FLINT WATER CRISIS: IMPACTS AND LESSONS LEARNED

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY

AND THE

SUBCOMMITTEE ON HEALTH

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

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C O N T E N T S

WITNESSES

[1] Witness did not answer submitted questions for the record by the time of printing.

[2] Additional material submitted for the record has been retained in committee files and also is available at *http://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=104765.*

SUBMITTED MATERIAL

[3] Witness did not answer submitted questions for the record by the time of printing.

FLINT WATER CRISIS: IMPACTS AND LESSONS LEARNED

WEDNESDAY, APRIL 13, 2016

HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY,
JOINT WITH THE
SUBCOMMITTEE ON HEALTH,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittees met, pursuant to call, at 10:02 a.m., in room 2123 Rayburn House Office Building, Hon. Joseph R. Pitts (chairman of the Subcommittee on Health) presiding.

Members present: Representatives Pitts, Shimkus, Guthrie, Harper, Murphy, Burgess, Latta, Lance, McKinley, Griffith, Bilirakis, Johnson, Long, Ellmers, Bucshon, Flores, Brooks, Hudson, Collins, Upton (ex officio), Engel, Green, Capps, Doyle, Schakowsky, Butterfield, Matsui, Castor, Sarbanes, McNerney, Luján, Tonko, Schrader, Kennedy, Cárdenas, and Pallone (ex officio).

Also present: Representative Kildee.

Staff present: Gary Andres, Staff Director; Will Batson, Legislative Clerk; Mike Bloomquist, Deputy Staff Director; Rebecca Card, Assistant Press Secretary; Karen Christian, General Counsel; Jerry Couri, Senior Environmental Policy Advisor; Theresa Gambo, Admin/Human Resources; A.T. Johnston, Senior Policy Advisor; David McCarthy, Chief Counsel, Environment and the Economy; Tim Pataki, Member Services Director; Graham Pittman, Legislative Clerk; Mark Ratner, Policy Advisor to the Chairman; Tina Richards, Counsel, Environment; Michelle Rosenberg, GAO Detailee, Health; Chris Santini, Policy Coordinator, Oversight and Investigations; Chris Sarley, Policy Coordinator, Environment and the Economy; Dan Schneider, Press Secretary; Adrianna Simonelli, Legislative Associate; Heidi Stirrup, Policy Coordinator, Health; Josh Trent, Deputy Chief Counsel; Dylan Vorbach, Deputy Press Secretary; Jeff Carroll, Democratic Staff Director; Jacqueline Cohen, Democratic Senior Counsel; Timia Crisp, Democratic AAAS Fellow; Kyle Fischer, Democratic Health Fellow; Jean Fruci, Democratic Energy and Environment Policy Advisor; Waverly Gordon, Democratic Professional Staff Member; Tiffany Guarascio, Democratic Deputy Staff Director and Chief Health Advisor; Rick Kessler, Democratic Senior Advisor and Staff Director for Energy and the Environment; Una Lee, Democratic Chief Oversight Counsel; Elizabeth Letter, Democratic Professional Staff Member; Dan Miller, Democratic Staff Assistant; Rachel Pryor, Democratic Health Policy Advisor; Alexander Ratner, Democratic Policy Ana-

lyst; Timothy Robinson, Democratic Chief Counsel; Samantha Satchell, Democratic Policy Analyst; Matt Schumacher, Democratic Press Assistant; and Andrew Souvall, Democratic Director of Communications, Outreach and Member Services.

Mr. PITTS. The subcommittee will come to order. This is a joint hearing between the Subcommittee on Environment and the Economy and the Subcommittee on Health. The Chair will recognize himself for an opening statement.

OPENING STATEMENT OF HON. JOSEPH R. PITTS, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Today's hearing will provide an opportunity for our two subcommittees to examine the issues related to the ongoing drinking water crisis and related public health effects in Flint, Michigan. Members of the committee already have a basic understanding of the situation that led to the high levels of lead discovered in the Flint drinking water system and the focus of today's hearing will be how we can best respond to help affected families in Flint and how we can best move forward with solutions to ensure this does not happen again. Our witnesses today will be able to provide key insights on what efforts both the Federal and State Governments are undertaking and I look forward to their testimony.

According to the Mayo Clinic, lead poisoning, quote, can severely affect mental and physical development, end quote, and can even be fatal at high lives. From a public health standpoint, we will want to better understand how the administration has coordinated with the State of Michigan to provide technical assistance to State and local health departments, including how they helped with case management and interventions with children identified with elevated lead blood levels.

Addressing the long-term health implications, a potential exposure of children to dangerously high levels of lead is no simple fix. Some steps have already been taken to attempt to address the serious public health issues in the community. Just last month, the administration announced an expansion of Head Start and Early Head Start in Flint, Michigan with a one-time emergency influx of $3.6 million for these programs. Additionally, the Centers for Medicare & Medicaid Services, CMS, approved Michigan's application to establish a 5-year Medicaid demonstration, Flint Michigan Section 1115 demonstration, in response to the public health emergency of lead exposure related to the Flint water system.

The U.S. Department of Agriculture's Special Supplemental Nutrition Program for Women, Infants, and Children, WIC, is allowing participants to use WIC vouchers for ready-to-feed infant formula, which does not need to be mixed with water. Participants can also swap powdered formula for ready-to-feed formula. WIC participants are being referred to the local Health Department for lead screenings and provided nutrition education on mitigating lead absorption through dietary changes.

These steps should help expand services available to ensure access to needed medical, social, educational, and other services. We are eager to hear of other options that may be employed to alleviate the potential impacts lead can have on health.

I look forward to our hearing today. I thank all of the witnesses on both panels for participating in this important hearing.

[The prepared statement of Mr. Pitts follows:]

PREPARED STATEMENT OF HON. JOSEPH R. PITTS

Today's hearing will provide an opportunity for our two subcommittees to examine the issues related to the ongoing drinking water crisis and related public health effects in Flint, Michigan. Members of the committee already have a basic understanding of the situation that led to the high levels of lead discovered in the Flint drinking water system. The focus of today's hearing will be how we can best respond to help affected families in Flint, and how we can best move forward with solutions to ensure this does not happen again.

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Mr. PITTS. Anyone on our side seeking time? If not, we will go back and recognize the ranking member, Mr. Green, 5 minutes for an opening statement.

OPENING STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. GREEN. Thank you, Mr. Chairman. Good morning and I thank all of you for being here for this important hearing. The drinking water crisis in Flint, Michigan is a national tragedy. It is a preventable, man-made disaster that should have been intervened months before it caught the Nation's attention. Most tragically are the estimated 8,000 children under the age of 6 who were exposed to unsafe levels of lead who may need life-long services to live fully productive lives.

Childhood lead poisoning is a tragedy impacting communities throughout our United States. The Centers for Disease Control estimates that approximately 500,000 American children under 6 have blood lead levels above 5 micrograms, the level recommended for public health actions to be initiated. Children from low-income communities, communities of color, like those in Flint, and commu-

nities I have the honor of representing in Houston and Harris County, Texas are two to three times more likely to have elevated blood levels based on CDC data. No child in America, regardless of background or income should be a victim of lead poisoning.

The City of Houston has been proactive on this issue. Houston is one of the six cities to be part of the CDC Child Lead Poisoning Prevention Programs with the ambitious goal of eliminating childhood lead poisoning in the city by 2020. In 2013 alone, over 24 children were screened for lead. And since 1996, nearly 3,000 homes have been remediated for lead paint. I support these efforts but more must be done to ensure that every child is tested for lead and all older homes are lead paint free in Houston and across the Nation. Unfortunately, the CDC program was drastically cut in recent years from $30 million in 2011 to $15 million last year. Health and Human Services working with Congress must ensure that this and other similar programs get the resources they need to protect our children from lead exposure.

The recent study conducted by the American Water Works Association estimates that there are 6.1 million lead service lines utilized nationwide, serving 15 to 22 million Americans. These lead service lines are greater concentrated in the mid-west and the northeast. LSLs are found in every State. My home State of Texas is estimated to have 270,000 lead service lines still in use, the eighth highest in the country. If we are going to eliminate lead out of our drinking water once and for all, our Nation must commit to the comprehensive plan to replace lead service lines. This will necessitate coordination between water utilities, cities, States, and EPA with a sizeable commitment of resources from the Federal Government to support local communities and low-income households, replacing their lead lines.

I am proud to join my colleague, Representative Paul Tonko, as an original co-sponsor of the AQUA Act, which would reauthorize the Safe Drinking Water Act for the first time in 13 years and give States greater resources to update our Nation's aging drinking water infrastructure by increasing funding for the State revolving fund.

The Safe Drinking Water Act was passed by Congress 4 decades ago, to ensure public drinking water supplies throughout the Nation. It is clear today that our Safe Drinking Water Act failed to protect the people of Flint and other communities around the country. As a community of jurisdiction, we need to know why.

Much of the responsibility for the failure, to my peer's point, is the Lead and Copper Rule. The LCR has not seen major revisions in 20 years. I am very interested in hearing what EPA has done to modernize the Lead and Copper Rule and what revisions the public health and water utility experts before us today believe are necessary to ensure that our public water systems are lead-free.

I hope that today's hearing will bring frank and truthful discussion on these critical issues in public health and that we find common ground in moving forward to ensure that this terrible tragedy never hits another great American city.

Mr. Chairman, I hope our committee will use our jurisdiction to further us and do our best to do.

And I would be glad to yield the remainder of my time to my colleague from North Carolina, Congressman Butterfield.

Mr. BUTTERFIELD. Thank you, Mr. Green, and I will talk fast.

On March 4th, members of the Congressional Black Caucus, the Congressional Progressive Caucus, and members of the House Democratic Leadership traveled to Flint to see the ongoing environmental disaster. I can only describe the frustration and harm to the residents of Flint as gut-wrenching. People have lost hope in their Government that have failed them at many levels, none more so than at the State level under the management of Governor Snyder. I am disappointed that the Governor is not here today to answer for his role and that of his administration in failing to protect the well-being of nearly 100,000 Flint residents.

I understand that this is a hearing on lessons learned from Flint but this is not the first time people have been poisoned by their water and it will not be the last until we make real investments to fix the root of the problem.

I represent a poor district in North Carolina, which, unfortunately, is no stranger to lead-poisoned water over the last decade. Cities of Durham, Greenville, and rural areas in Wayne County have all had unsafe drinking water. Levels of contamination in Durham exceeded 800 parts per billion. This is unacceptable, whether it is in Durham, Greenville, Wayne County, or in Flint, Michigan.

Too often, Mr. Chairman, these problems incur in vulnerable communities and our response is too little, too late. Access to clean water should not be a luxury. It should be a guarantee. The tragedy in Flint has highlighted one of the key environmental justice issues of this generation and it is time to fix this inequity now.

I thank the witnesses for coming today. I yield back.

Mr. PITTS. The Chair thanks the gentleman and now recognizes the chair of the full committee, Mr. Upton for 5 minutes for an opening statement.

OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Mr. UPTON. Well, thank you, Mr. Chairman.

You know the tragic situation in Flint has captured the attention of the Nation, that is for sure. And the events that unfolded are simply unacceptable. And sadly, there are missteps at all levels of Government. What happened to Flint and its residents, especially the kids, being poisoned in their own home absolutely breaks your heart.

And long after the media leaves Flint and the dust settles, families, real Michigan families will be grappling with this tragedy for decades, most likely, lifetimes. That is why today's hearing is going to take a look forward.

I have said before and I am going to say it again that I am not interested in finger-pointing. There has been much of that done already. The focus needs to be on the folks who are impacted, especially the kids, and what we can do to ensure that this does not happen again anywhere.

We are interested today in examining the underlying causes, various public health implications, and potential solutions moving for-

ward. And while we can't rewind the clock to prevent the colossal failure of public trust, actions taken by both the State of Michigan and the Federal Government are important steps in the right direction.

The administration and State have coordinated to disseminate public health education, provide case management and interventions for kids with elevated blood levels, and have worked to identify vulnerable populations in Flint who may need further targeted outreach.

The Federal Government should work with the State to ensure that proper testing and monitoring is indeed taking place. We know that early education is a critical factor in combating the effects of lead exposure. In February, HHS awarded grants of $250,000 to two health centers in Flint. These funds are being used to hire additional personnel, providing more testing, treatment, outreach, and education on the lead exposures. HHS has also announced an expansion of Head Start and Early Head Start in Flint and a one-time emergency influx of $3.6 million for these programs. Thank you.

In March, CMS also approved Michigan's application to establish a 5-year Medicaid demonstration project in response to the public health emergency. Michigan will expand coverage for kids up to age 21 and pregnant women with incomes up to and including 400 percent of the Federal poverty level who were served by the Flint water system from April of 2013 through a State-specified date. Additionally, Michigan has indicated that it will implement a State program to make available unsubsidized coverage for higher income populations in Flint.

Here in the House, we also took action when we passed H.R. 4470, the Safe Drinking Water Act Improved Compliance Act by a vote of 416 to 2. This bipartisan solution championed by Flint Congressman Dan Kildee and co-sponsored by the entire Michigan delegation ensures that the public is notified of excessive lead levels in the drinking water and also clarifies and improves the process of Federal, State, and city officials communicating promptly with each other, as they should. Communities across the country, mine included, and would note this is this week's my local paper, earlier this week The Herald Palladium, where the headline "U.S. water systems repeatedly exceed Federal standards for lead," all communities are worried about water infrastructure issues.

And our bipartisan bill, that passed again in the House, specifically calls on EPA to help communities develop a strategic plan for dealing with emergencies like this before they happen.

Today, we expect to learn more from EPA about its plans with the Lead and Copper Rule under the Safe Drinking Water Act. We are also going to learn from Michigan's Keith Creagh and Nick Lyon on what steps the State and community are taking to get Flint water back up to national standards.

On the second panel, we are going to hear from an association of water utilities in association with State drinking water regulators, what lessons that they have learned and what they are doing to apply those lessons.

We are also going to hear from Dr. Mona Hanna-Attisha, Program Director, Pediatric Residency at the Hurley Children's Hos-

pital. Dr. Mona, as she is called, provides an important perspective on children's health and I am pleased that she is with us so that we can continue to work together.

It is my hope that this hearing is going to serve as a valuable opportunity to hear more about this important work, ideas for further steps that can be taken by the Federal Government and the State of Michigan to help the people of Flint and how Congress can ensure with confidence that this does not happen again.

We cannot and we will not forget those in Flint who have been impacted by this tragedy. No amount of regrets or words can actually fix what is broken. We need concrete action.

I yield back.

[The prepared statement of Mr. Upton follows:]

PREPARED STATEMENT OF HON. FRED UPTON

The tragic situation in Flint, Michigan, has captured the attention of the Nation. The events that unfolded are unacceptable, and sadly there were missteps at all levels of Government. What happened to Flint and its residents, especially the kids being poisoned in their own home, absolutely breaks your heart. And long after the media leaves Flint and the dust settles—families—real Michigan families—will be grappling with this tragedy for decades, indeed lifetimes.

That's why today's hearing will be a look forward. I've said before and will say again: I am not interested in finger pointing. There has been much of that done already. The focus needs to be on the folks who were impacted—especially the children, and what we can do to ensure this happens never again, anywhere. We are interested today in examining the underlying causes, various public health implications, and potential solutions moving forward.

While we can't rewind the clock to prevent the colossal failure of public trust, actions taken by both the State of Michigan and Federal Government are important steps in the right direction. The administration and State have coordinated to disseminate public health education, provide case management and interventions for children with elevated blood lead levels, and have worked to identify vulnerable populations in Flint who may need further, targeted outreach. The Federal Government should work with the State to ensure that proper testing and monitoring is taking place.

We know that early education is a critical factor in combating the effects of lead exposure. In February HHS awarded grants of $250,000 to two health centers in Flint. These funds are being used to hire additional personnel and provide more testing, treatment, outreach, and education on the lead exposures. HHS has also announced an expansion of Head Start and Early Head Start in Flint, and a one time, emergency influx of $3.6 million for these programs.

In March CMS also approved Michigan's application to establish a 5-year Medicaid demonstration project in response to the public health emergency. Michigan will expand coverage for children up to age 21 and to pregnant women with incomes up to and including 400 percent of the Federal poverty level who were served by the Flint water system from April 2014 through a State-specified date. Additionally, Michigan has indicated that it will implement a State program to make available unsubsidized coverage for higher-income populations in Flint.

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Today, we expect to learn more from EPA about its plans with the Lead and Copper Rule under the Safe Drinking Water Act. We will also learn from Michigan's Keith Creagh and Nick Lyons on what steps the State and community are taking to get Flint water back up to national standards. On the second panel, we will hear from an association of water utilities and an association of State drinking water regulators what lessons they have learned, and what they are doing to apply those les-

sons. We will also hear from Dr. Mona Hanna-Attisha, program director, pediatric residency at the Hurley Children's Hospital. Dr. Mona, as she is called, and I met in February, and I'm pleased she is with us today. Dr. Mona provides an important perspective on children's health and how we should be working together moving forward.

It is my hope this hearing will serve as a valuable opportunity to hear more about this important work, ideas for further steps that can be taken by the Federal Government and State of Michigan to help the people of Flint, and how Congress can ensure with confidence this never happens again.

We cannot and we will not forget those in Flint who have been impacted by this tragedy. No amount of regrets or words can actually fix what's broken—we need concrete action.

Mr. PITTS. The Chair thanks the gentleman and now recognizes the ranking member of the full committee, Mr. Pallone, 5 minutes for an opening statement.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Mr. Chairman and thank you for holding this hearing today.

This committee's jurisdiction over public health and the environment makes it uniquely positioned to address the future in Flint and I am glad we are beginning that process today.

I remain extremely concerned about the water and health crisis. Flint has been without safe drinking water for far too long. It is important that we all recognize that all levels of Government will need to invest untold millions, if not billions, to mitigate the damage to Flint residents posed by this man-made disaster.

This hearing is an opportunity to address how we move forward and ensure that anyone impacted has access to support and assistance as long as necessary. We must decide what is needed to fix Flint's infrastructure and address the potential impacts lead contamination may have on Flint's children, which will take years.

The people in Flint need a fully functional drinking water system that delivers safe water to their homes. We need to take a hard look at whether the reestablishment of corrosion control is working to prevent further leaching from lead service lines and we need to know more about what is required to have those pipes removed and replaced.

There are also significant health needs that must be addressed. Flint's residents, especially the children, will require a suite of services, including ongoing testing and monitoring for lead exposure. They will also likely need a range of behavioral health, educational, and social services going forward. Thankfully, our Medicaid program is structured just for emergencies like this one but moving forward, our task will be to ensure that every affected child in Flint is not only enrolled but also receiving the services they need through the Michigan's Medicaid program.

Today is also an opportunity to begin to address the problems beyond Flint. For instance, in New Jersey, the Newark School System has ordered that water be turned off at 30 schools, due to the presence of lead. Flint reminds us that if we fail to properly invest in health and safety, the consequences can be devastating and, in many instances, we will need to invest even more resources in re-

sponse, if we wait. We must act now to ensure Americans throughout the country do not suffer from these same problems.

Now, Congress banned the use of lead in new pipes 30 years ago but between 3.3 and 10 million older pipes remain in use throughout the country today. Families living in homes connected to these pipes all across the country are potentially at risk from lead leaching from these aging pipelines into their plumbing. Children are most affected by these aging pipelines and the associated negative health effects linked to lead exposure. The CDC estimates that half a million U.S. children ages 1 to 5 have blood lead levels that exceed the agency's guidelines of 5 micrograms per deciliter. As deeply concerning as these statistics are, they understate the problem. The current scientific consensus holds that no amount of lead in the blood is safe for children.

It is long past time for a serious conversation in this country about the dangerous lack of Federal investment in our drinking water infrastructure and in our public health system. The Safe Drinking Water Act needs to be strengthened. EPA needs more authority to set health protective standards for all drinking water contaminants and we need to invest in our water systems to ensure safe drinking water. We also must ensure the necessary resources for providing healthcare to monitor and address lead poisoning, as well as preventing lead poisoning in the first place.

So, I want to thank all the members of both subcommittees here today for your continued attention on this issue. I look forward to hearing from our witnesses about how we can all work together to ensure a strong future for the residents of Flint.

[The prepared statement of Mr. Pallone follows:]

PREPARED STATEMENT OF HON. FRANK PALLONE, JR.

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Congress banned the use of lead in new pipes 30 years ago, but between 3.3 and 10 million older pipes remain in use throughout the country today. Families living in homes connected to these pipes all across the country are potentially at risk from lead leaching from these aging pipelines into their plumbing.

Children are most affected by these aging pipelines and the associated negative health effects linked to lead exposure. The CDC estimates that half a million U.S. children ages one to five have blood lead levels that exceed the agency's guidelines of 5 micrograms per deciliter. As deeply concerning as these statistics are, they understate the problem. The current scientific consensus holds that no amount of lead in the blood is safe for children.

It is long past time for a serious conversation in this country about the dangerous lack of Federal investment in our drinking water infrastructure and in our public health system. The Safe Drinking Water Act needs to be strengthened: EPA needs more authority to set health protective standards for all drinking water contaminants. And, we need to invest in our water systems to ensure safe drinking water. We also must ensure the necessary resources for providing health coverage to monitor and address lead poisoning as well as preventing lead poisoning in the first place.

Thank you to all of the members of both subcommittees here today for your continued attention on this issue. I look forward to hearing from our witnesses about how we can all work together to ensure a strong future for the residents of Flint.

Mr. PALLONE. I would like to yield—I know I have a minute and half—half the time to Ms. Matsui and Mrs. Capps. We will start, I guess, with Ms. Matsui.

Ms. MATSUI. Thank you, Mr. Pallone.

First and foremost, we must do everything we can to support the women, children, and families in Flint affected by this public health crisis. Contaminated water and lead poisoning were the end result of a system that failed the people of Flint but Flint is far from the only community at risk.

Today, we need to ask the hard questions and offer real solutions so that the suffering in Flint is not repeated in cities and towns across the Nation. The first step is increasing funding for our water infrastructure. This infrastructure must be resilient and sustainable because it is also our first line of defense.

We also need to ensure that our public health infrastructure is robust so we can both prevent and respond to crises like those in Flint. This means investments in public health, surveillance, prevention and screening, and treatment. I hope today we can learn about ways that can support or programs in our local health departments, as well as Medicaid programs to prevent and respond to public health crises.

Thank you, and I yield to Mrs. Capps.

Mrs. CAPPS. Thank you for yielding.

You know all people have the right to safe, reliable drinking water, no matter where you live. This crisis shines a spotlight on our country's insufficient water systems and potential devastation that can result from not investing in our Nation's most important infrastructure.

The central need for safe access to drinking water is exactly why Representative Tonko and I and several others introduced the Assistance Quality and Affordability Act a little over a month ago. The bill marks a much-needed start to address the issues facing our crumbling drinking water infrastructure and I am happy that several components from my Water Infrastructure Resiliency and

Sustainability Act are among the many important provisions included to help ensure that our water is available and safe.

But while we could spend our time talking about those, the fact is that lack of access to clean water threatens our families' health and our well-being. It compromises our very way of life. So, today's hearing is an important first step in what I hope will be a broader conversation on this imminent threat to our public health. It cannot wait. We must act now.

And I yield back to my colleague.

Mr. PITTS. The chairman thanks the gentlelady.

I now recognize the ranking member of the Environment and the Economy Subcommittee, Mr. Tonko, 5 minutes for an opening statement.

OPENING STATEMENT OF HON. PAUL TONKO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. TONKO. Thank you, Mr. Chair, and thank you to our witnesses for being here today for what I believe is a long overdue hearing.

I look forward to hearing what is being done by all levels of Government in response to this tragic and unnecessary crisis. By now, the details and time line of events that led to this situation in Flint have been well-established but there are still many questions to ask and many lessons left to learn.

There is no safe level of lead in drinking water, yet it exists throughout our water systems in pipes, solder, and fixtures. The consequences of lead exposure for the people of Flint will be long-term and will require Government assistance in education, public health, and mental health services for decades to come. It all affect the city's economy. And this event has lost its residents' trust in Government. So be it for austerity approaches.

We know the root causes of this catastrophe. I do not want to litigate the details that led to this tragedy but I do believe it is a clear case of environmental injustice caused by public officials that cared more about saving dollars than about serving the health and welfare of the people for whom they speak. There is no question there were failures and failures of Government. There were delays in acknowledging and in serious problems. The evidence and concerns of legitimate experts and public were dismissed. Some causes were also structural.

Flint's population decline in the past 5 decades has put tremendous stress on the city, on its water system, and on its residents. All of these issues are underlined by unaffordable water rates and aging infrastructure, which are sadly all too common in our country. Flint should open people's eyes, especially those in public service that we cannot take safe drinking water for granted. Water supports every life and water supports every job. And so, therefore, our drinking water systems cannot and should not be ignored.

Our systems require investments. That is right, investments to upgrade, maintain, and replace basic physical infrastructure to ensure public health. Such investments are basic and cannot be denied for the sake of austerity. At the end of the day, someone will pay for our nationwide neglect of drinking water systems. And we have seen that paying later, after a crisis, is more expensive than

investing now. In fact, my engineering community, of which I am part, tells me that we pay 10 times more when we wait for the break in a line to occur than to have done the preventative therapy.

We will hear about the steps that must be taken moving forward, clarifying and strengthening the Lead and Copper Rule, the risks of partial lead line replacement, issues around corrosion control and improving our testing procedures. Many of these issues have been discussed by the Flint Water Advisory Task Force's report and the National Drinking Water Advisory Council Lead and Copper Rule Working Group's report. These are important issues but I want to be clear that these issues do not end at Flint's city limits. We have been severely underinvesting in our drinking water infrastructure for decades and now we are seeing the dangerous and costly consequences. Why are we surprised?

Removing lead in drinking water should be a national priority with a national discussion and it must be done in a comprehensive and planned way. Corrosion control treatment will be part of the solution but it is not a final answer.

USA Today has reported that nearly 2,000 water systems across all of our 50 States have exceeded the EPA's lead action level within the past 4 years. That is strictly unacceptable. There are millions of lead pipes across this country, and, given our track record for replacement, many lead pipes will remain for decades without a more proactive replacement plan.

We know what we must do. Do we have the courage to go forward? We must improve lead testing, monitoring, and public notice to act on risks quickly. We need a focus on protecting vulnerable populations. We need to address lead exposure in schools and assist low-income homeowners with lead line replacement. And we need a sustained and robust commitment to upgrade our water systems and remove those lead components.

The current Federal commitment is simply not good enough. We can't even say we lead by example. We must step up to help States and local communities finance these projects.

A majority of the Democrats on this committee have co-sponsored the AQUA Act, which would reauthorize the drinking water SRF at Recovery Act levels and beyond. It also makes some much-needed updates to the Safe Drinking Water Act, including support for disadvantaged communities and additional emphases on the sustainability and affordability of our water systems. We want to be partners in this effort but unless we get serious about addressing these bigger issues of deteriorating infrastructure and unaffordable drinking water, it is only a matter of time before we are demanding another hearing on another preventable tragedy.

So, I hope that we can count on all members of this committee to make sure that the people of Flint, and in particular the children of Flint, get the assistance that they need and that they deserve. And I hope that we will do what is necessary and expand the Federal commitment to ensure other communities get the resources that they need to prevent these future tragedies.

With that, Mr. Chair, I yield back. Let's do the right thing.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the chair of the Environment and Economy Subcommittee, Mr. Shimkus, for 5 minutes for an opening statement.

OPENING STATEMENT OF HON. JOHN SHIMKUS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIMKUS. Thank you, Mr. Chairman for recognizing me and yielding me this time.

At one level, I am glad to see that we are looking into the tragedy in Flint, Michigan and, on another, I am saddened and disappointed that it even happened in the first place.

The drinking water crisis that the residents of Flint, Michigan have had to endure has been called a tragedy so much that the word loses its meaning. I know there have been concerted efforts to assign blame for these problems and other congressional committees have spent trying to look into who caused this or who didn't do enough to stop it. I have decided that there are very few white hats in this picture.

Flint was let down by its Federal and State Government and its local officials and the residents there are right to be skeptical. We need to look into what is being done to make the situation better, delve into what the schedule looks like to restore good drinking water to folks, and what the long-term plan is to take care of the health and the infrastructure of Flint. Ultimately, we need to ensure coordination, openness, and cooperation between Government water utilities and the public so we can feel confidence that the work is being done.

As part of this examination, we should appreciate what changes the Environmental Protection Agency is considering as part of its long-term revisions to the Lead and Copper Rules. I recognize EPA has been getting input from the National Drinking Water Advisory Council and others but we should examine what the impact of some of those decisions might have on communities. We all want to protect public health but there are a finite amount of resources, Federal, State, local, and private that can be brought to bear to address all issues. We need to prioritize the public health benefits we are addressing and getting. We want appropriate attention placed on this issue but not at the expense of addressing other pressing public issues.

I want to thank all of our witnesses for joining us today to give us their perspective. I want to welcome back Mr. Estes-Smargiassi, who testified on lead service lines 6 years ago before this committee.

Again, I thank you, Mr. Chairman, for the time you have yielded to me and I yield back the balance of my time.

[The prepared statement of Mr. Shimkus follows:]

PREPARED STATEMENT OF HON. JOHN SHIMKUS

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this picture. Flint was let down by its Federal and State Government, and its local officials and the residents there are right to be skeptical.

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I want to thank all our witnesses for joining us today to give us their perspective. I want to welcome back Mr. Estes-Smargiassi who testified on lead service lines 6 years ago before this committee.

Mr. PITTS. The Chair thanks the gentleman. That concludes the opening statements. As usual, all members' written opening statements will be made a part of the record.

We will now proceed to our first panel. And I apologize for the technical difficulties. I urge members, as they walk down the center aisle, not to bump the wires. It will result in all that cracking you are hearing. And the lights on the table do not work. So, at 4 minutes, I will give you a couple of taps so you know you have 1 minute left. At 5 minutes, I will do three taps for you to be able to wrap-up.

And I will introduce the first panel in the order of their presentations. Your written statements will be made a part of the record but you will each be given 5 minutes to summarize.

And in the order of their presentations, we have Joel Beauvais, Deputy Assistant Administrator for the Office of Water, U.S. Environmental Protection Agency; and then Dr. Nicole Lurie, Assistant Secretary for Preparedness and Response, U.S. Department of Health and Human Services; Mr. Nick Lyon, Director of Michigan Department of Health and Human Services; and Keith Creagh, Director of Michigan Department of Environmental Quality.

Thank you for coming. We appreciate you coming today and as I said, you will each be given 5 minutes to summarize your testimony. And at this point, the Chair recognizes Mr. Beauvais, 5 minutes for his opening statement.

STATEMENTS OF JOEL BEAUVAIS, DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY; NICOLE LURIE, M.D., ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE, DEPARTMENT OF HEALTH AND HUMAN SERVICES; NICK LYON, DIRECTOR, MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES; AND KEITH CREAGH, DIRECTOR, MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

STATEMENT OF JOEL BEAUVAIS

Mr. BEAUVAIS. Thank you, Chairman Pitts, and good morning to you and to Chairman Upton, to Chairman Shimkus, Ranking Member Green, Ranking Member Tonko, and distinguished members of

the committee. Thank you for the opportunity to testify about EPA's response to the drinking water crisis in Flint, Michigan.

Under the Safe Drinking Water Act, Congress directed the EPA to set national standards to protect public health but assigned primary responsibility to the States to implement these regulations. EPA maintains Federal oversight of the States' drinking water programs. That system, while imperfect, has achieved major improvements in drinking water safety nationwide. The situation in Flint, however, underscores the need for urgent and sustained action by Federal, State, tribal and local governments, and drinking water system owners and operators nationwide to address risks from lead in drinking water and to ensure that nothing like this ever happens again.

As part of the coordinated Federal effort led by the U.S. Department of Health and Human Services, EPA is working closely with the State of Michigan and the City of Flint to address the crisis in Flint. Since October 2015, EPA's Flint Safe Drinking Water Task Force, composed of agency experts in the areas of corrosion control and others, has provided technical assistance to the city and to MDEQ on steps needed to re-optimize corrosion control and ensure proper lead testing.

On January 21, 2016, EPA issued an Emergency Order under section 1431 of the Safe Drinking Water Act, directing the State of Michigan, MDEQ, and the City of Flint to take actions necessary to ensure that corrosion control is re-optimized and that the city establishes the capacity to operate its drinking water system in compliance with the requirements of the law.

EPA is an integral part of the Federal response effort and has established a significant presence on the ground, which includes response personnel, scientists, water quality experts, community involvement coordinators, and support staff. In addition to providing ongoing technical assistance through the EPA Flint Task Force, EPA is conducting a multi-pronged effort to collect and analyze drinking water samples taken from around the city to help ensure transparency and accountability in assessing the status of Flint's system. Sampling results will continue to be shared with individual homeowners and are publicly available on EPA's Web site.

EPA has also taken several concrete steps to address systemic issues raised during this crisis. EPA's Administrator McCarthy has directed a review of MDEQ's implementation of the Safe Drinking Water Act, has called on EPA's Inspector General to evaluate EPA's response to the Flint crisis, and issued an agency-wide elevation memo encouraging staff and managers to raise issues of public health concern and to assure appropriate and prompt action to address such concerns.

In addition, EPA is working with States that have primacy in implementing the Safe Drinking Water Act to strengthen implementation of the Lead and Copper Rule, which covers approximately 68,000 public water systems nationwide. EPA recently sent letters to the Governors and drinking water regulatory agency heads of every primacy State in the country asking them to work with EPA to strengthen implementation of the Rule. That includes a series of specific actions to enhance transparency, accountability, and communication of timely information to the public.

In addition, EPA has been actively working on revisions to improve the Lead and Copper Rule. In December 2015, we received extensive recommendations on potential revisions from our National Drinking Water Advisory Council, composed of members of the general public, State and local agencies, and private groups, as well as from other concerned stakeholders. We are carefully evaluating this input and the national experience in implementing the current rule, including the events in Flint, to develop proposed improvements. EPA expects to propose revisions to the Rule in 2017 and will welcome comments robust engagement and comments from the public and other interested parties.

Finally, the situation in Flint highlights the need for broader national action to address our drinking water infrastructure. In many areas across our country, that infrastructure is aging and severely underfunded, particularly in low-income communities, which may have the most difficulty securing traditional funding through rate increases or municipal bonds. As EPA continues to work to strengthen public health protections through regulatory policy and implementation, we also need a serious national conversation about how to advance the investments and technologies necessary to continue the delivery of safe drinking water to all American families.

I thank you for the opportunity to testify today and welcome your questions.

[The prepared statement of Mr. Beauvais follows:]

Testimony of Joel Beauvais
Deputy Assistant Administrator
Office of Water
U.S. Environmental Protection Agency
Before the House Committee on Energy and Commerce
Subcommittee on Health and Subcommittee on Environment and the Economy
April 13, 2016

Good morning, Chairman Pitts, Chairman Shimkus, Ranking Member Green, Ranking Member Tonko, distinguished Members of the Committee. Thank you for the opportunity to testify about EPA's response to the drinking water crisis in Flint, Michigan.

Under the Safe Drinking Water Act, Congress directed the EPA to set national standards to protect public health but assigned primary responsibility to the states to implement these regulations. EPA maintains federal oversight of the states' drinking water programs. That system, while imperfect, has achieved major improvements in drinking water safety nationwide. The situation in Flint, however, underscores the need for urgent and sustained action – by federal, state, tribal and local governments, and drinking water system owners and operators nationwide – to address risks from lead in drinking water and to ensure that nothing like this ever happens again. As part of the coordinated federal effort led by the U.S. Department of Health and Human Services, EPA is working closely with the State of Michigan and City of Flint to address the crisis in Flint. Since October 2015, EPA's Flint Safe Drinking Water Task Force – composed of many of the agency's experts – has provided technical assistance to the city and to MDEQ on steps needed to re-optimize corrosion control and ensure proper lead testing. On January 21, 2016, EPA issued an Emergency Order under section 1431 of the Safe Drinking Water Act, directing the State of Michigan, MDEQ and the City of Flint to take actions necessary to ensure that corrosion control is re-optimized and that the city establishes the capacity to operate its drinking water system in compliance with the requirements of the law.

EPA is an integral part of the federal response effort and has established a significant presence on the ground, which includes response personnel, scientists, water quality experts, community involvement coordinators and support staff. In addition to providing ongoing technical assistance through the EPA Flint Task Force, EPA is conducting a multi-pronged effort to collect and analyze drinking water samples taken from around the city to help ensure transparency and accountability in assessing the status of Flint's system. Sampling results will continue to be shared with individual homeowners and are publicly available on EPA's website.

EPA has also taken several concrete steps to address systemic issues raised during this crisis. The Administrator directed a review of MDEQ and its ability to implement the Safe Drinking Water Act; called on EPA's inspector general to investigate EPA's response to the Flint crisis; and issued an EPA-wide elevation memo encouraging staff to raise issues of concern to managers and for managers to be welcoming of staff concerns and questions.

In addition, EPA is working with states with primacy in implementing the SDWA to strengthen implementation of the Lead and Copper Rule, which covers approximately 68,000 public water systems nationwide. EPA recently sent letters to the governors and drinking water regulatory agency heads of every primacy state with primacy in implementing the SDWA asking them to work with EPA to

strengthen implementation of the Lead and Copper Rule, including through a series of specific actions to enhance transparency, accountability, and communication of timely information to the public.

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Finally, the situation in Flint highlights the need for broader national action to address our drinking water infrastructure. In many areas across our country, that infrastructure is aging and severely underfunded – particularly in low-income communities, which may have the most difficulty securing traditional funding through rate increases or municipal bonds. As EPA continues to work to strengthen public health protections through regulatory policy and implementation, we also need a serious national conversation about how to advance the investments and technologies necessary to continue to deliver safe drinking water to all American families.

Thank you for the opportunity to testify today. I welcome your questions.

Mr. PITTS. The Chair thanks the gentleman and now recognizes Dr. Lurie, 5 minutes for opening statements.

STATEMENT OF NICOLE LURIE

Dr. LURIE. Thank you Chairman Pitts, Chairman Shimkus, Chairman Upton, Ranking Members Green, Tonko, and Pallone. Thank you, Mr. Upton, and distinguished members of the committee. I appreciate the opportunity to testify about the water situation in Flint and the Federal Government's response.

I am Dr. Nicole Lurie, the Assistant Secretary for Preparedness and Response at the Department of Health and Human Services. I am also the lead Federal official for the response. And in that role, my job is to coordinate and bring the entire Federal family together to deliver resources to help the people in Flint.

When I was first asked to take on this role, I made the decision to base the Federal response in Flint, not in Washington or in Lansing. I established a unified coordination group there to bring Federal, State, and local partners together to assess the situation and align resources to support the community.

Since then, I have been in Flint almost every week meeting with community leaders, Government officials and, most importantly, residents in Flint to ensure we are doing everything possible. We have had up to 110 people working on the ground at any one time, including staff from EPA, FEMA, USDA, HUD, HHS, and the Department of Education, as well as hundreds of others working remotely. We have had four major goals: providing safe water, supporting efforts to restore the water system and mitigating the health effects of lead exposure.

I am pleased to report we have made real progress. FEMA has provided millions of liters of bottled water and tens of thousands of filters and cartridges to residents. Numerous partnerships have successfully delivered these commodities door to door and through points of distribution and I am confident that Flint residents have access to clean water for now.

As you have heard, EPA is focused on helping the community restore their water system. Our major focus has been understanding the extent of the lead exposure and doing everything we can to mitigate those effects. My first observation on arriving in Flint was that the community was scared, angry, and traumatized. In response, we immediately deployed teams from the U.S. Public Health Service to provide psychological first aid and to train others in those techniques. Behavioral health remains one of my priorities and is one shared by the community.

In order to fully assess the potential impact of exposure, CDC advised that all children should have the opportunity to be lead tested or retested. There have been many, many testing events across the city and what I can tell you is that fewer than one percent of children have high blood levels now. But we all know that all children in Flint were exposed to lead at the height of the crisis and CDC is completing an independent analysis going back before the water switch to the Flint River to further inform our mitigation strategies.

Another focus has been to ensure that all children with elevated lead levels receive timely follow-up from a nurse case manager so

that we can link these kids to important services through their medical homes. CDC has provided extra personnel to support the State and county in achieving this goal.

It will also be critical to follow kids over time. We are in the process of planning a long-term voluntary registry in collaboration with the State, local, and academic partners and this will be critical to the long-term monitoring follow-up of kids with lead effects.

Beginning early in the response, I began to hear from the community about concerns with [audio malfunction in hearing room]. I asked CDC to state in a comprehensive evaluation to see whether there might additional substances in the water that could be causing and this investigation is underway.

We know that a suite of interventions focused on early brain development can help kids overcome many of the harmful effects of lead exposure and these include access to healthcare, developmental and behavioral assessments, early childhood education and good nutrition. As you heard from Mr. Upton, HHS has approved an historic Medicaid expansion covering children through age 21 and up to 400 percent of the Federal poverty limit or approximately 15,000 additional children and pregnant women in the Flint area. We hope the State can move forward with this important enhancement as soon as possible.

HHS has also provided an additional $3.6 million in one-time emergency funding to Flint's existing Head Start programs and made additional funding available to two community health centers to expand access, case management and behavioral health services. And the Department of Agriculture is helping the State increase community access to foods that help combat the effects of lead in this community, which still lacks a full service grocery store. Additionally, this summer, USDA will extend nutrition benefits to an additional 15,000 students.

In closing, this has truly been a whole community whole of Government response. Our progress in Flint has been made possible by strong partnership and coordination between Federal, State, and local partners. Yet, there is still work to be done to assure the best outcomes for Flint families. The Federal Government will continue to support Flint's recovery with the goal of helping its children and families lead happy, healthy, and productive lives. Thank you.

[The prepared statement of Dr. Lurie follows:]

Written Testimony
House Committee on Energy and Commerce, Subcommittee on Health

Flint, Michigan: A Coordinated Response

Statement of
Nicole Lurie, MD, MSPH
Assistant Secretary For Preparedness and Response

ASPR
ASSISTANT SECRETARY FOR PREPAREDNESS AND RESPONSE

For Release on Delivery
Expected at 10:00 a.m.
April 13, 2016

Chairman Upton, Ranking Member Pallone, Chairman Pitts, Ranking Member Green, Chairman Shimkus, Ranking Member Tonko and distinguished Members of the House Energy and Commerce Committee, I am Dr. Nicole Lurie and I am the Assistant Secretary for Preparedness and Response (ASPR) at the Department of Health and Human Services (HHS).

Thank you for the opportunity to testify this morning about the situation in Flint, Michigan and the federal government's response. On Saturday, January 16, 2016, the President signed an emergency declaration ordering federal assistance in support of state and local response efforts to address high levels of lead in the Flint, Michigan water supply. The President also named the Department of Health and Human Services as the Lead Federal Agency. I was asked to assume the responsibility as the Lead Federal Official to lead federal response efforts in support of the State of Michigan and local governments. In addition, I serve as the principal advisor to the HHS Secretary on all matters related to federal health and medical preparedness in response to public health emergencies and direct a group of programs to respond to medical and public health emergencies.

ASPR is uniquely qualified to respond in Flint. As authorized by the 2006 Pandemic and All-Hazards Preparedness Act (PAHPA) and reauthorized in 2013, ASPR works within HHS and with its federal, state, tribal, and local partners to advance the public health preparedness of our nation by helping build communities that are more resilient to disaster. ASPR's responsibilities are broad, and include overseeing advanced research, development, and procurement of medical countermeasures; collaborating with health care systems across the country to improve preparedness; leading federal public health and medical response efforts under Emergency

Support Function #8 of the National Response Framework; and providing integrated policy and strategic direction under the National Health Security Strategy. Coordination has been a central focus of my tenure as the Assistant Secretary for Preparedness and Response. We have facilitated coordination opportunities among state and local health systems through Hospital Preparedness Program (HPP) grants and Health Care Coalitions (HCC), strengthened our day-to-day systems to aid in responding when disaster strikes, furthered medical countermeasure development though the Public Health Emergency Medical Countermeasures Enterprise, and advanced science-based policy decision-making processes before, during, and after emergencies. Our all-hazards approach to public health and medical emergencies allows us to be flexible in responding to both known and unanticipated threats.

Over the past nine years, ASPR has built a comprehensive range of capabilities that allow us to operate efficiently and to simultaneously manage multiple response efforts. Our government has learned many lessons from previous response efforts and we are making progress in Flint. After initial discussions with the inter-agency, I accepted a simultaneous role as the leader of the whole-of-government response and as the lead coordinator within HHS, since this is largely a public health event. As an immediate first step, we set up a Unified Command Group (UCG) in Flint with all the involved federal agencies and convened the Disaster Leadership Group (DLG) in Washington to assess the situation and begin to align available resources and response capabilities to support the community. While the State maintains responsibility for the response, since the beginning of this crisis we have engaged with both the State and City of Flint leadership to understand and address their needs, including for direct federal support, guidance and technical assistance. The overall federal strategy involves four core elements: ensuring

access to safe water, fixing the water supply, assessing the size and scope of the problem, and mitigating the health effects of lead. I am pleased to report that we have made strong progress on the targets for these goals, primarily through enhanced services for the community.

Since my appointment as the Lead Federal Official for the response, I have traveled to Flint nearly every week to engage with: community leaders; government officials such as the Mayor of Flint, the Governor of Michigan, state senators, and Members of Congress; health care leaders; civic and faith-based organizations; business leaders; technical experts; and most importantly, the citizens of Flint. Residents are worried, confused, and angry about the situation; they want a solution to the water crisis and they are concerned about their health and the health of their children. While many adverse health effects of lead exposure can be addressed with proper interventions, the psychological impact of the water supply problems on the community may be longer lasting. Recognizing the broad impact of this crisis, the federal government is committed to supporting physical and behavioral health, educational, nutritional and other services to support the Flint community.

To support a broad and coordinated response, I identified and mobilized a team of federal partners from across the government to work together in Flint. Staff from the Federal Emergency Management Agency (FEMA), the Small Business Administration, the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Education (ED), and the U.S. Department of Agriculture (USDA) joined staff from my office, ASPR, and other HHS divisions including the Centers for Disease Control and Prevention (CDC), the Agency for Toxic Substances and

Disease Registry, and the Office of the Assistant Secretary for Health, as well as the Public Health Service Commissioned Corps.

To assist the state in providing immediate access to safe water, President Obama issued an Emergency Declaration under the Stafford Act on January 16, 2016 authorizing emergency protective measures to provide water, water filters, water filter cartridges, water test kits, and other necessary related items for a period of 90 days. To date 5.3 million liters of bottled water has been provided by FEMA to the State of Michigan. On March 25, FEMA approved the State of Michigan's request and extended this commodities mission to support Flint until August 14, 2016. Through FEMA procurements, non-government donations, and the dedicated state and local personnel who distribute the water, filters, and cartridges, 99.9 percent of households have been engaged in the response efforts and 89.8% of official addresses have had filters delivered.

The federal response is also focused on restoring the safety of Flint's water system. EPA and other federal agencies are working with state and local officials to monitor the status of Flint's system, using sound science to move towards long-term system recovery.

Over the course of our response, some residents raised concerns about skin rashes that they attributed to showering. An Assessment of Chemical Exposure team from the CDC's Agency for Toxic Substances and Disease Registry at CDC is currently exploring possible explanations regarding whether for these skin concerns may be related to the water supply.

Our biggest health concern involves children under the age of six because they are most susceptible to lead exposure and long-term health problems. We know that there is a lot we can do to help mitigate the effects on children who have been exposed to lead, especially to encourage their achievement of developmental milestones. We are working with HHS grantees in Genesee County to improve access to early childhood education and primary care services through Head Start and the Health Centers Program and to expand and enhance the Medicaid program for children up to age 21 and pregnant women in Flint potentially exposed to lead. We acted quickly to approve a Medicaid expansion in Flint to ensure health care coverage and expanded services. Approximately 15,000 additional children and pregnant women are now eligible for Medicaid coverage, and 30,000 current Medicaid beneficiaries in the area are eligible for expanded services. We provided $500,000 in additional HHS funding to help two Flint Health Centers provide health care and outreach services to families in Flint.

The EPA is gathering data to estimate the number of people who may have been exposed to lead through the Flint water system. It has presented recommendations for lead testing and long-term monitoring for children to the Michigan Department of Health and Human Services. HUD is working with the Flint Housing Commission and a local health care provider to schedule onsite blood lead testing for children in public housing. CDC staff and commissioned officers from the U.S. Public Health Service have provided staff expertise to the Genesee County Health Department to process blood lead level tests and to follow up with children who have elevated lead levels so they can receive additional education and nutritional services, connect to a medical facility, and have their homes checked for other sources of lead.

Early education programs are critical tools in helping children overcome the potential effects of lead exposure. The Department of Education (ED) has actively worked with state and local education leaders and affected families to support response efforts in Flint, and expects to maintain a long-term relationship with stakeholders in Michigan, Genesee County, and Flint. ED has provided technical assistance about estimating long-term educational costs and about using federal funds to address immediate and long-term early intervention and special education needs of infants and toddlers and their families, and school age children—in areas ranging from early evaluation to effective early intervention and special education practices to engaging parents. It has disseminated vital information and facilitated dialogue between federal, State, and local education and health officials about the impact of lead poisoning on educational outcomes. And ED's Readiness in Emergency Management for Schools Technical Assistance Center provided training in Flint on Resilience Strategies for Educators at the Genesee County Community Action Resource Department Head Start office.

Further, to help understand how the learning environment had been disrupted by the water crisis, ED staff made two site visits to Flint and met with representatives from the Flint Community Schools, the Genesee Intermediate School District, and the Michigan Department of Education as well as representatives from Michigan's Parent Training and Information Center (PTI) funded under the Individuals with Disabilities Education Act. ED is currently working with both school districts on a package of financial assistance to help restore the learning environment, and with the PTI on additional funding to inform families whose children may be eligible for early intervention and special education services.

HHS is providing $3.6 million in additional one-time funding to allow Flint's existing Head Start and Early Head Start programs to provide enhanced and expanded services, including additional

classrooms, home visiting support, and transportation for medical appointments. These programs play an important role in providing comprehensive early learning, health, and family well-being services to 1,011 Head Start children and 166 Early Head Start children in the city of Flint.

Recognizing the importance of nutrition in mitigating the negative health effects of lead absorption, USDA is assisting the state in increasing the community's access to target foods high in Vitamin C, calcium, and iron. Many vendors at the Flint Farmers Market are authorized to accept Supplemental Nutrition Assistance Program (SNAP) benefits, which can be used for the purchase of target foods.

To help school-aged children specifically, USDA approved the Michigan Department of Education's request for an additional $62,700 through the Fresh Fruit and Vegetable Program, which provides fresh fruit and vegetable snacks at no cost to students in eligible schools. USDA encouraged eligible high-poverty schools in the area to participate in the Community Eligibility Provision, a program that ensures access to healthy school meals for all students at no charge. USDA also waived requirements that schools provide potable water to students during meal service, but Flint schools continue to provide bottled water to students. Finally, USDA awarded a Summer Electronic Benefits Transfer (EBT) for Children grant to Flint, Michigan. Summer EBT provides additional food benefits to low-income families with school age children during the summer when school meals are not available. Implementing Summer EBT in Flint is another strategy for maximizing the impact of FNS's broad range of resources, educational efforts, and programs that can help mitigate the negative health effects of the dangerous levels of lead in the

city's water supply. Through Summer EBT, Flint students from low income households will continue to have consistent access to the types of nutritious food they eat in school, which may help mitigate the effects of lead, throughout the summer months.

Finally, for younger children and their mothers, USDA is also temporarily allowing the State of Michigan to use Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) funds to conduct lead testing for WIC participants. This action could lead to 3,800 WIC participants being tested for lead. WIC is also allowing participants to use WIC benefits for ready-to-feed infant formula, which does not need to be mixed with water, and participants can also swap powdered formula for ready-to-feed formula. USDA also waived certain requirements and thereby allowed schools to provide bottled water to students.

We also are supporting the behavioral and mental health needs of affected communities. Early in the response, I deployed PHS Commissioned Corps officers to assist with the behavioral health response. Some officers offered psychological first aid training for interested community members, as well as train-the-trainer and stress management sessions for health and mental health providers and caregivers. The Substance Abuse and Mental Health Services Administration (SAMHSA) has a Disaster Distress Hotline available for crisis counseling and is supporting children and families of Flint through emergency response grants. Finally, the CDC is using their Community Assessment for Public Health Emergency Response technique to identify those in need of primary care and behavioral health services.

Beyond the critical need to support individual health, responders also need to support the city's health with an eye toward recovery and resilience. The Department of Housing and Urban Development (HUD), the Economic Development Administration, and the Small Business Administration are working closely with the City of Flint on economic development and interagency coordination. HUD extended the Strong Cities, Strong Communities program in Flint to provide a continued resource for economic development. HUD obtained confirmation from the Flint Housing Commission that it has provided water filters to every unit of public housing and to all Housing Choice Voucher assisted households. The Flint Housing Commission confirmed 100 percent installation of filters to all public housing, while HUD has done the same for HUD's federally assisted and owned properties, and HUD-insured properties. HUD is continuing to work with the Flint Housing Commission and multifamily property owners to ensure upkeep of this equipment. In addition, the Federal Housing Administration (FHA) is helping buyers secure home loans by expanding qualification for FHA-insured mortgages. FHA typically requires lenders to ensure that properties meet certain minimum standards of livability, including potable water. Properties in Flint may still qualify for an FHA-insured mortgage if the individual water purification system meets all federal, state and local standards. The Small Business Administration (SBA) is helping Flint businesses recover from the water crisis. SBA approved Michigan State's request for low-interest disaster loans to assist businesses owners who have been affected by lead contamination. It provided approximately $400,000 in additional funding through a number of programs and is offering low-interest disaster loans for small businesses within the greater Flint area. The SBA has also opened a Business Recovery Center in Flint to administer the loans.

Beyond the programmatic assets that the federal government has supported in Flint, we have also prioritized the immediate needs of county and City in response to this complex event. This support includes deploying an assistant surgeon general to Flint at the mayor's request to advise her on health issues facing the city. This experienced U.S. Public Health Service Commissioned Corps officer, a rear admiral and assistant surgeon general, is helping identify immediate, mid-, and long-term health goals for a community recovery plan, and working with the mayor to develop a position for a permanent public health advisor. Michigan State University (MSU) is providing an educational response to the situation in Flint, MI. MSU translated and developed Spanish, Arabic, and Chinese versions of the 'Fight Lead with Nutrition' fact sheet. Moreover, the MSU Cooperative Extension has provided research based on how to eat healthy to prevent lead poisoning, including a diet with higher calcium, iron, and vitamin C. We are also engaging the federal and academic research communities through the National Institute of Environmental Health Sciences, a component of the National Institutes of Health, to study the health impact of lead exposure and inform the public health response in the Flint community over the long term.

Our efforts in Flint have been made possible by close, person-to-person coordination with federal, state, and local partners under the UCG. The UCG provides operational direction and technical expertise through the federal employees working in Flint.

The federal government is truly providing a whole-of-government response including substantial resources to Flint. We anticipate that these efforts will serve as a foundation for meeting long-term needs as the community recovers. We are committed to giving the residents of Flint access to clean and safe water and will continue to be involved in Flint's recovery to address the

wellbeing of the residents, especially its children. This is a long-term effort, and the federal government will be supporting every step of the way. Again, thank you and I look forward to your questions.

Mr. PITTS. The Chair thanks the gentlelady and now Mr. Lyon, you are recognized for 5 minutes for your opening statement.

STATEMENT OF NICK LYON

Mr. LYON. Thank you, Chairmen Pitts and Shimkus, Ranking Members Tonko and Green, and members of the subcommittees for inviting me to this joint subcommittee hearing to discuss these important issues. I would like to also thank Congressmen Kildee and Upton for being here today.

My priority as Director for Michigan Department of Health and Human Services is to ensure a healthy, safe, and stable environment for all of Michigan's families. I know the people of Flint are hurt. I know that they are upset. And I recognize that there is anger and mistrust. Rightfully so. Despite the efforts of many dedicated and well-qualified people, both within my department and locally, the citizens deserve better.

We have initiated an internal review, in addition to the joint investigation being completed by the Office of Auditor General and Office of Inspector General. We will address whatever shortcomings are identified by these reviews within my department and will properly address issues and factors that affected our response. We know that we could have done better.

My heart goes out to the families impacted and that is why I am here today, to talk about what Governor Snyder's administration and particularly my department is doing to provide relief to the people of Flint and ensure that the necessary services are provided in the future. We are now looking forward at what we can do to improve the health and quality of not only Flint but for all people in Michigan.

We have already taken steps to restructure areas within our department to better align programs with surveillance and to ensure local health issues, such as the ones we are discussing today, are quickly elevated for immediate follow-up. For example, we have increased case management for all children with elevated blood lead levels in Flint to ensure that their health is immediately being addressed. We have funded additional nurse case managers within the Genesee County Health Department to work with families and we are aggressively working to increase services in the community. We know that outreach and continued care is important.

And as part of our nurse case management efforts in Flint, we are now regularly testing water as a potential source of lead during follow-up with families, in addition to considering paint, soil, and dust exposures in the home.

We are also working close with our partners in Medicaid, our Medicaid health plans, to increase the number of children in Flint tested. While lead testing is required for all children enrolled in Medicaid, this is an area we continue to improve upon with our recent rebid in Michigan's Medicaid Health Plans emphasizing the need. We are also working closely with our healthcare providers to ensure that all children are screened appropriately.

In addition, the Flint Water Advisory Task Force has issued a comprehensive set of recommendations that we are actively reviewing for implementation. For instance, we know that good nutrition works to prevent the absorption of lead into the body. To increase

access to sources of nutrition foods in Flint, we are working closely with the Food Bank of Eastern Michigan to arrange mobile food bank deliveries in 23 sites across the city. We are assisting the Michigan Department of Education with the coordination and placement of nine new nurses in the Flint community and we are also adding additional schools to our existing program for adolescent health centers.

We are developing and coordinating long-term educational and behavioral screening tools, services, and supports for the children of Flint. We are working with the Genesee Health System and the Flint Community Resilience Group to develop and implement mental health first aid to assist the community in their recovery. And most recently, we are working to finalize a contract with the Genesee County Community Action Resource Department to replace water heaters for residents whose water heaters may have been damaged.

Throughout this emergency, we have greatly appreciated the support of our Federal partners. Our department has six Federal Centers for Disease Control and Prevention personnel embedded within our programs, who continue to work closely with the Genesee County Health Department and the Michigan Department of Health and Human Services as part of our efforts.

Through those resources that we have available to us, we have worked closely with our partners in the Agency for Toxic Substances and Disease Registry to create and release a Legionella toolkit for healthcare facilities and large buildings to prevent the growth of Legionella in water systems. Ultimately, our hope is to help other communities in Michigan and across the country learn, as we have, how to prepare for and even prevent lead exposure and Legionella outbreaks such as the one that occurred in Flint.

We also appreciate the assistance of our partners at the Centers for Medicare & Medicaid and Services who have approved our application to extend Medicaid benefits to pregnant women and children up to the age of 21 up to 400 percent of the Federal poverty level who were served by the Flint water system. This waiver will ensure access to primary are and provide targeted case management services to coordinate all physical and behavioral health related services for children potentially exposed to lead.

The Substance Abuse and Mental Health Services Administration is providing technical assistance in many areas, and the United States Department of Agriculture has approved our requests to utilize our WIC Program resources to test children for lead and enhance our nutritional education efforts.

In implementing Governor Snyder's action plan, we are working with Dr. Hanna-Attisha and Professor Marc Edwards through the Flint Water Interagency Coordinating Committee.

I want to thank Dr. Mona Hanna-Attisha, who will be testifying on the next panel, for bringing this issue to light and for continuing every day to help the families and children of Flint. She has been an invaluable partner as we deliver on our commitment to provide the necessary health care services to these families.

On behalf of the Snyder administration, I want to assure you that we stand committed to fixing this problem for the people of

Flint and to ensure this does not happen again in Michigan or anywhere else.

Thank you again for the opportunity to testify and I look forward to answering your questions.

[The prepared statement of Mr. Lyon follows:]

U.S. House of Representatives
Committee on Energy and Commerce
Subcommittee on Environment and the Economy
and Subcommittee on Health
"Flint Water Crisis: Impacts and Lessons Learned"
April 13, 2016
2123 Rayburn House Office Building
Washington, DC

Nick Lyon
Director, Michigan Department of Health and Human Services
Opening Statement

Nick Lyon
Director, Michigan Department of Health and Human Services
Opening Statement

- Thank you, Chairmen Shimkus and Pitts and Ranking Members Tonko and Green, and Members of the Subcommittees, for inviting me to this joint subcommittee hearing to discuss these important issues.
- My priority as director for the Michigan Department of Health and Human Services is to ensure a healthy, safe, and stable environment for all Michigan families.
- I know that the people of Flint are hurt. I know that they are upset. And I recognize that there is anger and mistrust, rightfully so.
- Despite the efforts of many dedicated and well qualified people both at the MDHHS and locally, the citizens deserve better.
- We have initiated an internal review in addition to the joint investigation being completed by the Office of Auditor General and Office of the Inspector General.
- We will address whatever shortcomings are identified by these reviews within my department and will properly address issues and factors that affected our response.
- We know that we could have done better.
- My heart goes out to the families impacted and that's why I'm here today – to talk to you about what Governor Snyder's Administration, and particularly the MDHHS, is doing to provide relief to the people of Flint and ensure that the necessary services are provided in the future.
- We are now looking forward at what we can do to improve the health and quality of life for not only Flint, but for all people in Michigan.
- We have already taken steps to restructure areas within our department to better align programs with surveillance and to ensure local health issues such as the ones we are discussing today are quickly elevated for immediate follow up.
- For example, we have increased case management for all children with elevated blood lead levels in Flint to ensure that their health is immediately being addressed.
- In October, we funded additional nurse case managers at the Genesee County Health Department to work with families of every Flint child who has tested with elevated blood lead levels.
- We are aggressively working to increase nurse case management services in the community. This will improve outreach and assure continuity of care.
- And as part of our nurse case management efforts in Flint, we are now regularly testing water as a potential source of lead during follow up with families, in addition to considering paint, soil, and dust exposures in homes.

- We are also working closely with our Medicaid Health Plans to increase the number of children in Flint tested for lead.
- While lead testing is required for all children enrolled in Medicaid, this is an area we continue to improve upon with the recent rebid for Michigan's Medicaid Health Plans emphasizing the need to improve lead testing rates.
- We are also working closely with all healthcare providers to ensure that all children are screened appropriately for lead.
- In addition, the Flint Water Advisory Task Force has issued a comprehensive set of recommendations that we are actively reviewing for implementation.
- For instance, we know that good nutrition works to prevent the absorption of lead into the body.
- To increase access to sources of nutritious foods in Flint, we are working closely with the Food Bank of Eastern Michigan to arrange mobile food bank deliveries in 23 sites across the city.
- We are assisting the Michigan Department of Education in the coordination and placement of nine new nurses in Flint community schools. We've also added additional schools to our existing program for child and adolescent service centers.
- We are developing and coordinating long-term educational and behavioral screening tools, services and supports for the children of Flint.
- We are working with the Genesee Health System and the Flint Community Resilience Group to develop and implement mental health first aid to assist the community in their recovery.
- And most recently, we are working to finalize a contract with the Genesee County Community Action Resource Department to replace water heaters for residents whose water heaters have been damaged.
- Throughout this emergency, we have greatly appreciated the support of our federal partners.
- Our Department has six federal Centers for Disease Control and Prevention personnel embedded within our programs, who continue to work closely with Genesee County Health Department and the Michigan Department of Health and Human Services as part of our efforts.
- Through those resources that we have available to us, we have worked closely with our CDC partners in the Agency for Toxic Substances and Disease Registry to create and release a Legionella toolkit for healthcare facilities and large buildings to prevent the growth of Legionella in water systems.
- Ultimately our hope is to help other communities in Michigan and across the country learn, as we have, how to prepare for and even prevent lead exposure and Legionella outbreaks such as this.

- We also appreciate the assistance of our partners at the Centers for Medicare and Medicaid Services who approved our application to extend Medicaid benefits to pregnant women and children under the age of 21 up to 400% of the federal poverty level, who were served by the Flint water system.
- The Medicaid waiver will ensure access to primary care and provide targeted case management services to coordinate all physical and behavioral health related services for children potentially exposed to lead.
- The Substance Abuse and Mental Health Services Administration is providing technical assistance in many areas, and the United States Department of Agriculture has approved our requests to utilize our Women, Infants and Children Program resources to test children for lead and enhance our nutritional education efforts.
- In implementing Governor Snyder's action plan, we are working with Dr. Hanna-Attisha and Professor Marc Edwards through the Flint Water Interagency Coordinating Committee.
- I want to thank Dr. Mona Hanna-Attisha, who will be testifying on the next panel, for bringing this issue to light and for continuing every day to help the families and children of Flint. She is an invaluable partner as we deliver on our commitment to provide the necessary health care services to these families.
- On behalf of the Snyder Administration, I want to assure you that we stand committed to fixing this problem for the people of Flint, and to ensure this does not happen again in Michigan or anywhere else.
- Thank you again for the opportunity to testify and I look forward to answering your questions.

Mr. PITTS. The Chair thanks the gentleman.

I know recognize Mr. Creagh for 5 minutes for his opening statement.

STATEMENT OF KEITH CREAGH

Mr. CREAGH. Good morning and thank you for the opportunity to appear before this committee today.

I am Keith Creagh and on January 4, 2016 I was appointed to be the Interim Director of the Michigan Department of Environmental Quality. When I testified before the House Committee on Oversight and Government Reform on February 3, 2016, my testimony described how all levels of Government did nothing together to protect the people of Flint, resulting in a water emergency. Since that time, Government at all levels has begun working cooperatively to help the people of Flint. I look forward to discussing the progress made to provide resources and results for the people of Flint, as well as some of the lessons learned.

One of my first objectives was to implement changes in the culture of the department. We refocused our primary mission to protecting the environment and public health. In reviewing the water source switch to the Flint River, we took a technical approach to compliance with the Federal Lead and Copper Rule without adequately addressing public concern. One of the first lessons learned is that infrastructure changes are complex, especially in aging systems, and regulatory agencies need to engage with the experts and the public in a more meaningful way. Much of the progress to date has been achieved through the Flint Water Interagency Coordinating Committee. The Coordinating Committee is comprised of city, county, and State officials, private entities, and outside experts such as Dr. Marc Edwards and Dr. Mona Hanna-Attisha. The objective of the Coordinating Committee is to connect all available resources to assist the people of Flint and mitigate the impact of lead exposure to the committee.

Just last Friday, the Coordinating Committee heard presentations on the current status of the Flint water system. The data indicates that the water quality is improving and that protective coating on the pipes is being restored; however, it is still unstable.

The information sharing that has occurred as a result of the Coordinating Committee demonstrates a second lesson: in order to rebuild trust, Government at all levels needs to share information in order for there to be effective discussions with experts and citizens. The Safe Drinking Water Act Improved Compliance Awareness Act, passed in February by the House, is a good first step.

The State of Michigan has appropriated over $68 million to address the water issues in Flint, with another $165 million pending. $30 million has been appropriated for the City of Flint to credit residents for water used for drinking, cooking and bathing from April 2014 through April 2016. The State is paying for the reconnections to the Great Lakes Water Authority to supply finished treated drinking water to Flint. $18 million has been set aside to provide long-term follow-up care to children.

The Department if paying for water sampling and testing, residential plumbing assessments and reliability studies. We have established a sentinel water testing program through which over 600

residents are sampling their water every 2 weeks. The results from the past four rounds of sampling show that over 92 percent of the households have results at or below 15 parts per billion of lead but, again, it shows instability.

The Department also supported a pilot service line replacement program in Flint and, additionally, the State has provided $2 million to the City of Flint for Mayor Weaver's FAST Start Program to remove lead service lines with an additional $25 million in a pending supplemental appropriation.

Moving forward, the Department is committed to supporting the City of Flint's efforts to identify and prioritize replacement of unsafe service lines and other infrastructure to ensure the integrity of the drinking water system.

The third lesson is simply replacing lead pipes alone will not solve this problem. Many of the high lead levels come from internal fixture that either have lead components, lead solder, or have lead particles trapped in faucet aerators. A comprehensive lead education campaign must continue past the immediate emergency. We are working with EPA and outside experts to develop guidelines that will prohibit partial line replacement and establish replacement priority.

Furthermore, a long-term strategy needs to be implemented that upgrades and maintains an appropriately sized water infrastructure for Flint.

The fourth lesson is States should treat the Federal rule as a floor, not a ceiling. Michigan is proposing to establish a comprehensive Michigan Lead and Copper Rule to ensure necessary public health protections that exceed the existing Federal rule. When it comes to protecting public health, States cannot wait for EPA's issuance of an updated rules. States must be willing to go above and beyond what the Federal Government standards are, whenever necessary to ensure public health is protected.

We will continue to work with the City of Flint regarding its future water needs. We are committed to continuing the collaborative process already established with all levels of Government, outside experts and citizens to resolve the water emergency. We hope that the effective implementation of this approach and the lessons learned will prevent the reoccurrence of such emergencies in Michigan and other parts of the country.

Thank you for the opportunity and I look forward to your questions.

[The prepared statement of Mr. Creagh follows:]

RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

KEITH CREAGH
DIRECTOR

Committee on Energy and Commerce

Subcommittee on Environment and the Economy and

Subcommittee on Health

Flint Water Crisis: Impacts and Lessons Learned

Wednesday, April 13, 2106

Thank you for the opportunity to appear before the House Committee on Energy and Commerce. I am Keith Creagh, and on January 4, 2016, I was appointed to be the Interim Director of the Michigan Department of Environmental Quality (MDEQ). When I testified before the House Committee on Oversight and Government Reform on February 3, 2016, my testimony described how all levels of government did not work well together to protect the people of Flint, resulting in a water emergency.

Since that time, government at all levels has begun working cooperatively to help the people of Flint. I look forward to discussing with this committee today the progress made to provide resources -- and results -- for the people of Flint, and the lessons learned along the way by MDEQ.

When I became Interim Director, one of my first objectives was to implement changes in the culture of the MDEQ. We refocused our primary mission to protecting the environment and public health. The MDEQ has never strayed from its focus on protecting the environment. However, in reviewing the water source switch from the Detroit Water and Sewerage Department (DWSD) to the Flint River, Office of Drinking Water and Municipal Assistance took a technical approach to compliance with the federal Lead and Copper Rule (LCR) without

adequately addressing public concerns. **One of the first lessons learned is that infrastructure changes are complex, especially in aging systems, and regulatory agencies need to engage with the experts and the public in a more meaningful way.**

Since January, much of the progress has been a result of the collaboration through the Flint Water Interagency Coordinating Committee (FWICC). The FWICC was established through an Executive Order issued by Governor Snyder and is comprised of city, county, and state officials, private entities, and outside experts such as Dr. Marc Edwards and Dr. Mona Hanna-Attisha. Just last Friday, the FWICC heard presentations on the current status of the Flint water system. Experts have advised that the drinking water system is recovering but unstable, Flint residents can safely drink filtered water and a systematic refreshing/ flushing is needed. The data indicates that the water quality is improving and the protective coating on the pipes is being restored. The announcement was based upon experts reviewing data from multiples sources, including from MDEQ, Environmental Protection Agency (EPA) and Virginia Tech University. This was another important step in addressing the emergency.

The FWICC meets weekly to publicly discuss and share information, coordinate monitoring and sampling and assure alignment of efforts to ensure safe drinking water to the citizens of Flint. The overall objective of the FWICC is to connect all of the resources available to assist the people of Flint and mitigate the impact of lead exposure to the community. Subcommittees are meeting to make recommendations on infrastructure and water quality needs, improvements for the LCR, community outreach, and nutritional and health needs. The information sharing that has occurred as a result of the FWICC has demonstrated the **second lesson - in order to rebuild trust in government, government at all levels needs to collaboratively communicate amongst its partners to assure effective discussions with experts and the citizenry.** The *Safe*

Drinking Water Act Improved Compliance Awareness Act, passed in February by the House, is a good first step.

The MDEQ has established a sentinel water testing program, through which over 600 residences are sampling their water every two weeks. The sampling results will help guide decision makers. The results from the past four rounds of sampling show that over 92% of the households have results at or below 15 parts per billion (ppb) of lead. MDEQ has created a comprehensive outreach protocol for both the sentinel program as well as all residences with high lead or copper results, in which MDEQ sends a team consisting of a MDEQ inspector, Department of Health and Human Services health professional, trained local community member and a local plumber to the home to discuss the results, deliver new filters, and inspect the home's plumbing system to determine the cause of the high results.

Additional tangible and pragmatic results include: the State of Michigan has appropriated over $68 million to address the water issues in Flint, with another $165 million pending in the Michigan Legislature for fiscal years 2016 and 2017. The appropriated funds are paying for, among other items, the following activities:

- Water bill relief to Flint residences. $30 million has been appropriated for the City of Flint to credit residents for water used for drinking, cooking and bathing (65% of the total water bill) from April 2014 through April 2016, to provide relief to the residents of Flint. The money will be returned to residents as a credit from the City on their bills in the near future.

- Reconnection to the Great Lakes Water Authority (formerly DWSD) to supply finished treated drinking water through the end of the year. Since October 2015, the State of

Michigan has spent $6 million to cover the cost of water supplied by the Great Lakes Water Authority (the entity that was recently formed to provide wholesale water from the City of Detroit's system to non-Detroit communities) through June 2016. Additional funding of $1.3 million per month is proposed through December 2016.

- Follow up care and rehabilitation services for those exposed to high lead levels. $18 million has been set aside to provide long-term follow up care to children exposed to high lead levels.

- Water sampling and testing, residential plumbing assessments, reliability study and pilot service line replacement program. $7 million has been appropriated to evaluate water samples, conduct plumbing assessments and work with an outside engineering firm to produce a reliability study of the Flint water system and remove more than 30 lead service lines as a proof of concept. The reliability study will provide the basis for prioritizing future infrastructure investments for the City.

- Unsafe pipe replacement. The State of Michigan has provided $2 million to the City of Flint for Mayor Karen Weaver's FAST Start Program to remove lead service lines, with an additional $25 million in a pending supplemental appropriation.

Moving forward, the MDEQ is committed to supporting the City of Flint's efforts to identify and prioritize replacement of unsafe service lines and other infrastructure to ensure Flint's water system is suitable for drinking and everyday use.

The third lesson from the Flint water emergency is simply replacing the lead pipes alone will not solve the problem. Galvanized steel pipes can absorb lead and impact high lead levels.

Therefore, the identification of the makeup of all service lines is critical to developing a comprehensive strategy for replacement. Additionally, many of the high lead levels in schools and residences come from internal fixtures that either have lead components, lead solder or have lead particles trapped in faucet aerators. A comprehensive lead education campaign must continue past the immediate emergency. And vitally important, a long-term strategy needs to be implemented that upgrades and maintains an appropriately sized water infrastructure.

The fourth lesson is States should treat the federal LCR as the floor, not the ceiling. Michigan is proposing to establish a comprehensive Michigan LCR to ensure necessary public health protections that exceed the existing federal LCR. When it comes to protecting public health, states cannot wait for EPA's issuance of an updated LCR. States must be willing to go above and beyond what the federal government standards are whenever necessary to ensure public health is protected.

The State of Michigan also is working collaboratively with EPA and outside entities to develop state guidelines for lead service line replacement. These guidelines will prohibit partial line replacement and create a methodology for establishing replacement priority.

We continue to work with the City of Flint regarding its future water needs. We will work closely to ensure that Flint has the technical expertise in place before switching to an alternative water source. In Michigan, as we work to address drinking water and aging infrastructure concerns, the MDEQ will take a collaborative approach among all levels of government, as well as with outside experts and citizens. We hope that the effective implementation of this approach and the lessons learned will prevent the reoccurrence of such emergencies in Michigan and other parts of the country.

[Additional material submitted for the record by Mr. Creagh has been retained in committee files and also is available at http://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=104765.]

Mr. PITTS. The Chair thanks the gentleman, thanks each of the witnesses for their testimony.

I will begin the questioning and recognize myself 5 minutes for that purpose.

Dr. Lurie, I will begin with you. Can you talk specifically about the CDC Agency for Toxic Substances and Disease Registry response on the ground in Flint? What will their role be moving forward?

Dr. LURIE. The Agency for Toxic Substances and Disease Research or ATSDR, as it is known, has played the lead role in helping with the analysis of the lead data to date, providing case management services and helping the State and county with those and going forward will be instrumental in setting up a registry, as well as a strengthened lead program going forward.

Mr. PITTS. Thank you. Mr. Lyon, what changes are you implementing at the Michigan Department of Health and Human Services that will help reduce lead exposure for Michigan's children in the future? And would it be wise for other States to adopt these changes?

Mr. LYON. I think one of the things we have learned through this, and part of the education for all of us is the potential impact on these water systems that have the presence of lead. Traditionally, really lead in the past has been a public health success. Over the past several decades, the amount of lead in children has decreased drastically with the reduction of lead-based gasoline and lead-based paints but we now have to be cognizant that there is a new lead danger. As Dr. Lurie has noted and the chairman has noted, there is no safe level of lead in the bloodstream. And I think we have to be cognizant going forward of water as a potential source.

As part of what we have done specifically, as part of our lead abatement program in environmental investigations, we are looking at water in the households in Flint and we are looking at fixtures and aerators and things of that nature as part of the environmental investigation and potentially replacing those items if we believe that is the source of the problem.

Mr. PITTS. Thank you. Mr. Beauvais, is EPA performing compliance verifications of drinking water systems under the Safe Drinking Water Act? And was there ever a pause in the use of this authority? If so, when and why?

Mr. BEAUVAIS. EPA exercises its oversight of State drinking water programs with primacy through a number of mechanisms and it has done that over the years and we are engaged in a specific effort on Lead and Copper Rule oversight right now where regional offices across the country are meeting with every State primacy agency to ensure that there is appropriate attention and resources being given to Lead and Copper Rules oversight that lead action level exceedances are being addressed, that corrosion control is being implemented where it is supposed to be.

Mr. PITTS. OK and, Mr. Creagh, I have heard about the many testing programs occurring in the City of Flint. And the one I am interested in learning more about is the sentinel program. What is that? Can you give me some additional information about what it is demonstrating?

Mr. CREAGH. Yes, sir, Mr. Chairman, I can. So, the sentinel point was where we, in partnership with EPA, actually identified over 600 sites throughout the City of Flint looking at a whole variety of factors using some R. Mona Hanna-Attisha's information on age of water, where lead service lines were, where various communities were. And so every 2 weeks we test those individual homes. They have been actually trained on how to take the sample, making sure using wide mouth appropriate flow and we collect those and then analyze those. And so what that does is it gives us a snapshot, if you will, every 2 weeks, of the integrity and viability of a water system in Flint.

Mr. PITTS. And how is the community involved in this?

Mr. CREAGH. So, as we respond to individuals, we have a community member that has hired a local plumber, that has hired a DEQ inspector, and, at times, our Department of Health and Human Service or local public health individuals. That is especially true when there is high lead levels above 150 parts per billion. We are in the house within 2 days. If you are above 100 parts per billion, we are in the house within 7 days and if you are above 15 parts per billion, we communicate with you and ask you to take another sample.

Mr. PITTS. Thank you. My time has expired.

The Chair recognizes the ranking member, Mr. Green, 5 minutes for questions.

Mr. GREEN. Thank you, Mr. Chairman. I thank our panel for being here.

The Safe Drinking Water Act is supposed to ensure safe and reliable drinking water for customers of public drinking water systems across the United States. Clearly, it failed the citizens of Flint and we, in Congress, should be asking why. It seems that the short answer is that because the Lead and Copper Rule or LCR is in serious need of revision.

Mr. Beauvais, what is the status of the revisions for the LCR and when will they be completed?

Mr. BEAUVAIS. We are actively working on developing proposed revisions to the rule. As I mentioned in my testimony this past December, we received extensive recommendations from our National Drinking Water Advisory Council, as well as input from a number of other concerned stakeholders. So, we are carefully considering that input. We will be engaging with stakeholders over the coming months to develop a proposed rule and expect to be able to propose a rule in 2017.

Mr. GREEN. How long had that advisory panel been impounded to get you the information in December?

Mr. BEAUVAIS. I believe it was over the course of about a year or so. The NDWAC or the National Drinking Water Advisory Council formed a working group to provide specific advice which delivered recommendations to the council in August of last year and then the council transmitted those recommendations to the administrator in December.

Mr. GREEN. Here we are in the middle of April now and you have had that information since December. Because of what is happening in Flint I think is just a tip of the issue, is there any way that EPA could actually speed up the LCR?

Mr. BEAUVAIS. We certainly have a sense of urgency about the revisions and we also want to make sure that we get them right. And in fact, many of the recommendations of the National Drinking Water Advisory Council were developed at a time before Flint had really come to light in the national consciousness. So, I think stakeholders' understanding of where we need to go on this has evolved somewhat. So, we are working hard on that and we are going to get it done as quickly as we can.

Mr. GREEN. When do you think it will be? Is there an estimated time? Because, again, we are almost 4 months into the year.

Mr. BEAUVAIS. I don't want to prejudge the process. What we have been able to say is that we expect to propose in 2017 and I certainly hope that that is as early in 2017 as possible.

Mr. GREEN. Well, it seems that action levels are not set at levels to ensure vulnerable populations are protected. Is that a correct statement?

Mr. BEAUVAIS. I think the specific challenges that occurred in Flint have to do with the failure to apply corrosion control as should have been done under the existing rule. Nevertheless, we do recognize that there is a lot of need for improvement in the rule and we are going to be working actively on that.

In the meantime, we are engaging in very close coordination with the States in working to strengthen implementation of the current rule and see where States can go beyond the requirements of the current rule to improve public health protections.

Mr. GREEN. How will the LCR revisions ensure health protection for children and other vulnerable populations?

Mr. BEAUVAIS. I am sorry. Could you repeat that?

Mr. GREEN. How will the LCR revisions ensure health protection for children and other vulnerable populations?

Mr. BEAUVAIS. Well, I think one starting point is the National Drinking Water Advisory Council's recommendation which focus on a number of key areas. One of them is to have the revised rule require proactive replacement of lead service lines by utilities, instead of just as a reactive measure. Another proposal is for the agency to develop a household action level, which would trigger notifications to public health authorities if household levels are over a certain——

Mr. GREEN. Well, it seems there is a lot of frustration. The fact that exceeding the action level for lead did not actually constitute a violation of the Safe Drinking Water Act, the LCR requires corrective action when high lead levels are found but does not penalize systems for those initial high lead levels. In other words, the current LCR fails to incentivize protection.

Do you expect the new LCR revisions to include changes and advise systems to prevent lead contamination, not just a remedy if it is found?

Mr. BEAUVAIS. I do.

Mr. GREEN. OK. I have a number of series of questions. In February of this year, the Ranking Member Pallone and Congresswoman DeGette and Ranking Member Tonko sent a letter to the Michigan Department of Health and Human Services to better understand the role of lead level surveillance in Flint. The Depart-

ment answered some but not all of the questions in response dated March 11th of 2016. I want to follow-up with some questions.

Mr. Lyon, it is my understanding you were prepared to answer these questions today. Is that correct?

Mr. LYON. I will do my best, sir, yes.

Mr. GREEN. OK. In your letter, we asked about July 15th Michigan Health and Human Services memo that observed a spike in blood lead levels in the summer of 2014 after the city switched to Flint River in the drinking water. However, the Michigan Health and Human Services officials originally concluded that this spike was seasonal and not related to the water supply. What led the Department to compile the July 15th report?

Mr. LYON. I received a request from the Executive Officer, the Governor's office, sir.

Mr. GREEN. Mr. Chairman, I know. I just want—and why did Michigan Health and Human Services conclude that the spike was not related to the water supply?

Mr. LYON. Well I think when that initial analysis is done, the staff that work for me felt there were seasonal fluctuations within the data that drove the changes over that first summer. When they compared it prior years, it was within range of years before. And obviously, we learned, once Dr. Mona put her information forward, we worked with her on her data and were able to later show an association of the blood lead increases with the water switch.

Mr. GREEN. Mr. Chairman, I know I am well over time. I would like to submit additional questions, if possible.

Mr. PITTS. Thank you

Mr. LYON. And through the chair, sir, we will certainly look at your questions and provide a narrative response. Thank you for the additional time.

Mr. PITTS. We will make sure his questions are forwarded to you in writing, if you can respond.

The Chair thanks the gentleman and now recognizes the chair of the Environment and the Economy Subcommittee, Mr. Shimkus, 5 minutes for questions.

Mr. SHIMKUS. Thank you, Mr. Chairman.

I want to direct mine to Mr. Creagh. Can you speak to schools, day cares, and senior centers in Flint? We have mostly been talking about homes.

Mr. CREAGH. So, yes, sir, we can. And so we have actually tested all the schools in Flint and we have replaced 93 percent of the fixtures. And one of the questions had to do with lead exposures in schools in Flint, Michigan. There are no lead service lines going to the schools, to the best of our knowledge. It is other types of materials. So, mainly, the exposure happened because of the fixtures within those schools. So, we have replaced 93 percent of those. We have gone through a number of deep flushings, if you will, for those schools, to assure that when kids come back, hopefully after spring break, they can once again use that water in those facilities.

We are not there yet. As we replaced some of the fixtures, we found out that there was some plumbing within the schools that needed to have some further renovations and so we are working very closely with the school superintendent.

Mr. SHIMKUS. Daycares, senior citizens?

Mr. CREAGH. Yes, sir, those are certainly on the list and we are doing those. I can't tell you exactly what percentage. I think we are about at 46 percent of those.

Mr. SHIMKUS. So you talked in your opening statement some inconsistencies in the testings across the whole area. And then you have also talked about the sentinel program a little bit.

So, what measures—I mean how are you going to get to a determination when you can make a statement of the water is safe again, since there seems to be hot spots and—I mean can you talk through that? I mean, I don't know the answer. I am asking you.

Mr. CREAGH. Well, the data will drive our decisions. And I appreciate EPA regional administrator Bob Kaplan brought together a number of the scientists a week ago Monday to look at the data. And the thing that we cannot do is have different interpretation of data. We need to be closely aligned because we have promised citizens certain actions, without necessarily having that data support those decisions. So, I think what you will see is all of us look at the data.

And the data at this point in time says a couple of things. It says that soluble lead is getting better. In other words, there is coating in the piping. The particulate lead that gets caught in the aerator is problematic. And that is why it is unstable. The data says that the filters work and the data say that we need to enlist the help of the citizens of Flint to flush their systems thoroughly so that the orthophosphates will continue to coat those pipes.

Mr. SHIMKUS. Can you talk about water bill credits for Flint?

Mr. CREAGH. Yes, sir. No one should pay for unusable water. And so there is a $30 million credit that is available to refund or credit towards the water use between April of 2014 to 2016. About 52 percent of the bill was for drinking, bathing, and cooking. And so, because of the flushing and other things, the residents are afforded 65 percent.

We are working with the city. They are trying to perfect the refund and credit mechanism. So, at this point in time, that is in the city's court.

Mr. SHIMKUS. So, there is a plan but there is a recognizable delay?

Mr. CREAGH. Yes, sir. As the city was going through the records, they wanted to make sure they had clarity, transparency, and that they could answer the questions as the citizens raised them.

Mr. SHIMKUS. Let's talk about the communication between the Michigan Department of Environmental Quality and the rest of the local, State, and Federal. What have we done—I think from the outside, because I am from Illinois, we are watching this unfold. Obviously, there is a crisis but the question is how have we improved communication so that we are all moving towards the same objective versus pointing fingers at each other?

Mr. CREAGH. As Dr. Lurie said, one of the ways to improve communication was through the unified command group and I appreciate her leadership in that, so that there was not a difference between State, Federal, and local government. That is number one. Number two, Director Lyon and I have a memorandum of understanding or agreement to make sure we share data across program areas. Number three, we need to be in the community, so we meet

in the community every Friday through the Flint Water Interagency Coordinating Committee that I referred to that has both the internal and external expertise so we can honestly debate the data.

And then three is we need to embrace those that raised questions and not dismiss.

Mr. SHIMKUS. Thank you. Mr. Chairman, I know a lot of people want to ask questions. I will yield back my time.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the ranking member Mr. Tonko, 5 minutes for questions.

Mr. TONKO. Thank you, Mr. Chair.

Mr. Beauvais, the most recent EPA Drinking Water Needs Assessment has estimated that we need $384 billion over the next 20 years to bring drinking water systems into good working condition. The estimated investments needed for those systems has grown with each succeeding assessment, indicating that we are falling further and further behind. I agree with your statement that need a serious discussion about how to deal with this national problem. I further believe the funding level for the Drinking Water State Revolving Fund is simply too low to offer States the assistance that they truly need to tackle this problem.

This committee has received testimony and support of my belief from representatives of different States and systems both small and large. So, I would ask what is your assessment of the States and additional Federal funds to reduce the maintenance backlog with their drinking waters. What do you believe needs to be done?

Mr. BEAUVAIS. Well, I think it is clear that we do need increased investment in drinking water infrastructure, as well as on the clean water infrastructure side and the need surveys point to those needs. We are working hard within the levels of resources that we have within the State Revolving Funds. We are working closely with States to try to find ways to make that money work smarter and harder through leveraging and so forth. There is also the opportunity through the Water Infrastructure Finance and Innovation Act. In the President's budget for fiscal year 2017 there is a $20 million request, which could help to leverage additional resources for low-interest loans that could help compliment the SRS. So, those are some of the areas in which we are working but strongly agree with you that there is a need for more resources and work in this area.

Mr. TONKO. Thank you. And it is obvious that this response in Flint is reactive. It is obviously more expensive than a proactive program that would prevent emergencies. Do you agree in that assessment?

Mr. BEAUVAIS. I think there is a common sense response there of concern with penny wise but pound foolish policy decisions which might save a few dollars in the short-term but, ultimately, have led to some very serious expenses and, most importantly, the human tragedy that is unfolding in Flint.

Mr. TONKO. Thank you. And in the case of Flint, I understand there are estimates that up to 40 percent of their treated water may be leaking from the distribution system. That is not only a profound waste of a vital resource, it is economically unsustainable. A water utility cannot collect payment on that water but I assume

they have to charge a rate necessary to cover those losses. That problem must be addressed if Flint's water utility is ever to be able to get costs and rates under control.

What is the estimated investment needed to bring Flint's drinking water infrastructure up to par?

Mr. BEAUVAIS. I don't have precise numbers on what it would take to repair the water mains and so forth but that certainly would be an expense well beyond what is involved in possible replacement of the lead service lines.

Mr. TONKO. Yes, I am hearing some very high estimates and when I compare that to what is allocated in our SRF, it could take up that whole system. Is that your understanding?

Mr. BEAUVAIS. I don't have precise figures but that wouldn't surprise me.

Mr. TONKO. And am I correct in understanding that the focus now is on the lead service lines in Flint's distribution system?

Mr. BEAUVAIS. Well, the city has been very focused on replacing the lead service lines. I believe that Director Creagh made mention of the FAST Start program that the city is engaged in and the city has been in dialogue with the State about potential funding for full lead service line replacements across the city.

Mr. TONKO. And Director Creagh, your testimony states that results from recent sampling have shown that over 92 percent of the households have lead levels less than 15 parts per billion. That is not good enough. But even if water is reliably safe to drink, what steps do you believe are necessary to rebuild trust in Government, in their Government, and in our water system?

Mr. CREAGH. As I mentioned, one of the roles of the Flint Water Interagency Coordinating Committee is to make sure we are in the communities working with the community to build that trust, one. Two is that you have to have outside experts and those that are trusted in the community part of the solution, like Dr. Mona Hanna-Attisha, like Dr. Mark Edwards, Dr. Reynolds, and Dr. Sullivan. So, we try to do that. And then three is we need to perform and deliver.

And so, we are working with the city on reliability studies. We are looking at what is the infrastructure needs for the next decade, not the last decade.

Mr. TONKO. I know there has been a big discussion about affordability for programs that speak to drinking water. But I hear a lot of avoided costs that, regrettably, are part of the system because of austere thinking.

Can you provide an update on the lead service line replacement pilot program? Is there a reliable inventory of lead pipes in Flint?

Mr. CREAGH. Yes, sir, those are two different questions. The pilot program that Retired General—Brigadier General Mike McDaniel did on behalf of the city. By the end of this week, they should have 33 lines out as proof of concept. Those were more than lead service lines because galvanized lines act as a sink for lead and that is part of the reason for the particulate lead. So, that is a proof of concept that he is doing and that should be complete.

There is then, as I mentioned, $2 million to begin taking out additional lead service lines. They are using the program that the

Board of Water and Light in Lansing, Michigan used when they replaced their lead service lines.

Mr. TONKO. And I thank you, Director Creagh. I have taken up my available time but there are many questions I have and I will submit those to the subcommittees for review for the individuals.

Mr. PITTS. We will send them to you in writing.

Mr. TONKO. With that, I yield back.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the chairman of the full committee, Mr. Upton, 5 minutes for questions.

Mr. UPTON. Thank you, again, Mr. Chairman. We all have a good number of questions.

The first one that I have, I guess in listening to the response of Mr. Beauvais to Mr. Green's question, if there was one message you could send up the chain is we would like to have something maybe earlier than 2017. That is a long ways off. And I would like to think that maybe there can be a little extra push to try and get that so communities can figure out where they need to go. So, whether it is a proposed rule or something that can be out there that can help, I think that would be important.

The question that I have I guess for each of you, quickly, is so we passed, as I indicated in my opening statement, H.R. 4470 pretty darn quick. I mean Mr. Kildee had some good ideas. We refined them a little bit. We had, I thought, some constructive ideas. We have worked with Mr. Pallone and the committee staff, who is bipartisan. We didn't have the hearings. We didn't have a markup. We moved it right to the floor. And I thank again the leadership on both sides. We passed it under suspension like that. And of course, we are waiting for the Senate to take some action.

It has now been about 2 months since that happened. So, now if you had had this extra 2 months, again, we did this pretty quick, what changes would you make? What things have you discovered that we might have missed when we moved that bill so quickly out of here that we might want to think about, anything?

Mr. BEAUVAIS. Well, the agency is certainly very grateful for your and the committee's work on providing additional authority for prompt public notice for systems where there are lead action level exceedances. I don't have specific suggestions to offer at this moment but we would be more than happy to provide technical assistance.

Mr. UPTON. That would be great. Because, again, it has languished over in the Senate and, at some point, we are going to, I hope, come together.

Dr. Lurie, I just want to say, too, for the record, you and I have met a number of times. We have had a number of conversations. We really appreciate what you have done. The directive that you had from the President, your weekly trips that are there, you are working with all layers of Government. We appreciate your testimony today and what you are trying to do, your expertise.

But I would be interested in if you have any thoughts in terms of what we might have added, knowing that we have been a couple months since we passed this in the house.

Dr. LURIE. You know I think it is a great question. And my first observation, overall, is that public health and water are obviously

tied very closely together. A clear message from this is the disinvestment in the public health infrastructure has consequences. And a clear message I think going forward is the importance of preventing exposure by a strong early warning surveillance system to detect elevated blood levels, stronger surveillance efforts, and faster action on the lead mitigation issues.

Here, moving forward with the registry to track all kids, finding kids who might be having trouble and being able to jump on them quickly is going to be terribly important.

Mr. UPTON. So, here is a follow-up question as I watch the clock. How many—what percentage of kids in Flint, knowing that this is a national story, folks in Flint know about it, how many families, how many kids have not been tested in Flint by a percentage?

Dr. LURIE. You know at the beginning of this crisis——

Mr. UPTON. Because I mean——

Dr. LURIE [continuing]. And I asked Mr. Lyon to help, about 60 percent of kids on Medicaid had been tested, although there is a universal screening recommendation. With the more recent testing, most of the lead was probably out of kids' systems but it was very important for us to find any remaining kids who still had high lead levels. Moving forward, testing all kids per the universal screening recommendations and getting on those high lead levels within 2 weeks is going to be critical.

Mr. UPTON. Mr. Lyon?

Mr. LYON. She is exactly right. We were approximately 60 percent in our Medicaid program. We instituted some enhanced elevated blood level testing, especially after October first, when this occurred. We have tested thousands of children. What we have seen is the rate is somewhere below two percent, so we are following up with those children but, as has been indicated——

Mr. UPTON. Two percent with higher elevated—with elevated lead levels.

Mr. LYON. Five.

Mr. UPTON. Five percent, OK.

Mr. LYON. With that in mind, it doesn't measure past exposure. So, what we have done is we have really taken our focus and said that we need to have the services in place that could potentially serve any child in Flint because we don't know what their exposure may have been prior to the recent blood testing.

Mr. UPTON. OK. My time has expired but will prepare similar questions for the written record and yield back. Thank you.

Mr. PITTS. The Chair thanks the gentleman.

I know recognize the ranking member of the full committee, Mr. Pallone, 5 minutes for questions.

Mr. PALLONE. Thank you, Mr. Chairman. I wanted to ask some questions of the panel and I will be a little more specific but my major concern, what I hear from our Michigan colleagues is that we need to address the infrastructure issue because the fact of the matter is that we still have exposure to these lead pipes and short-term and long-term we need to correct that by having systems in place that would allow people to drink the water without having to worry about lead. And secondly, we have all these people, particularly children, who have been exposed to lead poisoning and

something needs to be done to treat them, not only now but also in the future.

Now, I understand that the Governor convened an independent group, the Flint Water Advisory Task Force, to review what happened in Flint and offer recommendations for the future and that this task force offered a number of recommendations, both short- and long-term, particularly establishing and maintaining a Flint Toxic Exposure Registry to include all the adults and children and further recommended that all children be offered timely access to age appropriate screening, clinical, and follow-up for development and behavioral concerns.

So, thinking about what this task force is trying to do to implement these recommendations, I assume they would try to do that, what about the funding? In other words, do you have adequate funding to correct the infrastructure both now and in the future so that this doesn't happen again in Flint and to address the health concerns that will rise with these adults but particularly children who have been exposed? That is what I wanted to know. I want to know because we are the committee of jurisdiction. We are not appropriators but you know obviously we can influence this.

I guess I would ask—let me be more specific. Let me start with Mr. Lyon. Do you agree that—do you think that the current State and Federal budget is adequate to address the public health activities that I mentioned?

Mr. LYON. I think with this issue especially the investments in lead programs nationally has decreased. And I think that has happened at State levels and Federal levels. And I think that is something—that is a priority that should be revisited. We have reviewed the science and we see the studies around lead exposure and how it impacts children in the near-term, behavioral issues, ADHD, in the long-term potential links with interventions with the juvenile justice system——

Mr. PALLONE. Well, let me ask you this, Mr. Lyon. Do you feel right now you have adequate funding at the State and the Federal level to address this in Flint, to address both the infrastructure needs and the public health concerns?

Mr. LYON. I would have to defer to Keith on the infrastructure needs. What I will tell you is that through the Medicaid waiver process and through our partnership with the Federal agencies and with the Governor's commitment to providing State funding as well, we are reviewing that. We have dedicated more than $200 million with State funds. and the Governor is committed to maintaining the fundings to provide these services in the future.

I also want to, again, thank my Federal partners. CDC has been on the ground helping us with many of these investigations. Dr. Lurie has been there. Dr. DeSalvo is somebody who has been very close to the ground as well to assist our staff there. That has been very important.

But if you are asking long-term what we are doing with some of these things, there is always going to be competing public health priorities.

Mr. PALLONE. Well, let me go to Dr. Lurie. So, you are of the opinion, if I understand it, that you have adequate State and Federal funds, at this point, to proceed.

Mr. LYON. For the near-term for what we are looking for.

Mr. PALLONE. All right.

Mr. LYON. But I think we are going to revisit.

Mr. PALLONE. All right, Dr. Lurie, we understand that one of the things that Flint teaches us about the consequences of budget cuts for public health activities, in other words, a lot of this arose because of budget cuts. So, you know what do you—do you want to comment on the same question? Should we be concerned that we have inadequate funding to deal with Flint now and in the future, so that we don't have recurrence of Flint problems?

Dr. LURIE. Well, I very much appreciate the question. And as I said, you know disinvestment in the public health infrastructure has dire consequences. Maybe not always year one, but it is going to come back and bite you, without a doubt.

Specific to lead and specific to Flint, I think that this Flint situation has shown us that lead in the water is another really important source of lead and the infrastructure issues make us all need to pay much more attention to lead. So, I think as Mr. Lyon said, it is important to revisit at this point support for the lead programs, particularly with the scope of the CDC.

Mr. PALLONE. No, I am asking whether or not you think we have adequate funding for these programs.

Dr. LURIE. Right now, I think the program certainly could be strengthened. In addition, I think we are really looking at wanting to put this registry in place in Flint so that we can both monitor kids and learn from the long-run. CDC estimates that establishing and maintaining a registry could cost as much as $4 million a year or more.

Mr. PALLONE. So, you think you need additional funds to the tune of $4 million a year?

Dr. LURIE. I think that is their estimation for the cost of the registry. Obviously, the Medicaid expansion, the other things are providing additional resources for the direct care of kids in Flint and I would defer to Mr. Lyon for more comprehensive assessment of the health and public health needs for Michigan and for Flint, per se.

Mr. PALLONE. Thank you.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the vice chair, Mr. Guthrie, 5 minutes for questions.

Mr. GUTHRIE. Thank you. Thank you, Mr. Chairman.

Mr. Creagh, first I want to ask you—it is three questions. I will ask it as one question and then get your answer.

So, what is the status of drinking water in Flint today, particularly in lead concentrations? Is it continuing to improve? And when will it be drinkable, without all the caveats and boiling and everything?

So, what is the status? Is it improving? And when will it be drinkable?

Mr. CREAGH. So, the data tells you that the quality is improving. The data tells you it is not yet safe because of the particulate lead. And until we go through a comprehensive data analysis in looking at where the lead particles are, there is not a date certain.

Mr. GUTHRIE. I mean is there a rough estimate or time?

Mr. CREAGH. At this point in time, there is not a rough estimate until the system is thoroughly flushed. And that is where we will need to have the assistance of Flint citizens to get that accomplished.

Mr. GUTHRIE. Thanks. Mr. Lyon, I would like to—we are talking about spending in public health. And on one of the things I think we should have been spending more on public health infrastructure as well, particularly infrastructure such as this. States are spending an enormous amount of money. I know my State of Kentucky and Medicaid, the growth of Medicaid is crowding out all the other. So, we are looking to reform that program to make it more efficient and more affordable so that we can spend money on things that matter in public health and other aspects. So, I have been focusing on Medicaid.

So, in your written statement, you indicated that Michigan emphasized the need to improve lead testing rates in your recent Medicaid Managed Care Contract. Can you describe what Michigan is doing to improve the rate of lead testing, not only in Flint but in the entire State?

Mr. LYON. Yes, sir. So, we have emphasized blood lead testing for several years within our Medicaid program but, as we looked at many of our public health issues and tried to roll those items up into our Medicaid rebid, we are trying to get a more comprehensive look at all things that drive health. So, what we are able to do with our rebid is build incentives in for the health plans, where if they reach certain metrics or certain measurements, then they actually can work their way into an incentive pool or a bonus pool. So, that is what we do.

So, we are a strong managed care contract state for Medicaid. We believe that that is the effective way to go. We have great health plan partners. So, that is who we utilize in trying to do this and they then have relationships with physicians.

What we need to do is circle back to ensure that we are measuring how those health plans are doing with their customers. What I would emphasize, public health is for the entire population. So, when you are looking at population-based activities, that is broader than the Medicaid program.

Mr. GUTHRIE. Yes and understand my previous comments, I understand that public health is broader than Medicaid. But a lot of states are just increasingly spending more and more money on Medicaid, which diverts money from broader public health initiatives. There is only X amount of dollars. States can't print money.

So my next question was what type of outreach is the state or Medicaid health plans doing to encourage families? So, I guess you answered that in that you are just giving them target numbers that they have to reach and it is really up to the state Medicaid plans to make these targets work. Is the state doing other kinds of outreach and advertisement and trying to get families to have their children tested?

Mr. LYON. Yes, sir. I am sorry. Thank you for the question. We have surveillance programs in place, centrally, and we also have some of the money that Dr. Lurie and some of the members we are talking about. We target towards our high-risk areas. So, there are

targeted areas that we really focus on and that is also part of what we are looking at.

Mr. GUTHRIE. All right, thank you. That concludes my questions and I yield back.

Mr. PITTS. The chairman thanks the gentleman.

I know recognize the gentlelady, Mrs. Capps, 5 minutes for questions.

Mrs. CAPPS. Thank you, Mr. Chairman and to all of our witnesses for your testimony here today.

Clearly, what has happened in Flint is a tragedy of incredible proportions. While there are many topics I would like to touch on as a school nurse, I can't help but continually go back in my mind to focus on the impact of lead on the children of Flint and, frankly, in far too many communities around our country. This is a lesson for us all.

I know too well that these environmental and health impacts are going to have ripple effects in every aspect of every child's life affected by it.

As you know, the CDC's Childhood Lead Poisoning Prevention Program was created to address such issues by funding State health departments to screen for children for lead poisoning. Unfortunately, Congress nearly zeroed out funding for this Federal program from 2012 to 2013 and has only partially restored it recently to 50 percent of its original levels. These breakdowns, compounded by cuts at the State level, deeply affect our Nation's ability to identify and alert communities of high lead levels. As has been said, we are now reaping the results of this neglect at every level of our life together, especially in our case at the Federal level, something that is not only morally wrong but that will result in tremendous long-term effects in our country, not to mention cost.

For these children and families, the impact of this crisis will be life-long and it would only add insult to injury if we add insult to injury if we stay on the sidelines and refuse to learn from this tragedy or deem it too hard or too expensive to act. We must think critically about the ways we can learn, now that it has happened, what went wrong so that our systems can be stronger in the future.

So, my first question, Mr. Lyon and Mr. Creagh, you have talked about this already, what you are doing to strengthen Michigan's blood lead level monitoring programs. But what are the lessons you wish we would learn here and considerations we should take into account how we learn from you and how we can create or strengthen a national program?

Mr. LYON. Well, specifically with lead, I believe that stronger surveillance is necessary, period. We are more active in surveillance than other areas of infectious diseases and I don't know if this was a Michigan-specific problem but one of the things we have done in reaction to this is really ensure that our CLPPP program is more aligned with our epidemiologists. That was part of the restructuring that we did and it was critical to correct what we were doing.

I think another sort of overarching piece, and maybe this will segue into what Director Creagh will say, is that we have to be cognizant of health in all policies that we create. We talk about health in all policies. This is a great example of when a switch was occur-

ring or something significant was occurring where we really are considering health. And we talked about that generally in communities where there is health disparities but this is something that we need to be cognizant of going forward and I think should inform both State and Federal policymakers.

Mr. CREAGH. And if I may, one of the things that we need to have is a very targeted and focused program relative to schools. As we went through the schools looking at what the infrastructure was, it had little to do with lead service lines. It had to do with fixtures in schools——

Mrs. CAPPS. Crumbling schools.

Mr. CREAGH. Yes, and so that is one. And then two, as Director Lyon said, there needs to be a direct and robust intersect between the environmental programs and the public health programs because you cannot run those as siloed programs and we are committed to do that.

Mrs. CAPPS. Well, thank you. You are pointing out some very critical issues.

You know Flint is a frightening example of the dangers associated with not investing in public health infrastructure and programming across the country. But it is indicative also of a much larger program. The CDC and the scientific community have established that no amount of lead in the blood is safe for our children. It is estimated that millions of children across our country, not just in Flint, are exposed to lead through paint in their homes, through lead pipes, and plumbing, and a variety of other ways, particularly in older homes and older structures and many older schools.

Dr. Lurie, I would like to turn to you. Is the agency—and I just have a second to get it out if you could respond. Is the agency considering any changes to the Childhood Lead Poisoning Prevention Program? How can we improve surveillance mechanisms so we can identify in real-time other communities?

Dr. LURIE. Thank you. I appreciate the question.

Yes, indeed, the agency is looking very closely at how to strengthen surveillance efforts to better detect these kinds of issues in the future and Flint has clearly highlighted the importance of preventing exposure, having a strong early warning system and being able to act on that as well.

In addition to revising the guidelines for the program going forward, we are also looking at novel approaches such as new ways to use health information technology to help with these efforts in the future so that we truly have an early warning system and connect on the signals.

Mrs. CAPPS. I yield back and I hope we can act further on this topic.

Mr. PITTS. The chairman thanks the gentlelady.

I now recognize the gentleman from Pennsylvania, Dr. Murphy, 5 minutes for questions.

Mr. MURPHY. Thank you very much. I want to pick up on some of the questions that my colleague from California brought up.

Dr. Lurie, with regard to these lead levels, as a psychologist, I have worked a lot with developmental testing of young children, but with these lead levels that you have evaluated and tested,

what can you expect of the developmental outcome of these lead levels that have been present?

Dr. LURIE. I think that is a really important question and something we focused a lot of our efforts on. What we know is, particularly for very young children, that no lead is good for you but we also know that if you do things to stimulate the brain and focus on early learning, such as early childhood education, good nutrition, parents reading to their kids, and frequent ongoing behavioral and development assessments so that when kids fall off, they can be—they can catch up.

Mr. MURPHY. I understand that part of that. I am just asking about the chemical aspect of this level. Again, no lead/copper is good, but what I am referencing is so this is a situation where it sounds like there was poor corrosion control. And water companies are supposed to look for this. Right? Are they supposed to review the corrosive levels of water that they are putting into the water system? Is that a standard? Does anybody know that, EPA?

Dr. LURIE. I will ask my EPA colleague to address that.

Mr. MURPHY. Yes.

Mr. BEAUVAIS. Yes, systems are supposed to both to be applying corrosion control treatment and to be monitoring water quality parameters.

Mr. MURPHY. And in Flint, they weren't doing that.

Mr. BEAUVAIS. That is right. In 2014, when the Flint water system switched from previously purchasing Detroit water, which was treated in Detroit and corrosion controlled——

Mr. MURPHY. Well someone was violating this. Whether it was the EPA wasn't testing or the community wasn't testing, someone wasn't following what they should have done.

Mr. BEAUVAIS. The system did not apply corrosion control after they switched to river water.

Mr. MURPHY. Right, somebody didn't do what they were supposed to do. I mean clearly know that.

Is Flint, Michigan the only water system in the country that has a problem like this?

Mr. BEAUVAIS. I think it is fair to say that Flint's problems are quite unique and unusual in the notion of a large system like this changing to an untreated water source and failing to provide corrosion control is highly unusual. That being said, it is clear that there are challenges with lead service lines and lead levels in many systems across the country.

Mr. MURPHY. So, and testing lead levels in people's homes is something that people are allowed to have, they are allowed to request that, correct? And here it happened that somebody did begin to test this out and that became what set this off and we are thankful that happened. But across America, I would suspect from what you are saying that a lot of communities aren't routinely testing their lead levels in water. Dr. Lurie, do you know if that is occurring? I will take anybody's.

Dr. LURIE. You can speak to the lead levels in water. I can speak to the lead levels in blood.

Mr. BEAUVAIS. OK, in whatever order is preferable. Yes, I mean for those systems that are subject to the Lead and Copper Rule,

they are required to monitor for lead levels in water through tap sampling and——

Mr. MURPHY. Right but they didn't. They didn't. And Dr. Lurie?

Dr. LURIE. Yes, and, as many people know I think, that Medicaid program, in general, has a set of screening requirements precisely for this reason, that there is a recommendation that all 1- and 2-year-olds be tested. And then there is a recommendation that children 3 and up be tested if they haven't been tested previously, precisely to detect these issues.

Mr. MURPHY. Right and I agree. I have seen many a child over the years, and I know how important this is. And in my role as chairman of Oversight and Investigations, we had company after company in front of us: General Motors, Volkswagen, health companies, FDA, people who didn't do what they were supposed to do. Congress puts up these laws, we have regulations. It doesn't happen. And then companies say, "Can you bail us out?"

Now, I am very concerned about the people of Flint and we need to find a solution for them but I am also concerned about the levels across the country. Locally, my elected officials in Allegheny County, Pennsylvania, are still struggling with what the EPA put upon years and years and years ago with a consent decree. Well, the constituents in my area and in Mike Doyle's area, who is also a member of this committee, have been told years ago because the pipes that were originally set up that the sanitary sewers and the storm overflow go into the same pipes. You have to replace all the pipes in the county and the City of Pittsburgh, eventually. It is costing these communities billions and billions and billions of dollars. And basically, it said you have got to do this; EPA says you have got to do it, you have got to do it.

So the question then becomes here is is this something that Flint, Michigan should bear the cost of all these actions or should the Federal Government help them out.

Mr. BEAUVAIS. Well, I think if you are speaking with regard to the infrastructure changes that need to happen and are planned in Flint, it really is, primarily, a State and local responsibility. The assistance that the Federal Government provides, the primary assistance that is available so far is through the State revolving funds, which is one available resource, that the State has to fund possible infrastructure improvements. There are, of course, ongoing discussions, I believe, both in Michigan and here in the U.S. Congress, regarding potential other funding mechanisms.

Mr. MURPHY. Thank you.

I recognize I am out of time. Thank you very much, Mr. Chairman.

Mr. PITTS. The chairman thanks the gentleman and now recognizes the gentlelady from Florida, Ms. Castor for 5 minutes.

Ms. CASTOR. Thank you, Mr. Chairman, and thank you to the panel for being here today. I also want to thank the committee for calling this hearing because the Energy and Commerce Committee has jurisdiction over the Safe Drinking Water Act, health matters, environmental matters and here it is April 2016 and many people were wondering where the Energy and Commerce Committee was. So, I am glad we finally have this hearing.

Mr. Lyon, following the April 2014 change of the Flint water source, then, in 2015 where families and medical professionals like Dr. Hanna-Attisha, who is on the next panel, started to say there is lead in the water. People have to stop drinking it. There needs to be a coordinated response. At some point after that, Michigan asked for a Medicaid waiver for health services for Flint children and pregnant women. When did you come together to apply for the Medicaid waiver?

Mr. LYON. Actually, I think we submitted our formal application in February, mid-February, approximately.

Ms. CASTOR. This February.

Mr. LYON. Yes.

Ms. CASTOR. And it was, you had been in discussion for a little while on that?

Mr. LYON. Yes, we were discussing the potential with——

Ms. CASTOR. And it was granted?

Mr. LYON. Quickly. I don't know the exact date but it was—yes.

Ms. CASTOR. OK, in February?

Mr. LYON. We applied in February. I am not sure when it was actually approved.

Ms. CASTOR. OK.

Mr. LYON. But CMS did approve it very quickly.

Ms. CASTOR. And this Medicaid waiver is a technical term. And what it really did is say we need help. We need to make sure that the citizens of Flint in the area, children and pregnant women get the health services that they need. Can you sketch that out a little bit more why you thought that was an important part of the response?

Mr. LYON. Yes, I think we wanted to extend benefits to children and pregnant women in Flint because they are most at risk for the impacts of lead exposure.

Ms. CASTOR. And in fact, low-income communities often are more at risk for lead exposure.

Mr. LYON. I am sorry. What was that?

Ms. CASTOR. Oftentimes low-income communities are more at risk for lead exposure.

Mr. LYON. Certainly, that is one of the health disparities that we look at through our programs is that where there are older homes and more lead-based paint in more impoverished areas, that definitely does have an impact on our urban cores, yes.

Ms. CASTOR. So, as part of that Medicaid waiver, does the State receive additional dollars to serve a larger population?

Mr. LYON. Yes.

Ms. CASTOR. How much?

Mr. LYON. I think it is approximately $25 million, total, State and Federal.

Ms. CASTOR. And is there a time line on the waiver and expanded population, treating the expanding population?

Mr. LYON. The Center for Medicare & Medicaid Services has approved the waiver. We are working with our State legislature to get their approval to move forward and those conversations are ongoing. And I hope and anticipate that they will act quickly so that we can get this up as quickly as possible.

Ms. CASTOR. So the Medicaid waiver has been granted by the Federal Center for Medicare & Medicaid Services but the State legislature has not put up its share because it is a State-Federal partnership. Is that——

Mr. LYON. That is basically correct. What I would say is we have to have the authorization and the funding to do this. And we go through a budget process every single year, and that takes some time.

So, I think there was a bit of an inkling that this could be done as a regular part of the budget and we have asked that they take a quicker look at this.

Ms. CASTOR. So, realistically, when do you think the legislature will act and do you think they will act?

Mr. LYON. I think we will hear quickly. I mean we have been having conversations at very high levels with leadership and I have been over discussing with them and they understand the importance of doing it.

Ms. CASTOR. OK, so within the next few months you anticipate?

Mr. LYON. Oh, yes, yes, yes.

Ms. CASTOR. OK. So, Michigan has a Medicaid Managed Care System. Is that right? You rely upon private plans to provide the health services and contract with medical professionals.

Mr. LYON. The end of that cut out. I am sorry.

Ms. CASTOR. To contract with medical professionals for the actual health services?

Mr. LYON. Yes.

Ms. CASTOR. So how do you ensure that children and pregnant women are actually being tested? And I think this kind of goes to the point of there seems to be a consensus that Flint is going to need a registry. But how do you ensure that the residents, the children and pregnant women get the health services they need? Are the Medicaid Managed Care companies required to collect data? And what else will you need going forward?

Mr. LYON. Yes, they are required to collect data. We will work very closely within the populations they serve. We do outreach with the Medicaid health plans. They do outreach to reach out to individuals. It is a capitated model, so they are interested in increasing their participation so they have an incentive to enroll people. And what I would tell you is it is so important because we have to have people identified in the system so that these early interventions can occur.

Dr. Lurie talked quite a bit about education, nutrition is very important, both to stop the absorption but also to ensure that a child develops the proper way that they can fight off any potential factors that happen. And the next part of that is having the screening in place so that if something is indicated, we can get them the services they need.

And the most important part of this to me is the link to the medical home or the primary care physician in ensuring that these children and pregnant women are being seen regularly by their providers. And this allows that access to occur.

Ms. CASTOR. So, in the Medicaid waiver that was granted to Michigan that we are waiting on the legislature to act on, does it

contain specific conditions that require the managed care plans to do that screening and testing and data collection?

Mr. LYON. Yes. As Dr. Lurie mentioned, she mentioned the Federal standards and she could read that right out of our Medicaid manual. Ages 1 and 2, and if they haven't been tested, ages 3 and higher.

Ms. CASTOR. And Michigan's intent is to ensure that the children and pregnant women that get their health services through Medicaid are entered into a registry and are tracked over time?

Mr. LYON. We are going to track them. That is something that anything that we do long-term will have to be well thought out because we haven't done it before. So, we would work with CDC on that. That would be very important.

The other thing I would note in this situation, too, we have encouraged our health plans to test even younger than 1 because we test at 1 and 2 because that is when children begin to be mobile and that is when they start interacting with potential——

Ms. CASTOR. So but the overall infrastructure on data collection and registry is not in place now and that is something you are building right now.

Mr. LYON. We collect data from the health plans but if we are looking to do a really robust, all-encompassing tracking system of these children long-term, I think it is something that we are going to have to work with the CDC and CMS and the local hospitals and the local providers to really get that in place, the local behavioral health system as well.

Ms. CASTOR. Thank you very much.

Mr. LYON. Yes.

Mr. PITTS. The chairman thanks the gentlelady.

I now recognize Dr. Burgess, 5 minutes for questions.

Mr. BURGESS. Thank you, Mr. Chairman, and thanks for having the hearing today. Thank you all for being here with us this morning and spending so much time with us.

I just have a couple of questions and possibly they could go fairly quickly. But Mr. Beauvais, let me start with you.

The Lead and Copper Rule, I didn't want to oversimplify it but to me, as a relative lay person here, it seems like Lead and Copper Rule, is the purpose of that to sort of let people know that the water supply is OK from these two agents, lead and copper? Does it function as an early warning system or does it function or could it function as providing a source of comfort to people who are relying on the municipal water that at least Lead and Copper Rule is being complied with, so we know we are OK?

Mr. BEAUVAIS. It needs to, you know the way that Congress wrote the Safe Drinking Water Act it required to set standards and treatment techniques, in this case, that are feasible.

Mr. BURGESS. But how does it exist today? I recognize you are talking that improvements need to be made.

Mr. BEAUVAIS. Right.

Mr. BURGESS. And I appreciate that.

Mr. BEAUVAIS. But when the rule was written in 1991, the focus was on what was the technique that—it is a technology-based standard, not a health-based standard. So, it focuses on what levels could be achieved by corrosion control, the application of optimal

corrosion control, techniques across systems. And the action level was generated off that. But yes, you are absolutely right that the public notice requirements that are in the rule are intended to provide the public with information about how the system is performing.

Mr. BURGESS. So even with the imperfection of the lead and copper rule as it existed a year and a half ago, should it have signaled that there is a problem here?

Mr. BEAUVAIS. Yes, I think first and foremost to make the switch from Detroit water to Flint water required an approval from the State. And at that time, the system should have been advised to apply corrosion control to the new water source and that was not done.

Mr. BURGESS. And it is your expectation with the improvements to the rule that you are anticipating these things will be mitigated.

Mr. BEAUVAIS. That specific problem we have already issued a memorandum clarifying, in case there was any misunderstanding for large systems that that is a requirement.

Mr. BURGESS. What about just sort of the ongoing surveillance of my municipal water system back home, do they check it for lead and copper? Are they required periodically to do an assessment?

Mr. BEAUVAIS. They absolutely are. However, the Flint experience has brought to light a number of concerns around sampling techniques and approaches and that is something that we are already focusing on. We have already new guidance to States across the country asking them to adopt the most protective sampling techniques and that is something that we will be looking in the course of the rule of revisions.

Mr. BURGESS. And who checks the checkers to make sure the checkers are checking?

Mr. BEAUVAIS. Right, that is our challenge in this federalist system of——

Mr. BURGESS. I check with my municipal water systems, obviously, after this story is on the front page of the newspapers, are you doing your job. And they are. And I am grateful for that. The numbers are in compliance.

But then, Mr. Lyon, as I look at the EPA's map of the City of Flint, Michigan and see the dots on the map that are published as of April 11th, it is pretty startling. You have got about 60 dots equally distributed north and south of the river and only one of them is in the zero range. Fortunately, they are not all in the highest range but I am sure they are all in higher ranges than we would like to see. So, that is a significant problem, which I assume you have got on your radar screen and you are zeroing in on those dots that are of the highest intensity. Is that correct?

Mr. LYON. Yes, Dr. Creagh is. He does the water piece with the map that you are referencing. He knows about it.

Mr. BURGESS. Well, I think it is good that you have made this public——

Mr. LYON. Yes, we are aware.

Mr. BURGESS [continuing]. So that people can, not real-time but almost real-time, assess it for themselves.

Mr. Beauvais, let me just ask you because you mentioned in your testimony something and I am not familiar with this term, an

EPA-wide elevation memo was issued. What is an elevation memo? I have been on this committee for 11 years, and I haven't seen that term.

Mr. BEAUVAIS. That is how we refer to a memorandum that was issued by Administrator McCarthy to all staff at EPA in January of this year, really highlighting the critical importance that in situations where there is an understanding at a staff level in particular that public health may be at risk, that staff take the initiative to elevate those issues to higher levels of management and that we work collectively as managers and leaders across the across the agency to ensure that we are creating an environment where that happens and is welcomed.

Mr. BURGESS. Can you share with the subcommittees involved the internal memoranda that related to that elevation memo being issued?

Mr. BEAUVAIS. Absolutely.

Mr. BURGESS. And just finally, there will be an EPA OIG report that is generated as a result of all of this. Do you know when that is going to be made public?

Mr. BEAUVAIS. I prefer to let the Office of Inspector General speak to the timing of that.

Mr. BURGESS. Thank you, Mr. Chairman. I will yield back.

Mr. PITTS. The Chair thanks the gentleman and have a UC request from the ranking member.

Mr. GREEN. Mr. Chairman, I ask unanimous consent to place into the record a statement from the American Public Works Association, the Ohio Department of Health, Director of Health, the American Academy of Pediatrics, and also the National Medical Association. I unanimous consent to place it into the record.

Mr. PITTS. Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. PITTS. The Chair now recognizes Mr. McNerney, 5 minutes for questions.

Mr. MCNERNEY. I thank the Chair.

One of the important lessons from the tragedy in Flint is the importance of investing, of course in this case it is in corrosion controls, what may seem like a lower priority investment could avoid a large public debt in the future.

Mr. Beauvais, what exactly is corrosion control and are there different types of corrosion control for different water systems?

Mr. BEAUVAIS. There are different types of corrosion control and the application of corrosion control really depends, in significant part, on the chemistry of the source water, as well as the configuration of the system.

So, one common method of protecting against corrosion is the addition of orthophosphate, which is what is being done in the Flint system now and that effectively provides a coating on any lead service lines or pipes in the system to prevent leaching of lead into the water.

Other techniques involve adjusting the pH of the water to reduce corrosion of the system——

Mr. MCNERNEY. I realize that Flint is unique. Do we have to worry about lead poisonings in other communities because of corrosion of pipes, of lead pipes?

Mr. BEAUVAIS. In any system that has lead service lines or lead premise plumbing, it is important to apply techniques to avoid that corrosion and certainly this is a challenge for many communities across the country.

Mr. MCNERNEY. So, is EPA doing anything to incentivize adoption of corrosion control in other communities?

Mr. BEAUVAIS. Well, in fact, the Lead and Copper Rule requires it and so one of the things that we are doing, we recently issued a new technical resource to help walk communities through how to do corrosion control to update preexisting guidance. And our regional offices, as I mentioned earlier, engaged with every primacy State across the country to ensure that they are taking a close look at any lead action level exceedances in it.

Mr. MCNERNEY. And this crisis has caused other communities to be more aware of the problem, I take it.

Mr. BEAUVAIS. Absolutely. There is definitely a strong focus on this now and I am sure members of the second panel will also speak to that.

Mr. MCNERNEY. OK, what more could Congress do to encourage water systems to make those kind of investments?

Mr. BEAUVAIS. Well, I think the oversight that Congress is providing and the attention that Congress is helping to bring to the issue is certainly helpful. We appreciate any support that we can get for our efforts to strengthen implementation of the rule now, as we engage with States and water systems across the country. And of course, this will be an important element of the Lead and Copper Rule revision so, we appreciate the committee's strong support for moving forward with that.

Mr. MCNERNEY. Very good. Well, corrosion controls are only one part of what the City of Flint needs to do to operate its water systems safely and sustainably. For example, Mr. Creagh, you mentioned that the city is losing large amounts of treated water in its distribution system every day.

Now, being from California, we have a water crisis almost every year. So, this is an issue that we care about very deeply, as well as contamination. What do you recommend?

Mr. CREAGH. So, we are working very closely with EPA and the city looking at the reliability study, doing hydraulic monitoring, doing tracer studies to figure out how long the water is in the system and how best to address those concerns for the community.

Mr. MCNERNEY. So, there is technology that is good at detecting these leaks.

Mr. CREAGH. Yes, sir.

Mr. MCNERNEY. OK. Is it pretty expensive to implement that?

Mr. CREAGH. The monitoring technology I wouldn't say is the expensive part. The right sizing the infrastructure would be the cost concern.

Mr. MCNERNEY. Thank you. Well, as we look to the future, we must invest aggressively in our water infrastructure. I think everybody knows that. But when you do so in a sustainable way, this should include incentivizing corrosion controls, water loss audits, and other methods to ensure that our water systems can afford safe and affordable water well into the future.

The EPA has committed a year ago to developing health-based household action level for lead to help parents, pediatricians, and local officials understand the risks to formula-fed infants so that they can protect children. Why hasn't the EPA issued this level yet?

Mr. BEAUVAIS. In fact, that was a recommendation that we had just received from the National Drinking Water Advisory Council this past December and we are, in fact, actively working on that.

Mr. MCNERNEY. So, you are not overdue on that recommendation.

Mr. BEAUVAIS. It really was a recommendation that came in the context of the Lead and Copper Rule revisions and we are actively working on it. That is a somewhat complex scientific endeavor that will require peer review and so forth.

Mr. MCNERNEY. So, you are not ready to give a commitment as to when you are going to release that information, that value.

Mr. BEAUVAIS. I can't. I can only say that we are working actively on it and when a product is ready for peer review, that will be done.

Mr. MCNERNEY. All right. Thank you, Mr. Chairman. I yield back.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the gentleman from West Virginia, Mr. McKinley, 5 minutes for questions.

Mr. MCKINLEY. Thank you, Mr. Chairman.

I have got a couple of questions, Mr. Beauvais, if I could start with you on it. Maybe at first you are not going to be able to answer, but if you could get back to me.

And that is, in your testimony you say there are 68,000 water systems in America. I have asked this question of other panels on this and no one has gotten back to me. I would like for you to get back to me.

What would be the breakout of communities, let's just say rural communities of 5,000 of fewer out of that 68,000? Could you get back to me on that?

Mr. BEAUVAIS. Absolutely. I think I can probably give you a——

Mr. MCKINLEY. You are not going to be able to give me that right now but we are looking for some kind of breakdown on the 68,000. How many of them are coming? Because in the rural communities, often, they are going to be poorer, perhaps, less affluent, perhaps. So, they are going to face some other difficulties a we deal with this problem.

I would also like to know from you, if you could, put together something that, based on the 1986 Safe Drinking Water Act, the number of homes that were constructed prior to 1986. I have got to think that that is going to be the majority of homes built in America, especially in rural areas that they are going to have older homes there that could have internal lead-inducing issues with it.

So, that leads to the next question of I think you are going to answer the question a posit, and that is, our plumbing fixtures, our lead solder, our galvanized pipe, just piping in general, our distribution within a house, even if we have the freshest, cleanest water coming into the home, aren't we possibly subjecting the

homeowners and the people that live in there, the children and all, aren't they going to be subject to higher lead levels as well?

Mr. BEAUVAIS. Premise plumbing is certainly part of the issue. The lead service lines, the laterals that connect the water mains to the homes are one big concern but premise plumbing can also be as significant.

Mr. MCKINLEY. OK, I would like to understand more of that significance on that. I often refer to Mildred Schmitt. She is your neighbor. She is my neighbor. Mildred Schmitt, when this issue was raised, contacted the EPA to find out what do I do. I have heard it on Fox News. I have heard it on the news. I have got a problem. What am I supposed to do? And she is fortunate enough they have the internet, because that is what everyone tells you, you are supposed to go to the internet. And she may or may not have internet access. But if she does have it, this is what she got was this one-inch thick panel of papers that she is 82 years old, and she doesn't know what do with that. So, she is overwhelmed with this. This is not a user-friendly system that we have set up for people, Mildred Schmitt, to be able to address this problem. She doesn't know whether she has a problem or not.

And so I am trying to understand—we have known about this problem, apparently since 1986 and it goes far beyond Flint. What differentiates this lead problem that manufacturers in solder, fixtures, plumbing lines, distribution systems and the like, what differentiates them from all the other settlements and litigation that we have had across this country over things? I just was listing them: the cigarette manufacturers, $206 billion settlement on that; the mesothelioma, the asbestos issue that was $30 billion that the manufacturers had to come up with; air bags; thalidomide; Corvair auto; ignition switch; engine coolant; breast implants. All of these manufacturers have had to step up and take care of this but we look over to the manufacturers of a lead-induced system in our homes and we are letting them pay no responsibility.

What differentiates that? Why aren't they involved in helping out the homeowners, whether it is in rural America, rural West Virginia, or elsewhere? What is your response to that?

Mr. BEAUVAIS. I think it is a very good question. It is not something that I have thought about before but I would be happy to give it some thought and get back to you.

Mr. MCKINLEY. Not that I am trying to get litigation started on this but I don't understand the difference. If these homeowners don't know—Mildred Schmitt doesn't have two nickels to rub against each other and she may be faced with something that could cost $5,000 or $10,000 to fix the lead problem in her home. What is she supposed to do? She is living on Social Security.

I think we have a real serious problem here as it relates to homeowners. So, I would really like to hear back what some solutions should be. Is this something Governments should step up, or is this the manufacturer should take care of it?

So, I have run out of time, apparently. So, if any of the rest of the panel, if you could get back, I would sure like to know which direction we want to go in this. OK?

Thank you very much.

Mr. PITTS. The chairman thanks the gentleman and now recognizes Mr. Luján, 5 minutes for questions.

Mr. LUJÁN. Thank you very much, Mr. Chairman.

I have been dismayed by the events that have unfolded in Flint, Michigan, which are deeply tragic, because all of these could have been prevented. It was all preventable. And that is what I just heard from my colleague as well from West Virginia, that is where this frustration is coming from.

And so I also hope that the crisis in Flint serves as a wake-up call to all of us in Congress and all across America that public health vital programs cannot be cut, that protections that should be in place should not be eliminated.

I am reminded as we are hearing this debate, Mr. Beauvais, that there is questions about the standards set with the clean water drinking standard. And when there as a breach about a year ago in New Mexico and Colorado in the Animas River, it turned orange. There were heavy metals flowing through it. And we were told in New Mexico that it met the clean water drinking standard. I don't know one of you that would have picked up a glass water out of that river that day and put it into your body. We have got to look into this stuff because if it is making people sick and killing people, we have got to get our hands around it.

So, with that being said, I am trying to understand what is going on in Flint and across the country but it has become apparent that there is a lack of good data on where kids are being exposed to lead. In my home State of New Mexico, I have become increasingly concerned by the risk level for lead exposure faced by many of our counties. New Mexico has received 3-year funding from the Centers for Disease Control and Prevention for lead poisoning prevention programmatic activities. However, just this week, the Associated Press analysis of data from the U.S. Environmental Protection Agency and the New Mexico Environment Department found that 20 small water systems across the State of New Mexico have exceeded the Federal lead standard at least once in the last 5 years. This is truly alarming. And I know, Dr. Lurie, that you share that concern with me.

Is it true that the Federal Government does not require States to submit lead exposure data?

Dr. LURIE. So, I think as we have been looking at how to strengthen lead program, one of the things and improvements we have been talking about is publicly posting lead data and obviously in a way that provides anonymity for patients but makes clear what the levels and issues are. And as we look forward to strengthening the lead program in general, I think we very much look forward to working with Congress on a set of proposals to do that.

Mr. LUJÁN. So, Dr. Lurie, the answer to that question is no, the Federal Government does not require States to submit——

Dr. LURIE. Does not require States to submit——

Mr. LUJÁN [continuing]. Lead exposure data.

Dr. LURIE. No.

Mr. LUJÁN. Do you believe that the variability between State reporting standards makes it difficult for decision-makers to understand the level of lead exposure risk across the country?

Dr. LURIE. I am not totally sure that I understand your question but it does seem as though there needs to be readily understandable, interpretable standardized data that let us all be able to act.

Mr. LUJÁN. That is the essence of the question, Dr. Lurie. It is my understanding that there is not a standard for how States even report that. That from one jurisdiction to the next, the data that is being reported is very different. And so there needs to not only be a requirement that this data be sent to the Federal Government, there needs to be a standard that is established as well.

And what steps should be taken to strengthen State and Federal programs to screen children for elevated blood levels?

Dr. LURIE. So, on the part of your question I would really like to get back to you on the facts because that is not a level of detail that I am familiar with.

On the State and local level, otherwise, there is a very good Medicaid standard, for example, about screening but I think we also know that while there have been vast improvements over the last decade or so and we are up to somewhere in the low 60 percents for Medicaid screening, we are really looking toward universal screening of young children to be sure that we can catch kids with lead. And strengthening the surveillance programs and potentially even automating some of those systems so that we can have an early warning system that is in real-time and is better is a real focus of the discussion going forward.

Mr. LUJÁN. I think you just described, Dr. Lurie, why there is such an importance with preventative care with screenings and with checkups on a regular basis so that we were able to catch as much of this as we can as early as we possibly can.

And then lastly, as my time runs out, Dr. Lurie, I just want to appreciate the attention that you brought to the behavioral and mental health aspect of this. There are too many people that have been traumatized over this and the emotional toil that has been experienced is traumatic. It also brings us back to the importance of what needs to be done for mental and behavioral health programs. So, thank you very much for your time today for this important hearing.

Mr. Chairman, with that, I yield back the balance of my time.

Mr. PITTS. The chairman thanks the gentleman.

I now recognize the gentleman from Virginia, Mr. Griffith, 5 minutes for questions.

Mr. GRIFFITH. Thank you very much.

The two witnesses from Michigan referenced Dr. Mark Edwards of Virginia Tech. I will ask each of you, it is kind of a yes or no except it is not, question and that is, Dr. Mark Edwards hero or gadfly troublemaker? We will start with you, Mr. Beauvais.

Mr. BEAUVAIS. Well, Dr. Mark Edwards, the collaboration between EPA and Dr. Edwards has been extremely useful to us. So, he surely is a hero in this.

Mr. GRIFFITH. Dr. Lurie?

Dr. LURIE. Similarly, he has been a very important collaborator and someone who has also earned the trust of the community in important ways for moving forward.

Mr. GRIFFITH. Mr. Lyon?

Mr. LYON. Not only would I want to recognize Dr. Edwards for his work but I would want to recognize Dr. Hanna-Attisha, who is going to testify later. Their independent look at this certainly brought us around. So, thank you.

Mr. GRIFFITH. Mr. Creagh?

Mr. CREAGH. I would echo Director Lyon to thank both those doctors for providing the leadership to resolve this issue also.

Mr. GRIFFITH. All right. So, here is the problem. Because he dropped everything he was doing, didn't teach class, in fact in an article that appears in the Roanoke Times today, he says he is not sure why Virginia Tech still has him on staff because he hadn't taught any classes, hadn't had time to write grant money, spent $250,000 out of their funds, 5 years' worth of man-hours working on this project. They have got a cash flow problem and in fact have set up a GoFundMe page, Flint Study VT, trying to raise money to offset the work that they have done.

I ask each of you, do your programs, do your agencies have a fund available? And to the folks in Michigan I would say if you don't have a fund available, you have a full-time legislature, if I remember correctly, perhaps a bill ought to be put in to help offset or defray some of these costs.

I don't know about the other person that you mentioned. She is not my constituent. But when I read an article about one of my constituents who has done the right thing for another part of the country and expended funds that have now put them into a little bit of a financial hole, that is what I am looking for.

So, again, Mr. Beauvais, just because you are at that end of the table, if you would start. Are there funds available at the EPA to help defray these costs?

Mr. BEAUVAIS. Well, in fact, we have provided support to some of Dr. Edwards' recent work in Flint.

Dr. LURIE. I am going to have to look into the kinds of funds that are available, although I am not aware that we have received any requests for funding.

Mr. GRIFFITH. I understand. Mr. Lyon, and either one of you can speak for Michigan.

Mr. LYON. I was going to defer.

Mr. CREAGH. So, I do know that that is a direct conversation being held in Michigan to see how we can support Dr. Edwards in his research.

Mr. GRIFFITH. All right, I appreciate that very much.

Mr. Chairman, if I might, I would ask unanimous consent for that article from the Roanoke Times in today's paper to be submitted to the record.

Mr. PITTS. Without objection, so ordered.

[The information appears at the conclusion of the hearing.]

Mr. GRIFFITH. And let me move on, then, to other newspaper articles that I have read. Miguel Del Toral, according to some recently released emails in an article that I read out of The Detroit News back at the end of March, indicated that in an email that was released that, at one point in time, he had offered to do more tests in Flint, Michigan on his own dime to prove that what he was saying up the chain, that there is a problem here, would come out.

I have to wonder if the EPA has just got too much bureaucracy when they can't even listen to their own people in the field and they are offering to do it on their own dime and, instead, they get the stiff arm. I know that you didn't have anything to do with that, but Mr. Beauvais, what are we going to do in the future? I mean that is what this hearing is about to make sure that when your own people are saying there is a problem, they are not just totally dismissed and, in fact, he would appear punished. Again, I know that is debatable but it appears that he was punished for a short period of time.

Mr. BEAUVAIS. Well first of all, let me just say that Miguel Del Toral is an incredibly valued member of EPA's team, one of the national experts in this area. I am not aware of any punishment of him but I——

Mr. GRIFFITH. I understand.

Mr. BEAUVAIS [continuing]. Do think that it is very important that concerns that get raised at a staff level be appropriately elevated and get appropriate attention. And that is precisely the point of the policy memo that was discussed.

Mr. GRIFFITH. And I know your position and I am not fussing at you but I will tell you in another hearing that I attended, not this committee, in regard to this, the mom, the hero mom in this situation was told that he had been dealt with and he disappeared for a period of time because he had been dealt with. I consider that a form of punishment. The EPA may not consider it that but I do.

And that is the kind of thing that bothers when we have folks saying that we need more money. And I am sure that there is always use for more money but if you just listened to the folks on the ground, you could have stopped this problem sooner. And that is my concern as a Federal representative talking to the Federal representatives of the EPA. You all had a chance. You missed it. I am not trying to bust your chops but I want to make sure that you all get the system right so when this happens again, because the same article in the Roanoke Times says they are looking at Philadelphia.

I yield back, Mr. Chairman. Time is up.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the gentlelady from Illinois, Ms. Schakowsky, 5 minutes for questions.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman, for holding this important hearing.

I was one of a pretty large delegation that went to Flint last month. I know Dr. Lurie was part of the—was one of the presenters and was there. I don't know if I met the others of you when the 25 Members led by Leader Pelosi, the Congressional Progressive Caucus, the Congressional Black Caucus for a speak-out, but we also had a panel and had an opportunity to see the incredible resources that were pulled together at that point to really address the problem. And, obviously, nothing is too much for us to do to correct this problem.

And it is not really contained to the City of Flint. There may be some particular circumstances, as was mentioned, but cities across the country have these aging water systems, these underground infrastructure problems and there could be lead, I know, in Chicago

because so many kids live in homes with lead paint. The latest data we have for the City of Chicago shows that in 2014 approximately 675 children had elevated levels at 10 times the amount but I think that is really underestimated. We don't do a lot of testing.

So, Dr. Lurie, as a key part of the State's response, and this has been discussed somewhat in Flint, was its application for a Medicaid waiver to extend Medicaid coverage to thousands of children and pregnant women in Flint to ensure that our most vulnerable receive the comprehensive and ongoing care that they need. And thankfully, this waiver was approved.

The coverage provided through this new Medicaid waiver, which also eliminated premiums and cost-sharing and broadened case management benefits for all the beneficiaries in Flint is clearly going to make a difference in the lives of Flint residents for years to come.

So, I am wondering if you could speak to why Medicaid coverage, in particular, was and continues to be such a vital part of the broader Federal response in this situation.

Dr. LURIE. Thank you. I appreciate the question. And as we have discussed, one of the situations we had here was that we had all kids in Flint exposed to the Flint water system and all kids in Flint and families in Flint potentially exposed to very concerning levels of lead. Medicaid is the healthcare infrastructure particularly for low-income people in this country. It not only provides, however, access, to basic healthcare, in this case, Medicaid is a terrific solution because it also can provide through expanded services case management, behavioral and developmental services and other things like transportation for people who have difficulty getting to medical care.

So if, in fact, we want to get kids into see a primary care provider through their medical home and help them use the services that are available to them, often we need case management, transportation services, as well as all the other things we call wraparound services, the developmental behavioral services, the home visiting, all of those things that are required to be sure kids get what they need.

Ms. SCHAKOWSKY. So, that is on the list of things that now are available. How is it going in Flint?

Dr. LURIE. So, right now, we are waiting for the State legislature to approve the Medicaid expansion so that we can actually get those services off the ground. We understand from the State that that is coming. And meanwhile, the Center for Medicare & Medicaid Services and all of us are looking at ways to lean forward both to monitor uptake but to be really proactive within the community about being sure that people know the services are available and are able to take advantage of them. Many, many community organizations are on the ground poised and ready to get kids enrolled.

Ms. SCHAKOWSKY. So, the legislature in Michigan has to approve this. What is the time line there?

Mr. LYON. Thank you for the question. We are working with them, at this point, daily on getting their approval to do this. So, it is something that we are working on. It was what I referenced a little bit earlier. They were looking, as part of the budget request,

where it would have taken a little bit longer to get this in place. We have asked them to expedite that. And we are ready to implement as well.

So, there are some technology revisions that will have to happen. There are things that have to occur but it should be a pretty quick implementation time frame, once we have that off the ground.

Ms. SCHAKOWSKY. Now, is this administered in the same way or funded in the same way that Medicare is with the State match as well as the Federal dollars?

Mr. LYON. The same with Medicaid. It is matched with State dollars, yes.

Ms. SCHAKOWSKY. So, do you have any expectation on when the money can be approved?

Mr. LYON. I would want to be careful speaking on behalf of the State legislature for obvious reasons. But again, I think we have an education process we are doing with them. They had a lot of other priorities in front of them as well and we have gotten to the right people to assure that decisions can be made quickly.

Ms. SCHAKOWSKY. Thank you. I yield back. Thank you.

Mr. PITTS. The chairman thanks the gentlelady and now recognizes the gentleman from Florida, Mr. Bilirakis, 5 minutes for questions.

Mr. BILIRAKIS. Thank you, Mr. Chairman, I appreciate it. Thanks to the panel for your testimony.

The first question would be for Mr. Beauvais. I pronounced that right, correct?

Mr. BEAUVAIS. Yes, that is right.

Mr. BILIRAKIS. OK. You mentioned that the EPA's role is to maintain Federal oversight of the State's drinking water programs. Why, then, didn't the EPA intervene after numerous violations, including the complete absence of corrosion control treatment by the City of Flint that was noted apparently in the June 2015 by Mr. Del Toral? Why didn't the EPA intervene?

Mr. BEAUVAIS. Well, in fact, the EPA staff were intensively engaged with their State counterparts from the period as soon as they—they were initially told that corrosion control was being applied and then later informed that it, in fact, was not being applied. From that point in time, EPA was intensively engaged with State counterparts to MDEQ. Ultimately——

Mr. BILIRAKIS. When? Can you give me a date on that?

Mr. BEAUVAIS. EPA was informed in April of 2015 that corrosion control was not being applied. A series of engagements ensued. By July of 2015, MDEQ had indicated that it would go and ask Flint to apply corrosion control.

Mr. BILIRAKIS. Thank you. The next question, sir.

There have been Safe Drinking Water Act violations in several States, including my home State of Florida. What administrative steps has the agency taken to ensure that similar problems that may occur across the country are acted upon quickly, of course, and do not lead to another public health crisis?

Mr. BEAUVAIS. Well, we focused on two key actions that are closely related to one another. One is that our regional offices are engaged with every single State drinking water program that has primacy across the country to review all of the data with regard to

led action level exceedances to ensure that those are being addressed and that corrosion control is being applied where needed and that any other steps that need to be taken are taken.

The second is that we sent letters to every Governor and every State drinking water regulatory agency head for the primacy States in the country asking them to focus appropriate attention and resources on this, asking for a series of concrete steps, both with regard to implementation of the rule and increased transparency and accountability in the way that sampling results and other information are being provided to the public.

Mr. BILIRAKIS. Thank you. Next question.

While lead levels are improving, Flint water still exceeds Federal standards and virtually all homes must still be considered at risk. Do you have an estimate as to when drinking water in Flint will be back in compliance with the Safe Drinking Water standards?

Mr. BEAUVAIS. I mean I think I would share the view that Director Creagh articulated earlier, which is that I don't feel that we can hazard a guess as to the timing.

At this point in time, directionally, things are improving and we really need to be guided by the data and the experts in assessing when we are back to a situation where it is safe to drink.

Mr. BILIRAKIS. Well, can you get back to us on this one?

Mr. BEAUVAIS. Absolutely, we are happy to do it.

Mr. BILIRAKIS. Thank you.

Experts stress the importance of water use in homes so that the orthophosphate and chlorine added to improve the water quality that flow through the pipes. Given that many Flint residents are hesitant to run their water, and you can't blame them, whether it be for safety or financial reasons, and that there is a growing vacancy in the housing market how will a flushing program be successfully implemented?

Mr. BEAUVAIS. Well, I want to give Director Creagh and opportunity to respond to this as well. I think that is exactly the challenge that we are now grappling with is both to identify an appropriate protocol and then to develop an approach to make that happen on the ground. And of course I think the question of water bill forgiveness is certainly going to be an element of that discussion.

Mr. BILIRAKIS. Director?

Mr. CREAGH. I certainly agree with Mr. Beauvais. Our staffs are working together to agree upon with Dr. Edwards on an agreed upon flushing protocol and then there is high-level conversations looking at forgiveness of any of that cost because we do need to have the assistance to participate in this effort.

Mr. BILIRAKIS. Director, I have a question for you. Do you believe that those in your agency, appointed or otherwise, had the necessary training and/or certification for managing the city's drinking water system with regard to implementing and enforcing regulations mandated by the Safe Drinking Water Act?

Mr. CREAGH. I think it goes beyond the technical training of staff. And that is one of the reasons why we are exploring apprenticeship programs with the American Water Works Association and some of the municipalities so that employees get more hands-on training, so they understand what happens inside the plant and the results of their actions.

Mr. BILIRAKIS. Thank you, Mr. Chairman, I yield back. I appreciate it.

Mr. PITTS. The chairman thanks the gentleman and now recognizes the gentleman from Mississippi, Mr. Harper, 5 minutes for questions.

Mr. HARPER. Thank you, Mr. Chairman, and thanks to each of you. And it appears that I am the last person to ask questions. So, thank you for being so patient on this.

Mr. Beauvais, I know that you followed up on some questions that Mr. Green had asked earlier and Chairman Upton followed up with about the EPA intends to make long-term revisions to the Lead and Copper Rule, a question about when. What are the key issues for EPA in hammering this out?

Mr. BEAUVAIS. Well, I think some of the key issues relate to lead service line replacements. That is a very, without getting into all the gory details, that is a very complex and challenging area because of the way that ownership and control of lead service lines works and the expense associated with lead service line replacements. So, that will be one of the key issues to grapple with.

Another, for example, is the recommendation of the development of a household action level that would be used to trigger notification and intervention from public health officials.

And there is a series of others which I would be happy to outline.

Mr. HARPER. Sure but thank you very much.

Does EPA have any concerns about National Drinking Water Advisory Council recommendations? And if so, which ones?

Mr. BEAUVAIS. I wouldn't say concerns. I guess what I would say is we have also had—we have received recommendations and input from a number of other concerned stakeholders. There was a dissenting member of the Council who submitted a separate opinion or set of recommendations. And the other thing to mention is just, as I was saying earlier, the working group, the Lead and Copper Rule Working Group's recommendations that ultimately came up through the council were really developed before the whole experience in Flint came into the national consciousness in the same way. So, we are learning a lot on the ground and we are learning a lot as we engage across the country and that will also influence our thinking on the proposed rule.

Mr. HARPER. You know you have said there is a lot of data coming in that has got to be evaluated, reevaluated and continuing input that is going to go on that. But what is go beyond the requirements?

Mr. BEAUVAIS. Well, one of the things that we have asked the State regulators to look at and drinking water system operators to look at is the current rule, for example, doesn't require public posting of the individual sampling results. Regulators are required to report to us the 90th percentile results but we really felt strongly that consumers and resident citizens would benefit from having that information be made publicly available. So, that is one area.

And we have provided some information on recommended sampling protocols that are not strictly speaking regulatory requirements of the current rule but we have encouraged people to adopt those as more protective. And there is a couple of other areas, as well, that we have focused on.

Mr. HARPER. And Mr. Beauvais, one of the other cities that has received some national news is Jackson, Mississippi in my district as well. And I know that city officials have been working with EPA during this time and we certainly appreciate that assistance.

In your testimony, you state that Administrator McCarthy's called for an IG investigation to investigate EPA's response to the Flint crisis. Do you know when that IG investigation and report will be completed?

Mr. BEAUVAIS. I think I will have to defer to the Office of Inspector General on the timing of their report.

Mr. HARPER. Well, on February 29th, the EPA sent a letter to ensure water systems were following the lead and copper rule to the Mississippi State Department of Health and agencies in each State across the country to enforce that rule. In it, EPA asked the States to work with public water systems with a priority emphasis on large water systems to increase transparency in implementing the Lead and Copper Rule by posting that information.

Any idea why there was an emphasis put on large water systems? Is it just the sheer volume of customers or is it a starting point? Explain that.

Mr. BEAUVAIS. I think something in the nature of triage. This is a huge level of effort that needs to be made by State drinking water system operators. So, there was an encouragement to start with large systems and then kind of work down the stack. We understand there is a number of unique challenges that small systems face and it is important to grapple with those as well.

Mr. HARPER. I think we all understand the importance of clean drinking water and we want to say we appreciate the assistance and look forward to a resolution.

And with that, I yield back.

Mr. PITTS. The Chair thanks the gentleman.

At this point, the members' questions are concluded. We will have follow-up questions we will send to you in writing. We ask that you please respond promptly to that.

And so at this point, we are going to take a short break while the staff sets up the witness table for our second panel. The subcommittee will stand in recess for 3 minutes.

[Recess.]

Mr. PITTS. All right, the time of recess having expired, the subcommittee will reconvene.

I will ask our second panel to please take their seats and the witness table. I will introduce them in order of their presentations.

First of all, Dr. Mona Hanna-Attisha, MD, MPH Program Director Pediatric Residency, Hurley Children's Hospital, Hurley Medical Center, Assistant Professor of Pediatrics, Michigan State University College of Human Medicine. Welcome.

Second, Joan Alker, Executive Director at the Center for Children and Families, Georgetown University. Welcome.

Mr. Steve Estes-Smargiassi, Director of Planning and Sustainability, the Massachusetts Water Resources Authority. Welcome.

June Swallow, President and Administrator, Rhode Island Drinking Water Program, Rhode Island Department of Health. Welcome.

Finally, Mae Wu, Senior Attorney, Health and Environment Program, Natural Resources Defense Council.

Thank you for coming, each of you. Your written testimony will be made a part of the record. You will each be given 5 minutes to summarize your testimony. Our little light system is not working so they are on the floor, along with the wires. So be careful, anyone walking, not to step on the wires. But at 4 minutes, I will give you a couple of taps to give you a signal that you have got 1 minute left of your 5-minute testimony and please ask you to wrap it up at 5 minutes.

So, we will start with Dr. Mona. You will be recognized now for 5 minutes to summarize your testimony. You are recognized.

STATEMENTS OF MONA HANNA-ATTISHA, M.D., ASSISTANT PROFESSOR OF PEDIATRICS, MICHIGAN STATE UNIVERSITY COLLEGE OF HUMAN MEDICINE, AND DIRECTOR, PEDIATRIC RESIDENCY PROGRAM, HURLEY CHILDREN'S HOSPITAL; JOAN C. ALKER, EXECUTIVE DIRECTOR, GEORGETOWN UNIVERSITY CENTER FOR CHILDREN AND FAMILIES; STEPHEN ESTES-SMARGIASSI, DIRECTOR OF PLANNING AND SUSTAINABILITY, MASSACHUSETTS WATER RESOURCES AUTHORITY, ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION; JUNE SWALLOW, ADMINISTRATOR, RHODE ISLAND DRINKING WATER PROGRAM, RHODE ISLAND DEPARTMENT OF HEALTH, AND PRESIDENT, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS; AND MAE C. WU, SENIOR ATTORNEY, HEALTH AND ENVIRONMENT PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL

STATEMENT OF MONA HANNA-ATTISHA

Dr. HANNA-ATTISHA. Thank you. Good afternoon. Now, I would like to begin by thanking Chairman John Shimkus and Chairman Joe Pitts, along with Ranking Member Paul Tonko and Ranking Member Gene Green, for the opportunity to testify at today's joint subcommittee hearing on the Flint Water Crisis and most importantly, on the plan to move forward.

I would also like to thank Chairman Fred Upton from Michigan, Ranking Member Frank Pallone, and their respective staff members for their continued interest and work on this issue.

This is a very important topic and I am pleased these two subcommittees have chosen to devote today's joint hearing to the public health situation in Flint the and long-term needs of our community.

It has been said that pediatricians are the ultimate witnesses to failed policies. And as a pediatrician in Flint, I can attest to that. Our children were failed by every agency that was supposed to protect them. I am not going to go into the details. You know what happened with Flint. A lack of corrosion control created a perfect storm for lead to leach out from our plumbing into our drinking water and into the bodies of our children. There is no safe level of lead. Lead is a potent, irreversible neurotoxin that impacts our children for decades and generations to come. The treatment for lead is to prevent all exposure to lead because there is no magic pill for lead. There is no lead antidote.

So, since we were able to prove that lead was getting into the bodies of children, our focus has always been on their tomorrows and what are we going to do next for our kids. And we are focused

on that moving forward. Flint is an incredibly resilient community with a proud past and we are hopeful and determined to create an even more promising future. Our community is committed to rebuilding and to creating a sanctuary where our children can recover and flourish. We cannot wait to see the potential cognitive and behavioral consequences of lead exposure. We must act and we must act quickly.

We are grateful for the State and the Federal support that has come in thus far and while these are helpful and appreciated, most are, unfortunately, only temporary expansions or increases in funding and will not adequately address the long-term needs of Flint's children.

On the academic side, Michigan State University and Hurley Children's Hospital have launched something called a Pediatric Public Health Initiative. This is our model public health program, a center of excellence, almost ground zero on lead, where we hope to continue the assessment of what happened to follow these children for decades but, most importantly, to intervene. To intervene for these children, which has never been done before and to become a model to create benchmarks so that the rest of the Nation can learn about what happened in Flint and how we were able to change the story and change a trajectory for our children.

These evidence-based interventions span many domains, most importantly, education, nutrition, and health. Because there is no medical treatment for lead, the treatment for lead is mitigating the impact of lead. Early literacy programs, universal preschools, school health services, quality education systems are key for our children. Nutrition plays a tremendous role not only for preventing ongoing exposure but preventing long-term re-exposure. Lead eventually gets stored in your bones and it can last there for decades. When you are stressed or pregnant or have poor nutrition in your future, it comes back out of your bones and an cause that neurotoxicity all over again. So, that is why nutrition plays a critical role in mitigating this exposure.

In terms of healthcare, we are grateful for the Medicaid expansion but that only covers our children. The adults were also exposed to lead and many other things in this water, including Legionnaire's Disease and many skin manifestations.

So, current efforts at both the State and Federal level efforts—our efforts on the academic front are not enough. We need congressional action to address the necessary short- and long-term response. I firmly believe that it is the imperative of public policymakers at all levels of Government, regardless of party or affiliation, to act quickly to address the urgent needs of the Flint community. We need congressional lawmakers to respond to this manmade disaster with the same impetus and robust response as they do for any other kind of disaster. Our Nation has never been reluctant to aid victims of hurricanes and floods and tornadoes.

Short-sighted cost-cutting and willful bureaucratic blindness caused the calamity in Flint but it is nothing short of a natural disaster. In addition, the magnitude of this disaster is much worse in the long-run. We are not a remote city in a developing world with a contaminated water supply. We are a great American city situated in the middle of the Great Lakes, the largest source of fresh

water in the world, yet we are going on our third year with a contaminated water supply.

Hopefully you agree that Flint families need our help. And it is my hope that our discussion today and with your committee's interest we will cut through the gridlock and spur significant action by Congress to create some legislation.

Thank you for the opportunity to address the committee today and I look forward to your questions. Thank you.

[The prepared statement of Dr. Hanna-Attisha follows:]

MICHIGAN STATE UNIVERSITY | HURLEY CHILDREN'S HOSPITAL

PEDIATRIC PUBLIC HEALTH INITIATIVE

Statement of Mona Hanna-Attisha MD MPH FAAP
Assistant Professor of Pediatrics and Human Development, Michigan State University College of Human Medicine
Director, Pediatric Residency Program, Hurley Children's Hospital
Director, MSU/Hurley Pediatric Public Health Initiative

Before the:

Committee on Energy and Commerce
Subcommittee on Environment and the Economy and
Subcommittee on Health joint hearing
"Flint Water Crisis: Impacts and Lessons Learned."

April 13, 2016

Good morning. I would like to begin by thanking Chairman John Shimkus and Chairman Joe Pitts, along with Ranking Member Paul Tonko and Ranking Member Gene Green, for the opportunity to testify at today's joint subcommittee hearing regarding the Flint Water Crisis and the path forward to heal our community. I would also like to thank Chairman Fred Upton, Ranking Member Frank Pallone, and their respective staff members for their continued interest and work on this issue. This is a very important topic and I am pleased these two subcommittees have chosen to devote today's joint hearing to the public health situation in Flint the and long-term needs of the Flint community.

Background
On April 26, 2014, the city of Flint changed its water source from Detroit-supplied Lake Huron to the Flint River water as a temporary measure until a new pipeline to Lake Huron was completed. Water from the Detroit Water and Sewage Department was treated with necessary corrosion control; however, Flint river water was not treated with corrosion control. The change in the water corrosivity - coupled with the decreased water usage (due to population loss and high water rates) and aging lead-based infrastructure - resulted in a perfect storm for lead to leach into the water.

Lead is a potent, irreversible neurotoxin with lifelong, multigenerational impacts. Increasing evidence shows that there is no safe blood lead level and that lead disproportionately impacts low income children. Lead has been linked to decreased IQ and an increased likelihood of ADHD, delinquent behaviors, total arrests, and increased rates of arrests involving violent offenses. There are other adverse effects on health attributable to lead exposure, including but not limited to hematological, cardiovascular, immunological, and endocrine. As we continue to learn more about the deleterious impact of lead, science tells us that the best way to protect children from the consequences of lead is to prevent all exposure to lead. Primary prevention failed in Flint.

To examine the impact of the water switch on young children's lead levels, we examined and compared the blood lead levels of children living in the city of Flint before (January to September, 2013) and after (January to September,

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PEDIATRIC PUBLIC HEALTH INITIATIVE

2015) the change in water source. We found a significant increase in the percentage of children with elevated lead levels - doubling and even tripling in some areas - that directly correlated with areas of elevated water lead levels.

A link to the research publication is provided for reference:
(http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2015.303003)

Our research is just a snapshot of a small group of children at one point in time. Due to the extended time period of potential exposure, the likelihood that most residents living in the area ingested the water directly or cooked with it, and the short time period in which we are able to detect blood lead levels in children (half-life of 20 to 30 days), it is highly likely that there are a large number of individuals whose elevated blood lead levels have gone undetected. As a result of these factors, it is clear that we must treat this crisis as a population-wide exposure.

Moving Forward
We are focused on moving forward. Flint is an incredibly resilient community with a proud past; and we are hopeful and determined to create an even more promising future. Our community is committed to rebuilding and to creating a sanctuary where our children can recover and flourish. We cannot wait to see the potential cognitive and behavioral consequences of lead exposure; we must act and we must act quickly.

Following President Obama's emergency declaration for Flint, federal agencies and their partners on the ground - lead by the Department of Health and Human Services - have begun to make a targeted impact through a broad range of administrative initiatives. Of late, these have included, but are not limited to, funding for water filters; expanded Medicaid coverage; expanded Head Start and Early Head Start services; increased funding for community health centers; and expanded use of WIC vouchers for ready-to-feed infant formula. While these and other services and supports are helpful and appreciated, most are unfortunately only temporary expansions or increases in funding, and will not be nearly adequate to address the long term needs of Flint's children.

That is why we have built a model public health program, a center of excellence, the Pediatric Public Health Initiative, to complement government efforts to help the children of Flint thrive. The Pediatric Public Health Initiative is a joint venture between Michigan State University, a land grant university, and Hurley Children's Hospital, a public academic children's hospital located in the city of Flint. The Pediatric Public Health Initiative has three main aims: assessing the extent of what has happened through vigorous research; developing the framework for the long-term surveillance of exposed children; and most importantly, and where our greatest energy is focused, intervening so that these children can have the brightest future possible. We are advocating for and implementing evidence-based interventions that will mitigate the effects of the lead exposure and make a difference in a community and in a generation of children. And finally, as more and more communities continue to deal with issues of lead exposure, the lessons we learn in Flint will be shared as best practices with the entire nation.

The evidence-based interventions we have proposed span the fields of education, nutrition, and medical/health. These are proven interventions to optimize children's health, especially our most vulnerable children. Developmental neurobiology has taught us that adverse childhood experiences and toxic stress, like lead exposure, change the trajectory of a child's life in predictable ways. But science also gives us hope. We can reduce the impact

of adversities like lead exposure when we wrap these children in evidence-based interventions to promote their development. All vulnerable children need these interventions, and all lead exposed children throughout the country need these interventions - but kids in Flint need them now.

Within education, the high priority, evidence-based interventions include literacy programs, universal early education, school health, early intervention (Early On in Michigan), and quality schools. Literacy programs and early education can help buffer the potential cognitive impact of lead exposure and promote school readiness. These strategies have a proven return on investment. All Flint children should have access to universal quality child care, Headstart and Early Headstart. School health and behavioral health services ensure that children are healthy and ready to learn. Early intervention (Early On), which provides early developmental services for children with delays, is hamstrung by chronic underfunding. This has created limited capacity and long waitlists for an important program to tackle these problems head on. Lastly, Flint kids need high quality education – Flint Community Schools struggle from both limited resources and an ongoing hemorrhage of students.

Within nutrition, there are both short term and long term needs. Children with poor nutrition absorb lead more readily, and long term healthy nutrition is critical to promote children's development and to minimize lead release from long-term bone stores. Flint is a food desert, with no full service grocery stores in the city. We need to address the issues of food insecurity, availability, and access through federally-supported programs like Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), WIC promotion and expansion, enhanced and universal school meals and afterschool feeding programs, and aggressive nutrition education. We should also consider establishing innovative ways to subsidize long-term nutrition access via neighborhood stores and mobile food markets, especially in targeted, at-risk areas.

Within medical/health, we want to promote caregiver capacity. Genesee County runs several evidence-based state, federal, and foundation-funded home visiting maternal infant support programs (nurse family partnership, healthy start, maternal infant health program). All of them have the potential to increase their capacity to serve more families. We also would like to see relaxed eligibility criteria so more mothers and infants can participate in these programs. And finally, we want to increase pediatric healthcare access to a patient-centered medical home and encourage patient-centered initiatives between Medicaid HMOs and Flint/Genesee County medical homes.

Current efforts at both the state and federal level, and our efforts in the academic front, are not enough. We need congressional action to address the necessary short and long-term response. I firmly believe that it is imperative for public policy makers at all levels of government, regardless of party or affiliation, to act quickly to address the urgent needs of the Flint community. We need congressional lawmakers to respond to this man-made disaster with the same impetus and robust response as they would for any other kind of disaster. Our nation has never been reluctant to aid victims of hurricanes, tornadoes, floods or earthquakes. While shortsighted cost-cutting and willful bureaucratic blindness may have caused the calamity in Flint, the effect has been nothing short of a natural disaster. In fact, I would argue the magnitude has the potential be much worse in the long run.

Flint is not a remote city in the developing world with a contaminated water supply; Flint is a great American city situated along the largest source of fresh water on Earth. And yet the cruel irony is that despite proximity to

abundant fresh water, we are approaching our third year without reliable, safe drinking water for the residents of the city. I hope you can understand why Flint families are traumatized. And hopefully you agree that Flint families need help from Congress.

It is my hope that our discussion today, and this committee's interest in Flint, will help cut through the gridlock and spur significant action by Congress during the current legislative session. Thank you again for the opportunity to address the committee today and I look forward to your questions.

Dr. Mona Hanna-Attisha
Pediatrician, Hurley Children's Hospital & Michigan State University
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Mona Hanna-Attisha MD MPH FAAP is director of Hurley Children's Hospital's Pediatric Residency Program and Assistant Professor of Pediatrics and Human Development at Michigan State University's College of Human Medicine in Flint, Michigan. With a background in environmental health, Dr. Hanna-Attisha completed medical school at Michigan State University, residency and chief residency at Children's Hospital of Michigan, and public health training in health policy from the University of Michigan. In addition to educating the next generation of physicians, Dr. Hanna-Attisha now directs the Michigan State University and Hurley Children's Hospital Pediatric Public Health Initiative, an innovative and model public health program to research, monitor and mitigate the impact of the Flint water lead crisis.

Mr. PITTS. Thank you for your testimony.

Ms. Alker, you are recognized for 5 minutes for your summary.

STATEMENT OF JOAN C. ALKER

Ms. ALKER. Thank you very much, Chairman Pitts, Ranking Member Green, and members of the committee. I am glad to be here today, thought the topic is, indeed a sobering one.

I am not here today to talk about why the Flint crisis happened but rather to respond to the committee's charge of examining lessons learned. This is an especially important exercise for children around the country, not just in Flint, because they may, too, be at risk of high levels of lead exposure or some of them reside in places that are known to have high levels of lead exposure. So, we must examine the Flint crisis not only for the children of Flint but for children nationwide, especially low-income children, who are at greater risk of lead exposure.

Of course, prevention is the key to ensure that such tragedies do not happen again. But sadly, prevention is too late for the children of Flint and other children who have already been identified with elevated blood lead levels. Policymakers must act immediately to ameliorate the harm that has been done. One essential part of this response is to ensure that these children have health coverage going forward, so that they may access the treatment they need now and in the future.

And while there is so much bad news here, I would like to focus the committee's attention on some good news that emerged from this debacle. Governor Snyder, a Republican, and President Obama's administration, a Democrat, were able to come to agreement on a Section 1115 Medicaid waiver very quickly at a time of sharp partisan discord, especially on health policy. The waiver relies on the Medicaid program to form the backbone of the State's response to the health crisis for families in Flint.

The terms and conditions of this waiver include an expansion of Medicaid and CHIP for children and pregnant women with incomes up to 400 percent of the Federal poverty level who were served by the Flint water system until they are age 21.

This is not the first time that Medicaid has played a vital role in our Nation's response to an emergency. After the terrorist attacks of 9/11, the State of New York also obtained a Section 1115 waiver to extend Medicaid coverage to additional groups and simplify the application process.

Following Hurricane Katrina, 15 States, DC, and Puerto Rico were granted Section 1115 waivers to provide temporary health coverage to those displaced by Katrina.

Medicaid's financing structure and the flexibility afforded by the waiver process allow for this kind of nimble and comprehensive response in times of crisis. Because Medicaid funding is not capped, it is able to respond to unanticipated emergencies, whatever their cause.

For children in situations such as that which has emerged in Flint, Medicaid's comprehensive pediatric benefit, and this is a real tongue twister, the Early Periodic Screening Diagnosis and Treatment or EPSDT benefit is essential. The Medicaid statute requires coverage of laboratory tests, including lead blood level assessments.

And once a problem is identified through a screen, the EPSDT benefit requires that treatment must be provided. Children may not be charged premiums or copays in the Medicaid program, which can be a barrier to needed care.

These features of Medicaid made it the obvious choice for Governor Snyder to turn to in responding to the crisis in Flint and responding to the health needs of those families.

But the crisis in Flint creates an opportunity and, indeed, a responsibility to reexamine Medicaid policy with respect to lead more broadly and I would like to offer two suggestions for the committee to consider.

Congress should consider ways to improve lead screening rates in Medicaid. Despite the requirement to screen for lead in the Medicaid program, screening rates are not where they should be. We don't have great data on this but it looks like for 1- to 2-year-olds across the U.S., the screening rate is only about 40 percent.

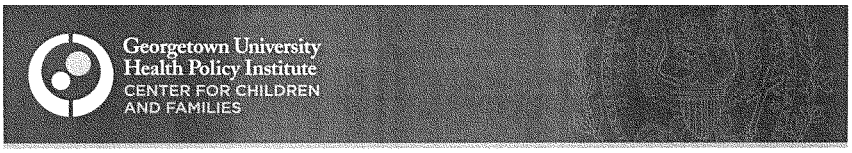
States must ultimately be held accountable for low screening rates but it is also worth noting that most children in Medicaid in Michigan and elsewhere, as has been discussed, are receiving services through managed care. So, ensuring that managed care plans are held accountable for improving screening rates would go a long way towards ensuring that public health objectives are being met.

Secondly, I would encourage you to review CMS policy, which allows States to request exemptions from universal screening requirements for lead. As a result of recommendations made by the centers for disease control, in 2012, CMS established a process by which States can request permission to target lead screenings, rather than screen all children in Medicaid.

Recent events in Flint suggest to me that this option should be carefully reviewed and perhaps reconsidered At a minimum, there needs to be a more robust public process for States requesting exemptions from universal screening requirements.

Thanks for inviting me to testify today, and I look forward to your questions.

[The prepared statement of Ms. Alker follows:]



Testimony of

Joan C. Alker

Executive Director, Georgetown University Center for Children and Families

Research Associate Professor, McCourt School of Public Policy

Before the

United States House of Representatives

Committee on Energy and Commerce

Subcommittee on Health/Subcommittee on the Environment

Hearing on

"Flint Water Crisis: Impacts and Lessons Learned"

April 13, 2016

STATEMENT OF JOAN C. ALKER, M.Phil

My name is Joan Alker, and I am the Executive Director of the Georgetown University Center for Children and Families and an Associate Research Professor at Georgetown's McCourt School of Public Policy[1]. In my work at Georgetown University I have studied the Medicaid program for many years with a particular focus on children. I have also done considerable work on Medicaid Section 1115 waivers – a topic that I had the opportunity to testify about in front of the Health Subcommittee last year. Thank you very much for the opportunity to testify again though today's topic is indeed a sobering one.

I am not here today to opine on why the Flint crisis happened but rather to respond to the Committee's charge of examining "Lessons Learned," as indicated by the title of the hearing. This is an especially important exercise as children around the country, not just in Flint, may be at risk of high levels of lead exposure or currently reside in places that are known to have high levels of lead in the water. So it is important to examine the Flint crisis not only for the children of Flint but for children nationwide – especially low-income children who are at greater risk of lead exposure.

Prevention is the key to ensure that such tragedies do not happen again. Screening for elevated blood lead levels for children enrolled in Medicaid is critical for the health of those children and also as a mechanism to identify possible widespread lead exposure. But screening alone is not sufficient to prevent community-wide lead poisoning. Public health surveillance systems must also be in place and adequately funded to ensure that all of our communities are safe.

[1] Please note that my views do not represent those of Georgetown University.

For the children of Flint, and others already identified with elevated blood lead levels, we must act immediately to ameliorate the harm that has been done. One essential response is to ensure that these children have health coverage going forward to ensure that they are able to obtain the many services they are likely to need. Elevated blood lead levels can lead to decreased IQ, academic failure and behavioral problems that are likely to adversely affect children for the rest of their life. The children of Flint must have comprehensive, affordable health coverage to identify all related health conditions now and in the future and provide high quality treatment.

And while there is so much bad news here, I would like to focus the Committee's attention on some good news that has emerged from this debacle – Governor Rick Snyder (a Republican) and President Obama's Administration (a Democrat) were able to come to agreement on a Section 1115 Medicaid waiver very quickly. The waiver relies on the Medicaid program to form the backbone of the state's response to this crisis for families in Flint. The waiver was submitted on February 14, 2016 and approved on February 28. At a time of sharp partisan discord, especially on health policy, it is worth noting that this bipartisan agreement on how to respond to the health care needs of children in Flint is comprehensive and happened quickly.

The terms and conditions of this waiver agreement include an expansion of Medicaid and the Children's Health Insurance Program (CHIP) for children and pregnant women with incomes up to and including 400 percent of the federal poverty level who were served by the Flint water system during a specified time period. Children and pregnant women above those income levels will be able to purchase or buy-in to public

coverage if they wish to do so, and CHIP premiums will be waived for those who are CHIP eligible. Children will retain coverage until age 21, and targeted case management services will be offered to families in Flint. It is estimated that an additional 15,000 persons in Flint will be newly eligible for coverage as a result.

This is not the first time that Medicaid has played a vital role in our nation's response to an emergency. After the terrorist attacks of 9/11, the state of New York obtained a Section 1115 waiver to extend Medicaid eligibility to additional groups and simplify the application process because the city's computer systems had been badly damaged, which made it difficult to process Medicaid applications. Following Hurricane Katrina, 15 states, DC, and Puerto Rico were granted Section 1115 waivers to provide temporary health coverage to those displaced by Katrina. Medicaid's financing structure and the flexibility afforded by the waiver process allow for this kind of nimble and critical response in times of crisis. Because Medicaid funding is not capped, Medicaid is able to respond to unanticipated emergencies whatever their cause.

And for children in situations such as that which has emerged in Flint, Medicaid's comprehensive pediatric benefit (Early Periodic Screening Diagnosis and Treatment or EPSDT) is essential. The Medicaid statute requires coverage of laboratory tests including lead blood level assessments appropriate for age and risk factors and once a problem is identified through a screen, the EPSDT benefit requires that treatment must be provided. In addition, children may not be charged premiums or copays in the Medicaid program, which can be a barrier to needed care.

These features of Medicaid made it the obvious choice for Governor Snyder to turn to in responding to the crisis in Flint. In general, his proposal, and the terms and conditions of the waiver agreed to with the federal Centers for Medicare & Medicaid Services (CMS), were sound. We did submit some specific suggestions for improvements such as expanding eligibility to lawfully residing immigrant children, following the recommendations of the American College of Obstetricians and Gynecologists regarding broader coverage of pregnant women, ensuring that public education is robust with respect to the coverage opportunities, and establishing a public notice process when a public health emergency is declared and the normal public comment rules are suspended.

The crisis in Flint creates an opportunity and indeed a responsibility to reexamine Medicaid policy with respect to lead more broadly. In that vein, I would propose the Committee consider two suggestions:

1) Congress should consider ways to improve lead screening rates in Medicaid. Despite the requirements to screen for lead in the Medicaid program, screening rates are not where they should be. States must ultimately be held accountable for low screening rates, but it is worth noting that most children in Medicaid are receiving services through managed care. Ensuring that managed care plans are held accountable for improving screening rates would go a long way towards ensuring that public health objectives are being met. This could be done at the federal level through legislative or regulatory change and, in the absence of federal action, states could insert requirements into their contracting processes with plans or reward plans with high lead screening rates. CMS is expected to

issue comprehensive final regulations on Medicaid managed care shortly, and after these regulations are released it would be worth revisiting this question.

2) Review CMS policy which allows states to request exemptions from universal screening requirements: As a result of recommendations made by the Centers for Disease Control and Prevention, and a process initiated during the tenure of Secretary Tommy Thompson, in 2012 CMS established a process by which states can request permission to target lead screenings rather than screen all children in Medicaid. To date, Arizona is the only state that has received permission to move to targeted screenings. Currently Washington and Nevada have such requests pending.

Recent events in Flint suggest that this option should be carefully reviewed and perhaps reconsidered. At a minimum, there needs to be a more robust public process for states requesting exemptions from universal screenings requirements similar to the process required for Section 1115 waivers.

Thank you for inviting me to testify today, and I look forward to your questions.

Mr. PITTS. Thank you.

Mr. is it Estes-Smargiassi? You are recognized or 5 minutes.

STATEMENT OF STEPHEN ESTES-SMARGIASSI

Mr. ESTES-SMARGIASSI. I am here today on behalf of the American Water Works Association.

What I would like to do today is to discuss how what we already knew about the issues of lead in drinking water was underlined and emphasized by the events in Flint and some of what we think needs to be done going forward. I will do that in part by focusing on the recent recommendations of the National Drinking Water Advisory Council, MDWAC. And I would say that the AWWA Water Utility Council and its Board of Directors have both voted to support those recommendations.

I will concentrate on three principle elements of shared responsibility. First, the important role of corrosion control in reducing the natural tendency of water to dissolve lead and other metals. Second, that we, as a Nation, must do more to reduce the amount of lead-containing materials that are in contact with the water we drink, especially the lead service lines connecting our older buildings with the water mains in the street. And third, how water supply and public health professionals can effectively communicate about the risks of water—of lead and work with our customers to reduce and eliminate those risks.

Flint should have but did not do corrosion control treatment when they switched sources. It was required by the LCR. It is sound water treatment practice. It is not clear exactly why they didn't do it. What is clear is that treatment can dramatically reduce the corrosivity of water. In the Boston area, we began monitoring corrosion control treatment in 1996, after careful planning, pilot testing, consultation with national experts. We went from having some of the highest levels in the Nation, being able to show our customers a 90 percent reduction.

That same success story was repeated across the country, prompting the NDWAC to recommend that the requirements and guidance for corrosion control treatment be retained as the rule is revised and strengthened. The NDWAC specifically recommended retaining the current rule requirements to reassess corrosion control if changes to source water and treatment are planned. Even before the publicity surrounding Flint, the group underlined this existing provision as key to protecting public health.

The NDWAC called for additional monitoring and the effective use of that date to ensure that treatment was being operated in a consistent manner and that water systems be required to review EPA guidance and update treatment as the science of corrosion control advances.

While the root of the problem in Flint was that corrosion control was ignored, it was the fact that perhaps half of the homes still had lead services that caused lead exposures to rise so significantly. Estimates are that there are about 6 million lead service lines in the U.S. installed a long time ago. They have been gradually replaced but the existing rule has not been effective at mandating substantial reduction. These factors caused NDWAC to rec-

ommend that over the long-term all lead services should be replaced from the main all the way to the house.

The NDWAC recognized that a national program of lead service line replacement would need to be implemented locally, that each water system might have a different approach to dealing with the complex issues of identifying lead services, communicating with the property owner about the need to replace their portion and dealing with issues of cost, access and need of authority.

The recommendation called for ongoing and regular outreach and efforts continue until every last service line is replaced.

My system just announced $100 million zero-interest loan program our member communities to remove funding as an impediment to progress. Boston just enhanced their incentive program, doubling their subsidy to $2,000 and a no-interest repayment period to 48 months.

The NDWAC also called for improved access to information about the location and ownership of lead services. A good example is the Boston Web site. Type in an address and up pops a map showing lead services.

AWWA believes in a future with no lead services. In the meantime, we need to do better informing the public. That was a significant failing in Flint, a lack of transparency and a failure to take their customers' complaints seriously.

The NDWC recommended targeted outreach to consumers with lead services and other vulnerable populations be a regular part of communication efforts and that the lead data be accessible. They also called on EPA to establish a national clearinghouse and Web site to provide up-to-date risk information, communication templates for use by water systems, models brochures, videos targeting different topics and audiences. AWWA is already providing additional materials for use by its members in their outreach.

At the MWRA, we believe in transparency. All of our samples, collected under the LCR since 1992 are up on our Web site. We believe that public data provides public confidence.

In summary, making further progress on lead is a shared responsibility. Water systems have made substantial investments in successful corrosion control and the enhancements recommended by the NDWAC should help many water systems do even better. As a community of professionals, water systems are committed to effective programs to alert our customers if they have lead services, to communicate the risk and to work with them to replace them.

Our State and Federal regulators must exercise responsible oversight and provide useful technical assistance, especially to smaller systems.

We and our partners in the public health community can implement more effective outreach so our customers are informed and empowered to make sound decisions about their drinking water.

Thank you for the opportunity to appear today.

[The prepared statement of Mr. Estes-Smargiassi follows:]

Flint Water Crisis: Impacts and Lessons Learned

Testimony by
Stephen Estes-Smargiassi
Director of Planning and Sustainability
Massachusetts Water Resources Authority

for
American Water Works Association

before the
House Subcommittee on Environment and the Economy
and Subcommittee on Health

April 13, 2016

Summary

Good morning, Chairmen Shimkus and Pitts, Ranking Members Tonko and Green, and members of the subcommittees. My name is Stephen Estes-Smargiassi, and I am the Director of Planning and Sustainability for the Massachusetts Water Resources Authority. I am here today on behalf of the American Water Works Association.

Established in 1881, the American Water Works Association is the world's largest nonprofit, scientific and educational association dedicated to managing and treating water, the world's most important resource. With approximately 50,000 members, AWWA provides solutions to improve public health, protect the environment, strengthen the economy and enhance our quality of life.

AWWA deeply appreciates this opportunity to offer input on the critical issues the subcommittees are addressing today: learning from the past and present, and looking to the future to protect the American people from the potential dangers of lead in drinking water.

Society has made significant progress in reducing children's exposure to lead over the past four decades with the removal of lead from gasoline, an on-going focus on lead paint and

dust, and the use of corrosion control in water systems to substantially reduce the amount of lead leaching into drinking water. Children's blood lead levels have dropped dramatically, but our goal is zero and more can and must be done.

Water systems have made substantial investments already in corrosion control, and the enhancements recommended by the National Drinking Water Advisory Council (NDWAC) should help many water systems do even better. At the Massachusetts Water Resources Authority, we have substantial experience – and success – in addressing lead in water through carefully planned and executed corrosion control measures. I will detail these in my testimony below. We have taken an additional step to further remove the risk of lead from water by initiating a unique program offering $100 million in zero-interest loans to member communities to help them remove lead service lines.

As a community of professionals, water systems are committing to developing effective programs to alert our customers if they have lead services, to communicate the risks associated with those lead services, and to work with them to replace them. We and our partners in the public health community, working with CDC and EPA, can implement more effective outreach and communication about lead so that our customers are informed and empowered to make sound decisions about their drinking water. At MWRA, we found partnering with local public health officials and other stakeholders to be essential to educational efforts on lead.

Making further progress on this issue is a shared responsibility. No one party can resolve the issues on its own. Local governments and water systems must continue to commit or enhance effective corrosion control treatment and distribution systems, licensed operators must continue to be informed and vigilant, state and federal drinking water regulators must continue to exercise or enhance responsible oversight and provide useful technical assistance especially to smaller systems. And of course, we must continue to provide our customers with the information they want and need to work with us in reducing risk and enhance those efforts

Experiences with lead

In the 29 years that I have worked at the Massachusetts Water Resources Authority (MWRA), I have been deeply engaged in managing the intersection of public health protection, outreach, education and disclosure, and the development and operation of water infrastructure, especially as it relates to issues of lead leaching into drinking water from home plumbing and service lines. The MWRA is the wholesale water and sewer service provider to 61 cities and towns primarily in eastern and central Massachusetts, including our capital city of Boston, serving about 2.5 million people. I have been directly involved in lead and public health issues

since 1993. I participated in EPA's 2004 and 2005 Lead and Copper Rule Review Expert Workshops, and served on working groups of EPA's statutorily-created NDWAC, which addressed improvements to the federal Lead and Copper Rule in 2005/6 and 2014/15.

Today I will discuss what we knew about lead in drinking water before the Flint, Michigan incident, how the events there underscore the importance of the actions water providers take to protect against lead exposure, and what we at the American Water Works Association believe should be done going forward to manage risk. I'll do that in part by discussing how the MWRA has successfully reduced lead levels at customers' taps by more than 90 percent since the federal Lead and Copper Rule (LCR) came into effect in 1991, and in part by focusing on the recently released NDWAC recommendations for improving the Lead and Copper Rule. AWWA's Water Utility Council and its Board of Directors have both voted unanimously to support the NDWAC's recommendations.

While there are numerous aspects to this issue, I would like to concentrate on three principal elements for managing the risks of lead in drinking water: first, the important role of corrosion control in reducing the tendency of water – the universal solvent – to dissolve lead and other metals; second, the growing consensus that our nation must do more to reduce the amount of lead-containing materials that are in contact with drinking water – especially lead service lines connecting many older homes with water mains in the street; and third, how water supply and public health professionals can effectively communicate about the risks of lead and work effectively with our customers to reduce or eliminate those risks.

All three of these key elements are necessary, and must proceed in parallel to achieve the desired outcome of increased risk reduction.

Corrosion Control Treatment

As water suppliers, the first and most important thing we can do to manage the potential risks of lead in drinking water is to have effective corrosion control treatment in place and to reliably and consistently operate that treatment.

As I mentioned above, and as we all learned in high school chemistry, water is the universal solvent. While that attribute of water enables it be the "solvent for life" and the key ingredient in all of life on this planet, it can also result in our drinking water leaching metals along the way from source to tap. Once water leaves our water treatment plants, it can come into contact with iron pipelines, especially in older communities with miles of old, unlined cast iron water mains; lead, iron, steel, or copper service lines connecting homes and businesses to the mains in the street; and then copper, brass, galvanized iron, lead solder and other materials in the premise plumbing within those buildings. As water suppliers, we work to manage the interaction of our water with all those materials, adjusting the chemistry to reduce the

potential for metals leaching out. It is important to note that our efforts focus on all different types of metals, not just lead alone.

Some waters are naturally non-corrosive by nature. Their pH, alkalinity and natural dissolved constituents render them less aggressive to metals. For all other waters, active measures to control corrosion are necessary. As you have probably learned by now, the EPA Lead and Copper Rule requires that all water systems serving more than 50,000 people to have corrosion control in place, and requires smaller systems to install it if their sampling for lead in high-risk homes indicates that it is necessary.

If corrosion control is necessary, it is important to select the appropriate treatment for the source water being treated, to operate the treatment effectively, and to do it consistently. Let me illustrate this with our experience over the past 25 years at the MWRA.

MWRA Experience with Corrosion Control Treatment

MWRA's source water is the well-protected watersheds of the Quabbin and Wachusett Reservoirs in central Massachusetts, 45 and 70 miles west of Boston. These exceptionally pristine supplies provide excellent source water, with no wastewater discharges and relatively little development, so they yield water with few pollutants or pathogens, and require substantially less treatment than many of the supplies our peers deal with. They provide a naturally soft and slightly acidic water which tastes great, and is excellent for shampooing – producing great lather.

That naturally soft water does mean that the water is aggressive to metals and requires corrosion control treatment. MWRA and its predecessor agency had been providing corrosion control treatment with simple pH adjustment since the 1970s, meeting the drinking water requirements of that time. When the new Lead and Copper Rule (LCR) came into effect in 1991 with new testing requirements and an Action Level of 15 parts per billion (ppb)(or micrograms per liter), it was immediately clear that more needed to be done. Test results taken under the new rule in 1992 showed that 90th percentile levels of lead in the high-risk homes required to be tested – those with lead service lines or relatively new lead solder – were more than four times the Action Level of 15 ppb. In one national news study, four of MWRA's 51 water service communities were among the nation's top 10 for high levels of lead – a dubious honor. New corrosion control treatment was needed.

At the same time, a number of other new EPA regulations were coming into effect, and a series of important changes in MWRA's treatment and distribution system were likely to be required. MWRA reached out to our state and federal regulators at that time about planning and scheduling all these important mandated changes. It was suggested that MWRA bundle all the new requirements, and move ahead with treatment changes to meet all the new rules,

with a clear acknowledgement that that would mean delaying beyond the LCR regulatory deadline of January 1997, under an agreed-upon legally binding schedule.

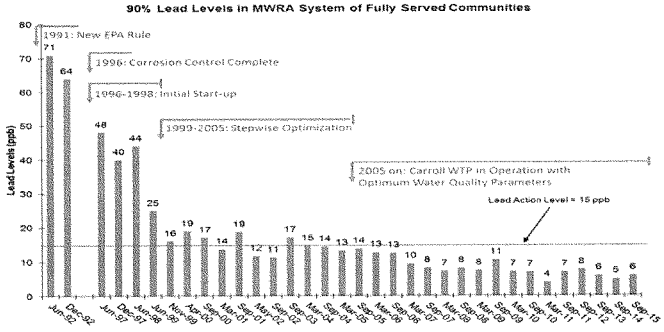
While this bundling offered the opportunity of increased cost efficiency, MWRA's management team and Board of Directors choose to reach out to a group of stakeholders before making a decision. A group of public health and environmental advocates, pediatricians for Children's Hospital in Boston, staff from the Women, Infants and Children (WIC) program, public health professionals from the state and city, as well as MWRA and regulatory agency staff gathered for a series of discussions reviewing the data and options. Out of that process came two clear recommendations - proceed with using an interim corrosion control treatment facility until the new permanent treatment would be placed into service, but equally important, develop an enhanced relationship with our public health colleagues to help with outreach to the most vulnerable of our customers. I'll say more about the second aspect later.

This fast-track approach to corrosion control would not be executed without careful planning. Bench and pilot scale testing – essentially miniature treatment plants, complete with simulated home plumbing with lead and copper components – were set up to test out different treatment alternatives and chemical doses. All aspects of corrosion and other treatment objectives were examined, not just lead, but iron corrosion and disinfectant effectiveness. It was important that changes we made to manage lead corrosion not result in problems with discolored water or compromise our ability to protect water quality as it traveled through more than 6,000 miles of MWRA and community pipelines.

Both of the two principle methods of corrosion control were examined: use of a phosphate-based corrosion inhibitor and adjusting the pH and alkalinity of the water to reduce its aggressiveness and improve its buffering capacity to provide a stable higher pH throughout the distribution system. In addition to our own staff and engineering design consultants, MWRA assembled an expert panel to review the results and assist us in making a final decision. The panel included academic, consulting and governmental experts from across the country. Discussions with the expert panel were conducted in an open meeting format, with a wide variety of stakeholders invited to not just listen in, but participate. Staff from our state and federal drinking water regulators and public health agencies, environmental and public health advocates, and staff from a number of our fully or partially supplied communities were all present and active participants. Both forms of corrosion control worked well in MWRA water. However, based on consideration of how our water was mixed with local supplies by a number of our partially supplied communities, environmental concerns about the use of phosphate on regional receiving water bodies, and the need to maximize the stability of our chloramine residual disinfectant, the panel and MWRA staff recommended proceeding with the pH and alkalinity approach.

MWRA was able to complete the $6.5 million fast-track design and construction process in 1996, well ahead of the regulatory compliance deadline. But again, starting up a new treatment process calls for careful consideration of transition issues and avoiding the potential pitfalls of dramatic changes in chemistry. Our expert panel worked with us to plan out a startup period, and then a cautious step- wise evaluation and optimization process to carefully adjust water chemistry and review the results. (We've continued the practice of vetting all significant treatment changes with an expert panel.)

The results were nothing short of dramatic. Even during the initial startup with treatment parameters not yet at optimum levels, lead levels at consumers' taps dropped quickly. As treatment was optimized, levels continued to drop, and we can now tell our customers that lead levels in consistently tested stagnant water in high risk homes have dropped by more than 90 percent from before treatment was put into place. The chart below shows the dramatic improvements in the required 90th percentile results over time from 71 ppb compared to the 15 ppb Action Level in 1992 to only 6 ppb in 2015.



While the 90th percentile results show one measure of improvement, another key measure is in some ways even more encouraging. When we look at the details of the data, in MWRA's case about 450 samples for each sampling round, we can see more and more of our customers have lower and lower levels of lead, even in these worst-case stagnant water samples. In 1992, only 11 percent of the samples were below 1 ppb – non-detectable by the typical analytical method, and 26 percent were below 5 ppb. In our most recent sampling in 2015, fully 66 percent were below 1 ppb and 87 percent were below 5 ppb. (97.5 percent were below the Action Level of 15 ppb.)

MWRA's experience is not unique. Most water systems across the country can claim similar results from their effectively implemented and operated corrosion control treatment. It is this record of success with corrosion control which prompted the National Drinking Water Advisory Council (NDWAC) to recommend that the Lead and Copper Rule remain a treatment

technique rule, and that requirements and guidance for corrosion control treatment be strengthened.

NDWAC Recommendations on Corrosion Control Treatment

The NDWAC recommendations to EPA on how to strengthen both the Lead and Copper Rule and its implementation related to corrosion control treatment had several key components.

First, and in the context of the situation in Flint Michigan, perhaps most importantly, the NDWAC explicitly recommended *"retaining the current rule requirements to re-assess [corrosion control treatment] if changes to source water or treatment are planned"*. It is worth noting that the working group developing the recommendations did not need to call out what it felt did not need changing in the existing LCR, but even before the publicity surrounding Flint occurred believed that this existing provision deserved to be underlined as a key element of protecting public health. Failure to follow this existing requirement seems to be at the root of the problems in Flint.

The science of corrosion and corrosion control continue to advance, and we can expect that we will know more in the future than we know now. An adequate or excellent solution today may be able to be made even more effective in the future. For this reason, the NDWAC recommended that water systems be required to *"to review updates to EPA guidance to determine if new scientific information warrants changes"*. As it stands now, EPA periodically updates its technical guidance manuals with the latest peer-reviewed science. This new requirement would affirmatively require that each system work with its state drinking water primacy agency to determine whether any of the changes in the updated guidance should be implemented in that system, ensuring that continuing progress is made in reducing the potential for lead corrosion. It is worth noting that the effectiveness of this recommendation will depend in part on EPA's resources and ability to advance the state of knowledge. Congress can do its part in providing adequate budgeting and priorities to the agency.

The need to operate any corrosion control treatment system effectively and consistently in order to achieve the optimum results caused the NDWAC to recommend that the Lead and Copper Rule be revised to *"tailor water quality parameters (WQPs) to the specific [corrosion control treatment] plan for each system, and increase the frequency of WQP monitoring for process control"*.

There are two parts to this recommendation. The LCR requires that each corrosion control treatment system have certain measurable water quality parameters, which can be used to determine if the system is being operated as originally designed and permitted. It was clear to the group that by emphasizing attention to these useful indicators of performance, that water systems, in coordination with their state regulator, could refine performance goals for treatment. This is particularly the case in which small and medium water systems have

achieved compliance with the lead Action Level without having had to add specifically identified corrosion control treatment processes (because their water was naturally non-corrosive or because other pre-existing treatment processes designed for other treatment objectives had achieved that status) that there was no way of assessing whether those conditions were being maintained. The recommendation calls for every system—rather than the limited subset required to have such parameters under the current rule--to have such indicators, and that that performance ranges for these indicators be controlled tightly enough that they are meaningful.

The second part of the recommendation is that the frequency of collection be increased for many systems to ensure that the treatment processes perform consistently, and that modern process control techniques be implemented to help the licensed system operators effectively reduce variation in corrosion control treatment processes.

Taken together, these recommendations should reduce the likelihood that water systems experience episodes of significantly increased lead levels, and should gradually improve the effectiveness with which treatment reduces lead leaching. Given the national success of corrosion control at reducing lead levels since 1992, the NDWAC recommendations represent positive important incremental steps forward.

The safety of our water supplies depends on responsible oversight by our state and federal regulators, periodic inspections and reviews by those regulators, motivated well-trained licensed water treatment operators and technical assistance by the state and federal government to support those operators and systems, particularly smaller ones with fewer resources.

In other congressional hearings, we have heard recognized experts investigating the situation in Flint say that situation was not a failure of the science of corrosion control, nor was it a failure of the Lead and Copper Rule. The existing rule structure specifically addressed what should have happened: an appropriate evaluation of the change in source and treatment by the system and the state regulator, and an affirmative requirement that a system the size of Flint must have corrosion control in place, which was ignored.

Replacement of Lead Service Lines

The root of the problem in Flint was that implementation of corrosion control was ignored when the community's source of water and treatment processes changed. However, perhaps half of the homes still had lead services and their presence contributed to lead exposures rising significantly. While lead solder and brass fittings and fixtures in the premise plumbing can contribute lead to stagnant water, in a home with a lead service line, the substantial mass of lead in contact with water is that service line. While corrosion control is effective at

reducing drinking water lead levels, the potential risk of substantially elevated levels remains as long as lead service lines remain.

Recent estimates published in *Journal AWWA* show that there are about 6.1 million lead service lines still extant across the US. Many water systems have been gradually replacing lead services as part of their on-going system maintenance, asset management and rehabilitation programs, but the existing Lead and Copper Rule has not been effective in requiring a substantial reduction in the number of lead service lines. In fact, the existing rule has created incentives which can make exposure risk greater.

The service line extends from the water main in the street to the building. We typically think of it as having two parts – the portion in the public way, usually but not always owned by the water system, and the portion on private property, almost always owned by the property owner.

Under the current LCR, if a system exceeds the lead Action Level, it is required to replace seven percent of its lead service lines annually, but only for as long as it is above the Action Level. Two consecutive six-month rounds of samples below the Action Level end the requirement. Most systems which exceed, quickly return to being below, and thus most mandatory lead service line replacement programs begin and end within a year. Besides the obvious fact that only seven percent would be replaced, the requirement creates a situation where systems are forced to immediately implement a difficult program with little preparation, little effective outreach to consumers and with an uncertain end date. That has frequently resulted in what is termed a partial replacement, in which only the portion in the public way is replaced, leaving the private portion in place. When the LCR was promulgated, it was generally thought that while removing half the lead service line was not ideal, it would result in some benefit in lead exposure and thus public health benefit. More recent research indicates that elevated lead levels may continue for weeks or months and substantive long term reductions may not be realized. Disturbances of the lead service line from construction or even fully replacing it can cause a temporary increase in lead levels, calling for better communication and ways to mitigate this risk as discussed below.

NDWAC Recommendations on Lead Service Lines

These factors prompted the NDWAC to recommend to EPA that the LCR be revised to require that over the long term, all lead services be replaced, from the main all the way to the house; that is, both the public portion and the private portion.

Given the wide variety of legal and political circumstances of water systems and communities across the country, with different levels of legal authority to spend money or work on private property, the NDWAC recognized that a national program of lead service line replacement would need to be implemented locally – that is each water system might have a different

approach to dealing with the complex issues of identifying where there were lead service lines, communicating with the property owner about the need to replace their portion and dealing with issues of cost and access. The recommendation focused on substantially strengthening educational outreach efforts to owners of lead services to motivate them to participate in replacement programs. Recognizing that in some cases individuals would have no current interest in doing so, the recommendations called for on-going and regular outreach, anticipating that ownership or circumstance would change over time and a decision to replace the line would eventually result. Efforts would continue until every last lead service line was replaced.

The recommendation called for removal of five percent of the inventory of lead services per year in the early years, with lower rates as the inventory approached zero. Intermediate three-year milestones were set, and the inability to reach a milestone would require more aggressive program elements of outreach and incentives to bolster participation. The group's vision was that the nation should be able to look toward a time when all lead services are gone, and significantly less lead was in contact with our drinking water.

The NDWAC also called for improved access to information about the existence of lead service lines similar to what is offered on the Boston Water and Sewer Commission website as discussed below.

The American Water Works Association's CEO David LaFrance drafted a widely circulated op-ed (attached) concluding with the line *"no one should have to question the safety of water at the tap. It's not a matter of whether our communities should get the lead out; it's a question of how and how long it will take. For the sake of public health, let's figure that out and get on with it"*. We do believe in a future with no lead services.

AWWA is also conducting research on more effective ways to clear out home plumbing after lead service line replacement, developing new standards for state-of-the-art lead service line removal techniques and on member outreach and education to spread best practices throughout the water sector.

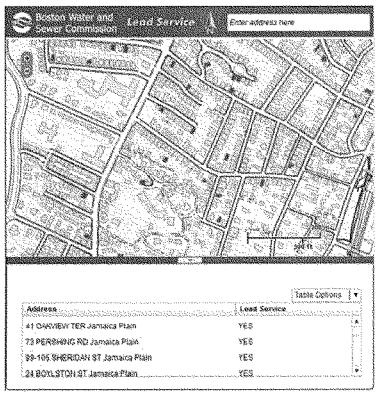
Lead Service Line Programs in the Boston area

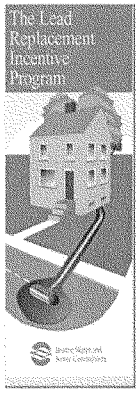
The MWRA Board of Directors voted at its March meeting to create a pool of $100 million in zero-interest loans to its member communities specifically for the sole purpose of fully removing lead services from the water main to the building. This new program supplements an existing program of zero-interest loans for cast iron main replacement and other water quality improvements (including any work with lead services), and is intended to remove funding as a reason not to proceed with full lead service line replacement at the local level. While the program details will be finalized over the next couple of months, the program will be up and running before the summer and has created substantial interest among our

member communities. The 51 communities in the MWRA region have only about five-to-six-percent lead service lines out of their approximately 500,000 service connections, and we anticipate that program funding is sufficient to have all of them replaced.

Boston, MWRA's largest customer community with a population of more than 650,000, has had an aggressive incentive program to encourage homeowners to replace their portion of the lead service for more than a decade. The Boston Water and Sewer Commission (BWSC) maintains open agreements with contractors to replace service lines at an annually bid competitive price. If a property owner wants to replace his or her lead service line, BWSC would arrange for the work to be done, subsidize the first $1,000 of the cost and bill the owner at no interest on his or her water bill over the next 24 months. In early April, BWSC announced that it was enhancing the program – doubling the subsidy to $2,000 and the repayment period to 48 months.

In addition, the BWSC maintains an on-line lead service map allowing anyone to check whether his or her home (or any other property in the city) has a lead service line. The inventory is continually being up-dated as additional information becomes available, and provides a valuable tool for renters or property purchasers. (See www.bwsc.org)





There are important opportunities for federal action beyond the Lead and Copper Rule. The NDWAC report lists many non-EPA regulatory actions which could accelerate the replacement of lead services. Additional targeted funding through the state revolving loan funds (SRFs), restructuring of Housing and Urban Development (HUD) Healthy Homes and lead paint funding programs to allow lead service lines to be removed at the same time other interventions are being done, tax credits for removal costs or simply requiring that appropriate notice of the existence of a lead service be given during property transfers. While these may not be directly in the purview of this subcommittee, I urge you to review what the

NDWAC called "Complementary Actions Critical to the Success of the National Effort to Reduce Lead in Drinking Water" and consider ways to further this effort.

I would be remiss if I did not acknowledge and thank Congress for an important step forward just a few years ago. A significant flaw of the 1986 amendments to the Safe Drinking Water Act was that "lead-free" brass was defined in the act as allowing up to eight percent lead. What this meant was that a whole generation of plumbing fixtures and products were purchased and installed that could leach out appreciable amounts of lead. In January 2011, Congress amended the SDWA fixing this flaw, and as of January 2014, consumers can finally purchase brass products that are more genuinely lead free. Over time, this will eliminate one more source of lead in drinking water.

Outreach and education to help customers identify and respond to the risks of lead in home plumbing – especially lead service lines

A recurring theme in communities with highly publicized lead-in-water issues is that customers do not feel that they were adequately informed about the risks and ways to minimize them. Managing and mitigating the potential risk of lead in drinking water is a shared responsibility roles for EPA and state drinking water regulators, public health officials, water suppliers and the public itself. The public relies on the government and on its water supplier to effectively communicate about these issues. Without clear and complete, readily available information, the public is unable to take appropriate action.

Unfortunately, much of the readily available information from federal, state and local health authorities on lead risks has focused on lead paint and lead dust. While these sources frequently represent the vast bulk of lead exposure, and when present represent a significant risk, it has become clear that in any home with lead-containing plumbing, especially those with lead service lines, water can become a sudden and unnoticed source of high lead levels. This almost exclusive emphasis on paint and dust has left an important gap in most people's understanding of potential sources of lead exposure. The NDWAC working group expressed frustration with this state of affairs, and the recommendations reflect that. We, meaning all parties, must do more to resolve this gap.

NDWAC Recommendation on Outreach and Education

The need for improved outreach and education efforts was a major focus of the NDWAC working group's discussions, and plays a key part in the recommendations.

As discussed above, an important component of the recommendations is that information about the location and ownership of lead services be readily available, and that targeted outreach to consumers with lead service lines and other vulnerable populations be a regular

part of communications efforts. All communications would include clear information about the potential risks of having a lead service line and how to get it replaced.

The recommendations call for EPA to work with risk communication experts to draft templates for water systems to use and provide a list of key topics which should be addressed. The recommendations also call for updating the Consumer Confidence Report (CCR, the annual report on water quality provided to every customer) with additional information on lead services and more specific health risk information.

An important element of the NDWAC recommendations called for EPA to establish a national clearinghouse and website of lead information. The clearing house would provide up-to-date risk information, communication templates for use by water systems, model brochures, videos targeting different topics and audiences, and key elements would be available in multiple languages. The concept was to be sure that the best information was available to all members of the public and to every water system, in contrast to the current situation, which handicaps smaller systems, and shortchanges those less proficient in English.

The American Water Works Association's is already providing additional educational materials for use by its members in improved customer outreach.

MWRA Outreach through the WIC Program

I mentioned earlier that one of the recommendations of MWRA's stakeholder group back when the LCR was first issued was to focus additional education efforts on the most vulnerable population. As a result of that recommendation, MWRA worked with the Women, Infants, and Children (WIC) program, designing brochures which had a simple message on avoiding lead risks from home plumbing. The brochure had a magnet to attach it to a refrigerator, and had the information in several languages.

The WIC program also modified one of its early post-partum visit protocols to include a section on lead and water. As program officials reached out to new mothers, they had a simple message, not overly complicated, but easy to follow, and presented at the critical time.

The message they recommended is to simply run the water before using it for drinking or cooking. There is no lead in the source water, or in the water mains. Any lead in the water comes from the water sitting stagnant in home plumbing or lead services: simply letting the water run for a short time until it is fresh results in lead-free water. We also provided information on how to get water tested.

Interestingly, the public health professionals in our stakeholder group were concerned that our efforts to educate about lead in drinking water would take attention away from the larger

and more pressing risks of lead in paint and dust, hinting at the on-going problem of maintaining a communication effort that effectively discusses all lead hazards.

MWRA's Communication Efforts in the Wake of Flint

When the Flint issue began to garner national press attention, MWRA developed a simple explanation for its customers, explaining what happened there, and how the MWRA water system was different. A link to that factsheet and to a wealth of lead-related information stays right at the top of MWRA's web site, helping to restore our customers' confidence in their drinking water (www.mwra.com/04water/html/lead/020916-mwra-different.pdf). Our message was that we understood what happened in Flint, but that our treatment was being properly operated, our source water was not changing, that our lead results were very positive, and most importantly that all the information that they needed to confirm that was available on our web site, focusing on our policy of transparency.

All of the samples collected under the LCR since 1992 are up on the MWRA web site, as well as multiple data summaries showing where we were and the progress made, updated each time we collect additional LCR samples. While as a wholesaler MWRA has no lead services, the MWRA web site has information on how to find out if you have one, and links to Boston's information. There are links to current water quality data (updated monthly, with a multi-year archive for reference), information on how to get your water tested, and a water quality hot line (617-242-LEAD). MWRA believes that sharing the data that makes us confident in our water quality helps our customer have the same confidence.

MWRA is not alone in these types of successful corrosion control, lead service line replacement efforts, and public transparency and outreach efforts. I offer these as concrete examples of the type of best practices in use and being considered at water systems across the country to reduce the potential risk of lead leaching into the water our customers consume.

Thank you again for the opportunity to appear today. I will be happy to answer any questions or to provide you with any other assistance I can, now or in the coming months.

AWWA PRESS RELEASE

Op Ed from David LaFrance - Together we can get the lead out

March 11, 2016

By David LaFrance CEO, American Water Works Association

If there is one lesson to be learned from the Flint crisis, it is this: Our communities will be safer in the long run with no lead pipes in the ground.

That's why the board of the American Water Works Association – recognizing our first core principle is the protection of public health -- voted unanimously on March 7 to forge on a path toward the removal of all lead service lines. AWWA believes that as water professionals and a broader society, we should seize this moment of increased awareness to develop solutions for eliminating all risks from lead in water.

To be clear, most water professionals are perplexed – even stunned -- at what transpired in Flint. They take seriously their obligation to protect the families in their communities. They know in most cases lead risks in tap water can be effectively managed through corrosion control at the treatment plant. They monitor water for changes in water chemistry and quality. They are not satisfied to simply meet minimum regulatory requirements.

But the Flint crisis lays bare a simple fact: As long as there are lead pipes in the ground or lead plumbing in homes, some risk remains.

A survey published March 10 by the American Water Works Association suggests there are about 6.1 million lead service lines nationwide. If the average cost of replacing each one is $5,000 – a reasonable estimate – the collective cost could easily top $30 billion. This is in addition to $1 trillion needed over 25 years to repair and expand buried drinking water mains.

There is an added complication in that most lead service lines are owned partially by the utility and partially by the property owner, and in many cases property owners would be challenged to meet their portion of this unexpected expense. So as communities and as a broader society, we must now advance a serious discussion on how we pay to replace those lead pipes.

Some utilities have already overcome barriers to lead service line removal. The Boston Water and Sewer Commission, for example, offers customers $1,000 direct credits toward the cost of removing lead service lines and two-year, interest free payment schedules for the balance of the work. In Lansing, Michigan, just 50 miles from Flint, the utility is in the uncommon position of owning its service lines from the main to the home. By January 2016, it had replaced all but 650 of its 14,000 lead service lines in just over a decade, using money generated from general ratepayers. Across America, there may also be opportunities to learn from and expand existing government assistance programs that address more common sources of exposure such as lead paint, dust and soil.

There is good news in the broader battle against lead in water. Even before the Flint situation was widely known, the U.S. Environmental Protection Agency was in the process of revising the Lead and Copper Rule, which requires utilities to collect samples at high-risk homes in order to determine if lead is leaching into the water. On Dec. 15, the National Drinking Water Advisory Council recommended that utilities create plans for engaging customers to remove all lead service lines in their entirety from their systems. It also advised that utilities should do more outreach to customers on lead, including assisting them with testing their water. By formally supporting the council's recommendations, AWWA is declaring a bold new front in the battle against lead exposure.

For those of us in the water profession, Flint reminds us that our first and most important job is to protect the families we serve. A lack of money or political will or technical resources can never be an excuse to put people at risk. From public officials, to water utility managers, to regulators, to chemists, to every operator at the treatment plant and throughout the distribution system, we must renew our commitment daily to providing safe water to our communities.

Part of that commitment implies that we actively communicate with consumers, and about lead in particular. So even if there are plans to remove all lead service lines in the future, consumers should understand how to protect their families today. Homeowners should know how to determine if they have lead service lines, the benefits of removing those lines, and the steps to protect themselves and their families from all sources of lead exposure from water.

As water professionals, we should help at-risk consumers protect themselves. We should provide information on how to sample for lead at the tap and get samples analyzed by certified laboratories. Where lead is a concern, customers should understand their options for limiting exposure, such as purchasing a home filter certified to remove lead, or flushing out the lines after a period of stagnation in order to get fresh water that is coming from the main, or avoiding consuming hot water from the tap, where lead is more likely to be present. AWWA makes tips available at www.drinktap.org.

And of course, if a home has a lead service line, we as water professionals should be committed to working collaboratively with customers, property owners and government to get it out.

In North America, no one should have to question the safety of water at the tap. It's not a matter of whether our communities should get the lead out; it's a question of how and how long it will take. For the sake of public health, let's figure that out and get on with it.

Mr. PITTS. The Chair thanks the gentleman.
Ms. Swallow, you are recognized for 5 minutes.

STATEMENT OF JUNE SWALLOW

Ms. SWALLOW. Thank you.

Good afternoon. My name is June Swallow and I am the Administrator of Rhode Island Department of Health drinking water program and also President of the Association of State Drinking Water Administrators. ASDWA represents the women and men in the 50 States, territories, DC, and the Navajo Nation who are responsible for administering the requirements of the Safe Drinking Water Act.

I also served on the National Drinking Water Advisory Council Working Group that recommended long-term changes to the Federal Lead and Copper Rule. Those recommendations were forwarded to the EPA Administrator in December, 2015.

Today, I will primarily focus on the lessons learned and the path forward.

Flint was something of a perfect storm and we don't believe there are exactly comparable situations in other parts of the country. But it did expose vulnerabilities in our collective approach to providing safe drinking water and these we very much want to shore up. We will learn the lessons of Flint and apply them across the country so that we restore peoples' trust and, most importantly, help ensure safe drinking water for everyone.

Deputy Assistant Beauvais' letter to the 50 States provides a good overall template for our collective near- and medium-term actions. We want to be sure that water systems are implementing and the States are overseeing the current rule optimally and as intended. Where further guidance and clarifications are needed, those gaps need to be filled as quickly as possible.

We will also work with our water systems to go above and beyond what the rule requires, such as transparently sharing information and sample results while working on long-term changes that will further solidify some of those above and beyond steps.

For the long-term, we support the recommendations of the NDWAC, the most important of which is to get the lead out, removing entire lead service lines and installing lead-free plumbing components. To accomplish that lofty, but I believe attainable goal, we need a national effort across Federal, State, and local players, as well as some non-traditional partners, such as the real estate community.

We also support the other key NDWAC recommendations, including establishing a household action level for lead, setting up a lead information clearinghouse, and providing greater overall transparency and timeliness in sharing sampling results with customers. We encourage EPA to move the revisions forward as quickly as possible and will actively assist.

It is not just the lead, though. There are many other challenges. We urge the committee, as it considers this matter and possible actions, to be mindful of the fact that implementing the Safe Drinking Water Act is akin to playing three-dimensional chess. The rule requirements for the 90-plus regulated contaminants must be met all of the time at all of the 155,000 water systems that States oversee, most of which are small. And we, States, EPA, and utilities,

must also be mindful of a host of new and emerging threats from which we need to keep the public safe, such as perfluorinated compounds, hexavalent chromium, perchlorate, and algal toxins, to name but a few.

As critically important as the challenge of addressing lead in water is, we may not shift all of our time, attention, and resources; thus, creating other vulnerabilities.

We also need to be mindful of what we call the multi-barrier source-to-tap approach to this collective task. To best protect public health, the sources of drinking water need to first be protected through a variety of other statutes, authorities, and programs, including the authorities provided under the Clean Water Act, as well as USDA's various programs. Sources of surface and groundwater used by water treatment facilities need to be adequately protected from point and non-point sources of pollution.

We are most successful in our collective efforts when EPA, the States, and local Governments work together in partnership, respecting and fulfilling our various roles and responsibilities. States remain firmly committed to these partnerships and we believe they have been mutually beneficial and essential to protect public health.

Finally, I would like to mention the importance of Support for both physical and human infrastructure. You are well aware of the issue of aging drinking water infrastructure, including service lines, and the costs and challenges of replacement. We appreciate the various bills that are seeking to address this need. Managers of State drinking water revolving loan fund programs stand ready to help in that task.

But, there is also a human infrastructure shortfall in States of which you need to be aware. State drinking water programs need far greater support than they receive now. Congressional support for the Federal principal appropriation for State drinking water programs, the PWSS grant, has been level funded at about $2 million per State for the past decade. To address the increasing responsibilities and assure adequate oversight, at least twice that amount is needed for States.

In summary, we are eager to apply the lessons learned in Flint, while being vigilant about all of the other challenges associated with providing safe drinking water, in collaboration with our Federal and local partners and with congressional support.

Thank you for the time to speak to you today.

[The prepared statement of Ms. Swallow follows:]

Association of State Drinking Water Administrators

WRITTEN AND ORAL TESTIMONY OF JUNE SWALLOW
BEFORE HOUSE ENERGY & COMMERCE COMMITTEE SUBCOMMITTEES:
ENVIRONMENT & ECONOMY AND HEALTH
April 13, 2016

Who We Are

My name is June Swallow. I'm the administrator of Rhode Island's drinking water program and President of the Association of State Drinking Water Administrators (ASDWA). ASDWA represents the women and men in the 50 states, territories, D.C., and the Navajo Nation who are responsible for administering the requirements of the Safe Drinking Water Act (SDWA) within their jurisdictions. I also served on the National Drinking Water Advisory Council's (NDWAC) working group that recommended long term changes to the federal Lead and Copper Rule. Those recommendations were forwarded to the EPA Administrator in December, 2015. Regarding the events of the past several months, I will primarily focus on lessons learned and the path forward.

Reflections on Flint; Lessons Learned

Flint was something of a "perfect storm" and we don't believe there are exactly comparable situations in other parts of the country. But it did expose vulnerabilities in our collective approach to providing safe drinking water that we very much want to shore up. We will learn the lessons of Flint and apply them across the country – so that we restore peoples' trust and, most importantly, help ensure safe drinking water at the tap for everyone.

Steps being Taken in the Near, Medium, and Longer Term

Deputy Assistant Administrator's Beauvais' letter to the 50 state commissioners provides a good overall template for our collective ***near and medium*** term actions: We want to be ensure that water systems are implementing (and states are overseeing) the current rule optimally and as intended. Where further guidance and clarifications are needed, those gaps need to be filled as

quickly as possible. We will also work with our water systems to go *above and beyond* what the rule requires, such as transparently sharing information and sample results -- while working on long term rule changes that will further solidify some of those "above and beyond" steps.

For the ***long term***, we support the recommendations of the NDWAC – the most important of which is to get the lead out: removing entire lead service lines and installing lead-free plumbing components. To accomplish that lofty, but, I believe, attainable goal, we need a national effort involving Federal, state, and local players -- as well as some non-traditional partners, such as the real estate community. We also support the other key NDWAC recommendations including, establishing a household action level for lead, setting up a lead information clearinghouse, and providing greater overall transparency and timeliness in sharing sampling results with customers. We encourage EPA to move the revisions forward as quickly as possible and will actively assist on these important issues.

It's Not Just Lead – There are Many Other Challenges

We urge the committee, as it considers this matter and possible actions, to be mindful of the fact that implementing the SDWA is akin to playing 3-dimensional chess: rule requirements for the 90+ regulated contaminants must be met all of the time at all 155,000 water systems that states oversee -- most of which are small.. And we (EPA, states, and utilities) must also be mindful of a host of new and emerging threats from which we need to keep the public safe: such as perfluorinated compounds, hexavalent chromium, perchlorate, and algal toxins – to name but a few. As critically important as the challenge of addressing lead in drinking water is -- we may not shift all of our time, attention, and resources -- thus creating other vulnerabilities.

The Multi-Barrier Approach

We also need to be mindful of what we call the multi-barrier – source-to-tap – approach to our collective task. To best protect public health, the sources of drinking water need to first be protected through a variety of statutes, authorities, and programs -- including the authorities provided under the Clean Water Act as well as USDA's various programs. Surface and ground

waters used by water treatment facilities need to be adequately protected from point and nonpoint sources of pollution.

The Criticality of Partnerships: State-EPA and the State-Utility

And, we're most successful in our collective efforts when EPA, states, and local governments work together in partnership -- respecting and fulfilling our various roles and responsibilities. States remain firmly committed to these partnerships: we believe they've been mutually beneficial and essential to our collective efforts to protect public health.

Support for both Physical and Human Infrastructure; What Congress Can Do

Finally, I'd like to mention the importance of support for both physical and "human infrastructure." You're well aware of the issue of aging drinking water infrastructure – including lead service lines -- and the costs and challenges of replacement. We appreciate the various bills that are seeking to address this need. Managers of state drinking water revolving loan fund programs stand ready to help in that task. But, there's also a human infrastructure shortfall in states of which you need to be aware. State drinking water programs need far greater support than they receive now. Congressional support for the principal Federal appropriation for state drinking water programs – the PWSS grant -- has been level funded at about $2 million per state per year for the past decade. To address increasing responsibilities and assure adequate oversight, at least twice that amount is needed for states.

In summary, we are eager to apply the lessons learned from Flint, while being vigilant about all of the other challenges associated with providing safe drinking water at the tap, in collaboration with our Federal and local partners – and with Congressional support.

Mr. PITTS. The Chair thanks the gentlelady.

Ms. Wu, you are recognized for 5 minutes for your summary.

STATEMENT OF MAE C. WU

Ms. WU. Thank you. Good afternoon, Chairman Pitts, Ranking Member Tonko and members of the subcommittee. I am honored to have this opportunity to testify before you today. My name is Mae Wu. I am a senior attorney at the Natural Resources Defense Council and I am heartened to see the bipartisan concern and support for the struggles of this community. It is a primary role of Government to make sure that its citizens have access to safe and affordable drinking water and it is failing right now and it is going to take bipartisan and a concerted effort to resolve these problems.

So, I am going to focus my testimony today on three things that we need to do. One, we need to fix Flint. Two, we need to fix the pipes. And three, we need to fix monitoring.

So, the first thing we need to do is we need to help the residents of Flint. The water infrastructure must be immediately repaired and replaced and safe and reliable water must be supplied to them. And for those who have been exposed, then the types of interventions that Dr. Hanna-Attisha mentioned also need to be given to them.

The second thing we need to do is we need to fix everyone's pipes. Even the best run system is going to have lead issues, as long as lead pipes are in the ground. So, a truck rolling by or construction, any of this stuff could help dislodge lead into the drinking water.

And so we need an inventory of where all those lead service lines are and then we need to get them fully replaced but it is not just about lead. The whole infrastructure needs replacing. Leaking pipes contribute to bacterial contamination. It wastes a lot of water and a lot of money and causes serious property damage.

So, I am asking on you all to help identify the mechanisms to fund this necessary overhaul.

The third thing we need to do is we need to fix monitoring. One of the craziest things about Flint was that Flint had no recorded violations of the Lead and Copper Rule. And it is one of the dirty little secrets is that there are some utilities that know how to do sampling to avoid finding problems.

The Lead and Copper Rule's monitoring system is designed to target high-risk homes but some of the utilities can employ techniques that defeat the intent of the rule. And so for example, they could have homeowners flush the water for 5 to 10 minutes before it sits for the 6 hours that are required. They can use the smaller-necked bottles, which force the samplers to use a lower flow of water, which can also lower the amount of lead that gets captured. They can remove the aerators, which have lead particles sometimes get lodged in those. And that can also help lower the amount of lead that gets collected.

And there are many more techniques that they can use. It is wrong and it needs to stop. And EPA can stop these types of activities as it is revising the Lead and Copper Rule.

And I really appreciated Mr. Upton's call for EPA to get the revisions done before 2017.

But I also wanted to address the NDWAC recommendations that have been mentioned several times. As Mr. Beauvais said, because Flint has happened, I think that there are more lessons that can be learned after the report was given out. And so some of those things that should be in the revised rule are a more robust monitoring program that has mandatory and frequent sampling, not voluntary sampling of the tap water in people's homes and in schools. And there should also be a rapid and clear notification to people when the samples detect a problem.

So, on a broader level, when it comes to drinking water, citizens have very limited ability in what they can do in the face of the catastrophic failure of the State and local government. Citizens should be given the ability to bring suits to enforce the Safe Drinking Water Act when there is a substantial and imminent endangerment like there was in Flint. Then they wouldn't have to be at the mercy of EPA waiting to see whether EPA is going to act and exercise its emergency authority over the States.

And finally, an important part of the story that I don't want us to forget in Flint, the Flint community is predominately African American and it has a high percentage of residents living at or below the poverty line or who are working but struggling to make ends meet and communities of color all over this country often bear the burden of environmental contamination and the resulting health problems.

And so as you are working to identify the funding mechanisms to upgrade our drinking water infrastructure, I just urge you to find ways to prioritize assistance going to these communities because we don't want to create a two-tier system, where the wealthy get access to clean and safe water and the less wealthy get second class water.

And so I have other recommendations in my testimony for how we can protect our drinking water and how doing so can help our economy and I would be happy to answer any questions. Thank you.

[The prepared statement of Ms. Wu follows:]

TESTIMONY OF
MAE C WU
SENIOR ATTORNEY, HEALTH AND ENVIRONMENT PROGRAM
NATURAL RESOURCES DEFENSE COUNCIL

BEFORE THE
COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON ENVIRONMENT AND THE ECONOMY
AND
SUBCOMMITTEE ON HEALTH
HEARING ENTITLED
"FLINT WATER CRISIS: IMPACTS AND LESSONS LEARNED"
APRIL 13, 2016

Good morning Chairman Shimkus and Chairman Pitts, Ranking Member Tonko and Ranking Member Green, and members of the Subcommittees. I am Mae Wu, Senior Attorney in the Health and Environment Program at the Natural Resources Defense Council (NRDC). I have served on the EPA's National Drinking Water Advisory Council and on the Federal Advisory Committee for the Total Coliform Rule and Distribution System Rule revision. I appreciate the opportunity to testify today.

As the drinking water crisis in Flint, Michigan has brought into national focus, the safe drinking water we all take for granted in the United States cannot be considered a given. And it's not just about lead.

Much of the recent discussion has been about deferred maintenance and the steady deterioration of the nation's water and wastewater infrastructure, which have been known to be a serious challenge for decades.[1] Calls for modernizing the nation's aging and outdated drinking water treatment plants and distribution systems continue, as they have for the past 20 years.[2] Similarly, we have long known that our wastewater and storm water treatment and collection systems badly need updating.

That's why Flint, while maybe an extreme situation, is not unique. Communities across the country are dealing not only with lead contamination, but also problems with regulated and unregulated contaminants. These problems require improvements to our system of regulating and enforcing existing violations.

Flint reminds us that penny-wise, pound-foolish decisions to save money can yield huge costs to public health, enormous economic costs, and a corrosive impact on public trust of government.

The Human Dimension

We should make no mistake: infrastructure problems may be out of sight and out of mind until it's too late, but they have very real impacts on people. This has come home to me as NRDC has been legally representing citizens of Flint who are directly affected by that disaster.

As an example, let me briefly tell you what happened to Maryum, a mother in Flint whose family's water was seriously contaminated. She, her husband, and two children noticed in 2014 that their water "smelled like rotten eggs," tasted bad, and was brown. They switched to bottled water. But after a month of hearing reassurances of the water's safety from government officials, and because using bottled water was expensive and inconvenient, they went back to tap water.

During this time, Maryum's family suffered from a number of health effects. In June 2014, she had a miscarriage; she had no history of miscarriages. She developed a skin rash, began to get headaches, and, she says, "clumps of my hair began to fall out." Her doctor prescribed treatments which that helped with hair loss somewhat, but she still has a skin rash that won't go away. Her husband also experienced skin rash and hair loss. Her young son had a bad outbreak of eczema on his back after the water change, worse than he had ever had. Medication would not heal the sores; his skin only improved when they stopped bathing him in Flint water.

Maryum says she has read that lead contamination can cause pregnancy complications including miscarriages, and she says "just not knowing whether lead exposure may have caused my miscarriage is painful." She worries about the possible effects of lead contamination on her kids. Since December 2015, her family has only used bottled water. For a long time, there were lines and waits for water at the distribution point at the fire station. Obviously, picking up and having to rely on bottled water is also very inconvenient. She takes her kids to her parents' house for bathing, which is on a different water system. The water crisis, she says, has "taken an emotional toll" on her and her family.

Widespread Health & Environmental Risks from Inadequate Water Infrastructure

There are thousands of stories like this in Flint. Maryum's experience, and that of other Flint residents, illustrates the perils of focusing just on cutting costs and failing to invest in public health and updating water infrastructure.

The EPA cannot shrink from its oversight responsibilities under the Safe Drinking Water Act. When a state is failing to protect the health of citizens from tap water contamination, EPA is obligated to use its oversight authority. While EPA ideally should maintain a cooperative relationship with states, the agency's paramount obligation is to safeguard the public's health. If a state is not swiftly addressing issues that are causing violations or threatening public health, EPA must promptly intervene and take enforcement action when the public is at risk, rather than simply deferring to the state as a "partner."

Although many water utilities have substantially improved treatment in recent years, the public is still drinking water containing contaminants that pose serious health risks in too many cases. The public health threat from our failure to invest in our water infrastructure is enormous. We remain at risk from lead, arsenic, bacteria and other pathogens, cancer-causing disinfection byproducts, the rocket fuel component perchlorate, and many other regulated and unregulated contaminants.

Moreover, our wastewater and storm water collection and treatment systems also are too often not up to the task. Combined sewer overflows (CSOs) are common, when domestic sewage mixes with collected storm water in combined sewers and during precipitation events, causes raw or minimally treated sewage to flow into lakes and streams. CSOs are, according to EPA, "a major water pollution concern for the approximately 772 cities in the U.S. that have combined sewer systems."[3] These CSOs and other shortcomings in our wastewater and storm water systems are often causing sewage contamination of drinking water source waters, beaches, and sensitive ecosystems.

The Safe Drinking Water Act

We need to improve the Safe Drinking Water Act to ensure the quality of our tap water.

The Safe Drinking Water Act requires the EPA to establish standards for drinking water safety. EPA is required to set a health-based Maximum Contaminant Level Goal (MCLG) for each regulated drinking water contaminant, at a level that is fully protective of health.[4] The agency is then required to establish maximum allowable levels of the contaminant called Maximum Contaminant Level (MCL) as close to the MCLG as is feasible, considering technological limitations and costs. EPA has identified about 100 contaminants that pose health risks and are regulated in our drinking water.[5]

If EPA finds that it is not feasible to ascertain the level of a contaminant in drinking water, the agency must establish a "treatment technique" instead of an MCL. A treatment technique sets required methods of treating the water to make it safe to drink.[6] Public

water systems are responsible for meeting the requirements of an MCL or treatment technique, subject to the supervision of state drinking water officials, and ultimately the oversight of the federal EPA.

The Lead and Copper Rule

In 1991, EPA established a complex treatment technique to control lead levels in tap water, known as the Lead and Copper Rule (LCR).[7] Under the LCR, all large water systems (serving more than 50,000 people) must treat their water to optimize corrosion control, or demonstrate that they don't need to do so because their water isn't corrosive and they have no lead problems. The LCR also generally requires water systems to control corrosion by adding chemicals, since corrosive water can cause the release of lead from pipes and fittings. Many systems use a corrosion inhibiter, such as orthophosphate, which coats the inside of the pipes with a thin film that can reduce the amount of lead that leaches into the water.

All water systems also are required to test a specified number of drinking water taps in high-risk areas (with lead service lines that bring water from the water main under the street to a residence, or areas with a lot of homes that are likely to have lead in their household plumbing or fixtures). The bigger the system, the more taps must be tested.

Under the LCR, if more than 10 percent of the tested taps contain lead above an "action level" of 15 parts per billion, the water system must take measures to reduce lead levels. These measures include removing lead service lines over a specified time period. Unfortunately, under the LCR there are unintended but significant incentives for water systems to monitor the lead levels in ways that fail to detect lead problems (such as using monitoring techniques that are less likely to find lead).[8] In the wake of the Flint crisis, in late February 2016, EPA issued a guidance intended to discourage the tricks some utilities have used to avoid finding lead problems.

Lead-contaminated drinking water remains a major problem around the country. The EPA's Lead and Copper Rule (LCR)—and the way states and EPA implement and enforce it—needs a major overhaul.

EPA recently began developing long-term revisions to the LCR. In 2014, the National Drinking Water Advisory Council (NDWAC) established a Working Group to address these revisions. Between March 2014 and June 2015, the Working Group met and discussed a set of recommendations for revising the LCR. EPA has indicated that it intends to propose revisions to the LCR in 2017. The Flint crisis provides a blueprint for the types of improvements that are needed.

It is critical that the revisions to the LCR, at a minimum, include the following: (1) a mandate to fully replace all lead service lines; (2) robust monitoring requirements that fully and fairly monitor problems, and prohibit gaming the system to avoid detecting or reporting lead contamination problems; and (3) a mandate for clear, ongoing, and culturally appropriate public education and notification of lead problems.

Full Lead Service Line Replacement

No matter how optimally a corrosion control system is run, there will always be lead contamination issues, as long as lead service lines are in the ground. The problem of lead service lines is enormous and exists nationwide. While there is no comprehensive national inventory of all of the lead service lines in the country, experts have estimated that 6 to 10 million lead service lines are being used in the United States, serving 15 to 22 million Americans.[9] Most were installed 50 or more years ago. So it is critical that the revised LCR contain an enforceable requirement to fully replace lead service lines on a strict timeline. It is also critical that the service lines be replaced fully; that is, replacement of the service line up to the customers' home or residential building, including on the homeowner's property.

We applaud the American Water Works Association (AWWA), the nation's largest drinking water utility trade association, for its support for complete removal of lead service lines across the country, recently announced by its Board of Directors.[10]

Robust Monitoring Program

Under the current LCR, it is too easy to develop a monitoring program that avoids finding problems. Flint stands as a marked example of this ability to fly entirely under the radar,

since the system reported no violations of the LCR, despite its disastrous lead contamination problems. EPA knows where these gaps exist and should ensure that the LCR is revised to close these gaps. At a minimum, EPA should codify its sampling protocol recommendations to stop the protocols that some utilities have used to "game the system." Specifically, states and water authorities should ensure that every test is valid by prohibiting water sampling instructions to: (a) remove aerators from faucets before testing, since they often capture particulate lead and can be responsible for substantial lead contamination of tap water; (b) pre-flush their tap water 6 hours before the testing, which can reduce the levels of lead detected; or (c) use narrow-necked bottles that make it difficult or impossible to test water rushing out of a faucet at high velocity (as consumers often do when pouring water for a drink or for cooking), when lead levels may be high due to shaking loose of particulate lead.[11]

In addition, the monitoring program should sample more frequently. It should retain and enforce the existing requirement that tap-water sampling target high-risk homes (e.g., those connected to lead service lines or where composition of service lines is unknown.)

Improved Public Notification and Education

The revised LCR should require clear public education notices and notification provisions to ensure customers are aware of elevated levels of lead in the system's drinking water. This should include public education encouraging all homeowners to get their water tested, even if they are not part of the utility's sampling program.

EPA Has Stalled on New Drinking Water Standards

In the 20 years since the Safe Drinking Water Act was amended, EPA has not set one single new drinking water standard without an act of Congress. Rather than being an indication of the safety of the U.S.'s drinking water, this is an abject failure of the process and a demonstration of the numerous barriers to getting contaminants out of our water.

Prior to the 1996 Amendments to the Safe Drinking Water Act, EPA established MCLs for more than 100 contaminants. The amendments created a new process requiring EPA to develop a list of unregulated contaminants that are known or anticipated to occur in public

water systems. This Candidate Contaminant List, or CCL, is published every five years. Once a CCL is finalized, EPA must make a "Regulatory Determination" whether or not to regulate five of the contaminants on the CCL every five years. A determination to set a drinking water standard for a contaminant is based on the following findings:

(1) The contaminant may have an adverse effect on the health of persons;
(2) The contaminant is known to occur or there is substantial likelihood the contaminant will occur in public water systems with a frequency and at levels of public health concern;
(3) In the sole judgment of the Administrator, regulation of the contaminant presents a meaningful opportunity for health risk reductions for persons served by public water systems.

Since 1998, EPA has published three CCLs and a draft CCL4, which all told include more than 100 chemicals and microbiological contaminants. Since 2003, EPA has made three preliminary determinations on 26 contaminants: the agency determined to take no action on 24 of them, delayed final determination on one (strontium), and determined to set a drinking water standard for only one: perchlorate.

Perchlorate—a chemical commonly used in rocket fuel, fireworks, and explosives – contaminates the drinking water of at least 16 million Americans. Even at low levels, perchlorate contamination in drinking water may be harmful to human health. Exposure is particularly dangerous for infants, young children, and pregnant mothers, and may cause developmental delays, reduced growth, and impaired learning capabilities.

In 2011, EPA determined that perchlorate met the three criteria under the SDWA for setting a national primary drinking water standard. The Act requires EPA to propose a drinking water standard within 24 months and publish a final standard within 18 months of the proposed rule. Despite the concerns about the impact of perchlorate on fetuses, it has been more than 63 months since EPA's determination to develop a standard for perchlorate, and EPA has not even proposed a standard.

In fact, EPA identified during the CCL3 process more than 7,000 potential chemical and microbial contaminants – and still not one single drinking water standard has yet come out of this process.

All the while, communities drink water contaminated with hexavalent chromium, pharmaceuticals, and perchlorate. And no one is required to address these contaminants because EPA has set no enforceable standard. As we continue to produce tens of thousands of industrial chemicals that can end up in our drinking water sources, we need our drinking water regulations to keep up. The system in place does not allow any standards for unregulated contaminants to develop in a timely way.

Enforcement Provisions of the Safe Drinking Water Act

On the flip side, violations of regulated contaminants standards rarely lead to enforcement actions either by EPA or the states. States with primacy under the SDWA (all states except Wyoming) are supposed to carefully oversee drinking water systems to ensure that they are in compliance with any EPA requirements such as the LCR. As part of this requirement, primacy states are to regularly report violations and certain other information to EPA. Under the Act, if EPA finds that a water system is in violation in a state with primacy, EPA is to notify the water system and state of the violation. If the state fails to take enforcement action within 30 days, EPA is legally required to issue an administrative order or file an enforcement case in court against the violator.[12] EPA and states often ignore these important mandates in the law.

Additionally, EPA is authorized to immediately issue an administrative order or to bring a case in court if a contaminant "may present an imminent and substantial endangerment to the health of persons," even if no violation of the law is proven.[13] Unlike some other laws (like the Resource Conservation and Recovery Act[14]), the Safe Drinking Water Act does not allow *citizens* to bring an action in such cases to protect their health from an imminent and substantial endangerment—a major shortcoming that should be rectified.

The Safe Drinking Water Act does authorize citizens to sue public water systems that have violated the requirements of the Act after providing 60 days advance notice to the violator, the state, and EPA. Unfortunately, this can mean substantial delays while there is an ongoing health threat. In Flint, NRDC brought such an action on behalf of local citizens including Concerned Pastors for Social Action and other local residents.

Unfortunately, stories of contaminated water are not limited to Flint and are not limited to lead. Drinking water contamination incidents are all too common. According to EPA's most recent annual compliance report for public water systems, there were 16,802 "significant violations" of EPA's drinking water standards.[15] The most common of these more than 16,000 violations were:

- Total coliform bacteria contamination, representing 48 percent of the significant health standard violations;
- Chemical contamination with synthetic organic, volatile organic, inorganic (except lead and copper) and radioactive contaminants, representing 22 percent of significant health standard violations;
- Lead and copper treatment technique violations, representing 5 percent of the significant violations;
- Disinfection byproduct contamination, representing 13 percent of the significant violations;
- Surface water treatment requirements (to control pathogens like *Cryptosporidium* and *Giardia*), representing 7 percent of the significant violations; and
- Ground water treatment requirements (to control for pathogens and fecal contaminants such as certain bacteria and viruses), which comprise 6 percent of the significant violations.[16]

Finally, far too many drinking water treatment plants in the U.S. continue to rely solely on outdated technologies for treatment such as coagulation, sand filtration and chlorination. These technologies can work well to remove some basic contaminants like certain

microorganisms, but cannot remove many of the modern regulated and unregulated contaminants such as pesticides, industrial chemicals, pharmaceuticals, and other chemicals that are widespread in water.[17] We need to invest in modernizing our treatment plants, as some leaders in the industry have done.

Disproportionate Impacts of Infrastructure Inadequacies in Low-Income Communities, and Communities of Color

As is well-known, the Flint community is predominantly African American (57%) and has a high percentage of residents living at or below the poverty line (over 40%), or who are working but struggling to make ends meet. State officials were "callous and dismissive" of the concerns these citizens raised about the water, according to the governor's independent Task Force on Flint.[18]

The obfuscation by government officials, and the denigration of community members and experts who raised concerns, illustrates a pressing nationwide problem. Communities of color all over this country often bear the burden of environmental contamination and the resulting health problems.

In recent years a series of peer-reviewed studies also have documented that unsafe drinking water often is disproportionately associated with lower-income communities of color.[19] Examples include nitrate and other contaminants in drinking water in California's San Joaquin Valley, contamination and substandard water infrastructure in U.S.–Mexico border *colonias* and some minority communities in certain Southern rural areas, and bacteriological and chemical contamination on some Native American lands.[20] Balazs et al. have established that in areas of California "race/ethnicity and socioeconomic class were correlated with exposure to nitrate and arsenic contamination and noncompliance with federal standards in community water systems."[21]

The Flint case is not an anomaly. There is a wide array of factors, including lack of access of lower-income communities of color to resources and government political attention, that help to create a disproportionate and "persistent drinking water burden" in these

communities. [22] In sum, researchers have found that "unequal access to infrastructure drives unequal access to safe drinking water."[23]

There are clear challenges to ensuring that every American gets safe drinking water. We don't want to create a two-tiered system where the wealthy get water that is clean and safe for their families, and the less well-to-do get second-class water that poses risks to their health.

Thus, we need to create an infrastructure investment and structuring system that ensures that communities that cannot afford to upgrade their water infrastructure get a helping hand. The National Drinking Water Advisory Council's Affordability Work Group report on how to address affordability concerns provides an important resource. [24] Among other ideas, the Work Group recommended the creation of Low Income Water Assistance Program (LIWAP), modeled after the Low Income Heating and Energy Assistance Program (LIHEAP), which would help lower-income people afford their water bills if needed. Thus, rather than providing substandard water, all consumers should get top quality tap water, with some assistance to low income people if necessary. Access to clean, safe, affordable drinking water should be available to everyone.

The Backlog of Overdue Investments in Infrastructure

There is a huge backlog of overdue investments in the nation's water infrastructure. The American Society of Civil Engineers (ASCE) has been ringing the alarm bell about our water infrastructure since at least 2001[25], with its troubling report cards giving our water and wastewater infrastructure a grade of "D" or worse every four years.[26] The engineers highlight serious problems that result from the lack of investment in our water infrastructure, noting that pipes and mains are often 100 years old and nearing the end of their useful life, causing frequent pipe failures and other problems.

The evidence of these problems is widespread. For example, there are about 240,000 water main breaks per year due to deteriorating and poorly-maintained underground drinking water pipes.[27] Even more water is lost to unseen leaks and breaks that never reach the surface. Water losses waste not only enormous amounts of this precious resource, but they

also can cause serious damage to roads and property, they can pose significant public health risks. For example, particularly when water mains are close in proximity to sewer lines, fecal contamination can get into the drinking water after a rupture or pressure loss, posing a threat of causing a waterborne disease outbreak.

In many cities, underground pipes are often a century old or more, and in too many cases municipalities are on track to take 200 years to replace their aging pipes.

We routinely lose an average of 14 to 18 percent of our drinking water to leaking underground pipes,[28] although this is just an estimate, since standardized auditing and reporting of water loses is not required in most states.[29] In some cases, such as Flint, water loss rates of 40 percent or more have been estimated. These leaks represent an enormous waste of water, energy, treatment chemicals, and money used to collect, treat, and pump the water. Moreover, points of leakage of any size can provide pathways for contaminants to enter the water system during short-term pressure fluctuations, known as "transients." Thus, leaks can cause water pressure losses, which can, much like catastrophic pressure failures from water main breaks, allow pathogens to get into the drinking water, posing health risks. Improved pressure management is an important component of both infrastructure stewardship and public health protection.

The American Water Works Association estimates that it will cost $1 trillion dollars to upgrade, repair, and maintain our drinking water infrastructure to serve the population as it grows over the next 25 years.[30] Unfortunately, funding for drinking water infrastructure is not keeping pace with the needs. In recent years, Congress has appropriated about $2.37 billion a year for water and wastewater infrastructure combined, funding a tiny fraction of the work needed.[31] While states and localities will need to bear much of the water infrastructure costs as they have for generations, the current federal investment is not making a dent in the problem.

Infrastructure Investment Creates Good Jobs

The good news is that investing in our water infrastructure not only helps to rebuild the base of the nation's economy, which is highly dependent upon reliable, safe drinking water and wastewater service. But major investment in water infrastructure also will create hundreds of thousands or even millions of good-paying jobs.

A recent study found that an investment of $188.4 billion in water infrastructure (an EPA estimate of wastewater-related infrastructure needs) spread equally over five years would generate $265.6 billion in economic activity and create close to 1.9 million jobs.[32] The study found, based on the economics literature, that such infrastructure investments "create over 16 percent more jobs dollar-for-dollar than a payroll tax holiday, nearly 40 percent more jobs than an across-the-board tax cut, and over five times as many jobs as temporary business tax cuts."[33]

Protecting Water Sources Helps to Protect Health and Reduces Treatment Costs

We need a greater focus on source water protection. Uncontrolled and poorly controlled source water pollution from polluters remains a serious problem. Unregulated or poorly-controlled sources that can pose substantial pollution threats include agricultural runoff and factory farm pollution, groundwater and surface water pollution from oil and gas exploration and development, coal and mineral mining, certain industrial sources, and spills and leaks from above-ground hazardous substance tanks. State authorities and EPA could substantially reduce the public health and environmental threats from such polluters, and could reduce the costs of drinking water treatment, by better controlling these pollution sources.

The experience of Des Moines Water Works, which serves 500,000 Iowans with their tap water, is illustrative of how state or EPA intervention to ensure that source water is protected from upstream agricultural pollution could help to keep rates more affordable. As a recent statement from Des Moines Water Works notes,

> Des Moines Water Works meets or exceeds regulatory requirements for drinking water established by the United States Environmental Protection

> Agency.... However, the costs and risks in doing so are increasingly high as Iowa's surface waters demonstrate dangers levels of pollutants.
>
> The increase in river nitrate levels is attributable to upstream agricultural land uses, with the largest contribution made by application of fertilizer to row crops, intensified by unregulated discharge of nitrate into the rivers through artificial subsurface drainage systems.
>
> "Iowa's political leadership, with influence from industrial agriculture and commodity groups, continue to deny Iowa's water quality crisis," said Bill Stowe, CEO and General Manager, Des Moines Water Works. "Defending the status quo, avoiding regulation of any form, and offering the illusion of progress and collaboration, places the public health of our water consumers at the mercy of upstream agriculture and continues to cost our customers millions of dollars."
>
> Des Moines Water Works seeks relief against upstream polluters and agricultural accountability for passing production costs downstream and endangering drinking water sources. In addition, Des Moines Water Works is actively planning for capital investments of $80 million, a cost funded by ratepayers, for new denitrification technology in order to remove nitrate and continue to provide safe drinking water to a growing central Iowa.[34]

While Des Moines may be unusual for its candor, its problems with unregulated or poorly-regulated upstream pollution are hardly so. Problems ranging from routine spills of industrial pollutants on the Ohio River that have led Cincinnati and Louisville to install advanced water treatment facilities at significant expense to ratepayers, are also illustrative.

Similarly, EPA has failed to effectively regulate runoff of the widely used herbicide atrazine which has caused drinking water systems across the country to find the chemical in their water, often at levels in excess of EPA's standard during peak runoff season.[35] In light of EPA's and states' failure to control this problem, a large group of water suppliers sued Syngenta, the manufacturer of atrazine, because they were routinely being required to spend significant amounts to remove the chemical from their tap water.[36] They reportedly

settled the case for $105 million dollars, and according to lawyers involved as many as 3,000 water utilities may be eligible to recoup at least some of their treatment costs.[37]

Another example was the spill/leak of toxic chemicals from a huge above-ground tank at Freedom Industries that contaminated the drinking water of 300,000 people in Charleston, West Virginia in January, 2014.[38] EPA had been charged in the 1972 Clean Water Act with issuing rules to prevent spills and leaks from above-ground tanks storing hazardous substances, but has still not done so. Citizen organizations and NRDC recently entered into a consent decree with EPA to have the agency finally issue those long-overdue rules[39], though the list of hazardous substances required to be covered by such rules still has not been updated to include the chemicals that caused the Charleston disaster.

Many other municipalities have been forced to quietly install treatment to remove or protect against potential contamination from other contaminants from upstream polluters, without recourse against the polluters. A far better approach would be for Congress, EPA and states to crack down on uncontrolled or poorly regulated pollution sources such as agricultural runoff and factory farms, mining, and oil and gas activities, to save ratepayers the expense of cleaning up after the polluters.

Protecting Waters of the United States Will Help Control Infrastructure Costs

As a result of confusing court decisions, millions of miles of streams and tens of millions of acres of wetlands lacked clear protection under the Clean Water Act. As a result, water sources that feed drinking water supplies for 117 million Americans were vulnerable to pollution. So were wetlands that filter contaminants and recharge groundwater supplies, while also providing important flood protection and wildlife habitat. If these waters are not protected against pollution by the Clean Water Act, downstream drinking water systems will have a very heavy burden of cleaning up the water to remove the contaminants, costs that—as in the case of Des Moines and so many other utilities—will be borne by ratepayers rather than the polluters.

EPA and the Army Corps of Engineers finalized the "Clean Water Rule" in May 2015, which helps to clarify which waters are protected under the act—about 60 percent of the nation's bodies of water. The new rule helps to protect a variety of streams, ponds, and wetlands, including those streams that one in three Americans relies on for drinking water. It is important that we continue to protect these waters for current and future generations.

Increasing Challenges to Water Infrastructure from Extreme Weather, Droughts

With increasing challenges from extreme precipitation events, droughts, groundwater depletion, and saltwater intrusion in many coastal areas, our water infrastructure faces new and often unprecedented risks. We see this in the impacts of the California and Midwestern droughts, the steady depletion of the Ogallala Aquifer, and the intrusion of saltwater into the wells used for drinking water in many coastal areas in Florida and California, for example.

It has become crucial for water utilities to plan for these challenges by integrating their water and wastewater planning through approaches such as using "integrated water resources management" or IWRM. Some have referred to this approach as "sustainable integrated water management." IWRM is "a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems."[40] Such integrated planning will become crucial as the impacts of climate change and other challenges become increasingly serious.

Recommendations

There is an emerging bipartisan consensus that we need to increase our investment in infrastructure. NRDC has several recommendations for improving federal water infrastructure investments and controlling costs of such investments:

1. **Fix Flint.** Flint's water infrastructure must be immediately repaired and replaced, and safe, reliable water (i.e. bottled water delivered to residents until tap water is fully confirmed as reliably safe) must be supplied in the meantime. In addition, we support the recommendations of the independent Flint Water Advisory Task Force,

including the recommendation that there be a tracking system to ensure ongoing health protection for those exposed and follow-up studies, treatment, and educational and nutritional intervention, among other important steps.[41]

2. **Fix the Lead and Copper Rule.** Overhaul the EPA's Lead and Copper Rule (LCR)—and the way states and EPA implement and enforce them. At a minimum, the LCR should be fixed to:
    - Require all lead service lines to be fully replaced;
    - More fully and fairly monitor problems, and prohibit gaming the system to avoid detecting or reporting lead contamination problems; and
    - Require clear, ongoing, and culturally-appropriate public education and notification of lead problems.

3. **Fix the Standard Setting Process Under the Safe Drinking Water Act.** When criteria to set a drinking water standard has resulted in no new standards in 20 years, despite the proliferation of drinking water contaminants, there is a problem. Revisions to the cost and feasibility analysis as well as the criteria could streamline the process and allow EPA to move in a timelier manner.

4. **Fix our National Water Infrastructure, Paying Special Attention to the Needs of Lower Income and Disproportionately-Affected Communities.** We need major investment in our water infrastructure, including:
    - Adoption of standardized water loss auditing and reporting methods, as developed and endorsed by the AWWA,[42] to provide the foundation for cost-effective loss reduction and repair strategies;
    - Accelerated replacement of deteriorating water distribution piping;
    - Improvements to the process that utilities use for treating our drinking water.

5. **Increase Federal Water Infrastructure Funding.** Current Congressional funding of $2.37 billion dollars per year *combined* for Clean Water and Drinking Water infrastructure is paltry by comparison to the enormous need. As noted, we must

invest in clean water infrastructure to better protect the source waters of our drinking water supplies, in addition to making investments in our drinking water infrastructure. These investments must be substantially increased, at least to the approximately $8 billion per year combined level funded under the American Recovery and Reinvestment Act of 2009. I note that Mr. Tonko has proposed legislation (HR. 4653) that would more than triple Drinking Water and Clean Water SRF funding, a move we strongly support. As part of the funding strategy, EPA and state agencies managing these investments should prioritize funding (including grants) for water infrastructure improvements in low-income communities and communities of color since they are so often most at risk and have the greatest problems affording new investments. In addition:

- As part of this reinvigoration of the federal infrastructure investment, more flexibility (grants, loan forgiveness) in the SRF is needed for communities that don't have the ability to meet the criteria to pay back the loans but have serious health threats.
- States and municipalities also must play a significant role and join in the investment.

6. **Protect Source Water to Reduce Infrastructure Costs.** The better we prevent source water pollution from a wide array of sources ranging from agricultural runoff, to factory farm pollution from manure, to oil and gas-related pollution, the less ratepayers will need to pay to clean up their drinking water. As we have seen repeatedly in cases like Des Moines, the hundreds of water systems forced to sue the manufacturer of atrazine due to poor regulatory controls on runoff that caused widespread water contamination, and many other examples, an ounce of prevention is worth a pound of cure. A strong Clean Water Rule to protect waters of the United States is an important component of this strategy.
7. **Let Citizens Act Immediately in Cases of Imminent & Substantial Endangerment to Health.** In cases such as Flint, citizens whose drinking water may present an imminent and substantial endangerment to health should be authorized

under section 1431 of the Safe Drinking Water Act to immediately bring an action for relief when the government has failed them.

NOTES

[1] See for example American Society of Civil Engineers, 2001 Report Card for America's Infrastructure. Available online at http://ascelibrary.org/doi/pdf/10.1061/9780784478882

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[4] Ibid, section 1412.

[5] EPA, "Table of Regulated Drinking Water Contaminants," available online at https://www.epa.gov/your-drinking-water/table-regulated-drinking-water-contaminants.

[6] Ibid section 1412.

[7] EPA Lead and Copper Rule, supra note 2.

[8] Marc Edwards et al., Gaps in the EPA Lead and Copper Rule That Can Allow For Gaming of Compliance: DC WASA 2003-2009 (Oct. 2009)

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[14] Resource Conservation and Recovery Act section 7002(a)(1)(B), 42 U.S.C. section 6972(a)(1)(B).

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[16] Ibid.

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[38] See e.g. Testimony of Erik D. Olson, NRDC, Before the Subcommittee on Water and Wildlife of the U.S. Senate Committee on Environment and Public Works, at the hearing entitled Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis, February 4, 2014, available online at http://www.epw.senate.gov/public/index.cfm/hearings?ID=8CCDAFF7-CDC6-8A6F-CA6E-A7017498083C.

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Mr. PITTS. The Chair thanks the gentlelady.

That concludes the testimony of Panel 2. We will now go to questioning. I will recognize myself 5 minutes for that purpose, and I will begin with you, Dr. Mona.

The administration announced $3.6 in Head Start, Early Head Start funding for the City of Flint. Can you elaborate on the impact this intervention will have on the children exposed to lead and their families?

Dr. HANNA-ATTISHA. Yes, great question. So, education is one of the solutions here, and what we do in the 0–5 age range is the most important things, and that is where Early Head Start and Head Start plays a role.

The $3.6 million expands three more classrooms and gives one more year of funding. So, it is a temporary thing for a limited number of children. The children most at risk from this exposure are the infants and the babies and we need funding for at least 5 to 10 years to address those exposed children. So, we are grateful for that 1 year of funding, but it is not enough.

Mr. PITTS. Thank you.

Ms. Alker, thank you for coming to the committee again to share your insights on Medicaid waivers. As you noted in your testimony, CMS moved quickly to approve a waived expanding Medicaid coverage to children and pregnant women. Your testimony explained how children can benefit from early periodic screening and diagnosis and treatment but you didn't mention how the Flint waiver expands coverage to pregnant women and newborns.

Can you talk a little bit about some of the services, benefits available to pregnant women and newborns under the waiver?

Ms. ALKER. Well, newborns should also be subject to the EPSDT benefit that I mentioned. That does provide for comprehensive screening and treatment.

With respect to the pregnant women, I would mention that, and I am certainly not an expert, but there were a few ways in which the waiver could have been improved in my judgment. And there were comments submitted by the American College of Obstetricians and Gynecologists with respect to the pregnant women piece, where they thought the coverage needed to be little bit more comprehensive and I don't think those comments were adopted in the final waiver. So, that would be something that the committee might want to look into.

Mr. PITTS. Thank you.

Director Estes-Smargiassi, what lessons have you learned from the experience in Flint?

Mr. ESTES-SMARGIASSI. It is clear that shared responsibility from the operators to the plant to the folks who deal with financing, to our regulators, to paying attention to citizens is necessary to avoid this type of crisis.

One lesson that I see in this is that we have rules. We need to make sure that the rules are paid attention to. We can't create rules that fix every problem. We need to pay attention, as citizens and as operators of systems pay attention to what is going on.

My system, we try and train our operators, train our customer service folks that when complaints come in that we take them seriously. If that had happened in Flint, when the water changed col-

ors and it was not palatable, folks really investigated what was going on, even though bad decisions had been made about corrosion control, they might have stopped it earlier. Likewise, if that information had gotten up to the regulators and it was taken seriously.

So, it is a case where we all need to be vigilant to avoid a crisis.

Mr. PITTS. Do you have any comments on what Panel 1 said about the Lead and Copper Rule?

Mr. ESTES-SMARGIASSI. Not specifically. I think I would emphasize a couple of things. One, that so long as lead lines are out there, there is a risk that some change in treatment—it may be that we have a new contaminant that we are worried about and we change our treatment—to account for that. And if those lead lines are out there, there is a chance that that lead could become mobile and end up in the drinking water. Or, if there is a change in the source, change in climate, change in weather different circumstances that changes the quality of the source water without changing the location of the source, those lead lines could become a problem.

So, as an operator of a system and as a member of the AWWA, I kind of look to a long-term view that there aren't any lead service lines out there. Maybe not in 5 years or 10 years, but getting to that point of not having lead in contact with the water is a major step forward.

Mr. PITTS. Thank you.

Administrator Swallow, yesterday EPA announced it had reached an agreement with State health officials on environmental exposures and public health. Can you give us some personal examples of whether this will enhance coordination or create overlapping Federal responses?

Ms. SWALLOW. I am sorry, I am not familiar with that agreement.

Mr. PITTS. OK. All right, thank you. My time has expired.

The Chair recognizes the gentleman, Mr. Tonko, 5 minutes for questions.

Mr. TONKO. Thank you, Mr. Chair. And welcome to our panelists.

First let me offer a thank you to Dr. Hanna-Attisha for all of your work on behalf of the children of Flint. It is so greatly appreciated. And I am also glad we are joined by a number of members of the National Drinking Water Advisory Council.

And Ms. Wu, thank you mentioning other contaminants.

In my home State of New York, a number of communities are dealing with toxic substances in their water systems. This is about more than just lead and you made that very clear. But without strong Federal support, we cannot incentivize greater response on many contaminants to protect public health.

Ms. Wu, would you agree with my assessment that the Federal share of investment has not been adequate to truly carry out our goal of reducing public health risks from unsafe drinking water?

Ms. WU. Yes, I would agree that even more funding needs to go to the State revolving fund programs for drinking water and it has been woefully underfunded.

Mr. TONKO. And what role would you site that aging and deteriorating infrastructure plays in that whole outcome?

Ms. WU. It is a big part of the problem. So, as I mentioned you have leaking pipes and if you have pipes that are leaking that happen to be in the same part of the say ditch as like sewer lines, you could get bacterial contamination leaking into drinking water and that could lead to waterborne disease outbreaks. That is a big part of the problem.

And then there are other issues with contamination that can get in through broken water towers and things like that. The big part.

Mr. TONKO. And I am told that billions of gallons of water lost through leaking pipes on any given day. So, it is textiles flowing out of those pipes also.

And Ms. Swallow, you point out in your testimony the importance of maintaining the human infrastructure of our drinking water programs. We need to attract and maintain quality people, qualified people to operate these systems. We need to ensure that system operators have access to ongoing training and certification programs to tackle new problems that arise.

You mentioned the public water system supervision grant program. Will you please expand a bit on the importance of tat funding?

Ms. SWALLOW. Yes, the public water system supervision grant is the primary grant from Congress to the States to implement the safe drinking water act. That is our base funding to operate the program. It has been level funded for the past 10 years, and that has been while we have had a reauthorization of the Safe Drinking Water Act. There are quite a lot of more requirements that we are implementing among the water systems.

And the State programs are, essentially, pretty much stretched to the breaking point. Our resource needs estimate is that the State programs are 41—this is a 2014 estimate—that the drinking water programs with the States have a 41 percent shortfall in funding, amounting to roughly $308 million.

Mr. TONKO. Wow. And are there other items or other things we can do to support the drinking water workforce that we require?

Ms. SWALLOW. Yes. Certainly technology improvements help, improvement of the database. The States are in the process, and EPA, in doing a major improvement in our data system which will be transparent to the public and EPA and, of course, the State programs. So, I think that will help.

And another thing that is much needed is greater funding of the State revolving loan fund programs, so that we can better meet, better address the needs both for lead service line replacement and all of the other infrastructure improvements that are necessary.

Mr. TONKO. I would think not focusing on our water infrastructure has also like not provided the attention to the career paths that are associated with that work. So, I think by investing we will just draw more attention to that career opportunity.

Administrator, you mentioned the value of using a multi-barrier approach for drinking water. It is certainly less costly for water utilities if we prevent contaminants from entering their water sources. Should we be strengthening source water protection programs?

Ms. SWALLOW. Yes, we should be strengthening source water protection programs, particularly of the nine-point source pollution va-

riety. Many States are challenged, especially by a nitrate and phosphorus contamination issues that are leading to nitrate contamination but also cyanotoxins.

Mr. TONKO. And how are States and water utilities addressing this environmental infrastructure issue?

Ms. SWALLOW. States also have the clean water revolving loan fund, which is used to help address this environmental issue.

Mr. TONKO. OK.

Ms. SWALLOW. And of course all of the other authorities that are environmental program partners.

Mr. TONKO. OK. I have exhausted my time but I have, Mr. Chair, other questions that I will enter into the record, so as to get responses to those.

And with that, I thank our panel and I yield back.

Mr. PITTS. The Chair thanks the gentleman. We will send you those questions in writing, if you will please respond.

The Chair now recognizes the gentleman from Virginia, Mr. Griffith, 5 minutes for questions.

Mr. GRIFFITH. Thank you very much, Mr. Chairman. Thank you all for being here and waiting through the first panel to get to testify. I do appreciate that. And I do appreciate the testimony that you have given here this morning.

I mentioned in the previous panel that there was an article in the Roanoke Times, Roanoke, Virginia, my area, at least the beginning of my area, and in the article that was talking about the Virginia Tech water study team, it said that Edwards said he and those involved in the Flint study are gauging interest in doing a similar project in Philadelphia. There are some initial similarities between Philadelphia and Flint, Edwards said. What do you know about it?

Who wants to tackle it? Does anybody know anything about a Philadelphia situation where the initial similarities are there? Do you know about other situations? I mean what can we do to be aware of these types of things?

And they went on to mention some other things dealing with some private wells and that kind of thing. And obviously, that is always going to go on. But do we know of any other major municipal areas that are distressed?

Dr. HANNA-ATTISHA. I can quickly comment and then I will pass it on to the water experts.

Mr. GRIFFITH. Yes, ma'am.

Dr. HANNA-ATTISHA. But understanding is that in Philadelphia, like in Michigan, they are gaming the sampling. So, they are doing maybe pre-flushing or removing aerators or using small wattles. It is very easy to manipulate the sampling to detect low levels of lead but I will have the others comment as well.

Mr. GRIFFITH. And I will accept that. So, that gives you some of what may be happening and it might be fine; it might not be.

Now, for those people who might be concerned, wherever they might be in the United States, watching this most likely sometime in the wee hours of the morning, is there a kit that you can just go out and buy and test your own water and follow the instructions? Is that available to the general public?

Dr. HANNA-ATTISHA. I am not sure.

Mr. GRIFFITH. No.

Mr. ESTES-SMARGIASSI. We would not recommend you go to Home Depot and pick up a water test there. It will not be very helpful. But many utilities do—every State has a list of certified labs and many utilities maintain that information for their own rate payers to get access to. Some systems provide discounted or free water testing, all local decisions. But in any State, anywhere, if you were to contact the State Drinking Water Act program, you could get a list of labs and for something on the order of $20 to $30 or $35, get a sample taken of water in your own home, using whatever sample technique to help to understand your own particular problem.

Mr. GRIFFITH. OK. So, it is——

Mr. ESTES-SMARGIASSI. That information is available.

Mr. GRIFFITH. It is available and you can get a list of the labs that might come to your—will they come to your house or you take the water yourself and send it?

Mr. ESTES-SMARGIASSI. Typically, they will mail a sample kit to you and then you would return it to them by mail.

Mr. GRIFFITH. All right. Ms. Wu, go ahead.

Ms. WU. Well, I was going to mention that I believe there is also a group called Healthy Babies, Bright Futures that are doing—that have online test kits that you can purchase at whatever price you can afford, if your system doesn't have that available.

Mr. GRIFFITH. They are listed here as well. And apparently, the Virginia Tech water project folks are working on a number of the kits that they, Healthy Babies, Bright Futures, has put out. That is a nonprofit group but then you still have to get somebody to analyze it.

Ms. Wu, you indicated that as we go forward, we need to do more testing, make it mandatory testing, do it at the schools and the homes. Now, would that be done by an agency or would that be done by a third party? What do you think would work better?

Ms. WU. Well, I mean the idea that I had was they would be part of the revisions of the Lead and Copper Rule where right now the utility is supposed to send people out to do the sampling in the homes and the idea would be to keep that. And I mentioned it only because in the recommendations from NDWAC that were mentioned, it was talking about more of a customer-initiated voluntary program. And so I wanted to make sure that we kept it as a mandatory program for testing.

Mr. GRIFFITH. OK and I do appreciate that.

Dr. Hanna—help me.

Dr. HANNA-ATTISHA. Dr. Mona is fine.

Mr. GRIFFITH. Dr. Mona. Thank you, I appreciate that.

I did mention earlier that Dr. Edwards is out a lot of money that they expended to bring the team out from Virginia Tech to do the research in Flint. The folks from Michigan indicated you had been very helpful as well. Are you out substantial funds as well?

Dr. HANNA-ATTISHA. You know this work doesn't involve money. It is something that is so important that you do and you don't sleep. It is not a 9 to 5 issue. There is no cost.

You know Dr. Edwards is a hero. You asked that earlier. When he heard that Michigan wasn't listening to its residents and, every

day that went by, children were being poisoned with lead, he packed his minivan with grad students and some slides and he came up to bring science to test the water.

So you know we have all had opportunity costs because of this work but this is incredible work and it has been incredibly rewarding.

Mr. GRIFFITH. Right. And even though they are out of funds, it is interesting that you say that because in the article that I didn't mention earlier, he says this was priceless. We will go to our graves knowing we stood up for Flint kids when no one else could or would.

Dr. HANNA-ATTISHA. Absolutely.

Mr. GRIFFITH. And with that, my time is up. I yield back. But thank you all very much.

Mr. PITTS. The Chair thanks the gentleman.

I know recognize the ranking member, Mr. Green, 5 minutes for questions.

Mr. GREEN. Thank you, Mr. Chairman.

As I said during the first panel, the Safe Drinking Water Act is intended to ensure safe and reliable drinking water for customers of public drinking water systems across the United States. Clearly, it failed the citizens of Flint. Listening to this panel, it seems like it is failing citizens nationwide. Everyone has a role to play in improving the situation—cities, counties, States, the EPA, and Congress. One of the most important things we can do is quickly adopt important revisions to the Lead and Copper Rule and those of you who were here heard the EPA statement that maybe this summer, maybe next year, which is not acceptable when you have something like Flint.

And really, there are a lot of Flints around the country that just haven't been discovered. And that is what I think we need to be planning for.

Ms. Wu, you are a member of the National Drinking Water Advisory Committee, which is playing an important role in LCR revisions. Before the Flint crisis, was there any clear revisions to the LCR that were needed?

Ms. WU. No, not during while everything was happening. But just to note that I am not actually on the council anymore.

Mr. GREEN. OK.

Ms. WU. My term ended in December of 2014.

Mr. GREEN. Anybody else have—were there any—I mean obviously, they have been working on it for a few months.

Ms. SWALLOW. Sure, there were many important pieces in the NDWAC recommendations, primarily, get the lead out. Remove the lead service lines from the street to the house but also the household lead action level, which is a health guide for individuals in their homes when they get their lead results. And the greater transparency, so that the public can see the data and also can know if they have a lead service line to the best of the knowledge of the water system.

And I guess that is enough for now and Steve can follow-up with more.

Mr. ESTES-SMARGIASSI. So, I was on the working group that worked on that. And I would say a number of things in addition to what June said.

One, the group clearly felt that there were opportunities beyond the regulatory structure to improve this situation. I will give you a couple of examples. Huge frustration among the group, as we discussed the fact that current HUD programs, Housing and Urban Development programs, will set up under The Healthy Homes to go in and remove lead paint. They might spend $25,000 or $30,000 in my neighborhood to remove all the lead paint in someone's apartment but they can't spend a nickel on removing the lead service line.

So, they will spend all that money, make the house sort of lead-free but not remove the lead service line. So, there are opportunities that aren't EPA regulatory programs that could make a huge differences.

Other places are in better coordination of communication tools between various Federal programs and even at the local level between various parts of organizations.

Frequently, when we speak to folks who are doing lead education, they don't talk about water. Folks talk about lead paint, they talk about lead dust because those are huge and important areas but the person they are dealing with doesn't get the piece on water.

When we were doing the beginning of our program on corrosion control, we were actually initially admonished not to talk about water because it would confuse people. And we said no, that is not right. We need to talk about all the aspects uniformly, make sure that the citizens get all that information.

So, there is a lot we can do that is outside the regulatory framework.

Mr. GREEN. Well, and I know we have programs and, like I said in the opening statement, the City of Houston has been really aggressive with lead paint on the walls and in dealing with that but, again, the galvanized pipes, that was the state of the art over the last 50 years, I guess, or so. And what happened in Flint, we see that there are ways that that can be eroded.

Although, my other question is when I first elected to Congress, years ago, I was told not to drink the water in DC. I haven't seen those warnings in the last few years so, obviously, we know how to fix it. But it is very expensive because you have to replace those lines and, obviously, you replace the worst ones first and it takes a cooperation between the city government, the State, and the Federal Government to try and do it. And that is why the revolving fund is so important to do that.

But again, it is not just a Flint. It is just Flint fell into it because of a decision-making and they didn't recognize that was a wrong decision until it was too late.

Thank you, Mr. Chairman.

Mr. PITTS. The Chair thanks the gentleman.

I now recognize the gentleman from Maryland, Mr. Sarbanes, 5 minutes for questions.

Mr. SARBANES. Thank you, Mr. Chairman. I want to thank the panel.

We have heard a lot about the physical consequences on children in terms of their physical health from the lead in the water. Most of the discussion has been on that and how we address it going forward. But I was hoping, Doctor, maybe you could speak to the psychological impact because I think in the prior panel we heard that the recent testing shows maybe only two percent of the children now have elevated lead levels but they have going through all kinds of testing.

So, you have the larger context of just heightened anxiety of parents, community leaders, teachers, principals, which obviously must be producing some effect. Then, within that, you have got testing regimens happening. I don't know how frequently but it has got to be contributing to a sense among these children that something is terribly wrong and they are under siege. So, maybe you could speak to that a little bit and kind of what is being done about it and what the potential lingering effects of that are going to be.

Dr. HANNA-ATTISHA. Absolutely. So, the psychological trauma is real and I see it every day in the clinic. When a mom brings her kid in, there is a look of fear and anxiety and trauma. These are families that for 2 years were told everything was OK. Even when in their gut they knew that the brown water was not OK, they were told it was OK. So, they feel betrayed and traumatized and a huge, huge, lack of trust in Government.

And then there is the fear of the unknown. What is going to happen to my child? All they hear on the news is brain damage, irreversible neurotoxin. They think that their children may be damned for generations.

So, we are actively trying to do reassurance and provide hope. Not every kid is going to have every problem but it takes a lot of rapport-building and a lot of time. There is definitely the beginning of mental health first-aid that is ongoing. Just like in any crisis, the American Red Cross and our community mental health is in there. There is a crisis line that is set up. Because just that trauma and that stress can lead to chronic diseases and more health problems.

So, of any health issue right now, it is the mental health that is most pressing. You talk to a family and after the first sentence, they are in tears or they are yelling and rightly so. There is almost a sense of a truth and reconciliation process that needs to happen. They are so angry and they want to know what happened so that they can start healing. It is going to be a long path for healing that is going to take decades.

Mr. SARBANES. Does anyone else want to comment on that to mention anything? OK.

Thanks very much. I yield back the rest of my time.

Mr. PITTS. The Chair thanks the gentleman.

We are voting on the floor at this time. The Chair now recognizes Mr. Cárdenas for 5 minutes for questions.

Mr. CÁRDENAS. Thank you very much, Mr. Chairman. I want to thank the panel for coming together and also doing the wonderful work that you attempt to do and do every single day for everyone. So, thank you so much.

What happened in Flint is atrocious and gut wrenching but today we can't just talk about getting lead out of the water. We need to

address the future and do what it will take for the children to heal. I want to be clear that this scenario was the result of another effort to prioritize cuts in Government spending without any regard for the protection of the public's health. In other words, this was a cost-saving measure estimated to save only $2.5 million a year, but now we are looking at mounting human and economic costs that will take decades and hundreds of millions of dollars to address.

There is a saying that goes water is for life and sanitation is dignity. In Flint, water also stands for dignity. But where is the dignity when children's futures have been robbed? The Michigan State Government's choices to cut the budget where they did should have been made elsewhere, in places where the lives of children would not have been put at risk.

While I know that most of my Republican colleagues continually seek to reduce or eliminate Government department by department and service by service, we have an obligation to make sure that we invest in the lives of children and every American. No American child should have to suffer from a manmade disaster.

This is an atrocity that should not have ever happened. This is a reminder that when we are unwilling to invest in people's safety, Flint is going to happen again. The brain does not fall on the EPA or the constituents. This dark moment should remind all elected officials that we have a responsibility to do what is right. When an idea may not seem popular, it is critical for us to do what is right for the wellness and safety of every American so that we never have what happens in Flint, Michigan ever happen again.

Unlike earthquakes, mudslides, and hurricanes, Flint was not a national disaster. The Government-appointed commissioner and the State of Michigan made this happen. They thought it was appropriate to do something they were warned not to do. The disaster was manmade. It was not made out of ignorance. This disaster was made out a willfulness to ignore a responsibility to an entire community.

The brains of the children poisoned with lead will not fully recover. What happened in Flint happens every day in Third World countries. It should never happen anywhere in the world, much less the United States of America. There were individuals responsible for the community who knew the water wasn't safe enough to drink and yet they did nothing and said nothing.

Every time we insist on cutting resources from communities, the tragedy in Flint is bound to happen over, and over, and over again.

I want to be clear. What happened in Flint is a disaster that was manmade and at the tip of the spear is the Michigan Government, its complicity in many levels of Government. So, we need to be willing to do our job to make sure that this never happens again. Because with all due respect, ladies and gentleman, at every level, the infrastructure of America is crumbling and we need to address these issues. We have a responsibility to be there for the children. Let this be a lesson that the $2.5 million a year that the State of Michigan wanted to save is now a drop in the bucket of the amount we now need to invest due to this manmade disaster.

Dr. Hanna-Attisha, in your testimony, you observed that the State and Federal Government had begun to make an impact in Flint through important services offered through Medicaid, Head

Start, community health centers and WIC. However, as you note, most of these are temporary. Correct?

Dr. HANNA-ATTISHA. Correct.

Mr. CÁRDENAS. Should this be something that we should continue to address for many, many years as these afflicted children and families will have these effects for many, many years to come?

Dr. HANNA-ATTISHA. Absolutely. We have yet to see the long-term investment in our children and in our community.

Mr. CÁRDENAS. Thank you.

In my closing seconds, I would just like to remind us, finally, let me remind our colleagues that when you advocate for billions upon billions of dollars in cuts, we will guarantee and put in motion that we have failed to prevent the future disasters in America and Flint will happen again and again, and again.

Thank you, Mr. Chairman. I yield back.

Mr. PITTS. The Chair thanks the gentleman.

That concludes the questions of the members present. We will have follow-up questions. Other members will have written questions. We will send them to you. We ask that you please respond.

Thank you very much for your expertise, for sharing with us today.

Members are advised there are still 7 minutes left on the clock for the vote on the floor.

I remind members that they have 10 business days to submit questions for the record. So, members should submit their questions by the close of business on Wednesday, April 27.

This is a very, very important issue. We all must have clean, safe drinking water. We will work together to accomplish this. Thank you very much for all of the testimony and members' interest on this.

Without objection, the subcommittee hearing is adjourned.

[Whereupon, at 1:40 p.m., the subcommittees were adjourned.]

[Material submitted for inclusion in the record follows:]

Statement for the Record

Brian Usher, President

American Public Works Association

House of Representatives Energy and Commerce Committee

Subcommittee on Health

Subcommittee on the Environment and the Economy

Joint Hearing on

Flint Water Crisis: Impacts and Lessons Learned

April 13, 2016

Statement for the Record
House Energy and Commerce Committee
Flint Water Crisis: Impacts and Lessons Learned

April 13, 2016

The American Public Works Association (APWA) is pleased to provide the following statement to the House Energy and Commerce Health and Environment and the Economy Subcommittees joint hearing on the ongoing lead crisis in Flint, Michigan.

APWA is an organization dedicated to providing public works infrastructure and services to millions of people in rural and urban communities, both small and large. Working in the public interest, APWA's more than 29,000 members plan, design, build, operate and maintain our vast water infrastructure network, as well as other key infrastructure assets essential to our nation's economy and way of life. We wish to offer our assistance to the Subcommittees on any matter related to Public Works, including drinking water infrastructure.

Healthy and prosperous communities require access to clean drinking water. As the stewards of water infrastructure, APWA members are concerned that the situation in Flint, Michigan could have been prevented via following fundamental engineering practices. APWA members are also concerned that the city's water supply was being managed by officials, appointed or otherwise, in a state agency who may not have had the necessary training or certifications for operation of a drinking water system. APWA stresses that if our nation's water infrastructure is allowed to continue to decline without adequate investments needed to ensure safe levels of infrastructure maintenance, the threat of effects of lead and other contaminants will continue to grow, which may lead to other serious public health issues.

A Failure in Professional Conduct

As operators of our nation's drinking water infrastructure, our members revere the trust placed in them by the public. As a Class C Licensed Water Operator for more than 20 years and a Responsible Operator In Charge for more than 10 years, we take our responsibilities very seriously. I am dismayed with the profound disregard for the public's welfare, and for the procedures, in this disaster. Many of our members are also water operators and share this position. What happened in Flint could have entirely been prevented had the operators and elected officials followed the decades-old standard corrosion control practices in place across the profession. The operators of drinking water systems and the elected officials overseeing them have the obligation to ensure the water that comes out of the tap is safe; that did not happen here.

As the committee examines what went wrong in Flint, Michigan, we encourage you to evaluate why the operators did not follow practices that are well-known throughout the profession. The pillars of public trust in our nation's water delivery systems are the certifications and licenses to operate these systems. We encourage the committee to determine if strengthening the Safe

Drinking Water Act's (SDWA) certification provisions to ensure professionals with the necessary knowledge and experience to operate these systems is appropriate. Further, we believe that the SDWA should protect operators if they receive a directive to operate a utility in a manner that would threaten public health.

The public must be able to trust that the agencies that regulate drinking water systems will be the final line of defense for protecting them. It is clear from testimony before Congress that the Environmental Protection Agency (EPA) and the Michigan Department of Environmental Quality did not do all that was necessary. I will focus my comments to the EPA, as it is under your jurisdiction. The EPA has an ever increasing scope of responsibility when it comes to water quality and the agency's resources have failed to keep pace. In this situation it was not a matter of funding, it was a matter of people. Our members have on instances, interacted with EPA staff with a background in government, not engineering or the natural sciences, which reduces the ability of the agency to effectively process permits for public works projects and keep its focus on protecting public health and the environment. In a time of scarce taxpayer dollars, giving the agency increased funds for its responsibilities, particularly after a failing of the magnitude it did in Flint, is not an effective solution. Congress must ensure the agency is meeting its core missions first.

Flint is a Harbinger

The catastrophe in Flint is also the product of the city's rapidly declining infrastructure, which is common in communities across the country. The EPA estimates that ten million homes across the country have at least partial lead service lines. Unless these lines are replaced, there will always be a risk that lead will be ingested from drinking water. Lead is not the only risk to public health due to failing infrastructure. For example, coliform bacteria, which can lead to serious illnesses, can enter the drinking water system after heavy rainfall over-loads water treatment plants. As the age of our infrastructure nears one-hundred years in many parts of the country and hits limits in capacity due to a growing population, investment in replacing and expanding it is vital.

We encourage the Committee to take this opportunity to reauthorize the Safe Drinking Water Act State Revolving Fund (SRF) program, and increase the authorization levels for the loan program. The SRF program is a proven and reliable source of funding for essential water, wastewater and stormwater infrastructure projects across the county. Strong, well-funded SRF programs in combination with alternative funding tools like the Water Infrastructure Finance Innovation Act are vital to address the current water, wastewater and stormwater infrastructure funding crisis. APWA encourages Congress to work towards continued funding of this vital source of financial assistance to water, wastewater and stormwater systems.

As Congress considers how to provide assistance to Flint, we urge both chambers to carefully consider the precedent it sets. The victims of the disaster should receive the necessary assistance,

but financial aid to the city to rebuild its infrastructure cannot set the precedent that the federal government will bail out a utility for mismanaging its system. That would be a disservice to the Public Works Departments across this country that manage their utilities with the resources they have or that raise their water rates when necessary.

Conclusions

The American Public Works Association urges Congress to use this moment to consider if changes to the Safe Drinking Water Act are warranted to ensure licensed professionals operate water systems, and if it must increase its oversight of the EPA to ensure it is enforcing our nation's drinking water standards when states fail in their responsibility. Importantly, Congress must use this moment to preserve and enhance the federal investment in our nation's water infrastructure or else more disasters like Flint will be likely. Building the infrastructure needed to support our economic health, welfare and safety takes several years, even decades to implement. Action is needed now to identify ways to leverage scarce taxpayer dollars for making improvements to our nation's water infrastructure.

Our nation cannot enjoy the significant health improvements made in the last two-hundred years if our water infrastructure is left inadequate and crumbling. Investing to improve and repair our deteriorating water infrastructure network will preserve these health improvements, guard our quality of life, and protect the environment. We commend you for bringing focus to the issue by holding this hearing. APWA is hopeful Congress understands the importance of investing in our nation's water infrastructure. As the Subcommittees work to build solutions to prevent what happened in Flint from happening again, we offer our assistance. Thank you for your consideration of our comments.

OHIO DEPARTMENT OF HEALTH
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John R. Kasich/Governor
Richard Hodges/Director of Health

APR 13 2016

The Honorable Frank Pallone, Jr.
Ranking Member
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Congressman Pallone,

The Ohio Department of Health (ODH) lead activities provide for public and professional education, public health lead investigations, case management, data collection, and analysis. ODH also licenses lead risk assessors, lead abatement contractors, lead abatement workers, lead inspectors, and lead abatement project designers to provide for safe and proper lead abatement and detection.

Representatives from the Centers for Disease Control and Prevention (CDC) visited ODH last week and commended Ohio's leadership on childhood lead poisoning prevention and shared that our program reflects the gold standard across the nation. ODH's efforts to protect children from lead poisoning are further detailed below.

Ohio law provides for children at risk for lead poisoning to receive blood lead tests. Children in Ohio are to be tested if they meet the following criteria: 1) they reside in a high risk zip code; 2) are eligible for Medicaid, or 3) the child's guardian has responded in the affirmative or unknown to a paper screening questionnaire regarding lead exposure. This three-pronged approach to targeted blood lead screening is designed to provide for children who are at risk for lead poisoning to receive a blood lead test to determine their blood lead level and receive treatment in the event of a confirmed elevated blood lead level.

Ohio tests children enrolled in Medicaid, per guidance from the Centers for Medicare and Medicaid Services (CMS). In accordance with ODH requirements and Ohio Administrative Code (OAC), children eligible for Medicaid should receive a blood lead test at 12 months, 24 months, and additionally before age six if a child has no documented testing history. Blood tests must be submitted to ODH by certified laboratories when children with elevated blood levels are identified. ODH combines electronically reported blood lead levels with Medicaid claims data to determine children with an elevated level. Annually, ODH publishes testing data on its website, and reports quarterly lead test results received to the CDC regardless of the blood lead level.

Once a child with an elevated blood lead level is identified, an investigation is conducted to determine the cause. In Ohio, deteriorating lead-based paint is the most likely cause of the elevated blood lead levels in children. Funding dedicated for lead based paint hazard control and lead reduction through the US Department of Housing and Urban Development (HUD) is approximately $10 million in Federal Fiscal Year 16 (FFY16). Approximately 90% of the funds are provided directly to nine large, urban jurisdictions in Ohio based on population and other factors identified by HUD, and the remaining 10% goes to ODH. (ODH received a

quarterly performance rating of 100/100 in February from HUD, indicating that benchmarks for lead hazard control activities are being met under the grant.)

The portion of those funds received by the state of Ohio is dispersed in the approximate amount of $1.1 million dollars in grant funds and an additional $70,000 in matching funds from the Ohio Development Services Agency's Housing Trust Fund. Funds will be dispersed to 18 Ohio counties chosen based on identified gaps in service and the need, as demonstrated by the number of children diagnosed with lead poisoning annually.

Medicaid covers the cost of testing children on Medicaid and private insurers are billed for non-Medicaid children. Medicaid also provides reimbursement to the state for lead investigations for Medicaid-covered children. The Maternal and Child Health Block Grant provides an additional $1.2 million per year to support investigations and personnel in the Healthy Homes and Lead Poisoning Prevention Program.

ODH also receives CDC funding through the Childhood Lead Poisoning Prevention Program. Amounts received over the past three fiscal years are as follows:

- 10/1/13-9/29/14 $0
- 9/30/14-9/29/15 $406,472
- 9/30/15-9/29/16 $376,451

Prevention funds were used to develop a surveillance system to manage and disseminate lead poisoning data. The system allows ODH to identify lead poisoned children and populations most in need so that efforts can be focused on that population. The system is used to target education activities in communities to make child lead poisoning a priority for medical providers and health and housing agencies, to document the efficacy of medical case management, and to monitor environmental investigation activity.

In 2014, the definition of an elevated blood lead level in the state of Ohio was changed to be consistent with the CDC reference level. And, the definition of lead poisoning in OAC 3701-30-01 is consistent with the CDC. The attached Lead Case Management Protocol and Public Health Lead Investigation Manual outline interventions and blood lead levels that trigger these interventions. Recently, the surveillance system underwent a period of dedicated code development. This improved the state's ability to receive electronically reported files, add local health department users, generate electronic referrals for appropriate follow-up services, and utilize reports to track progress on services provided.

Testing results are imported into the system and are available for review by any case manager or investigator in the system with access to that jurisdiction. If the system determines that blood lead levels are increasing on an open case, a system alert is sent to the assigned case manager. The frequency for receiving a re-test is dependent on the child's blood lead level. ODH outlines the recommended re-testing schedule in its *Medical Management Recommendations for Ohio Children Receiving Blood Lead Tests*.

As requested, I am attaching grant applications, reports, budget narratives, and other documents submitted to the CDC for the Lead Poisoning and Prevention Program. ODH is committed to protecting children at risk for lead poisoning through targeted prevention and control strategies identified above.

Thank you for your interest in this issue.

Sincerely,

[redacted]

Richard Hodges
Director of Health

cc: Ranking Member Green, Subcommittee on Health
Ranking Member DeGette, Subcommittee on Oversight and Investigations
Ranking Member Tonko, Subcommittee on Environment and the Economy

American Academy of Pediatrics
"Flint Water Crisis: Impacts and Lessons Learned"
House Energy and Commerce Committee
April 18, 2016

Chairman Upton, Ranking Member Pallone, and members of the Committee:

The American Academy of Pediatrics (AAP) greatly appreciates the opportunity to provide testimony regarding the path forward for the children and families of Flint, Michigan. The AAP a non-profit professional organization of 64,000 primary care pediatricians, pediatric medical sub-specialists, and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents, and young adults.

By way of background, lead is metal that has been used by humans for at least 5,000 years.[i] Most lead is the end product of the natural radioactive decay of uranium and thorium. At some point, lead started being put in "things" that come in contact with us. This includes paint, gasoline, pipes, batteries, ammunition, ceramics, jewelry, and cosmetics to name a few.

Lead was first discovered as a poison to children in 1902 when a pediatrician diagnosed a number of children with significant brain injuries after ingesting deteriorating paint in the home. He published his data and as a result many developed countries removed lead from paint soon after. The exception was the United States who finally removed lead from paint in 1978. Additionally, automotive workers were significantly poisoned by lead that was put in gasoline starting in the 1930s. However, the lead in gasoline was not completely phased out until the late 1970s. Thus, we continue to have homes and soil with lead contamination that can result in children being exposed.

As you know well, regulations in this country have over the years reduced or eliminated lead in gasoline, foods and food packaging, house paint, and toys. Those have been important strides for the public health. However, there are still children we have to worry about when it comes to lead exposures. Children under the age of 6 years are more likely to have lead pass into their brain compared to adults due to the immaturity of the barrier to the brain. Thus, children are at risk when they are most vulnerable to developmental effects. Lead levels tend to peak around 2 years of age. Additionally, children living in urban areas in older housing and those at or below the poverty line are at greatest risk. Medicaid-eligible patients also tend to be at higher risk for lead exposure because many live in these lower socioeconomic areas, or in housing that is older and which still has lead-containing paint or soil.

When lead is ingested it is directly absorbed into the body. In fact, children absorb more lead through the GI tract with 70% being absorbed in children compared to 20% for adults. Nutritional status, such as fasting state and iron and calcium deficiency can increase absorption. It is distributed into the blood, soft tissues like the brain and then to the bone. The time in the blood is relatively short (1-2 months), but once it gets into the bone, it can be there for 10-25 years depending on the length of the exposure. Children who are exposed chronically may have elevated levels for more than a year.

Women who are pregnant or breast feeding and have elevated lead levels may increase the release of lead from the bone resulting in the fetus having higher exposures and increased risk for neurotoxicity.

Lead is a potent neurotoxin. There is no safe level of lead exposure for children. Lead damage can be permanent and irreversible. This was not always known. Lead levels that in the past were considered safe are now considered hazardous. As new information has emerged about the neurologic, reproductive, and possible hypertensive toxicity of lead, and as more sensitive parameters are developed, the levels defining lead poisoning have been progressively lowered. Between 1986 and 1988, several studies demonstrated neurobehavioral impairment in lead exposed children with blood lead levels as low as 10 to 14 micrograms per deciliter. As more data become available, it was recognized that there is no physiological purpose for lead in the body and may cause harm at levels below 5 micrograms per deciliter.

Children with elevated lead levels are more likely to have behavior problems, attention deficit and reading disabilities, and fail to graduate from high school. Elevated blood lead levels are defined as lead levels above the CDC "reference level" of 5 micrograms per deciliter.[ii] However, lasting decreases in cognition have been documented in children with blood levels as low as 5 micrograms per deciliter of lead in blood.[iii]

All that we have learned over the years tell us that the best way to deal with lead exposure in children is to PREVENT it from happening in the first place. There are a number of interventions that can help exposed children, but the best solution is primary prevention.

As pediatricians know, however, the risk of exposure continues, particularly in older homes and communities. Lead can remain in household dust, in deteriorated lead paint, in soil that children unintentionally ingest through normal hand-to-mouth behavior, or in water that is supplied through lead pipes, as we saw in Flint. Children can also be exposed to lead from their parents, who have been exposed to lead in the workplace.[iv] One of our pediatricians is currently following over 100 children in one region with elevated blood lead levels from ingesting paint chips, eating soil, playing with lead fishing weights and from parental occupational exposures in firing ranges and battery plants. One of these children has a lead level of 35 micrograms per deciliter. When the home investigation did not find a source, they assessed the father's workplace. His father works in a family owned firing range where his job is to pick up the spent bullets and "clean" them. Dad was bringing home lead dust on his clothes. Significant levels of lead were found on the child's car seat in the dad's car.

Although lead is a risk factor for developmental and behavioral problems, its impact varies significantly by individual and may be affected by the psychosocial environment and educational experiences of the developing child. Given the disproportionate risk for low-income children and families, the impact of lead exposure in communities like Flint can be enormous.

We know why lead is bad. What we have not understood is why primary prevention of lead prevention is not better resourced at all levels. What the tragedy in Michigan has given us is an opportunity to make sure that federal, state, and local governments have the funding they need to help the children and families of Flint, and to make sure that another Flint does not happen

elsewhere in the country. We urge the Senate to finally move its negotiated bipartisan legislation that would provide direct aid to Flint as quickly as possible – the delay in passage of this legislation, and its consideration by the House and hopefully its signature into law by the President, means that the children of Flint are losing precious time that could be used to make sure that critical early childhood interventions are supplied to provide them with the brightest future possible.

Further, the Academy feels that Congress should provide Flint with even more than what is currently under consideration in the Senate. Specifically, the AAP supports federal efforts to provide additional funding for long-term educational, early literacy, nutrition, medical, behavioral, and other assistance to this community. This includes, but should not be limited to: support for all of Flint's approximately 8,000 children under 6 to enroll in Head Start and Early Head Start; quality child care; literacy programs; Medicaid and Children's Health Insurance Program enrollment; the Special Supplemental Nutrition Program for Women, Infants, and Children; school meals and afterschool feeding programs; and mental health screening and treatment.

The AAP makes the following recommendations to the Committee for federal action regarding lead exposure treatment and prevention for all communities:

- The federal government should expand the resources currently offered by the Department of Housing and Urban Development (HUD) to local and state governments for lead hazard control work.
- The federal government should provide both financial and nonfinancial resources and technical guidance through the CDC, the EPA, and HUD to state and local public health agencies as well as environmental and housing agencies engaged in childhood lead poisoning prevention efforts.
- The federal government should resume and expand its vital role in providing federal public health leadership in childhood lead poisoning prevention work through the CDC. The Academy supports the appropriation of $35 million for the CDC Childhood Lead Prevention Program in order to accomplish this goal.
- We very much appreciate that both the Centers for Medicare and Medicaid Services and private insurers must cover lead screening for certain categories of children.[v] We urge a further step – coverage for home investigations for children with lead poisoning and other home-related illnesses such as asthma. Such home investigations can make sure that the elevated blood lead levels detected in children at screening are in fact acted upon, and that the source of lead exposure is remediated. The inspections will ultimately help decrease long-term health costs because the source of lead exposure will be identified and removed.
- The federal government should continue to conduct the National Health and Nutrition Examination Survey (NHANES) and provide national data on trends in blood lead concentrations. These newer data should be used by the CDC to periodically formulate a new reference value and guide clinical and public health interventions.
- The federal government should continue to regularly survey children and adolescents in the NHANES for ADHD and conduct disorder using validated diagnostic surveys from the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)* to examine the association of lower blood lead concentrations with these conditions.

This is but a partial list of the AAP's recommendations for policymakers regarding lead exposure and children's health. For our comprehensive recommendations, we refer the Committee to the AAP's complete policy statement, "Lead Exposure in Children: Prevention, Detection, and Management." A copy of this policy statement has been submitted along with our written testimony.

Thank you for the opportunity to submit this testimony for the record. The Academy is eager to help assist the Committee as it works on childhood lead exposure prevention and treatment.

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[i] http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm
[ii] http://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm.
[iii] https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/lead-exposure/Pages/Lead-Exposure-in-Children.aspx.
[iv] https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/lead-exposure/Pages/Treatment-of-Lead-Poisoning.aspx#sthash.Txnw6xoO.dpuf
[v] http://healthfinder.gov/HealthTopics/Category/pregnancy/getting-ready-for-your-baby/protect-your-family-from-lead-poisoning

AMERICAN ACADEMY OF PEDIATRICS

POLICY STATEMENT
Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of All Children

Committee on Environmental Health

Lead Exposure in Children: Prevention, Detection, and Management

ABSTRACT. Fatal lead encephalopathy has disappeared and blood lead concentrations have decreased in US children, but approximately 25% still live in housing with deteriorated lead-based paint and are at risk of lead exposure with resulting cognitive impairment and other sequelae. Evidence continues to accrue that commonly encountered blood lead concentrations, even those less than 10 μg/dL, may impair cognition, and there is no threshold yet identified for this effect. Most US children are at sufficient risk that they should have their blood lead concentration measured at least once. There is now evidence-based guidance available for managing children with increased lead exposure. Housing stabilization and repair can interrupt exposure in most cases. The focus in childhood lead-poisoning policy, however, should shift from case identification and management to primary prevention, with a goal of safe housing for all children. ***Pediatrics*** **2005;116:1036–1046;** ***child, lead, environmental exposure, chelation therapy, succimer, cognition, clinical trials, housing, prevention, behavior.***

ABBREVIATIONS. CDC, Centers for Disease Control and Prevention; AAP, American Academy of Pediatrics; EPA, Environmental Protection Agency; CNS, central nervous system; EP, erythrocyte protoporphyrin; EDTA, ethylenediaminetetraacetic acid; TLC, Treatment of Lead-Exposed Children; HUD, Department of Housing and Urban Development.

BACKGROUND

In 1991, when 1 in 11 US children had a blood lead concentration greater than 10 μg/dL, both the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) recommended that all US children have their blood lead concentration measured at around 1 and 2 years of age, when concentrations increase and then peak. By 1997, the median blood lead concentration in the United States had decreased, and screening in some areas with newer housing turned up few cases of elevated blood lead concentration. The CDC and AAP then began to recommend screening only those children with a greater chance of having an elevated blood lead concentration—those in older housing, those who had a sibling or playmate with an elevated blood lead concentration, or those who had lived in or visited a structure that might contain deteriorated, damaged, or recently remodeled lead-painted surfaces. Screening of all children eligible for Medicaid, among whom were found 80% of those with increased blood lead concentration,[1] continued to be recommended and had been required by Health Care Financing Administration (now the Centers for Medicare and Medicaid Services) regulation since 1989.

This new policy statement replaces the 1998 statement and includes discussion of new data, including:

- Reliable estimates of the percentage of the US homes containing lead hazards[2];
- Results from a large clinical trial showing that chelation in children with moderately elevated blood lead concentrations does not improve cognitive or neuropsychologic test scores[3];
- Documentation of unacceptably low screening rates among Medicaid-eligible children[4];
- Further confirmation of the link between lead exposure in early childhood and delinquent behavior during adolescence[5,6]; and
- New data showing inverse associations between blood lead concentrations less than 10 μg/dL and IQ.[7,8]

The best approach to lead poisoning is to prevent exposure in the first place, but it will be years before that goal is realized. In the meantime, case finding, case management, and prevention of additional exposure will still be required. This document considers relevant aspects of the epidemiology, clinical toxicology, prevention, and treatment of lead exposure in young children and provides recommendations for pediatricians as well as public health authorities.

DECLINE OF LEAD POISONING IN THE UNITED STATES

Lead is an element and occurs naturally, but blood lead concentrations are quite low in the absence of industrial activities.[9] In the United States, there were historically 2 major sources of industrially derived lead for children: airborne lead, mostly from the combustion of gasoline containing tetraethyl lead; and leaded chips and dust, mostly from deteriorating lead paint. Both contribute to soil lead. A steep decrease in exposure to airborne lead in the United States has occurred since 1980. Federal legislation in the 1970s removed lead from gasoline and decreased smokestack emissions from smelters and other sources, causing blood lead concentrations in children to decrease. From 1976 to 1980, before the regulations had their full effect, US children 1 to 5 years

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of age had a median blood lead concentration of 15 μg/dL.[10] In 1988–1991, the median was 3.6 μg/dL[11]; in 1999, the median was 1.9 μg/dL.[12] Although concentrations have decreased in all children, black children and poor children continue to have higher blood lead concentrations. Airborne lead should no longer be a source of community exposure in the United States, but individual counties sometimes still exceed airborne lead regulations, and continued vigilance is warranted. Individual children may still be exposed to airborne lead in fumes or respirable dust resulting from sanding or heating old paint, burning or melting automobile batteries, or melting lead for use in a hobby or craft.

SOURCES OF LEAD EXPOSURE

Lead Paint, Dust, and Soil

The source of most lead poisoning in children now is dust and chips from deteriorating lead paint on interior surfaces.[13] Children who developed lead encephalopathy with blood lead concentrations more than 100 μg/dL often had chips of lead paint visible on abdominal plain films. Children who live in homes with deteriorating lead paint, however, can achieve blood lead concentrations of 20 μg/dL or greater without frank pica.[14] The use of leaded paint on interior surfaces ceased in the United States by the mid-1970s. However, in 1998, of the 16.4 million US homes with ≥1 child younger than 6 years, 25% still had significant amounts of lead-contaminated deteriorated paint, dust, or adjacent bare soil ("lead hazard").[2] Dust and soil are also a final resting place for airborne lead from gasoline and dust from paint. Lead in dust and soil can recontaminate cleaned houses[15] and contribute to elevating blood lead concentrations in children who play on bare, contaminated soil.[16]

Transplacental Exposure and Lead in Human Milk

Lead crosses the placenta, and the blood lead concentration of the infant is similar to that of the mother.[17] The source of lead in the infant's blood seems to be a mixture of approximately two thirds dietary and one third skeletal lead, as shown by studies that exploited the differences in lead isotopes stored in the bones of women migrating from Europe to Australia.[18] Although lead appears in human milk, the concentration is closer to plasma lead and much lower than blood lead, so little is transferred. Because infant formula and other foods for infants also contain lead, women with commonly encountered blood lead concentrations who breastfeed their infants expose them to slightly less lead than if they do not breastfeed.[19] In Mexico, giving women supplemental calcium during lactation resulted in a small (less than 2 μg/dL) decrease in the mother's blood lead concentration, presumably by decreasing skeletal resorption.[20] Theoretically, this could diminish transfer of lead through breast milk even further. In the United States, however, where calcium intake may be higher, calcium supplementation does not prevent bone loss during lactation[21] and, thus, might not affect lead transfer at all.

Other Sources

Lead plumbing (in Latin, "plumbus" = lead) has contaminated drinking water for centuries, and lead in water can contribute to elevated blood lead concentrations in children.[13] In 2003–2004, some tap water in Washington, DC, was found to exceed Environmental Protection Agency (EPA) regulations. This was thought to be caused by a change in water disinfection procedures, which increased the water's ability to leach lead from connector pipes between the water mains and interior plumbing in old houses. The extent of this problem in Washington and other cities is not yet known. Affected families are drinking filtered or bottled water until the pipes can be replaced. (Most bottled water is not fluoridated; its consumption may lead to marginal fluoride intakes in children.) Much more about lead in drinking water is available on the EPA Web site (www.epa.gov/safewater/lead/index.html).

Table 1 includes questions about less common sources of lead exposure, which include hobbies, contaminated work clothes, ceramics, cosmetics, imported canned foods, etc. Such questions may be useful if a child has an elevated blood lead concentration but no exposure to leaded dust or soil. They have not been validated for the purpose of deciding whether to screen.

The lead concentration of blood for transfusion is not routinely measured. After exchange transfusion in the extremely low birth weight infant, 90% of the infant's blood is donor blood. Bearer et al[22] recommended that only units with lead concentrations of less than 0.09 μmol/L be used in these patients, on the basis of their adaptation of the World Health Organization tolerable weekly intake from ingestion to intravenous injection. Approximately one third of the units of blood that they measured were above this concentration. The effect of lead in transfused blood used in older children has not been considered.

TOXICITY OF LEAD

Subclinical Effects

At the levels of lead exposure now seen in the United States, subclinical effects on the central nervous system (CNS) are the most common effects. The best-studied effect is cognitive impairment, measured by IQ tests. The strength of this association and its time course have been observed to be similar in multiple studies in several countries.[23] In most countries, including the United States, blood lead concentrations peak at approximately 2 years of age and then decrease without intervention. Blood lead concentration is associated with lower IQ scores as IQ becomes testable reliably, which is at approximately 5 years of age.[23] The strength of the association is similar from study to study; as blood lead concentrations increase by 10 μg/dL, the IQ at 5 years of age and later decreases by 2 to 3 points. Canfield et al[7] recently extended the relationship between blood lead concentration and IQ to blood lead concentrations less than 10 μg/dL. They observed a decrease in IQ of more than 7 points over the first 10 μg/dL of

TABLE 1. Suggested Clinical Evaluation for Lead Exposure

- Medical history
  - Ask about
    - Symptoms
    - Developmental history
    - Mouthing activities
    - Pica
    - Previous blood lead concentration measurements
    - Family history of lead poisoning
  - Environmental history
  - Paint and soil exposure
    - What is the age and general condition of the residence or other structure in which the child spends time?
    - Is there evidence of chewed or peeling paint on woodwork, furniture, or toys?
    - How long has the family lived at that residence?
    - Have there been recent renovations or repairs to the house?
    - Are the windows new?
    - Are there other sites at which the child spends significant amounts of time?
    - What is the condition/make-up of indoor play areas?
    - Do outdoor play areas contain bare soil that may be contaminated?
    - How does the family attempt to control dust and dirt?
  - Relevant behavioral characteristics of the child
    - To what degree does the child exhibit hand-to-mouth activity?
    - Does the child exhibit pica?
    - Are the child's hands washed before meals and snacks?
  - Exposures to and behaviors of household members
    - What are the occupations of adult household members?
    - What are the hobbies of household members? (Fishing, working with ceramics or stained glass, and hunting are examples of hobbies that involve risk for lead exposure.)
    - Are painted materials or unusual materials burned in household fireplaces?
  - Miscellaneous
    - Does the home contain vinyl miniblinds made overseas and purchased before 1997?
    - Does the child receive or have access to imported food, cosmetics, or folk remedies?
    - Is food prepared or stored in imported pottery or metal vessels?
    - Does the family use imported foods in soldered cans?
- Nutritional history
  - Take a dietary history
  - Evaluate the child's iron status by using the appropriate laboratory tests
  - Ask about history of food stamps or participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)
- Physical examination
  - Pay particular attention to the neurologic examination and the child's psychosocial and language development

lifetime average blood lead concentration. Bellinger and Needleman[8] subsequently reported a similarly steep slope in a reanalysis of data from their study of children with blood lead concentrations similar to those in the Canfield et al study. To confirm the adverse effects of lead on IQ at these concentrations, however, more children whose blood lead concentration has never been more than 10 μg/dL should be studied. A reanalysis of the primary data from several of the prospective studies is underway to help resolve this issue. At the moment, however, these data have not yet been incorporated into policy, and the CDC[16] and AAP[24] both currently use 10 μg/dL (Table 2) as the blood lead concentration of concern.

Other aspects of brain or nerve function, especially behavior, also may be affected. Teachers reported that students with elevated tooth lead concentrations were more inattentive, hyperactive, disorganized, and less able to follow directions.[25,26] Additional follow-up of some of those children[25] showed higher rates of failure to graduate from high school, reading disabilities, and greater absenteeism in the final year of high school.[27] Elevated bone lead concentrations are associated with increased attentional dysfunction, aggression, and delinquency.[28] In children followed from infancy with blood lead measurements, self-reported delinquent behavior at 15 to 17 years of age increased with both prenatal and postnatal lead exposure,[5] and bone lead, thought to represent cumulative dose, is higher in adjudicated delinquents.[6] These data imply that the effects of lead exposure are long lasting and perhaps permanent. Subclinical effects on both hearing[29] and balance[30] may occur at commonly encountered blood lead concentrations.

Although there are reasonable animal models of low-dose lead exposure and cognition and behavior,[31] the mechanisms by which lead affects CNS function are not known. Lead alters very basic nervous system functions, such as calcium-modulated signaling, at very low concentrations in vitro,[32] but it is not yet clear whether this process or some other one yet to be examined is the crucial one. Lead interferes detectably with heme synthesis beginning at blood lead concentrations of approximately 25 μg/dL.[33] Both aminolevulinate dehydratase, an early step enzyme, and ferrochelatase, which completes the heme ring, are inhibited. Ferrochelatase inhibition is the basis of an erstwhile screening test for lead poisoning that measures erythrocyte protoporphyrin (EP), the immediate heme precursor. Because it is insensitive to the lower concentrations of

TABLE 2. Summary of Recommendations for Children With Confirmed (Venous) Elevated Blood Lead Concentrations[16]

Blood Lead Concentration	Recommendations
10–14 μg/dL	Lead education
	Dietary
	Environmental
	Follow-up blood lead monitoring
15–19 μg/dL	Lead education
	Dietary
	Environmental
	Follow-up blood lead monitoring
	Proceed according to actions for 20–44 μg/dL if
	A follow-up blood lead concentration is in this range at least 3 months after initial venous test; or
	Blood lead concentration increases
20–44 μg/dL	Lead education
	Dietary
	Environmental
	Follow-up blood lead monitoring
	Complete history and physical examination
	Lab work
	Hemoglobin or hematocrit
	Iron status
	Environmental investigation
	Lead hazard reduction
	Neurodevelopmental monitoring
	Abdominal radiography (if particulate lead ingestion is suspected) with bowel decontamination if indicated
45–69 μg/dL	Lead education
	Dietary
	Environmental
	Follow-up blood lead monitoring
	Complete history and physical examination
	Lab work
	Hemoglobin or hematocrit
	Iron status
	Free EP or ZPP
	Environmental investigation
	Lead hazard reduction
	Neurodevelopmental monitoring
	Abdominal radiography with bowel decontamination if indicated
	Chelation therapy
≥70 μg/dL	Hospitalize and commence chelation therapy
	Proceed according to actions for 45–69 μg/dL
Not Recommended at Any Blood Lead Concentration	
Searching for gingival lead lines	
Evaluation of renal function (except during chelation with EDTA)	
Testing of hair, teeth, or fingernails for lead	
Radiographic imaging of long bones	
X-ray fluorescence of long bones	

ZPP indicates zinc protoporphyrin.

blood lead that are of concern now, the test is obsolete for that use; however, EP measurement is still used clinically in managing children with higher blood lead concentrations.

Clinical Effects

Children with blood lead concentrations greater than 60 μg/dL may complain of headaches, abdominal pain, loss of appetite, and constipation and display clumsiness, agitation, and/or decreased activity and somnolence. These are premonitory symptoms of CNS involvement and may rapidly proceed to vomiting, stupor, and convulsions.[34] Symptomatic lead toxicity should be treated as an emergency. Although lead can cause clinically important colic, peripheral neuropathy, and chronic renal disease in adults with occupational exposures, these symptoms are rare in children.

Reversibility

In an influential 1994 study, 154 children who were 13 to 87 months old and had blood lead concentrations between 25 and 55 μg/dL were given chelation with ethylenediaminetetraacetic acid (EDTA) and therapeutic iron when clinically indicated and then followed for 6 months. Those whose blood lead concentrations decreased the most had improved cognitive test scores independent of whether they had been given iron or chelation therapy.[35] An Australian study[36] of 375 children with longer follow-up, however, found only small and inconsistent improvement in the IQs of children

whose blood lead concentrations decreased the most. A large (780-children) randomized trial of the use of succimer in children with blood lead concentrations of 20 to 44 μg/dL, the Treatment of Lead-Exposed Children (TLC)[3] Trial, showed no benefit on cognitive or neuropsychologic testing despite an abrupt but transient decrease in the treated children's blood lead concentrations. The children were randomly assigned at approximately 2 years of age and followed with cognitive, neuropsychologic, and behavioral tests until they were approximately 5 years of age. The large size of the trial permits confident exclusion of a drug-related improvement of 2 IQ points or more. Additional follow-up at 7 years of age with more sophisticated testing still showed no advantage for the succimer-treated children.[37]

Because blood lead concentrations decreased as the children in the TLC Trial got older regardless of whether they had chelation, Liu et al[38] used the TLC data to attempt to replicate the reported relationship between decreasing blood lead concentrations and improved cognitive test scores. Test scores were unrelated to decreasing blood lead concentrations at 6 months' follow-up, but results from following the children for 36 months, when they were approximately 5 years of age, showed improved test scores with greater decreases in blood lead concentration but only in the placebo group. Additional research on whether some effective intervention can be isolated to account for this phenomenon is needed. There remains no evidence that chelation will reverse cognitive impairment, and the predominance of data is consistent with a noncausal association between decreasing blood lead concentrations and improved cognitive test scores.

COSTS OF CHILDHOOD LEAD POISONING AND BENEFITS OF PREVENTION

Cost-Benefit Analyses

The removal of lead from gasoline cost money, and it will cost more money to remove lead from housing. If childhood lead exposure, however, affects cognitive function and its consequences, such as graduating from high school, then it is plausible that it will affect social function, employment, and earnings. Several groups have estimated the long-term dollar costs of childhood lead exposure, assuming that the effect of lead on IQ is linear and permanent; they also assume a specific economic value of increased IQs. Grosse et al[39] estimated the economic benefit of the 25-year secular downward trend in childhood lead exposure in the cohort of children 2 years of age in 2000. The estimated increase in earnings for the 3.8 million children would be between $110 billion and $319 billion over their lifetimes, compared with what they would have earned if they had been exposed to 1975 lead levels. Landrigan et al[40] estimated the lifetime costs for each year's cohort of children currently exposed to lead to be $43 billion. On the cost side, Needleman[41] estimated a $10 billion cost for deleading the estimated 2 million lead-contaminated houses that existed in 1990. In 2002, a more reliable estimate is that there are 4 million such lead-contaminated houses,[2] and when adjusting for inflation (with the Consumer Price Index inflation calculator [www.bls.gov/cpi]), Needleman's estimate becomes approximately $28 billion in 2002. Combining these estimates leads to the conclusion that removing lead paint is cost-effective if it prevents even two thirds of lead exposure for any single year's cohort of 2-year-olds. Similarly, a presidential task force estimated that the net nationwide benefit of interim control of lead hazards in the nation's pre-1960 housing would be $1 billion to $9 billion over 10 years. The benefit of abating the hazards permanently would be $21 billion to $38 billion. Such quantitation allows planning and setting priorities to be done more transparently and allows comparisons to estimates of the cost for lead-abatement programs and other preventive activities. Although these are exemplary numbers in simplified analyses, all parts of which could be challenged, they illustrate the rationale for viewing lead exposure as a problem that should be solved, even on economic grounds.

Federal Strategy to Prevent Lead Poisoning

The President's Task Force on Environmental Health Risks and Safety Risks to Children was formed in 1997 by executive order. It consists of government officials from the EPA, the Department of Health and Human Services, the Consumer Product Safety Commission, the Department of Housing and Urban Development (HUD), and others. One of its first projects was to formulate a plan to eliminate childhood lead poisoning,[42] a goal that was incorporated into the Healthy People 2010 goals for the nation(www.healthypeople.gov/Document/HTML/Volume1/08Environmental.htm#_Toc490564710). For the first time, the strategy concentrated on primary prevention and was directed at housing. It did not require that a lead-poisoned child first be identified before a house was considered eligible for participation (the principle of primary prevention). The core of the strategy is a grant-based program administered by the HUD that would accelerate the pace at which in-place management of lead hazards would occur in US homes. The strategy projected that more than 20 million houses could be remediated in the decade from 2000–2010, making lead-safe housing available to a large majority of US children. The strategy also included continued screening, especially among Medicaid-eligible children, enforcement of existing statutes and regulations, and research, especially on the effectiveness of in-place management of lead hazards. The HUD plans periodic evaluations and progress reports, which can be tracked on its Web site (www.hud.gov/offices/lead).

DIAGNOSTIC MEASURES

The diagnosis of lead poisoning or increased lead absorption depends on the measurement of blood lead concentration. This is best performed by using a venous sample, but a carefully collected finger-stick sample can be used. Most blood lead measurements are now performed because the child meets some general eligibility criteria (screening) and not be-

cause they are at especially high risk of exposure or have symptoms suggestive of lead poisoning (diagnosis).

Screening

Between 1991 and 1997, both the AAP and CDC recommended universal screening, that is, that all children have their blood lead concentration measured, preferably when they are 1 and 2 years of age. Because the prevalence of elevated blood lead concentrations has decreased so much, a shift toward targeted screening has begun,[43] and the criteria for and implementation of targeted screening continues to develop. As of early 2005, the situation is as follows. All Medicaid-eligible children must be screened.[4] Medicaid will reimburse 2 screenings, one at 1 year of age and one at 2 years of age. Most children with elevated blood lead concentrations are Medicaid eligible, and most Medicaid-eligible children have not been screened.[4] The Advisory Committee on Childhood Lead Poisoning Prevention has proposed criteria by which a state could acquire an exemption from this requirement, and the proposal is under consideration in the Secretary of Health and Human Services' office. Until such exemptions are granted, both the CDC[4] and AAP support universal screening of Medicaid-eligible children. The thinking behind the availability of exemptions is not primarily to decrease the number of screenings performed but rather to increase it among groups in which increased lead absorption will be found. Children whose families participate in any assistance program but who, for whatever reason, are not eligible for Medicaid should also be screened.

For children not eligible for Medicaid, several states and some municipalities have developed targeted screening recommendations or policies using suggestions made by the CDC,[43] their own data, or some combination of the 2. All practitioners should determine if such recommendations are in place where they practice. Appropriate contacts at state and city health departments with CDC-funded programs are listed on the CDC Web site (www.cdc.gov/nceh/lead/grants/contacts/CLPPP%20Map.htm).

The approach to screening children who are not eligible for Medicaid and who live in areas in which health authorities have not made locale-specific recommendations is less clear. Although targeted screening may be desirable, well-validated tools with which to achieve it are not yet in place.[44] In the absence of policy, current recommendations support screening all children who are not enrolled in Medicaid and who live in areas in which local authorities have not issued specific guidance.

There are now many case reports of children who are recent immigrants, refugees, or international adoptees who have elevated (sometimes very elevated) blood lead concentrations.[45] Such children should be screened on arrival in the United States.

Diagnostic Testing

Some experienced clinicians measure the blood lead concentration in children with growth retardation, speech or language dysfunction, anemia, and attentional or behavioral disorders, especially if the parents have a specific interest in lead or in health effects from environmental chemicals. However, a persistent elevation of blood lead concentration into school age is unusual, even if peak blood lead concentration at 2 years of age was high and the child's housing has not been abated. This is probably because hand-to-mouth activity decreases and the child's body mass increases. Thus, a low blood lead concentration in a school-aged child does not rule out earlier lead poisoning. If the question of current lead poisoning arises, however, the only reliable way to make a diagnosis is with a blood lead measurement. Hair lead concentration gives no useful information and should not be performed.[46] Radiograph fluorescence measurement of lead in bone is available in a few research centers and has been used in children as young as 11 years with acceptable validity for research purposes,[47] but it has no clinical utility as yet.

MANAGEMENT OF CHILDREN WITH ELEVATED BLOOD LEAD CONCENTRATIONS

In 2002, the national Advisory Committee on Childhood Lead Poisoning Prevention published a monograph, "Managing Elevated Blood Lead Levels Among Young Children."[16] The goal of the monograph was to provide an evidence-based, standard approach to management usable throughout the United States. Anyone involved with the management of children with elevated blood lead concentrations needs access to it. This section is consistent with the monograph.

The management of children with elevated blood lead concentrations is determined primarily by how high the concentration is (Table 2). Children with concentrations less than 10 μg/dL are not currently considered to have excess lead exposure. Children with concentrations 10 μg/dL or greater should have their concentrations rechecked; if many children in a community have concentrations greater than 10 μg/dL, the situation requires investigation for some controllable source of lead exposure. Children who ever have a concentration greater than 20 μg/dL or persistently (for more than 3 months) have a concentration greater than 15 μg/dL require environmental and medical evaluation.

Residential Lead Exposure

Most children with elevated blood lead concentrations live in or regularly visit a home with deteriorating lead paint on interior surfaces. Some children eat paint chips, but pica is not necessary to achieve blood lead concentrations of 20 μg/dL or greater.[14] Children can ingest lead-laden dust through normal mouthing behaviors by simply placing their hand or an object in their mouth. This also happens when children handle food during eating.[48–50] There is increasing evidence that professional cleaning, paint stabilization, and removal and replacement of building components can interrupt exposure. Cooperation with the health department in investigating and decreasing the source is necessary. Although some authorities insist that moving children to unleaded

housing or removal of all lead paint from their current housing is the only acceptable solution,[51] alternative housing is rarely available and extensive on-site removal of leaded paint can raise the concentration in house dust and resident children.[52]

Lead in soil is higher around houses with exterior lead paint and in places where there has been a smokestack or other point source or heavy traffic. Soil concentrations are related to blood lead concentrations but not as closely as are interior dust lead concentrations.[13] Soil can be tested for lead content, and the EPA has guidelines for testing on its Web site (www.epa.gov/lead/leadtest.pdf). Lead should no longer be a problem in municipal water supplies, but wells, old pipes from the municipal supply to the house (as has been the case in Washington, DC), or soldered joints may add lead to water (see www.epa.gov/safewater/lead/index.html).

Other Sources

Some children will have persistently elevated blood lead concentrations without access to lead paint, bare soil, or lead in their drinking water. Their exposure may come from any of the sources listed in Table 3. Blood lead concentrations should decrease as the child passes approximately 2 years of age, and a stable or increasing blood lead concentration beyond that age is likely to be caused by ongoing exposure.

The recommended approach to environmental investigation of a child with an elevated blood lead concentration consists of (1) an environmental history, such as the one shown in Table 1, (2) an inspection of the child's primary residence and any building in which they spend time regularly, (3) measurement of lead in deteriorated paint, dust, bare soil, or water as appropriate, (4) control of any immediate hazard, and (5) remediation of the house, which may require temporary relocation of the child. If new or lead-safe housing is an option for the family, it offers a simple and permanent solution. These situations can be frightening for the families. Involving the family and providing them with information as it is obtained is the right thing to do and may help lessen anxiety.

Although intense regimens of professional cleaning decrease children's blood lead concentrations, providing families with instructions and cleaning materials does not. Washing children's hands has intuitive appeal, but no data support its role in decreasing exposure. Suggested prevention strategies are listed in Table 3.

Medical Management

If the blood lead concentration is greater than 45 μg/dL and the exposure has been controlled, treatment with succimer should begin. A pediatrician experienced in managing children with lead poisoning should be consulted; these pediatricians can be found through state health department lead programs, through pediatric environmental health specialty units (www.aoec.org/pehsu.htm), at hospitals that participated in the largest clinical trial of succimer,[3] or by calling the local poison control center or the AAP Committee on Environmental Health. The most common adverse effects of succimer listed on the label are abdominal distress, transient rash, elevated hepatocellular enzyme concentrations, and neutropenia. The drug is unpleasant to administer because of a strong "rotten-egg" odor, and 40% of the families on active drug compared with 26% on placebo found the drug difficult to administer.[53] The succimer label provides dosages calculated both by body surface area and by weight, but the equivalent dose by both methods would occur in a child approximately 5 years of age. For the younger children

TABLE 3. Sources of Lead Exposure and Prevention Strategies[59]

Source	Prevention Strategy
Environmental	
Paint	Identify and abate
Dust	Wet mop (assuming abatement)
Soil	Restrict play in area, plant ground cover, wash hands frequently
Drinking water	Flush cold-water pipes by running the water until it becomes as cold as it will get (a few seconds to 2 minutes or more; use cold water for cooking and drinking
Folk remedies	Avoid use
Cosmetics containing additives such as kohl or surma	Avoid use
Old ceramic or pewter cookware, old urns/kettles	Avoid use
Some imported cosmetics, toys, crayons	Avoid use
Contaminated mineral supplements	Avoid use
Parental occupations	Remove work clothing at work; wash work clothes separately
Hobbies	Proper use, storage, and ventilation
Home renovation	Proper containment, ventilation
Buying or renting a new home	Inquire about lead hazards
Lead dust in carpet	Cover or discard
Host	
Hand-to-mouth activity (or pica)	Frequent hand washing; minimize food on floor
Inadequate nutrition	Adequate intake of calcium, iron, vitamin C
Developmental disabilities	Enrichment programs

typically given the drug, body surface area calculations give higher doses, which are those that are recommended.[54]

Although chelation therapy for children with blood lead concentrations of 20 to 44 μg/dL can be expected to lower blood lead concentrations, it does not reverse or diminish cognitive impairment or other behavioral or neuropsychologic effects of lead.[3] There are no data supporting the use of succimer in children whose blood lead concentrations are less than 45 μg/dL if the goal is to improve cognitive test scores.

Children with symptoms of lead poisoning, with blood lead concentrations higher than 70 μg/dL, or who are allergic or react to succimer will need parenteral therapy with EDTA and hospitalization. Guidelines for these circumstances are beyond the scope of this statement, but the same consultation as described above is recommended. There are academic centers that use D-penicillamine, another oral chelator used in Wilson disease, for lead poisoning. Its safety and efficacy, however, have not been established,[55] and the AAP Committee on Drugs considers it to be a third-line drug for lead poisoning.[56]

Dietary Intervention

The Advisory Committee on Childhood Lead Poisoning Prevention reviewed the evidence for dietary intervention in lead-exposed children.[16] They concluded that there are no trial data supporting dietary interventions aimed specifically at preventing lead absorption or modulating the effects of lead. However, there are laboratory and clinical data suggesting that adequate intake of iron, calcium, and vitamin C are especially important for these children. Adequate iron and calcium stores may decrease lead absorption, and vitamin C may increase renal excretion. Although there is epidemiologic evidence that diets higher in fat and total calories are associated with higher blood lead concentrations at 1 year of age,[57] the absence of trial data showing benefits and the caloric requirements of children at this age preclude recommending low-fat diets for them.

Psychological Assessment

The Advisory Committee on Childhood Lead Poisoning Prevention reviewed the evidence for psychological assessment and intervention in lead-exposed children.[16] Despite data from several large epidemiologic studies suggesting that moderate exposure to lead produces specific deficits in attention or executive functions, visual-spatial skills, fine-motor coordination, balance, and social-behavioral modulation,[58] there is no specific "signature" syndrome yet identified. In addition, although 2-year-olds tend to have the highest blood lead concentrations, they will usually not have detectable cognitive damage, which can be expected to become more apparent at 4 years of age and later. It seems reasonable to manage children whose blood lead concentration is 20 μg/dL or greater at its peak as having a higher risk of developmental delay and behavior abnormalities.[16] Because the effects emerge later, after the child's blood lead concentration will have decreased, the child's record must be kept open even after the blood lead concentration has decreased.

Although there is not specific literature supporting the use of enrichment programs in lead-poisoned children, programs aimed at children with delay from another cause should be effective in lead-poisoned children.

RECOMMENDATIONS FOR PEDIATRICIANS

1. Provide anticipatory guidance to parents of all infants and toddlers about preventing lead poisoning in their children. In particular, parents of children 6 months to 3 years of age should be made aware of normal mouthing behavior and should ascertain whether their homes, work, or hobbies present a lead hazard to their toddler. Inform parents that lead can be invisibly present in dust and can be ingested by children when they put hands and toys in their mouths.
2. Inquire about lead hazards in housing and child care settings, as is done for fire and safety hazards or allergens. If suspicion arises about the existence of a lead hazard, the child's home should be inspected. Generally, health departments are capable of inspecting housing for lead hazards. Expert training is needed for safe repair of lead hazards, and pediatricians should discourage families from undertaking repairs on their own. Children should be kept away from remediation activities, and the house should be tested for lead content before the child returns.
3. Know state Medicaid regulations and measure blood lead concentration in Medicaid-eligible children. If Medicaid-eligible children are a significant part of a pediatrician's practice or if a pediatrician has an interest in lead poisoning, he or she should consider participating in any deliberations at the state and local levels concerning an exemption from the universal screening requirement.
4. Find out if there is relevant guidance from the city or state health department about screening children not eligible for Medicaid. If there is none, consider screening all children. Children should be tested at least once when they are 2 years of age or, ideally, twice, at 1 and 2 years of age, unless lead exposure can be confidently excluded. Pediatricians should recognize that measuring blood lead concentration only at 2 years of age, when blood lead concentration usually peaks, may be too late to prevent peak exposure. Earlier screening, usually at 1 year of age, should be considered where exposure is likely. A low blood concentration in a 1-year-old, however, does not preclude elevation later, so the test should be repeated at 2 years of age. Managed health care organizations and third-party payers should fully cover the costs of screening and follow-up. Local practitioners should work with state, county, or local health authorities to develop sensitive, customized questions appropriate to the housing and hazards encountered locally.
5. Be aware of any special risk groups that are prevalent locally, such as immigrants, foreign-born

adoptees, refugees, or children whose parents work with lead or lead dust in their occupation or hobby and, of course, those who live in, visit, or work on old houses.

6. In areas with old housing and lead hazards, encourage application for HUD or other moneys available for remediation.
7. Keep current with the work of the national Advisory Committee on Childhood Lead Poisoning Prevention and any relevant local committees. Although there is now evidence that even lower blood lead concentrations may pose adverse effects to children, there is little experience in the management of excess lead exposure in these children. Although most of the recommendations concerning case management of children with blood lead concentrations of 15 μg/dL should be appropriate for children with lower concentrations, tactics that decrease blood lead concentrations might be expected to be less and less effective as they are applied to children with lower and lower blood lead concentrations.

RECOMMENDATIONS FOR GOVERNMENT

1. Identify all children with excess lead exposure, and prevent further exposure to them. The AAP supports the efforts of individual states to design targeted screening programs, even for Medicaid children. However, the goal must be to find all children with excess exposure and interrupt that exposure, not simply to screen less. To do this, state and local government activities must focus on the children who are most at risk, which requires more and better data about the prevalence of elevated blood lead concentrations in specific communities. Prevalence estimates based on convenience samples or clinic attendees are not reliable and should not be used as the basis of policy.
2. Realize that case-finding per se will not decrease the risk of lead poisoning. It must be coupled with public health programs including environmental investigation, transitional lead-safe housing assistance, and follow-up for individual cases. Lead-screening programs in high-risk areas should be integrated with other housing and public health activities and with facilities for medical management and treatment.
3. Continue commitment to the Healthy People 2010 goal of eliminating lead poisoning by 2010. The AAP supports the current plan with emphasis on lead-safe housing. Continued monitoring and commitment will be necessary. Research findings on low-cost methods of remediating housing have become controversial. The federal government should support impartial scientific and ethical inquiry into the best way to carry out the needed research.
4. Minimize the further entry of lead into the environment. Regulations concerning airborne lead should be enforced, use of lead in consumer products should be minimized, and consideration should always be given to whether a child might come into contact with such a product.
5. Encourage scientific testing of the many simple, low-cost strategies that might decrease lead exposure. Examples include hand-washing and use of high chairs. Exploration of innovative, low-technology tactics should be encouraged, perhaps through the use of special study sections or review groups. Educational resources for parents and landlords need to be developed and tested.
6. Require coverage of lead testing for at-risk children by all third-party payers by statute or regulation.
7. Fund studies to confirm or refute the finding that blood lead concentrations of less than 10 μg/dL are associated with lower IQ. The next important step in lead research is conducting of studies in which confounding by socioeconomic factors is not so strong. Funding of studies in this area needs to be given high priority, as was done in the early 1980s when the question of effects of blood lead concentrations less than 20 μg/dL was raised.
8. Gather the nationally representative data necessary for a rational public health response to the problem of childhood lead poisoning. The federal government should continue measuring children's blood lead concentrations in the National Health and Nutrition Surveys to allow national estimates of exposure and should periodically resurvey housing to measure progress in the reduction of lead-paint hazards. In addition, state governments can improve monitoring of trends among screened children by supporting electronic reporting of blood lead test results to the CDC.

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Lead Exposure in Children: Prevention, Detection, and Management
Committee on Environmental Health
Pediatrics 2005;116;1036
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Lead Exposure in Children: Prevention, Detection, and Management

Committee on Environmental Health

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American Academy of Pediatrics
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NATIONAL MEDICAL ASSOCIATION
INTERIM MEETING OF THE HOUSE OF DELEGATES

Number: 16-101X

RESOLUTION
ADOPTED MARCH 6, 2016

SUBJECT: Lead Contamination in Flint Water: Negligence

WHEREAS, the dangers of lead exposure have been recognized for millennia, and it is now established that there is no safe level of lead, particularly for children[7]. The reference blood lead concentration for children, set by the Centers for Disease Control and Prevention, is 5 μg per deciliter for risk stratification purposes only[4]. The reason the blood lead reference value wasn't set lower was because of limited resources[7], and

WHEREAS, with the increasing recognition that no identifiable BLL is safe and without deleterious and irreversible health outcomes, Healthy People 2020 identified the elimination of elevated blood lead levels (EBLL) and underlying disparities in lead exposure as a goal[6], and

WHEREAS, pregnant women, lactating women and children are at risk from lead exposure.[5] Children are more vulnerable to lead than adults because of their greater fractional absorption of ingested lead and greater intake on a body-weight basis. Lead is a potent neurotoxin, and childhood lead poisoning has an impact on many developmental and biological processes, most notably low birth weight, intelligence, behavior, and overall life achievement.[2,8] When lead concentrations in water are high, infants consuming reconstituted formula are at special risk[2,3], and

WHEREAS, African Americans adults are four times more likely to develop renal failure than their white counterparts. Low level lead exposure has been shown to decrease renal function and increase blood pressure in teenagers and adults.[8] The toxic stress associated with this crisis is likely to be further elevating blood pressures and over 40% of African Americans are already hypertensive, and

WHEREAS, Michigan officials were aware of the lead elevation in the waters of Flint and delayed taking any corrective actions until forced to due to the protests of its residents[4],

THEREFORE BE IT

RESOLVED, that the children of Flint exposed to lead contaminated water with resulting elevated blood lead levels (EBLL) have hematological and neurodevelopmental monitoring at established intervals so that they do not suffer delay in diagnosis of adverse consequences of their lead exposure.

RESOLVED, that Federal/State funded programs already established to evaluate at risk children be expanded to provide automatic entry into early intervention screening programs to help assist in the neurodevelopmental monitoring of exposed children with EBLL

RESOLVED that appropriate nutritional support be assured for all residents, but especially exposed pregnant women, lactating mothers and exposed children. That support should include Vitamin C, green leafy vegetables and other calcium sources so that their bodies will not be forced to substitute lead for missing calcium as the children grow.

RESOLVED, that the Flint community should be made aware that chronic low-level lead exposure is a potent vasoconstrictor and nephrotoxin in teenagers and adults. There should be intensive monitoring of blood pressure and renal status of Flint residents. Residents should be informed as to what constitutes an abnormal blood pressure level and where to go for treatment when abnormal results are found in order to prevent the severe consequences resulting from a lack of treatment.

RESOLVED, that there should be diagnosis and treatment of iron deficiency anemia in all residents, especially women and children.

RESOLVED, that the appropriate agencies that are aware of cities with elevated water lead levels take immediate action to alert and treat affected citizens appropriately. In addition, they must help those cities develop plans for systematic reduction of lead-contaminated water and replacement of lead pipes in an appropriate and proactive manner.

RESOLVED, that the NMA is interested in working with the local physicians to provide in-service education as well as public education messages around these issues if this is yet to be done

RESOLVED, that the NMA publish this resolution, once adapted, on its web site, in its journal, send it out in press releases and to all of its local associations.

FISCAL IMPACT: None

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The Roanoke Times - Virginia Tech water study team faces financial struggles

http://www.roanoke.com/news/virginia-tech-water-study-team-faces-financial-struggles/article_a8ca7591-3668-5ae4-a7a4-adeb8d3a3faa.html

Tuesday, April 12, 2016 3:49 pm | *Updated: 3:49 pm, Tue Apr 12, 2016.*

By Robby Korth robby.korth@roanoke.com 381-1679

BLACKSBURG — The Virginia Tech professor who helped expose elevated lead levels in Flint, Michigan, water said he would continue fighting for safe water, though it's becoming increasingly difficult because of financials.

Marc Edwards, dubbed a "hero" professor by national media, announced during a news conference Tuesday that March testing by a Virginia Tech study team revealed that lead and iron levels have dropped in the city, but residents need to take more action to make them safe again.

After the news conference, Edwards said work his team did to expose a water crisis in Flint has ended up costing his lab $250,000 plus the equivalence of five years' worth of work hours. He also took a semester off from teaching classes and hasn't had time to apply for funding for his lab's work, essential duties of a tenured professor.

"Why I haven't been fired by Virginia Tech I'm not really sure," Edwards joked. "They seem happy so far so I'm glad I still have my job.

"But I haven't been able to write grants."

Those grants are the lifeblood of Edwards' work, but in the year he's been working on the Flint study, he said he's been unable to apply for more and his lab's funds are running dry. The team has raised just shy of $100,000 on a GoFundMe page and gotten a National Science Foundation Grant worth $33,000. The lab, with personnel and equipment upkeep, requires $850,000 annually to operate.

Edwards said he and others involved in the Flint study are gauging interest in doing a similar project in Philadelphia. There are some initial similarities between Philadelphia and Flint, Edwards said.

Kelsey Pieper, a postdoctoral researcher on Edwards' team, is also looking at investigating lead levels in private wells in New York and North Carolina. That's on top of work by Tech research scientist Jeff Parks analyzing lead-testing kits distributed by nonprofit Healthy Babies, Bright Futures.

"We could not do what we did in Flint again today because I'm just not as financially strong as I was," Edwards said. "You have to be in a very strong place financially."

That doesn't mean the work in Flint hasn't paid off, he said.

"We're not complaining," he said. "This was priceless. We'll go to our graves knowing we stood up for Flint kids when no one else could or would."

Work in Flint, though, still needs to be done.

"The system is definitely on its path to recovery," Edwards said. "But we need to get more water running through the system."

Edwards recommended Flint residents continue to use lead filters or drink bottled water. Testing completed last month determined lead and iron levels in the water are dropping, but residents need to use more water to flush amassing contaminants in pipes and water mains.

Pieper said it's also important that Flint residents run their water to make sure that the infrastructure can "heal." Lead particulate is built up in the pipes, and running water will help dislodge some of that excess lead and essentially rinse it from the system, she explained.

In March, researchers took 174 samples from homes sampled in 2015. Their results showed drops in lead amounts in many of the homes, Pieper said. However, in some homes there were still high levels of lead, Pieper said.

According to Edwards, the team will continue to monitor the situation. Right now, they're planning for another round of testing in August.

"We're the only ones with access to this data," Edwards said.

The group of 25 researchers from Blacksburg has traveled to Michigan five times to analyze the tap water and then worked to make their findings public after they were ignored by government agencies. The work has resulted in national attention on water infrastructure, a state of emergency, resignations and a switch back to an old water system.

Flint's water had been contaminated with lead since 2014, when the city began getting its water from the Flint River as a cost-cutting measure. The water was then not properly treated to prevent lead in pipes from running through residents' taps. It has also been revealed that the water issues also could have caused a high number of Legionnaires' disease cases — including nine fatalities, Edwards said — in Flint.

Edwards, once again, blamed bad work from governmental agencies for the problems in Flint.

The Michigan Department of Environmental Quality and federal Environmental Protection Agency did little to nothing to help people in Flint as taxpayers funded their salaries and work, he said.

"We're all paying a horrible price for corruption and this culture where the agencies are not serving us," Edwards said. "That's what Flint has shown."

Making sure that science can help people is the most important takeaway from the Flint study, Edwards said. His hope is that he can help the public regain trust in science and stop federal agencies from betraying the public because of their own interest, he said.

Edwards said he needs to apply for grants and find ways to gather more money to continue his mission as a faculty member of Virginia Tech.

"It always works out for me," Edwards said. "If you have to sit there and ask yourself how it'll work out you'd never get anything. So what you've got do is follow your heart, do the right thing and figure it out later.

"But at the same time, there are limitations that ultimately you can't ignore."

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ONE HUNDRED FOURTEENTH CONGRESS

Congress of the United States

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COMMITTEE ON ENERGY AND COMMERCE

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Minority (202) 225-3641

May 17, 2016

Mr. Joel Beauvais
Deputy Assistant Administrator, Office of Water
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Mr. Beauvais:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on May 27, 2016. Your responses should be mailed to Graham Pittman, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to graham.pittman@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittees.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment
and the Economy

Joseph R. Pitts
Chairman
Subcommittee on Health

cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

FRED UPTON, MICHIGAN
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS

Congress of the United States

House of Representatives

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515–6115
Majority (202) 225-2927
Minority (202) 225-3641

May 17, 2016

Dr. Nicole Lurie
Assistant Secretary for Preparedness and Response
U.S. Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, DC 20201

Dear Dr. Lurie:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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May 17, 2016

Mr. Nick Lyon
Director
Michigan Department of Health and Human Services
201 Townsend Street
Lansing, MI 48913

Dear Mr. Lyon:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

STATE OF MICHIGAN
RICK SNYDER
GOVERNOR
DEPARTMENT OF HEALTH AND HUMAN SERVICES
LANSING
NICK LYON
DIRECTOR

May 27, 2016

Graham Pittman, Legislative Clerk
Committee on Energy and Commerce
2125 Rayburn House Office Building
Washington, DC 20515
graham.pittman@mail.house.gov

Dear Mr. Pittman:

I am writing in response to the letter dated May 17, 2016 from Representatives Shimkus and Pitts. Below are responses to the additional questions submitted for the record.

The Honorable Michael C. Burgess

1. **The Flint Water Advisory Task Force, among a long list of other recommendations, suggested that a Toxic Exposure Registry be implemented by the State to monitor the ramifications of the wide-spread lead poisoning in the city. Understandably, this task could be resource-heavy to execute. What resources does the State of Michigan have available to monitor disease and outbreaks? Could these resources be used to monitor the emergency in Flint in lieu of federal assistance?**

   The Michigan Department of Health and Human Services (MDHHS) has developed and maintained the Michigan Disease Surveillance System (MDSS) to gather and share information on reportable diseases. The system is designed to share data with the CDC, local public health agencies and clinical partners. The system is not designed for long-term case management or long-term follow-up and is not suitable to use as a registry.

2. **The state has promised long-term care and other services for the children of Flint who have tested positive for "elevated blood lead levels". In determining that status for children, is the state using a specific threshold for "elevated blood lead levels" or simply any discernable trace of lead in the child's blood? How will the state determine which children are ultimately eligible to receive services? How will the state care for children that were exposed to lead but were not screened within the appropriate window to test positive for lead exposure?**

   Michigan requested a Section 1115 demonstration to extend Medicaid coverage and services to Flint residents impacted by the lead exposure, which was approved by the U.S. Department of Health and Human Services' Centers for Medicare & Medicaid Services (CMS) in March 2016. Pursuant to the waiver authority granted under the Flint

Demonstration, Medicaid coverage is now available to children up to age 21 and pregnant women who were exposed to Flint water while living, working, or receiving child care and education services at an address served by the Flint Water System. These individuals will also be eligible for targeted case management services established specifically to ensure that the most vulnerable populations with respect to lead exposure are connected with the medical, educational, social and other services they may need. A case manager will meet with eligible individuals to create a plan of care, help them get needed services offered in the community, and assist with transportation to services. Enrollment in this waiver began on May 9th and the state is currently partnering with the local community, as well as the federal government, to conduct extensive outreach efforts to ensure residents are made aware of the coverage now available to them.

Additionally, children who have or have had (back to April of 2014) an elevated blood lead level (EBLL) of 5 mcg/dl have been eligible for nurse case management to specifically address the need to reduce the lead blood level and linkage to medical care and follow up. Any child eligible to receive EBLL case management is also offered an environmental investigation, and where the need and resources are available, the opportunity to have lead pipes and housing abatement occur.

Children/families whose EBLL is below five will receive additional contact and information from their Medicaid health plans as to what to be aware of, how to prevent lead poisoning, etc.

The Honorable Frank Pallone, Jr.

During the hearing, you were asked about a July 2015 MDHHS memo that observed a spike in blood lead levels in the summer of 2014, after the city switched to the Flint River water source. MDHHS officials originally concluded that this spike was seasonal and not related to the water supply. We sent you a letter on February 22, 2016, asking for more information on the MDHHS memo. Please answer the following questions relating to our February 22 letter and your testimony at the hearing:

1. **Has the Department changed its surveillance practices since July 2015?**

Significant changes have been made in the organization, staffing, and use of the blood lead surveillance data beginning September 2015.

- In September 2015, two senior epidemiologists from MDHHS reanalyzed the blood lead surveillance data for Flint, following concerns raised by Dr. Mona Hanna-Attisha.
- In mid-November 2015, the two staff responsible for the operation of the blood lead surveillance system were transferred to the Division of Environmental Health in order to locate the data management and surveillance functions of the Childhood Lead Poisoning Prevention Program (CLPPP) with environmental surveillance and epidemiology. This transfer also integrated the data surveillance functions with the program that is responsible for overseeing programs that fund lead home hazards assessments and lead home abatements.

- In January 2016 three new positions were identified to provide additional support statewide for maintaining and enhancing the data system and for conducting epidemiologic analyses.
- During February 2016, two teams of scientists from the Centers for Disease Control and Prevention (CDC) were detailed to MDHHS to provide technical advice on epidemiologic methods, long term surveillance strategies, and mapping of the blood lead and environmental data. The team has continued their technical consultations from their offices in Atlanta, with calls twice a month and ongoing data analysis projects.
- Major productions following these organizational changes have included:
    - Weekly postings of blood lead data summaries for Flint on the Flint water website (www.michigan.gov/flintwater).
    - Development of a data system to track case management and environmental investigation follow-up related to children with elevated blood lead levels in Flint.
    - Timely response to over 130 requests for blood lead data from researchers, the media, the public, local health departments, and others since February 1, 2016.
    - As required by statute, release of two statistical lead data summary reports, one for the legislature and one for the public.
    - Major progress in completing the redesign of the surveillance data management system to align with 2016 information technologies and State of Michigan IT requirements.
    - On-going partnership with the CDC science team to develop and validate statistical methods to detect unusual trends in elevated blood lead levels and to develop a long term surveillance strategy document.

2. **In hindsight, what lessons have you learned as a result of these events? How can we strengthen surveillance to ensure that spikes in blood lead levels in children are detected in a timely manner and that determinations of correlation and causation are made when appropriate?**

   Detection of unusual trends in elevated blood lead level data is challenging. There are expected variations in trends of elevated blood lead levels, including seasonal spikes in the summer and there has been a long-term downward trend in the numbers/percent of children with elevated blood lead levels. The team of CDC scientists is working with MDHHS to develop epidemiologic methodologies that can be applied in the future. These methodologies will not establish causation, but should be able to identify potential variances from normal trends that then signal the need for more in-depth analysis, causal research studies, environmental assessments including water testing, home evaluations of children, or other community interventions.

   Also in the February 22 letter, you were [informed] about Dr. Hanna-Attisha's findings that the blood lead levels of children in Flint had increased significantly following the switch to the Flint River water source. State officials suggested that Dr. Hanna-

Attisha's data differed from their own data, which showed "no increase outside the normal seasonal increases."

3. **In hindsight, what lessons have you learned as a result of these events? How do you and officials in your department believe we can strengthen surveillance of blood lead levels in children?**

   As discussed above, organizational changes, increased scientific staffing, and significant resources have been directed toward strengthening the blood lead surveillance system to ensure that the data system is accurate and timely, and, on an ongoing basis, is used to better identify potential blood lead level elevation trends in communities and target appropriate community interventions.

In your response to the February 22, 2016 letter, you did not provide answers to several of the questions. Please submit answers to the following questions:

The July 2015 MDHHS memo confirmed a spike in blood lead levels in the summer of 2014, after the city switched to the Flint River water source; however, MDHHS officials originally claimed that this spike was "seasonal and not related to the water supply."

4. **What led MDHHS to compile the July 2015 report?**

   As part of the response to Dennis Muchmore's 7/22/2016 email, the CLPP director requested Epidemiology staff to compare 2014-2015 counts to 2013-2014 counts to see if there was a statistically significant difference in blood lead levels since the switch.

5. **What was the basis for MDHHS's conclusion that the spike was not related to the water supply?**

   It is my understanding that MDHHS staff were interpreting these results based on information from DEQ that Flint was in compliance with federal lead levels in water supply. MDHHS staff were not aware that lead in water varies seasonally. Thus, if the spike was related to the water supply, it was expected that the proportion of children with EBLL would remain high over the fall and winter, which was not shown by the data.

6. **Did MDHHS seek technical assistance from the CDC or any other experts in interpreting blood lead level results? If not, should the agency have considered seeking such assistance?**

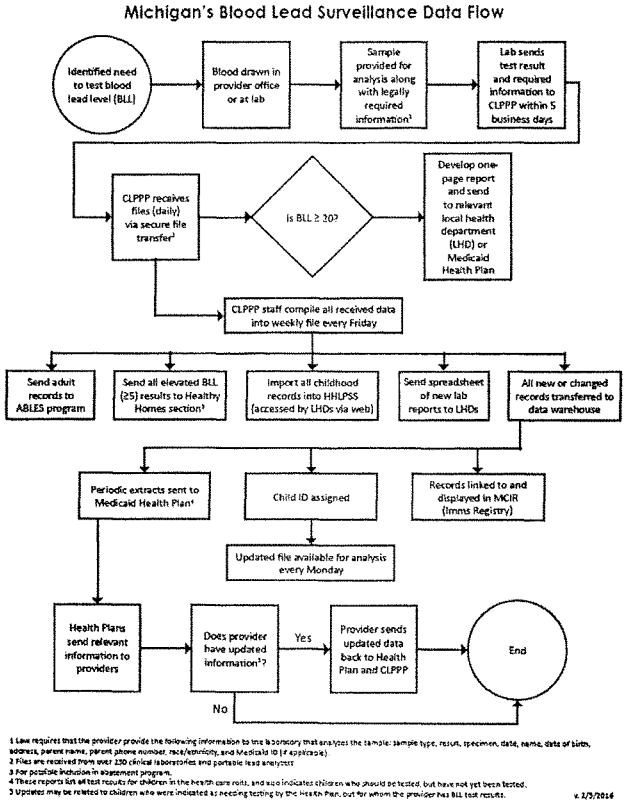
   To the best of my knowledge, based on information from DEQ that Flint was in compliance with federal lead levels in water supply, DHHS staff did not seek technical assistance from CDC or other experts in interpreting blood lead level results in July 2015.

7. **Please provide all documents and communications related to this report.**

   If you have any specific questions or concerns about the report, we will be happy to address them.

8. The July 2015 report indicated that "[d]ata for the City of Flint was provided by the Childhood Lead Poisoning Prevention Program at the Michigan Department of Health and Human Services." How is that data compiled? How frequently is it compiled? What data was provided to assist in compiling the July 2015 report?

The data used in this report were monthly counts of children with elevated lead test during this time period and monthly counts of lead tests performed. Lead tests are to be reported to MDHHS Childhood Lead Poisoning Prevention Program (CLPPP) in accord with Michigan Law, MCL 333.5474. A process flow chart for how the data are summarized and made available to a variety of stakeholders is below:



In September 2015, State officials received Dr. Hanna-Attisha's findings that Flint children's blood lead levels had increased significantly following the switch to the Flint River. State officials suggest it is different from their own data, which showed "no increase outside the normal seasonal increases."

9. **How was MDHHS conducting blood lead level testing? How was that different from Dr. Hanna-Attisha's methodology?**

   The MDHHS method differed in a number of ways from the MSU/Hurley group's study as described in the "Pediatric Lead Exposure in Flint, Michigan: A Failure of Primary Prevention," presented at a September 2015 press conference.

   The MDHHS work:
   - Used a regression technique. The initial MSU/Hurley study presented to the press used a chi-squared analysis, although these researchers also used geospatial analysis techniques for their journal publication (Hanna-Attisha et al. Am J Public Health. December 21, 2015: 21-28.).
   - Included all tests reported to the state health department. The MSU/Hurley study included those tests processed through Hurley Medical Center.
   - Included all tests for each child in a calendar year up until and including the first test with elevated blood level. The MSU/Hurley study selected the highest test for each child in each time period.
   - Examined monthly rates from January 2010 to August 2015. The MSU/Hurley study compared rates in two time periods (January-September 2013 and January-September 2015).
   - Included season and age in the regression to adjust for the expected seasonal pattern of lead testing and for differences in the age of children being tested in different areas of the county. The MSU/Hurley analysis controlled for seasonality by limiting each pre- and post-switch time period to the same season.
   - Grouped zip codes to be consistent with the high risk and lower risk definitions used by Dr. Mona Hanna-Attisha's group (MSU/Hurley researchers). Dr. Hanna-Attisha's group later geocoded the Hurley data to more finely characterize water exposure, which was presented in the AJPH article.

10. **What steps, if any, did MDHHS take to verify Dr. Hanna-Attisha's findings?**

    Due to differences in data sets, MDHHS did not try to replicate Dr. Hanna-Attisha's methods. The Poisson regression method was used to assess differences in the proportion of children with EBLL prior to and after the change to Flint River water in April 2014.

11. **Please provide all documents and communications related to Dr. Hanna-Attisha's findings, including documents related to any efforts to verify or refute her findings.**

    If you have any specific questions or concerns in this regard, we will be happy to address them.

The Flint Water Advisory Task Force recommends that the Governor issue an Executive Order mandating guidance and training on environmental justice across all state agencies in Michigan, pointing to Flint as an example. Additionally, the task force recommends that the State reinvigorate and update implementation of an Environmental Justice Plan for the State of Michigan.

12. **Do you agree with these recommendations? Is your department engaged in efforts to implement them?**

Through our training efforts on health equity and social determinants of health, the department has raised awareness about how these concepts may have an impact on public health. Additionally, in working with our Health Equities and Reduction team, we have engaged staff in a number of trainings and workshops to educate staff on these important concepts.

13. **The task force recommends that MDHHS consider "converting the Childhood Lead Poisoning Prevention Program from passive collection of test results into an active surveillance and outreach program." Is MDHHS planning to implement this recommendation? Is MDHHS considering any other improvements to the Childhood Lead Poisoning Prevention Program so it is better equipped to track trends in lead exposure?**

The MDHHS Childhood Lead Poisoning Prevention Program's (CLPPP) blood lead surveillance system has been collecting blood lead testing results from laboratories since 1998 for two purposes. (1) Historically, the primary purpose of the surveillance system has been to ensure that children with elevated blood lead levels (EBL) are identified and connected with lead poisoning prevention and, if needed, medical treatment services. This has been accomplished by providing local health departments with information on a near real-time basis about the children in their jurisdiction who have EBLs, and then making technical assistance and training available to local health departments who do follow-up with these children.

In addition, the data have been, and continue to be, used by health care providers (by linking the blood lead data to the Michigan Care Improvement Registry, Michigan's immunization registry, and Medicaid Health Plans) to identify children who need blood lead testing. By providing annual descriptive data summaries to local health departments and the public, providing de-identified data to the Centers for Disease Control and Prevention (CDC), and making the data available to researchers, CLPPP has provided information for others to look at trends over time and the identification of high risk groups.

Both CDC and CLPPP recognize the need for a more sophisticated set of statistical tools to be applied to the data on an on-going basis that can be used to identify subtle changes in trends over time or among high risk groups. Although this work is on-going, CLPPP has already applied some epidemiologic tools developed for Flint data to data from another jurisdiction. We are also in the process of completing a long-term surveillance strategy plan than incorporates on-going tracking of trends and identification of anomalies and unusual clusters of elevated blood lead levels that would then trigger additional investigation.

The task force recommends that MDHHS "improve screening rates for lead among young children through partnerships with county health departments, health insurers, hospitals, and healthcare professionals."

14. Do you agree with this recommendation? Why or why not?

We agree that all children need to be screened for lead as recommended by the American Academy of Pediatrics (AAP). This is a requirement of the Medicaid Health Plan contracts for all children covered by Medicaid. We agree that continuing to work with a wide range of partners is necessary to continue to expand the number of children tested.

15. What is the status of Flint's comprehensive effort to ensure all children under age 6 are screened for lead? What does MDHHS plan to do with the data derived from this screening effort?

Medicaid health plans that provide health care coverage to children in Flint have held many screening activities, conducted extensive outreach to families with children, and have worked very hard to have all pediatric medical homes actively working with children in their respective practices to increase the number of children screened. The local public health department has also done additional activities to screen more children, as have local WIC programs. The evidence-based home visiting programs in Flint have been asked specifically to follow up with families involved in these services to assure all young children are screened, as well as that all families have received the necessary information about the local Flint situation, how to prevent lead poisoning, have water filters, etc.

Data from this activity is recorded in the CDC Healthy Homes and Lead Poisoning Surveillance System (HHLPSS) and reports are issued each week to local health departments statewide and to Medicaid health plans; each has a list of the children in their respective plans and/or jurisdictions that have elevated blood levels. In Flint, MDHHS is involved in assuring each child who has had an elevated blood lead level back to April of 2014 is provided with the opportunity for EBLL case management, as well as environmental investigations and remediation/abatement. The data is monitored and information is reported to the various entities involved.

16. What actions does MDHHS plan to take to improve screening rates across the State of Michigan?

Additional attention to screening requirements is being stressed for all Medicaid health plans across the state, and health plans as well as many local health departments. WIC programs are renewing efforts to assure as many children as possible are screened.

In April 2016, there were press reports confirming two more fatal cases of Legionnaires' disease in the Flint area last year. Of the 91 cases in 2015 now confirmed by the Michigan Department of Health and Human Services, 50 were linked to a Flint hospital served by the municipal water system.

17. Can you confirm these figures for Legionnaire's disease in the State in 2015?

Yes. Those figures are correct.

The Flint Water Advisory Task Force analyzed the state's response to the Legionnaire's disease outbreak. The task force found that "communication and coordination among local and state public health staff and leadership regarding Legionellosis cases in 2014-2015 was inadequate to address the grave nature of this outbreak."

18. Have you undertaken efforts to improve coordination at the state and local levels regarding this outbreak?

MDHHS typically serves in a supporting role for investigations being led by local health departments. MDHHS continues to consistently offer guidance and resource support to the GCHD in support of their efforts. Guidance includes direction to appropriately assess the epidemiology of the cases of illness that are reported, notify the healthcare community and promote the collection of appropriate clinical and environmental specimens. MDHHS coordinated with local and federal partners to develop guidance on clinical evaluation, specimen collection and testing. MDHHS recently hosted a two day, CDC directed, laboratory training event. The MDHHS requested this CDC program and brought laboratorians from the three Flint area hospitals together to standardize the laboratory approach to testing for Legionella. MDHHS, CDC and GCHD staff worked together in the development of the Toolkit that describes best practices in water management to minimize amplification and transmission of Legionella in high risk facilities (including hospitals).

19. The task force recommended that MDHHS make a formal request to CDC for assistance in assessing this disease outbreak. Has that occurred?

A formal request was made of CDC leadership toward the development of the water management toolkit that has now been completed and distributed throughout Flint and the State. CDC staff involved in that development have also reviewed analysis and data from the disease outbreaks. Their assessment has indicated that the predominant source of the increase in cases was a specific healthcare facility. Enhanced surveillance and additional study is underway to evaluate water chemistry elements and how they may have played a role in the proliferation of Legionella bacteria in water systems. It is important to note CDC staff were embedded within MDHHS and worked closely with MDHHS and local health department staff throughout the outbreak.

20. The task force recommended that MDHHS develop a strategy for improving prevention, rapid detection, and timely treatment of cases of Legionnaire's disease in Michigan in 2016 and beyond. Has that occurred?

MDHHS has worked with the CDC, the Genesee County Health Department, risk communication expert, Dr. Matthew Seeger, as well as other subject matter experts, to develop frequently asked questions (FAQ) for the public and which were released in early May, 2016. (Those FAQs were published in multiple languages, including ASL.) In addition,

enhanced guidelines for the surveillance detection, testing, control and management of legionella, were developed as a collaboration between MDHHS and GCHD and the Genesee County Medical Society and FACEP.

MDHHS worked with the CDC, the Genesee County Health Department and other infection prevention specialists within the local health systems to develop a toolkit titled, "Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings," which is to be distributed nationwide. This toolkit is based on implementations of best practices in building water safety plans in the City of Flint, and the lead author is the CDC. With this toolkit, all facilities that have been identified as high risk for potential Legionnaires' contamination for their water systems have been identified. Facility managers will work closely with the support of both local and state health departments for the mitigation and development of their water safety plans.

MDHHS staff are working with the Flint Area Community Health & Environment Partnership (FACHEP) as they define the second phase of their project. This Wayne State University-led, independent research team is developing a two year strategy in Flint that includes partnerships in the clinical and public health communities with the defined goal of developing and implementing "best practices in enhanced and timely Legionellosis case recognition, reporting, and investigation." In the clinical community, a stated objective is to increase health-care provider application of optimal clinical approaches to the detection, diagnosis and management of case-patients with suspected, probable and confirmed Legionellosis.

21. **Is MDHHS undertaking any evaluation to understand whether this disease outbreak is linked to the 2014 shift to drinking water from the Flint River? Please update us on the status of this evaluation.**

Part of the FACHEP project involves an evaluation of water chemistry elements and how they may have played a role in the proliferation of Legionella bacteria in water systems. An environmental component of the study will describe the prevalence of legionella in the existing Flint water system in comparison to other communities. Investigators will assess the impact of Flint River water treatments on the viability, resilience and virulence of L. pneumophila.

Ongoing enhanced surveillance for legionella will continue by the local and state health departments, in partnership with the local health care systems. Any potential environmental source identified in the case investigations will be promptly tested and shared with all stakeholders.

The Flint Water Advisory Task Force concluded that "[t]he rate of follow-up on children with elevated blood lead levels through January 2016 was unacceptable, illustrating a low level of coordination between the Genesee County Health Department, which serves Flint, and the Michigan Department of Health and Human Services and insufficient resources devoted to this task." According to that report, as of late January 2016, only about one-fifth of children known to have elevated blood

lead levels in Flint since April 2014 had received in-home environmental assessments, which include water testing.

Please provide the Committee with an update on both the number of children who have been identified as having elevated blood lead levels and what percentage of those children have received the recommended environmental follow-up.

Between April 1, 2014 and May 20, 2016, 328 Flint children 17 years old or less had blood lead levels greater than 5 µg/dl. Of these, 87 children have had environmental investigations in their homes.

22. When do you expect that all affected children will have received this follow-up?

MDHS has used a multipronged approach to provide these services to the families residing in Flint. This has included a contract with the Genesee County Health Department (GCHD) to work closely with their nursing case managers to enroll and schedule families for the Environmental Investigation (EI). This contract has recently been transitioned to *Genesee County Children's Healthcare Access Program* (CHAP). Secondly, MDHHS has provided direct mailing to all families with EBL children in Flint and across the state. This direct mailing offers EI services to any family that meets minimum eligibility criteria. MDHHS worked closely with the U.S. Public Health Service who provided nursing field support to assist GCHD case management nurses in reaching families to schedule EIs.

To date 107 families have been contacted and 77 EIs have been performed from this list plus two additional EIs from our direct mailings. At this time 34 families will be contacted directly by the private consulting firm to attempt to schedule the families for an EI. MDHHS has made funding and contract personnel available to accomplish this goal.

23. Are there barriers or resource constraints that have prevented Michigan from ensuring that all the identified children receive the recommended environmental follow-up?

A number of families have responded that they are not interested in the EI and other families have not responded to repeated attempts to schedule the EI. All efforts are being made to educate the family on the importance of the EI and to schedule this service. Additional suspected barriers may include the perceived message that water is the only exposure source for lead poisoning and the family may have had a previous water test and does not understand the need for testing additional sources of lead in paint, dust, soil and other household items.

Another barrier appears to be homeowner and tenant fatigue from the numerous amount of services being offered to them.

Another barrier may be a homeowner or tenant's reluctance to remove the source or sources of lead exposure due to pending litigation against named parties of the lawsuit.

24. What strategies are the Michigan Department of Health and Human Services or Genesee County Health Department using to increase the number of identified children who have received the recommended environmental follow-up?

MDHHS and GCHD are working to develop a more comprehensive education and outreach message to increase understanding and fact sheets for distribution on sources of lead. MDHHS and GCHD are also working with community partners to help to inform residents of the continued need to address all sources of lead exposure in their homes.

The Honorable Gene Green

In February of this year, I, along with Ranking Member Pallone, Rep. DeGette, and Rep. Tonko, sent a letter to the Michigan Department of Health and Human Services (MDHHS) to better understand the role of blood lead level surveillance in the Flint crisis.

The Department answered some, but not all of our questions, in its response dated March 11, 2016. I want to follow-up on some of those questions today to better understand how we can improve surveillance of blood lead levels in children, both in Michigan and across the country.

In our February 22 letter, we asked you about a July 2015 MDHHS memo that observed a spike in blood lead levels in the summer of 2014, after the City of Flint switched to the Flint River as its drinking water source. However, MDHHS officials originally concluded that this spike was seasonal and not related to the water supply.

1. **Mr. Lyon, what led your Department to compile the July 2015 report?**

As part of the response to Dennis Muchmore's 7/22/2016 email, the CLPPP (Childhood Lead Poisoning Prevention Program) Director requested Epidemiology staff to compare 2014-2015 counts to 2013-2014 counts to see if there is a statistically significant difference in blood lead levels since the switch.

2. **Why did MDHHS conclude that the spike was not related to the water supply?**

It is my understanding that MDHHS staff were interpreting these results based on information from DEQ that Flint was in compliance with federal lead levels in water supply. MDHHS staff were not aware that lead in water varies seasonally. Thus, if the spike was related to the water supply, it was expected that the proportion of children with EBLL would remain high over the fall and winter, which was not shown by the data.

3. **In hindsight, what lessons have you learned as a result of these events? How can we strengthen surveillance to ensure that spikes in blood lead levels in children are detected in a timely manner?**

As a result of the Flint water event, CLPPP and the CDC have recognized the need for a more sophisticated set of statistical tools to be applied to the data on an on-going basis that can be used to identify subtle changes in trends over time or among high risk groups.

Accordingly, additional staff with training in epidemiology have been assigned to work on this, with technical assistance from CDC. Although this work is on-going, CLPPP has already applied some epidemiologic tools developed for Flint data to data from another jurisdiction. CLPPP also is in the process of completing a long-term surveillance strategy plan than incorporates on-going tracking of trends and identification of anomalies and unusual clusters of elevated blood lead levels that would then trigger additional investigation.

4. **In our letter, we requested all documents and communications related to this report. We believe that these documents are important to enhance our understanding of how to strengthen surveillance and what lessons we should draw from Flint. Would you be willing to provide us with these documents?**

If you have any specific questions or concerns in this regard, we will be happy to address them.

Thank you. Similarly, in our February 22 letter, we asked about Dr. Hanna-Attisha's findings that Flint children's blood lead levels had increased significantly following the switch to the Flint River water source. State officials suggested that Dr. Hanna-Attisha's data differed from their own

5. **Mr. Lyon, can you explain the discrepancy between the state's own data and Dr. Hanna-Attisha's findings?**

The MDHHS method differed in a number of ways from the MSU/Hurley group's study "Pediatric Lead Exposure in Flint, Michigan: A Failure of Primary Prevention, presented at her September 2015 press conference." The MDHHS work:

- Used a regression technique. The initial MSU/Hurley study presented to the press used a chi-squared analysis, although these researchers also used geospatial analysis techniques for their journal publication (Hanna-Attisha et al. Am J Public Health. December 21, 2015: 21-28.).
- Included all tests reported to the state health department. The MSU/Hurley study included those tests processed through Hurley Medical Center.
- Included all tests for each child in a calendar year up until and including the first test with elevated blood lead level. The MSU/Hurley study selected the highest test for each child in each time period.
- Examined monthly rates from January 2010 to August 2015. The MSU/Hurley study compared rates in two time periods (January-September 2013 and January-September 2015).
- Included season and age in the regression to adjust for the expected seasonal pattern of lead testing and for differences in the age of children being tested in different areas of the county. The MSU/Hurley analysis controlled for seasonality by limiting each pre- and post-switch time period to the same season.
- Grouped zip codes to be consistent with the high risk and lower risk definitions used by Dr. Mona Hanna-Attisha's group (MSU/Hurley researchers). Dr. Hanna-Attisha's group later geocoded the Hurley data to more finely characterize water exposure, which was presented in the AJPH article.

6. **In hindsight, what lessons have you learned as a result of these events?**

   Detection of unusual trends in elevated blood lead level data is challenging. There are expected variations in trends of elevated blood lead levels, including seasonal spikes in the summer and there has been a long-term downward trend in the numbers/percent of children with elevated blood lead levels. The team of CDC scientists is working with MDHHS to develop epidemiologic methodologies that can be applied in the future. These methodologies will not establish causation, but should be able to identify potential variances from normal trends that then signal the need for more in-depth analysis, causal research studies, environmental assessments including water testing, home evaluations of children, or other community interventions.

7. **In our letter, we requested all documents and communications related to Dr. Hanna-Attisha's findings. Would you be willing to provide us with these documents moving forward?**

   If you have any specific questions or concerns in this regard, we will be happy to address them.

8. **Do you have anything else to add about how we can strengthen surveillance of blood lead levels in children?**

   We can strengthen surveillance of blood lead levels through a nationwide uniform system for collection of complete information on tested children from provider electronic medical records, electronic transmission of blood lead laboratory test results, and automated data management systems that can process reports accurately and rapidly so that they can be made available for analysis and follow-up of children with elevated blood lead levels.

   Thank you. We appreciate your responsiveness and cooperation with our inquiry.

   <u>The Honorable Lois Capps</u>

   The CDC's Childhood Lead Poisoning Prevention Program provides funding to state health departments to screen children for elevated blood levels. Through this program, Michigan's Department of Health and Human Services received $327,353 in FY 2014. In 2012-2013, Congress nearly zeroed out funding for this federal program and only partially restored it recently, to 50% of original levels. The impact of lead poisoning in children is of particular concern, especially due to the tremendous long-term effects on growth and development.

1. **Can you talk about what you are you doing to strengthen Michigan's blood lead level monitoring program?**

   Significant changes have been made in the organization, staffing, and use of the blood lead surveillance data beginning September 2015.

- In September 2015, two senior epidemiologists from MDHHS reanalyzed the blood lead surveillance data for Flint, following concerns raised by Dr. Mona Hanna-Attisha.
- In mid-November 2015, the two staff responsible for the operation of the blood lead surveillance system were transferred to the Division of Environmental Health in order to locate the data management and surveillance functions of the Childhood Lead Poisoning Prevention Program (CLPPP) with environmental surveillance and epidemiology. This transfer also integrated the data surveillance functions with the program that is responsible for overseeing programs that fund lead home hazards assessments and lead home abatements.
- In January 2016 three new positions were identified to provide additional support for maintaining and enhancing the data system and for conducting epidemiologic analyses.
- During February 2016, two teams of scientists from the Centers for Disease Control and Prevention (CDC) were detailed to MDHHS to provide technical advice on epidemiologic methods, long term surveillance strategies, and mapping of the blood lead and environmental data. The team has continued their technical consultations from their offices in Atlanta, with calls twice a month and ongoing data analysis projects.
- Major outputs following these organizational changes have included:
    - Weekly postings of blood lead data summaries for Flint on the Flint water website (www.michigan.gov/flintwater).
    - Development of a data system to track case management and environmental investigation follow-up related to children with elevated blood lead levels in Flint.
    - Timely response to over 130 requests for blood lead data from researchers, the media, the public, local health departments, the Governor's office, and others since February 1, 2016.
    - As required by statute, release of two statistical lead data summary reports, one for the legislature and one for the public.
    - Major progress in completing the redesign of the surveillance data management system to align with 2016 information technologies and State of Michigan IT requirements.
    - On-going partnership with the CDC science team to develop and validate statistical methods to detect unusual trends in elevated blood lead levels and to develop a long term surveillance strategy document.

2. What are some lessons learned, and considerations we should take into account as we consider how to strengthen the program on a national level?

The CDC funding to states and local jurisdictions for childhood lead poisoning prevention is intended to be used to maintain the laboratory-reporting-based surveillance system and to "...use surveillance data to identify the highest risk areas and implement appropriate population-based prevention interventions wherever needs are identified." [1] The amount of funds allocated to MDHHS annually under this program is enough to cover three data

[1] CDC-RFA-EH14-1408PPHF14, p. 6.

management/technician staff, but no funds for scientific support, education and other interventions for primary prevention, or the information technology (IT) support that is essential in managing the 150,000 laboratory reports a year in 21st century IT standards. MDHHS has had to identify resources from other programs to maintain and upgrade the electronic data system and to use the data for on-going data analysis and dissemination, but these additional funding sources may be temporary. This problem is not unique to Michigan. Thus additional dedicated funding for CLPPP programs nationwide is essential for the future prevention of childhood lead poisoning.

The Honorable Michael Doyle

1. **Why isn't the state government providing long-term, coordinated medical care and monitoring of the medical conditions of Flint residents? And, given the level of distrust now, what is the administration in your state doing to restore that trust? Wouldn't consulting with credible outside entities both ensure Flint residents have access to essential care and help to restore their trust?**

   MDHHS is working with a number of agencies and partners through the Flint Water Interagency Coordinating Committee. This committee includes a multitude of community partners who strategically assess the needs of the Flint community and provide access to resources as needed. This coordinating committee is made up of key stakeholders in the Flint community, leaders in state agencies, and subject matter experts. These experts include Dr. Mona Hanna-Attisha of Hurley Medical Center and Dr. Marc Edwards of Virginia Tech University. The purpose of this committee is to discuss long-term solutions, analyze any long-term effects of high lead levels, and recommend action impacting Flint residents. The Flint Water Interagency Coordinating Committee is responsible for reviewing the recommendations of the Flint Water Advisory Task Force for implementation.

2. **Why isn't the state government providing central, coordinated care and monitoring for all Flint residents? Not just those who qualify under the Medicaid wavier exception—every single resident? How will you pay for it? Who will run it? When will it be in place?**

   Through the FY 16 supplemental funding, a total of $18,444,055 has been appropriated for variety of services to address the nutrition, physical health, and mental health and well-being of Flint community residents.

3. **Why isn't the state providing ongoing care for lead exposure related conditions for both children and adults instead of relying on blood tests and donated medical services? Why aren't you monitoring other issues besides blood lead levels? Are there sufficient medical resources within the City of Flint to provide the type of care needed? How do you know? When are you going to start focusing on long-term solutions, rather than putting Band-Aids on this problem? How will you pay for them? Who will you work within Flint to make sure these solutions are working?**

   MDHHS is working with a variety of internal and external partners and community agencies to provide a multitude of services including nutrition, education, access to health services, mental health services, etc. in the Flint community. I serve on the Flint Water Interagency Coordinating Committee, and chair the Health and Education subcommittee.

   Thank you for the opportunity to respond to your questions.

   Sincerely,

   [redacted]

   Nick Lyon
   Director

FRED UPTON, MICHIGAN
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS

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May 17, 2016

Mr. Keith Creagh
Director
Michigan Department of Environmental Quality
525 West Allegan Street
Lansing, MI 48909

Dear Mr. Creagh:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on May 27, 2016. Your responses should be mailed to Graham Pittman, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to graham.pittman@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittees.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment
and the Economy

Joseph R. Pitts
Chairman
Subcommittee on Health

cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

KEITH CREAGH
DIRECTOR

Michigan Department of Environmental Quality's Answers to Questions Posed by Members of the Committee on Energy and Commerce

The Honorable Susan Brooks

Question 1. How do the U.S. EPA and environmental state agencies educate homeowners, businesses, and schools on what their responsibilities are when it comes to water-related infrastructure – whether it's in the ground or internal infrastructure, such as old faucets and drinking fountains?

Answer 1. The Michigan Department of Environmental Quality (MDEQ) has implemented a comprehensive education and outreach program for the residents of the City of Flint (Flint). The goal of the program is to increase the residents' awareness of lead exposure risks with respect to the plumbing in their homes and the service lines that connect their homes to the water main. The MDEQ is utilizing a five-prong approach to sampling, which includes the following:

- Residential testing,
- School testing (which includes daycares and other at risk populations),
- Food establishments
- Elevated blood lead investigations, and
- Sentinel testing.

Each testing program is designed to target a specific area of concern in Flint so that residents will receive comprehensive protection. A detailed explanation of the five-prong plan is attached. In addition, the MDEQ has "high lead" investigation teams that conduct visits to those homes with over 100 parts per billion (ppb) of lead or over 1,300 ppb of copper. The teams consist of:

- a representative of the MDEQ,
- a representative of the Michigan Department of Health and Human Services (MDHHS),
- a professional plumber from Local Union 370, and
- a member of the community.

The investigation teams:

- provide residents with information on what the test results mean,
- ensure that the residents know how to properly install and maintain the filter units that are provided at no cost,
- conduct an inspection to determine the material of the service line entering the home,
- provide information on aerator cleaning,
- provide nutritional information, and
- provide information on additional services that are available.

The MDEQ is also conducting an ongoing series of town hall meetings in a variety of settings such as churches, community centers, schools, and elder care facilities. These forums offer residents the opportunity to ask questions on a wide variety of topics related to the lead exposure. The MDEQ has also formally and publicly presented on topics such as the importance of flushing water lines in the home to reduce particulates and to accelerate the reestablishment of the protective layer in the pipes.

Every other Friday, the MDEQ participates in two key meetings: one with the Flint Water Interagency Coordinating Committee (FWICC) and the second with Mission Flint. The FWICC includes members from several State of Michigan departments, Flint, as well as representatives of different community groups and the scientific community. The purpose of the FWICC is to coordinate the efforts of the various partners to create a consensus addressing the lead exposure. The Mission Flint meetings are designed to interact with various groups in the community to learn and respond to their needs.

The MDEQ also educates the public regarding infrastructure concerns using handouts that have been created to help explain issues, such as what to do if construction is occurring nearby, how to reduce potential lead exposure, how to reoccupy a residence that has been unoccupied for an extended period of time, and how particulate lead can affect sample results.

Question 2. What is your agency doing to inform the public of best practices when they have lead service pipes delivering water to their homes?

Answer 2. One of the challenges regarding the service lines is that Flint's records are not always accurate or complete regarding the material composition of the home service line. The MDEQ has led a door-to-door campaign to identify the material of the home service lines. As lead service lines are identified, the MDEQ representatives inform residents of their findings and review the recommended precautionary measures to ensure that residents understand the precautions and have the necessary commodities to implement the relevant recommendations. The MDEQ provides commodities such as filters, cartridges, and bottled water to Flint residents without charge.

The State of Michigan is working with communities outside of Flint by providing recommendations on compliance testing for the federal Lead and Copper Rule (LCR) and how to deal with issues related to lead service lines. A copy of the March 14, 2016, memo from the MDEQ to community water supplies discussing these recommendations is attached.

In addition to this memo, the MDEQ is developing recommendations concerning the federal LCR and has put together a guidance document for testing in schools on a statewide basis. A copy of the draft protocol is attached.

The Honorable Paul Tonko

Question 1. Is there a reliable inventory of lead service lines in Flint? If not, will the creation of such an inventory be part of Flint's replacement program?

Answer 1. The field investigations conducted by the MDEQ have shown that the service line material inventory is not always accurate. The MDEQ created a database to document what has been verified by physical inspection. The MDEQ is working with the University of Michigan, Michigan State Police, and Flint to create an accurate representation of service line materials and to map this data in GIS to assist Flint in its decisions relating to the service line removal program.

Question 2. Has work been done to help Flint make information on the location of lead service lines publicly available to residents? Is that information accessible digitally?

Answer 2. The identification of service line material composition is ongoing. As this information is collected, it is being incorporated into a database that will be shared with Flint.

Question 3. I have seen cost estimates of about $5,000 per replacement of a lead service line. How much has the State of Michigan allocated to complete lead line replacement in Flint? Is that amount going to be sufficient based on existing estimates of the number of lead lines and the cost of replacement?

Answer 3. The State of Michigan provided Flint $2 million for the replacement of lead service lines. Another $25 million is awaiting final action in the Michigan House of Representatives for this project. Rowe Engineering recently completed a pilot service line replacement program, through which Rowe replaced 33 different service lines and developed best practices to reduce costs associated with service line removal. A copy of the Rowe Pilot Program Report is attached. The amount of money necessary to replace lead service lines is still to be determined and will be based on the results of the field investigations and other efforts to determine the accuracy of service line records.

Question 4. Is there an intention to follow the Flint Water Advisory Task Force's recommendation to prohibit partial line replacements? If so, what is being done to help homeowners that cannot afford the cost of replacing their line? Are additional protections or outreach protocols being developed to assist low-income homeowners or renters that might not be able to make the financial decisions or investments necessary for their privately owned portion of the line?

Answer 4. The MDEQ is opposed to partial service line replacement and has provided guidance to community water supplies against this practice. A memo from the MDEQ dated March 14, 2016 to community water supplies addressing this issue is attached. The State of Michigan is providing funds to Flint for the full replacement of lead service lines. In addition, notification is being provided to neighbors when service lines are being replaced so that they can take precautionary measures. Samples are taken both before and after service line replacements, and residents are instructed to ensure that they continue to use filtered water for a minimum of 3 months after the replacement of a service line.

The Honorable Lois Capps

These questions will be answered by the Michigan Department of Health and Human Services.

Attachments:

Attachment 1: 5 Prong Sampling Plan
Attachment 2: Sygo Letter to Community Water Supplies
Attachment 3: Sampling Guidance for Schools and Daycares
Attachment 4: Rowe Engineering Report

FRED UPTON, MICHIGAN
CHAIRMAN

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RANKING MEMBER

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May 17, 2016

Dr. Mona Hanna-Attisha
Program Director, Pediatric Residency
Hurley Children's Hospital
1 Hurley Plaza
Flint, MI 48503

Dear Dr. Hanna-Attisha:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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Thank you again for your time and effort preparing and delivering testimony before the Subcommittees.

Sincerely,

John Shimkus
Chairman
Subcommittee on Environment
and the Economy

Joseph R. Pitts
Chairman
Subcommittee on Health

cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

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May 17, 2016

Mr. Steve Estes-Smargiassi
Director of Planning and Sustainability
Massachusetts Water Resources Authority
100 First Avenue, Building 39
Boston, MA 02129

Dear Mr. Estes-Smargiassi:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

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Joseph R. Pitts
Chairman
Subcommittee on Health

cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

American Water Works Association
Dedicated to the World's Most Important Resource®

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June 3, 2016

The Honorable John Shimkus
Chair
Subcommittee on Environment and the Economy

The Honorable Joseph R. Pitts
Chair
Subcommittee on Health

U.S. House of Representatives
Washington, DC 201515

Dear Representatives Shimkus and Pitts,

Below are the follow-up questions to the April 13 hearing on the Flint water crisis and our responses to thos questions. We apologize for the lateness of these responses. I do appreciate the opportunity to provide my field experiences in dealing with lead in drinking water issues on behalf of my utility and the American Water Works Association. Below are the questions from specified members and my responses:

Questions from the Hon. Morgan Griffith

1. *How will customer-initiated sampling that includes any home, even at low or no risk for lead in water, achieve the intent of the LCR's monitoring requirement, which is assessment of CCT effectiveness through monitoring lead-in-water levels at a small number of highest risk homes?*

The NDWAC recommendation to emphasize customer-centered sampling focused on providing data which could be used for multiple purposes. It is designed to be implemented in conjunction with more intensive outreach to homes with lead service lines (LSL). The data would be used to inform and empower customers to take actions to reduce their lead exposure, to evaluate the performance of CCT, and in conjunction with the recommended household action level, to provide data to local health officials when a specific home had elevated lead levels.

Under the current LCR, many systems are under reduced monitoring (because their LCR results have been consistently below the lead action Level) and sample during a four-month period every three years. Those samples must be at the same homes previously sampled. No regulatory samples are collected during the other 32 months of that three-year period, and the current rule construct and interpretation discourages customer or investigatory sampling. The NDWAC recommendation encourages and allows sampling throughout the distribution system, particularly focused on homes with LSL, and throughout the year. The NDWAC working group believes that this would provide superior coverage to the current sampling program.

Section 3.4.2 of the NDWAC report provides a more detailed discussion of the potential benefits of the monitoring recommendations.

2. *How would sampling using the strategy recommended by the NDWAC have been able to identify the DC or the Flint water crisis any sooner than current LCR sampling?*

It is possible that a program which encouraged more sampling and looked at all the data might have picked up the changes in Flint sooner.

3. *Should the revised LCR include a ban on partial lead service line replacements?*

The NDWAC recommendations strongly discourage and provide no regulatory benefit for partial replacements. They require substantial public education around the risks of having any portion of a LSL in place, and in particular the risks of a partial replacement, and require information about risk mitigation methods.

The recommendations do recognize that some partial replacements may still occur, and require more aggressive efforts to inform the residents of the risk and provide risk mitigation. The NDWAC working group recognizes that there may be practical real-world situations where a partial LSL replacement may occur, such as in a water main replacement project where the LSL will be disturbed in any case due to the construction, and where a homeowner refuses to allow work on his or her property. In such cases, removal of the portion of the LSL in the public way, proactive outreach and providing comprehensive information about the risks to the property owner and customer and collaboration with public health agencies are the most appropriate actions.

Section 3.1 of the NDWAC report discusses the importance of full LSL replacement and the limited circumstances and conditions under which a partial replacement might be permissible.

4. *Is public health protected when water systems perform partial lead service line replacements?*

A full LSL replacement is always best. The NDWAC report recommends that the revised LCR provide strong encouragement for full LSL replacements, with the understanding that there may be limited justifiable exceptions and that those exceptions would occur only after the

recommended required efforts on the part of the PWS to work with customers to complete a full LSL replacement. Revisions to the LCR should include options for risk management to occupants of those properties with remaining, partial lead service lines, e.g. additional sampling, filters, dielectrics to reduce the risk of galvanic corrosion, plastic piping, aggressive premise flushing, etc.

5. *Under the proactive lead service line replacement program recommended by the NDWAC, what measures can be used to ensure that actual replacements are mandatory?*

The NDWAC recommendations require that all water systems with LSL actively work toward full replacement of all LSL. Given the variability and complexities of each local situation and state laws, and the strong desire that full replacements occur, the NDWAC did not assume that every property owner would be immediately agreeable to replacement of the portion of the LSL on his or her private property. Therefore, the recommendations call for continued efforts, with escalation of those efforts over time to eventually convince every property owner to participate. The water system is required to continue until every LSL is fully replaced.

Questions from the Hon. Paul Tonka

1. *Are state or the federal government providing sufficient resources and technical support to enable drinking water utilities to put together accurate inventories and develop asset management plans to help them evaluate and proceed with a good infrastructure repair and replacement program?*

No. The NDWAC report provides a number of recommendations for additional support both from traditional sources of drinking water funding, as well as other state and federal programs. Success at reducing lead exposure will require additional resources over many years.

2. *The Massachusetts Water Resources Authority has some valuable experience in identifying and replacing lead service lines. But, as you know there are multiple challenges for cities like Flint to implement a program where the ratepayer assumes a portion of these costs. What support can be given to low-income homeowners to replace privately owned portions of lines?*

The NDWAC report recognizes that economic justice issues were key to success. The report suggests use of other federal programs such as the HUD Healthy Homes program or Community Development Block Grant funds as potential sources of additional targeted resources.

3. *My understanding is that many cities do not have accurate inventories of the physical infrastructure in their systems, let alone accurate records of where the lead is in their systems. Is this accurate for many systems around the country?*

The completeness and accuracy of service line inventories varies substantially from system to system. The NDWAC report recognizes this in the structure of its recommendations around LSL replacement, calling for parallel efforts to improve inventories and make them more publicly

available, while informing homes with LSL of the risks and beginning to fully remove LSL where they were known to exist. Replacement should not wait until a perfect inventory is available, it can begin immediately.

4. *Do you believe creating an inventory of lead service lines is critical for running an efficient replacement program and improving public education?*

   Yes, but replacement and education need not wait for the complete inventory.

5. *What incentives need to exist to get more systems to develop and update inventories of infrastructure?*

   The NDWAC recommendations focus on creating incentives to improve inventories by requiring that water systems assume that areas and buildings where LSL were likely to exist did have them until such time as the inventory assessment could reasonably demonstrate otherwise. Thus outreach efforts would be required to focus on that wider universe, and annual targets for replacement would be based on that larger number until the inventory was improved. Section 3.1.1 of the NDWAC report provides additional detail on how this incentive would work.

6. *Many systems have not transitioned into the digital age. What has Boston done to provide more information to homeowners and what resources were necessary to get your map tool started?*

   The availability of community web sites and mapping tools is rapidly increasing. Larger communities are likely to have access to more sophisticated Geographic Information System data and tools. However, with relatively simple tools such as Google Map and databases, any community can provide easy access to data on LSL – if they have the inventory.

7. *Do most utilities implement an asset management plan? Do small and distressed systems have the resources and technical expertise necessary to do so?*

   Formal asset management plans exist more typically in larger systems, but some smaller systems have more basic versions. Even in those systems with some type of plan, in many cases, available financial resources do not permit fully funding all the required work. The NDWAC commented on the fact that the LSL replacement recommendations would be adding additional financial burden, and suggested that EPA and other federal agencies would need to assist in bring more resources to bear on the issue.

8. *Generally, is lead service line replacement part of existing asset management plant?*

   Many water systems have been replacing at least the portion of the LSL in the public way as part of their pipeline replacement or street improvement programs. Going forward, it is likely that full LSL replacement will accompany such projects. Some water systems have included LSL replacement programs as specific items in their capital improvement programs or routine maintenance programs. The NDWAC recommendations will likely increase the number who do so.

9. *Can you explain the challenges for lead line replacement in cities that have reduced populations or numerous abandoned properties, resulting in service lines that are not in regular use? Would leaving those lines in place present any risk to the systems should corrosion control cease in the future?*

Lead service lines serving abandoned properties should be replaced before the properties are re-occupied. Any lead service line represents an increased risk of elevated lead levels should corrosion control treatment be disrupted.

Question from the Hon. Lois Capps

1. *Flint has shown us that we must invest in our nation's future by supporting our infrastructure as well as our preparedness moving forward. What mechanisms and collaborative efforts can be put in place moving forward to ensure that we do not see a repeat of the crisis we experienced in Flint in another community?*

Sustainable infrastructure begins at home. Communities need to have sufficient technical, managerial and financial (TMF) capacity to adequately plan, build and maintain infrastructure for the citizens and businesses they serve. Local water rates and fees are the backbone of capital investment in water infrastructure. However, communities that lack TMF capacity will not be able to reliably fund and manage the infrastructure under their domain regardless of federal assistance or regulatory frameworks. Federal collaboration and support for programs helping water systems become more sustainable is valuable and appreciated.

There is a role for federal investment in water infrastructure. As you know, the drinking water and Clean Water state revolving loan funds provide federal and state roles in helping water systems achieve regulatory compliance at rates or conditions helpful to small or distressed communities. We feel there are administrative changes that could make the SRFs more effective. For example, we have heard that while some states have more projects applying for SRF funds than they can support, other states are sizable funds that are not used. In some states, the cost and time required to apply for an SRF loan drives water systems to USDA's Rural Development programs or the municipal bond market instead of the SRF. The drinking water SRF is not authorized to fund projects addressing population growth. AWWA has begun developing recommendations for improving the SRF which we would be happy to share with the committee once completed.

SRF funding is not typically available to support extensive distribution system rehabilitation, such as that needed in Flint – there simply is not enough available funds for all critical public health needs and investment in infrastructure renewal. Providing funding for the new Water Infrastructure Finance and Innovation Act (WIFIA) to begin making loans would greatly expand the pool of funds available to assist water systems for projects beyond the size or authorized scope of the SRF. Appropriations are needed to launch WIFIA's actual loan-making capabilities.

Place-based problem solving is needed in communities seeking to solve particularly intransigent infrastructure challenges. As community-driven problem-solving efforts are undertaken, those participating must be open to considering regionalization, public-private partnerships or public-public partnerships. State and federal support for infrastructure finance, enforcement policies, and educational efforts can help communities evaluate these options.

At the local level, tough decisions regarding water rates, utility organizational structures and significant treatment changes do require customer buy-in. To that end, federal and state government needs to more clearly articulate the value of water service, clearly communicate relative risks associated with contaminants in drinking water, and bring available federal programs to bear to help economically challenged households afford water service. Flint illustrates that the lack of a cohesive multi-media, multi-agency federal communication plan for managing lead risk can result in a lack of appreciation of potential risks and ultimately the loss of community trust. Federal measures that build a cohesive support network on key topics can provide a credible backstop for state and local efforts to build community support for local actions.

Again, I appreciate the opportunity to provide input to your subcommittees. Please feel free to contact me or staff in the government affairs office of the American Water Works Association if you would like to discuss these issues further.

Sincerely,

Steve Estes-Smargiassi
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100 First Avenue
Building 39
Boston, Mass. 02129

FRED UPTON, MICHIGAN
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS

Congress of the United States
House of Representatives
COMMITTEE ON ENERGY AND COMMERCE
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Minority (202) 225-3641

May 17, 2016

Ms. June Swallow
Chief, Office of Drinking Water Quality
Rhode Island Department of Health
3 Capitol Hill
Providence, RI 02908

Dear Ms. Swallow:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

To facilitate the printing of the hearing record, please respond to these questions with a transmittal letter by the close of business on May 27, 2016. Your responses should be mailed to Graham Pittman, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to graham.pittman@mail.house.gov.

Thank you again for your time and effort preparing and delivering testimony before the Subcommittees.

Sincerely,

Tom Shimkus
Chairman
Subcommittee on Environment
and the Economy

Joseph R. Pitts
Chairman
Subcommittee on Health

cc: The Honorable Gene Green, Ranking Member, Subcommittee on Health
The Honorable Paul Tonko, Ranking Member, Subcommittee on Environment and the Economy

Attachment

Attachment — Additional Questions for the Record

The Honorable Morgan Griffith

Current LCR compliance sampling requires that a minimum of 50% of sampled homes have lead service lines; the same homes are required to be sampled year after year to measure effectiveness and changes in corrosion control. The National Drinking Water Advisory Council (NDWAC) recommends a change away from this scheme to customer requested sampling.

1. How will customer initiated sampling that includes any home, even at low or no risk for lead in water, achieve the intent of the Lead and Copper Rule's (LCR) monitoring requirement, which is assessment of corrosion control treatment (CCT) effectiveness through monitoring lead-in-water levels at a small number of highest risk homes?

   We share the concern reflected in this question and the background paragraph. We don't believe customer-initiated sampling alone will be sufficient for assessing the effectiveness of corrosion control treatment. The recommendations of the NDWAC were to enhance sampling of key water quality parameters at representative sites throughout the distribution system to help gauge the effectiveness of any CCT (or determine whether CCT was needed). Customer-initiated sampling was envisioned by the NDWAC as a means to educate customers about whether or not their homes were served by lead service lines and, if so, to help motivate them to action (either on their own initiative or with the assistance of the local jurisdiction or the state). The latter provision would promote greater consumer awareness and transparency, but we don't believe that the results from low risk sites should be the basis for decisions about establishing optimal water quality parameters and adding CCT.

2. How would sampling using the strategy recommended by the NDWAC have been able identify the DC or the Flint water crisis any sooner than current LCR sampling?

   As noted in our response to question #1, we believe a "blend" of approaches is needed for the future monitoring strategy. We believe that, for the current (or any future) sampling strategy to be effective in expeditiously identifying problematic portions of the distribution system and lead contamination, the sampling sites need to be in the "right" (i.e., high risk) locations, need to be of sufficient number to adequately characterize the distribution system, and samples need to be collected properly. We believe that part of the problem that contributed to the Flint crisis may have been sample sites that were not reflective of the highest risk locations. In the case of the DC lead crisis, our understanding is that high levels of lead in the distribution system were discovered early on, but may not have been acted upon quickly enough.

The EPA science advisory board submitted a report to EPA finding that partial lead service line replacements may pose a risk of increased lead exposure.

3. Should the revised LCR include a ban on partial lead service line replacements?

   Generally yes – we concur with the recommendations of EPA's Science Advisory Board in this regard. The only circumstance we can envision where partial replacement would make sense would be in a case where a damaged or leaking portion of the lead service line need to

be repaired and replaced. In that case, after the repairs are made, the damaged portion should not be replaced with fresh lead service line, but rather, lead-free materials.

4. Is public health protected when water systems perform partial lead service line replacements as is currently a standard practice in many water systems?

   Not sufficiently; while some studies have indicated some benefits from partial lead service line replacement, other studies have shown it to ineffective. As noted above, we concur with the SAB recommendations and believe the entire lead service line needs to be replaced.

5. Under the proactive lead service line replacement program recommended by the NDWAC, what measures can be used to ensure that actual replacements are mandatory?

   We believe that lead service line replacement requires an "all of the above" shared effort by Federal, state, and local governments – to encourage and incentivize rapid, full lead service line replacement. The NDWAC did not recommend a mandatory national replacement program. However, we believe that some mandatory elements can substantially move the process forward. For instance, we believe that mandatory disclosure of lead service lines and provisions for their replacement should be a feature of all real estate reactions.

The Honorable Lois Capps

1. Flint has shown us that we must invest in our nation's future by supporting our infrastructure as well as our preparedness moving forward. What mechanisms and collaborative efforts can be put in place moving forward to ensure that we do not see a repeat of the crisis we experienced in Flint in another community?

   We believe that one of the silver linings in the dark cloud of the Flint crisis has been a far greater shared awareness -- at all levels of government -- of the need to adequately support both physical and human (especially, at the state and local levels) infrastructure needed to ensure safe drinking water and avoid future Flints. While Flint was something of a perfect storm (as I indicated in my testimony) the conditions that lead to Flint do indeed exist in other communities. Moving forward, we believe that we collectively need to: 1) implement the current rule as effectively as possible everywhere in the country, with enhanced transparency and communication; 2) rapidly develop an improved and enhanced Lead and Copper Rule based on the recommendations of the National Drinking Water Advisory Council recommendations as well as our learnings from Flint; and 3) use a variety of levers and incentives (at all levels of government) to totally remove lead from drinking water distribution systems as quickly as possible.

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May 17, 2016

Ms. Mae Wu
Senior Attorney, Health and Environment Program
Natural Resources Defense Council
1152 15th Street, N.W.
Washington DC 20005

Dear Ms. Wu:

Thank you for appearing before the Subcommittee on Health and the Subcommittee on Environment and the Economy on April 13, 2016, to testify at the hearing entitled "Flint Water Crisis: Impacts and Lessons Learned."

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