

LEAD EXPOSURE IN D.C.: PREVENTION, PROTECTION, AND POTENTIAL PRESCRIPTIONS

HEARING

BEFORE THE
SUBCOMMITTEE ON FEDERAL WORKFORCE,
POSTAL SERVICE, AND THE DISTRICT
OF COLUMBIA

OF THE

COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM
HOUSE OF REPRESENTATIVES

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LEAD EXPOSURE IN D.C.: PREVENTION, PROTECTION, AND POTENTIAL PRESCRIPTIONS

TUESDAY, JUNE 15, 2010

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON FEDERAL WORKFORCE, POSTAL
SERVICE, AND THE DISTRICT OF COLUMBIA,
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:09 p.m., in room 2154, Rayburn House Office Building, Hon. Stephen F. Lynch (chairman of the subcommittee) presiding.

Present: Representatives Lynch, Norton, Cummings, and Chaffetz.

Staff present: Jill Crissman, professional staff; Aisha Elkheshin, clerk/legislative assistant; William Miles, staff director; Rohan Siddhanti, intern; Dan Zeidman, deputy clerk/legislative assistant; Lawrence Brady, minority staff director; Jennifer Safavian, minority chief counsel for oversight and investigations; Adam Fromm, minority chief clerk and Member liaison; Seamus Kraft, minority director of new media and press secretary; Justin LoFranco, minority press assistant and clerk; Howard Denis, minority senior counsel; Hudson Hollister and Marvin Kaplan, minority counsels; Mark Marin, minority senior professional staff member; and Molly Boyd and James Robertson, minority professional staff members.

Mr. LYNCH. Good afternoon. The Subcommittee on Federal Workforce, Postal Service, and the District of Columbia hearing will now come to order. Welcome, Ranking Member Chaffetz, members of the subcommittee, hearing witnesses and all those in attendance.

In light of the District of Columbia's ongoing efforts to minimize the amount of lead in its water, particularly since the 2000 to 2004 lead-in-the-water crisis, I have called today's hearing to look into how the District and the Federal Government can reduce the amount of lead that D.C. residents are exposed to and to learn what steps, if any, should be taken to identify children exposed to lead during the lead-in-the-water crisis.

The chair, the ranking member and the subcommittee members will each have 5 minutes to make opening statements, and all Members will have 3 days to submit statements for the record.

I now yield myself 5 minutes for my opening statement.

Ladies and gentlemen, again let me welcome you to the subcommittee's oversight hearing entitled, "Lead Exposure in D.C.: Prevention, Protection, and Potential Prescriptions." From a health and safety perspective, today's hearing provides the subcommittee with an important opportunity to take a prospective look at issues

of lead and lead exposure in D.C. and to discuss what the District and Federal Government can do to help protect the more than 600,000 District of Columbia residents and the millions of people that visit our Nation's Capital every year.

There is an old saying that the only good lead is no lead, and although we may never actually meet the objective standard, given the various sources of lead that exist, I do believe it is critical that we continue to work to limit and reduce the level of exposure of D.C. residents, particularly of infants and children, particularly susceptible populations, as well as to fully inform the public about their options if exposure to lead does occur. Today's hearing is also intended to look at what steps, if any, should be taken to identify and assist those previously exposed to lead during the District's lead-in-the-water crisis.

As many of you are aware, from 2000 to 2004, the D.C. lead-in-the-water crisis threatened the District's drinking water with an estimated 4,000 District of Columbia homes having lead in their water that exceeded the Federal limit of 15 parts per billion. While a host of work has been performed since the early 2000's to limit the District residents' exposure to lead, the seriousness of the previous crisis warrants ongoing oversight and examination, which is why I believe today's hearing is one of the most important proceedings this subcommittee will hold during the 111th Congress.

It is my hope that today's hearing will examine a myriad of topics and questions, ranging from current practices to treat and deliver high-quality drinking water to residents of the District, to recent improvements in agency coordination and the dissemination of accurate and timely information to the public about whether or not their homes are at risk to exposure to lead, and to look into what actions can be taken to ensure the prevention of another crisis.

I would like to thank my colleague, the Honorable Congresswoman Eleanor Holmes Norton, for her years of work on this issue. Please know that the subcommittee looks forward to continuing to work with you and others who are concerned about this problem as we collectively look for ways to prevent, protect and prescribe possible solutions for those who may have been or are exposed to lead in the District of Columbia.

Again, I thank all of those in attendance this afternoon, and I look forward to hearing the testimony of our witnesses.

[The prepared statement of Hon. Stephen F. Lynch follows:]

**STATEMENT OF CHAIRMAN STEPHEN F. LYNCH
AT THE SUBCOMMITTEE ON FEDERAL WORKFORCE
AND POSTAL SERVICE, AND THE DISTRICT OF COLUMBIA**

**OVERSIGHT HEARING
“Lead Exposure in D.C.: Prevention, Protection, and Potential Prescriptions.”**

**Room 2154 Rayburn House Office Building
2:00 p.m., Tuesday, June 15, 2010**

Ladies and gentlemen, again, let me welcome you to the Subcommittee’s oversight hearing entitled, “Lead Exposure in D.C.: Prevention, Protection, and Potential Prescriptions.” From a health and safety perspective, today’s hearing provides the Subcommittee with an important opportunity to take a prospective look at issues of lead and lead exposure in D.C. and to discuss what the District and Federal Government can do to help protect the more than 600,000 D.C. residents and the millions of people that visit our Nation’s capital every year. There is an old saying that “the only good lead is no lead,” and although we may never actually meet this objective standard, given the various sources of lead that exist, I do believe it is critical that we continue to work to limit and reduce the level of exposure of D.C. residents, particularly infants and children, as well as to fully inform the public about their options if exposure does occur. Today’s hearing is also intended to look at what steps, if any, should be taken to identify and assist those previously exposed to lead during the District’s lead-in-water crisis.

As many of you are aware, from 2000 to 2004, the D.C. lead-in-water crisis threatened the District’s drinking water, with an estimated 4,000 D.C. homes having lead in their water that exceeded the federal limit of 15 parts per billion. While a host of work has been performed since the early 2000s to limit the District residents’ exposure to lead, the seriousness of the previous crisis warrants ongoing oversight and examination, which is why I believe today’s hearing is one of the most important proceedings this Subcommittee will hold during the 111th Congress. It is my hope that today’s hearing will examine a myriad of topics and questions, ranging from current practices to treat and deliver quality drinking water to residents of the District, to recent improvements in agency coordination and the dissemination of accurate and timely information to the public about whether or not their homes are at risk to exposure and to look into what actions can be taken to ensure the prevention of another crisis.

I'd like to thank my colleague, Congresswoman Eleanor Holmes Norton, for her years of work on this issue. Please know that the Subcommittee looks forward to continuing to work with you and other related entities as we collectively look for ways to prevent, protect, and prescribe possible solutions for those who may be or have been exposed to lead in D.C.

Again, I thank all those in attendance this afternoon, and I look forward to hearing the testimony of our witnesses.

Mr. LYNCH. I would like now to take a moment to introduce the ranking member, Mr. Chaffetz, for 5 minutes for his opening statement.

Mr. CHAFFETZ. Thank you, Mr. Chairman. I stand by your assertion. You are correct that one of the basic tenets here, one of the basic things we should do is make sure that the water is safe for our people and for the people who are going to consume it from all over the world as they visit the District of Columbia. People expect their drinking water to be safe, abundant and inexpensive. Sadly, here in the Nation's Capital the safety of our drinking water has been an ongoing concern.

Clearly there is a major Federal role in the quest for safe drinking water in the Washington region. Congress has done extensive oversight, and legislation has been enacted. Our goal is to basically make sure that the lead is out.

Though not one of the leading tourist attractions in the Washington, DC, area, the Blue Plains Advanced Wastewater Treatment Plant is the largest such facility in the world. On the banks of the Anacostia, it is the key to having a healthy Potomac River and Chesapeake Bay.

I recognize that I am still a freshman here, but I do understand that not too many years ago there would be pitchers of water with drinking glasses supplied to Members and witnesses at congressional hearings. I notice that today we have bottles of water on the table. Back then there were boil water alerts in Washington and signs in this very building cautioning people against drinking the water from the water fountains. Yet now, as we pointed out, we have bottled water.

So the Water and Sewer Authority was created as a quasi-regional entity, and as recently as 2008, Congress enacted legislation to preserve its independence. WASA operates Blue Plains. As of April 2009, WASA has a new general manager, who is with us today, and we appreciate you being here.

WASA supplies wholesale wastewater treatment for over 2 million local residents and millions of visitors and has over 500,000 retail, commercial and Federal customers. The Washington Aqueduct, the Pentagon, the Reagan National Airport are all closely linked to WASA.

In 2004, the WASA board hired a leading law firm, Covington and Burling, to investigate its management of lead-monitoring activities from July 2000 to January 2004 due to elevated lead levels in the local water supply. That investigation, interestingly enough, was conducted under the direction of now-U.S. Attorney General Eric Holder.

Some of our witnesses today testified before our predecessors on this subcommittee and before the full committee. It is shocking that a congressional investigation recently concluded that the Centers for Disease Control and Prevention made "scientifically indefensible" claims in 2004 relative to the dangers some local residents were exposed to by drinking public water. That is something we would like to hear about more in this committee and hopefully here today.

Mr. Chairman, I thank you again for calling this hearing and look forward to hearing from our witnesses. I appreciate you all

being here and look forward to your testimony and the question and answer afterwards.

I yield back the balance of my time.

[The prepared statement of Hon. Jason Chaffetz follows:]

OPENING STATEMENT OF JASON CHAFFETZ
RANKING MEMBER
SUBCOMMITTEE ON FEDERAL WORKFORCE, POSTAL
SERVICE, AND THE DISTRICT OF COLUMBIA
JUNE 15, 2010
HEARING: "LEAD EXPOSURE IN D.C.: PREVENTION,
PROTECTION, AND POTENTIAL PRESCRIPTIONS"

- Thank you Mr. Chairman for holding this important hearing on lead exposure in the District of Columbia.
- People expect their drinking water to be safe, abundant, and inexpensive. Sadly, here in the Nation's Capital, the safety of our drinking water has been an ongoing concern.
- Clearly there is a major Federal role in the quest for safe drinking water in the Washington Region. Congress has done extensive oversight and legislation has been enacted.
- Our goal has been basically to get the lead out.
- Though not exactly one of the leading tourist attractions in Washington, the Blue Plains Advanced Wastewater Treatment Plant is the largest such facility in the world. On the banks of the Anacostia, it is a key to having a healthy Potomac River and Chesapeake Bay.
- I'm still a freshman here, but I understand that not too many years ago there would be pitchers of water with drinking glasses supplied to Members and witnesses at congressional hearings. Then there were "boil water alerts" in Washington and signs in this very building cautioning people against drinking from the water fountains. Now we have bottled water.

- And so the Water and Sewer Authority was created as a quasi-regional entity. As recently as 2008 Congress enacted legislation to preserve its independence.
- WASA operates Blue Plains. As of April, 2009 WASA has a new General Manager, who is with us today.
- WASA supplies wholesale wastewater treatment for over 2 million local residents and millions of visitors. It has over 500,000 retail, commercial and Federal customers.
- The Washington Aqueduct, the Pentagon, and Reagan National Airport are also closely linked to WASA.
- In 2004 the WASA Board hired a leading law firm (Covington and Burling) to investigate its management of lead monitoring activities from July 2000 to January 2004 due to elevated lead levels in the local water supply.
- The investigation was conducted under the direction of now-U.S. Attorney General Eric Holder.
- Some of our witnesses today have testified before our predecessors on this Subcommittee and before the full committee.
- It is shocking that a congressional investigation recently concluded that the Centers for Disease Control and Prevention made “scientifically indefensible” claims in 2004 relative to the dangers some local residents were exposed to by drinking public water.

- I look forward to hearing from today's witnesses as we seek answers in our ongoing quest to reduce the exposure of local residents to lead in the water.

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Mr. LYNCH. The chair will now recognize the gentlelady from the District of Columbia, Ms. Eleanor Holmes Norton, who has been a driving force behind this hearing and trying to correct a very difficult situation.

Ms. NORTON. Thank you very much, Mr. Chairman. I particularly appreciate your quickly holding a hearing on this important public health issue.

The hearing is, I believe, important for its national implications as well because of the effects of lead on children and pregnant women in particular. Just as the earlier lead-in-the-water crisis from 2000 to 2004 resulted in national attention on the issue and the introduction of legislation in Congress, this hearing will take a broad-prospective look at lead in D.C. to learn not only about reduction of lead exposure in the District, but also what steps, if any, can and should be taken to identify and treat children and adults who were exposed to lead during the District's lead-in-the-water crisis.

This crisis became public in 2004 and caused considerable concern in the city. At my request the Committee on Oversight and Government Reform held hearings on this issue, and a number of other congressional committees did as well. Two months ago, the lead-in-the-water crisis reemerged in public consciousness when the majority staff of the House Science and Technology Subcommittee on Investigations and Oversight released a critical investigation report making out the case that the Centers for Disease Control and Prevention had misrepresented the harm caused to D.C. residents during the lead-in-the-water crisis.

This hearing is a followup to the S&I Subcommittee report, and I think, Mr. Chairman, it is necessary because the emergence once again of this issue has caused D.C. residents to be concerned about lead in the water, that whole crisis, and what are its implications for today.

We called to the attention of residents that for the past several years, however, lead in the water has been below the U.S. Environmental Protection Agency action level of 15 parts per billion. However, the subcommittee report raised questions about whether public officials misled, intentionally or otherwise, and continue to mislead the public about the lead-in-the-water crisis. These questions need clarification, and the CDC has indicated, too, that mistakes were made.

But the more urgent goal of today's hearing, I believe, Mr. Chairman, is to look forward at what we should do about the children and the pregnant women who may have been exposed during the lead-in-the-water crisis, and what steps we can take to ensure that D.C. residents are safe now from lead in the water, lead in paint, and from other sources.

The D.C. Water and Sewer Authority [WASA], first became aware of the high levels of lead in the water in 2002; however, it was only when the Washington Post ran a story in early 2004 that the public became aware of the full scope of the problem. At that time it was estimated that 4,000 District homes had lead in the water that exceeded the EPA action level of 15 parts per billion, and that the city had 23,000 homes with lead service lines. Fear spread through the District.

In response to the lead-in-the-water crisis, and pursuant to Federal law, the District sought to replace all of the approximately 35,000 known utility lead service lines in the District of Columbia by 2016.

At congressional hearings in 2004 and 2008, I questioned WASA's response to the lead-in-the-water crisis of proceeding with partial lead pipe replacements. There was no evidence at the time, and to my knowledge there is no evidence today, that such a measure would reduce lead in drinking water. In fact, CDC's own research suggests that partial lead pipe replacements actually may increase the amount of lead in the water. However, WASA spent \$100 million on partial pipe replacement in the District.

We are very concerned that while WASA has considerably reduced the number of such partial replacements, it continues to perform them. We need to look for new science-based approaches to rebuild confidence in the agencies responsible for preventing lead contamination.

Most of our witnesses today are charged with the task of improving public health here in the District and nationally. The subcommittee, I am sure, will be interested to learn how they are meeting this charge today, particularly as it relates to the reduction of lead exposure here, what progress has been made, and, looking toward the future, what changes are needed.

Though the focus of this hearing relates to the specific example of the District of Columbia, its findings, in my judgment, could have far-reaching consequences. The lessons learned from the lead-in-the-water crisis here in the District already have been instructive to health professionals elsewhere.

Again, I thank you, Mr. Chairman, for the hearing. I think it is as important outside of the District as much as it is in the District itself.

Mr. LYNCH. I thank the gentlelady.

It is the committee's policy that all witnesses to testify must be sworn, so may I please ask you to rise and raise your right hands. [Witnesses sworn.]

Mr. LYNCH. Let the record show that all of the witnesses have answered in the affirmative.

What I would like to do is begin by offering a brief introduction of each of our witnesses on this panel, and then we will invite the witnesses each to offer a brief opening statement as well.

On panel one, I would like to begin by introducing Ileana Arias. Am I pronouncing that correct?

Ms. ARIAS. You are.

Mr. LYNCH. OK. That was luck.

Currently Ileana Arias currently serves as Deputy Director at the Centers for Disease Control and Prevention. In 2005, she was also appointed as the Director of the National Center for Injury Prevention and Control. Prior to joining the Centers for Disease Control and Prevention in 2000, she was the director of clinical training and a professor of clinical psychology at the University of Georgia.

Mr. Thomas Jacobus has been the general manager of the Washington Aqueduct since 1994. He is responsible for overseeing one of the largest municipal water-treatment operations in the Nation.

Prior to his arrival at Washington Aqueduct, Mr. Jacobus, a registered professional engineer, spent more than 25 years with the Army Corps of Engineers in military assignments around the world.

Thank you for your service.

Mr. George Hawkins has been the general manager of the D.C. Water and Sewer Authority since September 2009. In this position Mr. Hawkins oversees all of the D.C. Water and Sewer Authority's operations and is responsible for carrying out the strategic plan for the utility. Prior to this Mr. Hawkins served for 2½ years as the director of the District Department of the Environment, an \$80 million agency with 300 employees.

Mr. Christophe Tulou was named acting director of the District Department of the Environment in May of this year. Mr. Tulou has over 10 years of experience in government, including his position as cabinet secretary for the Delaware Department of Natural Resources and Environmental Control. He also worked as an adviser on the Clinton Climate Initiative's Carbon and Poverty Reduction Project.

Dr. Ellen Silbergeld is currently a professor and editor in chief of environmental research at the Johns Hopkins Bloomberg School of Public Health. She received her Ph.D. from Johns Hopkins in geography and environmental engineering and a postdoctoral fellowship in environmental health sciences. She has served as a scientific adviser to the Centers for Disease Control, Environmental Protection Agency, Department of Energy, Occupational Safety and Health Administration and the World Bank.

Welcome.

Ms. Arias, you are welcome to offer an opening statement for 5 minutes. Let me just explain that small box in front of you will flash green while your time is active, it will flash yellow when you should begin to wrap up, and then obviously it will show red when your time has expired. But welcome, and, please, you are welcome to offer your opening statement.

STATEMENTS OF ILEANA ARIAS, Ph.D., PRINCIPAL DEPUTY DIRECTOR, CENTERS FOR DISEASE CONTROL AND PREVENTION; THOMAS P. JACOBUS, GENERAL MANAGER, WASHINGTON AQUEDUCT DIVISION, U.S. ARMY CORPS OF ENGINEERS; GEORGE S. HAWKINS, GENERAL MANAGER, D.C. WATER AND SEWER AUTHORITY; CHRISTOPHE A.G. TULO, ACTING DIRECTOR, DISTRICT DEPARTMENT OF THE ENVIRONMENT; AND ELLEN SILBERGELD, PROFESSOR, JOHNS HOPKINS BLOOMBERG SCHOOL OF PUBLIC HEALTH

STATEMENT OF ILEANA ARIAS

Ms. ARIAS. Thank you, Mr. Chairman, and thank you to the subcommittee for inviting me to testify today on what we consider an incredibly important issue for D.C. and for the country as a whole.

I am Dr. Ileana Arias, the Principal Deputy Director of the Centers for Disease Control and the Agency for Toxic Substances and Disease Registry, as has been mentioned. In that role I am primarily responsible for advising the Director, Dr. Thomas Frieden,

on all scientific and programmatic activities at CDC and the ATSDR.

We are here to talk today about lead. Lead is an incredibly dangerous substance. It leads to, unfortunately, a number of neurobehavioral effects, and young children are particularly susceptible to the effects of exposure to lead.

Lead exposure in the child's environment must be controlled and eliminated as much as possible. At CDC essentially we adopt a zero tolerance for lead, even though we recognize that removing all traces of lead in the environment may not be possible. However, we are committed to driving those numbers down as much as is feasibly possible and that we can.

For nearly three decades CDC has spearheaded an effective national lead prevention campaign. When we began about 30 years ago, 88 percent of American children tested had blood levels above 10 micrograms per deciliter. Today we are testing children and showing that less than 1 percent have those high levels of lead in their system.

The changes that have taken place in the 30 years essentially constitute one of the greatest public health success stories in the United States. CDC has worked tirelessly in order to accomplish this, and we haven't done it alone. We have partnered with other agencies who are equally committed to making a significant difference, such as the EPA, HUD, State and local health departments and others. CDC recognizes the potential to eliminate childhood lead exposure, and although we have made significant strides, we are not giving up in trying to make even greater differences.

Lead is a common but dangerous substance, and exposures can occur in many different ways, as already has been mentioned; paint, dust, soil, toys. We even know now some imported candies, unfortunately, have traces of lead. We have been successful in the past in fighting it. Important pervasive sources of lead, like leaded gasoline, have been eliminated. Eliminating childhood lead exposure will require, however, targeting the most at-risk, and unfortunately that means the hardest-to-reach, populations. We need to remain vigilant for current sources and identify new sources of lead and make sure that we address those exposures appropriately.

CDC continues to work with D.C. to protect its children from lead exposure. Today the D.C. Program is a very effective program at reducing childhood lead exposure, screening at-risk children, and ensuring that exposed children get effective case management.

The D.C. Council has adopted and implemented a lead poisoning prevention law that is one of the strongest in the Nation. It requires universal screening of all 1- and 2-year-olds in D.C., who are at highest risk for the negative effects of lead exposure. It also requires screening once prior to the age of 6 years and also screening of children prior to daycare and school enrollment.

The D.C. lead program continues to address compliance and enforcement. D.C. drinking water has been in compliance with EPA's Safe Drinking Water Act standards for lead since 2006. CDC works with D.C. to reduce the number of D.C. children exposed to lead and to ensure that children who have been exposed receive appropriate case management.

Children who test positive are enrolled in case management, which includes actions such as clinical followup, that includes medical assessment of neuro development, chelation for excessive levels of blood lead, referrals for childhood development educational service. It also includes environmental followup, including assessment of potential sources of lead exposure and enforcement of lead hazard mitigation in homes and in the environment of the children.

It also involves parent and guardian education in the form of home visitation programs to not only educate parents and caregivers, but also to address the hazards, to assess and mitigate hazards in the home and the households where children and other at-risk populations live. Enriched educational services and intellectual development programs in the D.C. Public Schools also have been incredibly helpful in responding to children who have been exposed and characterized by high levels of lead in their systems.

Moving forward, our focus must be on how best to protect children from lead poisoning. The CDC Director, Dr. Tom Friedman, and I have met with D.C. leaders already, and I am testifying today to underscore our intention and commitment to eliminate lead poisoning in children.

In D.C., we are working very closely with the lead program. We are also engaging in a number of broad national activities to improve our knowledge of the state of affairs and our ability to respond very quickly to make a difference.

Thank you.

Mr. LYNCH. Thank you.

[The prepared statement of Ms. Arias follows:]



Testimony before the
Subcommittee on Federal Workforce, Postal
Service, and the District of Columbia
Committee on Oversight and Government Reform
U.S. House of Representatives

**Lead Exposure in D.C.: Prevention,
Protection, and Potential Prescriptions**

Ileana Arias, PhD
Principal Deputy Director
Centers for Disease Control and Prevention and
Agency for Toxic Substances and Disease Registry
U.S. Department of Health and Human Services



For Release upon Delivery
Expected at 2:00 p.m.
June 15, 2010

Mr. Chairman, Ranking Member Chaffetz, Delegate Norton: Thank you for the opportunity to testify today at this important hearing. I am Dr. Ileana Arias, Principal Deputy Director for the Centers for Disease Control and Prevention (CDC). In this role, I am responsible for advising the director, Dr. Thomas Frieden, on all scientific and programmatic activities of CDC. I have been at CDC since 2000. Prior to coming to my current position, I served as the Director of the National Center for Injury Prevention and Control at CDC. I previously served as Director of Clinical Training and Professor of Clinical Psychology at the University of Georgia.

Childhood Lead Poisoning Prevention:

CDC is the Nation's premier health promotion, disease prevention, and preparedness agency and a global leader in public health. CDC remains at the forefront of public health efforts to prevent and control infectious and chronic diseases, injuries, workplace hazards, disabilities, and environmental health threats. One such environmental health threat is lead, which is a systemic toxin and has neurobehavioral effects, particularly in young children. The largest remaining sources of lead exposures to children are leaded paint and contaminated house dust and soil in older homes; lead in water derived from lead solder in copper plumbing; plumbing fixtures and water lines made with lead; lead brought into homes from the workplace; and other more recently identified sources such as leaded paint on consumer products like toys and charms; lead in imported candies; traditional medicines, and spices.¹

¹ <http://www.cdc.gov/nceh/lead/tips/sources.htm>

Public health efforts to prevent lead exposures have been very successful. CDC and other federal agencies' efforts to control or eliminate lead hazards in children's environments, through the removal of lead from gasoline, paint, pipe and solder, among other activities, have resulted in dramatic reductions in elevated blood lead levels in our country. Between 1976 and 1980, CDC's Second National Health and Nutrition Examination Survey (NHANES II) and our biomonitoring laboratories found elevated blood lead levels (greater than $10\mu\text{g}/\text{dL}$) in 88% of children aged one to five. These numbers dropped significantly by 1991 - 1994, when an estimated 890,000 young children (4.4%) had elevated blood lead levels. By 2005-2006, the estimated number of children with elevated blood lead levels dropped to 121,000 (0.60%). This is a significant public health accomplishment, achieved through collaboration with the Department of Housing and Urban Development, the Environmental Protection Agency, and others.

CDC's Role in Reducing Childhood Lead Exposure:

CDC has reduced and prevented lead poisoning in children by supporting state and city programs and working with other Federal agencies, monitoring the blood lead levels of children in the United States, establishing guidelines that protect children from lead, and investigating situations where children have been exposed to lead. CDC's Childhood Lead Poisoning Prevention Program (CLPPP) provides funding to state and local health departments to determine the extent of childhood lead poisoning by screening children for elevated blood lead levels and ensuring that lead-poisoned infants and children receive medical and environmental follow-up (case management). This program

also supports the development of state and local government agencies' capacity to reduce and prevent lead poisoning in their communities through the development of protective policies.

Since the inception of CDC's lead program, nearly 60 state and local jurisdictions have received funding for their CLPPPs. During Fiscal Year 2009, CDC was appropriated more than \$34 million through the Childhood Lead poisoning and Healthy Homes program to support 35 states and five of the largest cities in the U.S., including the District of Columbia. State and local CLPPPs have several important responsibilities for carrying out their CDC-supported programs. Each program is required to create its own coalition of state and local agencies and organizations to implement primary prevention efforts to reduce the number of children with elevated blood lead levels. CDC requires that each recipient program work with its coalitions to create and implement its own strategic plan for the elimination of lead, in order to comply with its own unique state and local laws, as well as local conditions. All forty CLPPPs currently funded by CDC have strategic plans in place and are making progress toward their goals. CDC also requires that each program provide case management and home inspections for lead when children with elevated blood lead levels are identified. Another basic responsibility of the CLPPPs is to collect and process data that identifies children with elevated blood lead levels, and to use these data to drive state and local primary prevention activities to eliminate lead sources, targeting the neighborhoods where the risk for elevated lead levels are highest and housing where children are known to have been exposed to lead and had elevated blood lead levels in the past.

CDC has provided sustained leadership in preventing and addressing exposures to lead, including playing an active role in HHS's plan to eliminate lead poisoning. CDC led the effort over time to change the blood lead level threshold guideline from 60µg/dL to 10µg/dL. Based upon the expert guidance of CDC's Advisory Committee on Childhood Lead Poisoning Prevention, 10µg/dL is the threshold at which CDC recommends case management and follow-up for children. Another example of CDC's scientific recommendations related to lead poisoning is the set of guidelines (<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5608a1.htm>) produced by the CDC Advisory Committee on Childhood Lead Poisoning Prevention that address the identification and follow-up of children who are exposed to lead. CDC has institutionalized these guidelines on case management into requirements for all of the cooperative agreement recipients. CDC also works on interagency committees focusing on preventing and removing lead in consumer products and safe removal of lead paint hazards. CDC continues to focus on populations especially vulnerable to lead exposure, such as children, both in the U.S. and internationally. We have provided assistance to other countries - - such as Kosovo, Peru, China, and Nigeria - - to help address significant lead poisoning problems.

DC Lead Poisoning Prevention Program:

The District of Columbia's Childhood Lead Poisoning Prevention Program, with CDC funding, undertakes activities including collecting and processing D.C.-based lead surveillance data; building D.C.-based community coalitions focused on preventing lead exposures; testing children for elevated blood lead levels; and implementing public health

education campaigns. CDC has worked hard over the years with the D.C. Lead Program to help address shortcomings, such as problems in reporting data to CDC that became an issue during the period of elevated levels of lead in water in homes with lead service lines. As an example, CDC automated the surveillance reporting system and required that all data be reported directly to CDC. The District of Columbia's CLPPP moved to the D.C. Department of the Environment in 2007 and evolved into an effective program. As an example, the program worked to secure the adoption and implementation of a new and rigorous lead poisoning prevention law passed by the D.C. Council in 2008, currently one of the strongest laws in the country. CDC continues to work with the D.C. Department of the Environment to further strengthen its Childhood Lead Poisoning Prevention Program and protect the residents of D.C.

CDC's Public Health Response to Lead in D.C. Water in 2004:

Recently, public attention has returned to the previously elevated levels of lead in the drinking water in D.C. homes with lead service lines. For roughly four years, lead levels in these homes were elevated, and local residents (and CDC) were not notified of the threat. The recent focus has been for the most part on an April 2004 article (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5312a6.htm>) that CDC published roughly six weeks after CDC and the general public learned that lead levels in D.C. water had been high since 2000, and remained high for several years, including four years during which local residents were not sufficiently notified of the threat. CDC testified about this at a recent Congressional hearing, and CDC Director Dr. Frieden and I subsequently met with Delegate Norton to discuss related concerns. I will briefly discuss

steps CDC has taken to address concerns raised by Del. Norton and others, and then focus on CDC's first priority at the time, to take immediate steps necessary to protect District residents against further harmful exposures to lead in their drinking water.

Morbidity and Mortality Weekly Report (MMWR):

In response to concerns that CDC's 2004 conclusions may have been flawed due to the large number of test results that were not available to the D.C. lead program or CDC at the time, last fall Dr. Frieden asked the D.C. Government to provide any test results that had not been turned over to CDC during its original review.. CDC recently completed an intensive re-analysis to determine if the missing tests affected the results we released in 2004. The re-analysis was peer reviewed. Although it clearly showed more residents had been exposed to lead than previously known to CDC, the missing tests did not alter our earlier findings that lead in water was associated with an increase in blood lead levels, and that people living in homes with lead service lines had higher blood lead levels than those people who did not live in homes with lead services lines. In fact, the rate of elevated blood lead tests was lower when we included the newly available 2003 tests previously unavailable to us.

However, because more test results were examined, these new data document that more children had elevated blood lead levels than were previously documented in surveillance data. At the hearing last month and during our subsequent meeting, Del. Norton expressed concern about the children whose test results had been missing in 2004, and turned out to have had elevated blood lead levels. And, this is one of the issues the Subcommittee asked us to address today.

Among the data missing from the 2004 analysis were test results for 100 children who had elevated blood lead levels in 2003. We have checked the records of the D.C. Childhood Lead Poisoning Program to learn more about those children and have confirmed that the program followed-up on all of these cases in 2003, when these tests had been conducted. Ninety-five of them received appropriate case management through the D.C. Department of Health, and of the remaining five children, three showed tests below 10, and the parents of one child, who lived in an embassy, were notified at that time. We have not been able to determine whether appropriate case management from CLPPP was provided for one child, though it is likely that the child's clinician was aware of the findings and may have initiated follow-up.

We published the results from the reanalysis (<http://www.cdc.gov/nceh/lead/leadinwater/reanalysis.htm>) as well as a notice to readers acknowledging shortcomings in our communication in the 2004 article (<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5919a4.htm>), and reaffirming our findings. Those findings include that no safe blood lead level for children has been identified, and all lead exposures in children should be controlled or eliminated. We are committed to learning from our experience in working with the D.C. lead situation, have been forthcoming about our mistakes in communication, and have taken steps that I will describe later to apply those lessons to our future work on lead, in D.C., and in other areas.

Prevention of Lead Exposure in the District:

Unfortunately, even though tests of the D.C. drinking water in homes with lead service lines began showing elevated levels of lead in 2000, CDC was not informed of the problem until the winter of 2004. That clearly was too long a lag time between potential exposure and intervention. But once we learned of the contamination, CDC's public health response was immediate. CDC acted rapidly to educate the public and prevent ongoing lead exposures. CDC first learned that thousands of homes had drinking water lead levels exceeding the EPA action level in early February, 2004, when contacted by EPA. Soon after, the D.C. Department of Health requested CDC's assistance. Over a period of six weeks, CDC conducted a rapid public health response to prevent exposure to lead in drinking water, through public health education, provision of water filters, and blood lead testing to identify adversely affected individuals. CDC's work with the D.C. government and the U.S. Public Health Service Commissioned Corps includes:

- On February 26, 2004, recommendations were made that children less than six years of age, pregnant women, and nursing mothers living in households with lead water service lines refrain from drinking unfiltered tap water.
- CDC notified all households with lead water service pipes that young children and pregnant and breastfeeding women should refrain from drinking unfiltered tap water.
- On March 4, 2004, CDC updated its lead website with specific recommendations regarding the length of time to run tap water prior to consumption.

- CDC was visible in the media and at public meetings to draw attention to these recommendations. For example, a March 31, 2004 *Washington Post* article quoted CDC's Mary Jean Brown as saying "There is no safe level of lead... Even a small contribution, especially in small children, is not something that we want to happen... We don't want to increase the blood lead levels of those individuals by even 1 microgram if it can be prevented."
- On March 8, 2004, CDC lead branch staff participated in the first of several community meetings addressing lead in the water and protection of residents.
- On March 9, 2004, then Surgeon General Carmona activated the Commissioned Corps Readiness Force (CCRF) to assist with blood lead testing and distribution of water filters to D.C. residents. The CCRF also was charged with blood testing residents of homes with the highest levels of lead in their water.
- On April 1, 2004, CDC Lead Program staff began participating in the EPA expert panel on lead in D.C. drinking water. CDC Lead Program staff continue to participate in efforts to improve D.C.'s lead program.
- Extensive ongoing technical assistance and training has and is being provided to the D.C. Lead Program, particularly as related to program management, data/surveillance and statutory authorities.

Current Analysis of Lead in D.C. Water:

CDC is currently completing a new scientific manuscript that addresses some of the limitations in the previous work and extends the analyses through 2006, two years after Washington Aqueduct made changes to assure appropriate corrosion control in the D.C. water supply. Preliminary findings from the manuscript include the following:

- Lead water service lines are a risk factor for elevated blood lead levels independent of age of housing (a proxy measure of lead paint), and the method used to disinfect water.
- The changes in the water disinfection method used in the District of Columbia enhanced the risk of the impact of lead water service lines for elevated blood lead levels and had the unintended consequence of further increasing this risk.
- Preliminary data show that strategies of replacing only the publicly owned portion of lead pipes (known as partial mitigation) have significant limitations and do not decrease (and may increase) blood lead levels.

Due to the significance of the finding concerning risks from partial pipe replacement, in January 2010 CDC sent letters to state and local health departments and federal agencies advising them of the findings (<http://www.cdc.gov/nceh/lead/waterlines.htm>).

Moving Forward to Further Reduce Childhood Lead Exposure:

CDC has identified a number of priorities for preventing childhood lead poisoning in the District. First, the percentage of eligible children in the District who are being screened needs to be increased. In 2009, approximately 38% of children less than six

years of age were screened. While the District has taken several steps to improve lead screening, public health officials need to encourage clinicians and parents to have all District children tested. Second, officials should be concerned about all sources of lead and assure that case-management practices consider all potential sources of exposure. Since 2007, the District has included routine sampling of drinking water every time it inspects homes with children having an elevated blood lead level.

CDC will continue reviewing currently funded Childhood Lead Poisoning Prevention Programs, and take steps to further improve the programs in D.C. and nationally. For example, CDC has streamlined the process for reporting of raw data from grantees to CDC, and is currently launching an improved surveillance system for the program. In addition, CDC plans to conduct a program review of the entire lead program to inform our next grant cycle. And, CDC has taken steps to ensure that it is promptly informed of elevated lead levels in water.

Organizational changes made by Dr. Frieden also will benefit lead poisoning prevention programs. CDC has established two new offices to support epidemiology and surveillance, and state and local programs.

In addition, CDC is evaluating the concern that CDC's use of the phrase blood lead *level of concern* can be interpreted as suggesting that blood lead below this level are not of concern. This term is intended to define when case management is recommended for a child who has been exposed to lead. It is not intended to describe a "safe" level of exposure to lead. In light of studies that show that blood lead levels less than 10 µg/dL are associated with adverse health outcomes, and that all sources of lead in children's environments should be controlled or eliminated, CDC wants to ensure that our

terminology does not suggest otherwise. Dr. Frieden will ask CDC's Advisory Committee on Childhood Lead Poisoning to reevaluate this issue and provide evidence-based recommendations. This work would build on an August 2005 statement by the Advisory Committee that primary prevention efforts, namely controlling or eliminating lead in children's environments before they are exposed, are the most important actions supported by the data. It will also build on CDC's published recommendations for clinical health care providers on the treatment and follow-up of children with BLLs less than 10 µg/dL.

Public health scientists also continue to question what systems are in place to evaluate drinking water exposure as a cause of elevated blood lead levels. To answer this question, CDC will ask the Advisory Committee to review both the science related to health risk exposure to lead in water and the guidance that CDC provides the CLPPS regarding lead safe water practices.

I am committed to continuing progress toward elimination of childhood exposure to lead in DC and throughout the country, and welcome the Committee's help and suggestions in accomplishing this important goal.

Mr. Chairman, this concludes my prepared statement. I will be happy to answer questions from the Subcommittee. Thank you.

Mr. LYNCH. Mr. Jacobus, you are now recognized for 5 minutes for an opening statement.

STATEMENT OF THOMAS P. JACOBUS

Mr. JACOBUS. Thank you.

Mr. Chairman and members of the subcommittee, I am Tom Jacobus, general manager of Washington Aqueduct. Thank you for inviting me to testify today concerning strategies for reducing lead exposure via drinking water.

Washington Aqueduct is committed to ensuring that we produce safe, high-quality drinking water for our customers. Every action we take as an organization is focused on achieving this. We have an exceptional record of producing and delivering safe, reliable and cost-effective water service for our customers.

Washington Aqueduct is regulated by EPA Region 3, and even though we are Federal in nature, we operate like every other regulated water utility.

The elevated levels of lead in drinking water in some homes in the District of Columbia that were reported in the media in January 2004 were caused by a treatment change we made in November 2000. That change was made to be more protective of chronic exposure to disinfection by-products, while at the same time keeping the water free from harmful bacteria. However, it resulted in an unforeseen change as to the corrosion control measures being used. As a result, the water in contact with the lead service lines was too reactive, and the lead was leached from those lines.

A technical solution to restore affected corrosion control was researched and tested and then applied to the treatment process and delivered to the entire distribution system in August 2004. By adding orthophosphate as the corrosion inhibitor, lead levels measured at the tap in accordance with the Safe Drinking Water Act Lead and Copper Rule began dropping, as predicted. The use of a chemical additive as a corrosion inhibitor in the Washington Aqueduct treatment process will continue indefinitely.

Lead gets into the drinking water after the water has been produced at the treatment plants. Nothing in the treatment process adds lead to the water, and the network of public water mains that transport the water to the homes does not add lead. Lead can only be introduced to the drinking water if lead service lines connect the residents to the water main, or if there is a galvanized pipe in a residence which has had a lead service line, if there is lead in solder joints in home plumbing, or if there is lead in plumbing fixtures in the homes.

However, if the treatment plants have optimal corrosion control techniques, the possibility of lead leaching into the drinking water in the home can be very significantly reduced because the corrosion inhibitor creates a nonreactive surface inside the pipes and fixtures.

To confirm analytical calculations and bench tests of corrosion control chemistry, Washington Aqueduct built an array of lead pipe loops and set it up at the water treatment plant to mimic home water use conditions. Looking forward, this lead pipe loop array will be a test bed for analysis of the effects of any future change to water chemistry or treatment techniques. We will investigate

thoroughly what happens to corrosion control. All of this will be evaluated by our consultants and then by the Environmental Protection Agency before any future treatment change is made.

We have followed this review procedure with the ongoing change in the form of the disinfectant we use. Instead of having chlorine gas delivered to the water treatment plants, we are converting to the use of an aqueous form of chlorine known as sodium hypochlorite.

We are confident that through precise water chemistry control, our customers can maintain compliance with the Lead and Copper Rule. That confidence is based not only on science, but also on corroboration with our customers. We have the very best equipment for analyzing lead concentrations, and we share the data with our wholesale customers. We have regular meetings to discuss water quality, and we get excellent feedback.

Even with optimum corrosion control chemistry in a system that is fully compliant with the Lead and Copper Rule, as long as there are homes with lead service lines, lead solder or plumbing fixtures containing lead, the water delivered to those homes may pick up some concentration of lead. However, by following the directions that the District of Columbia Water and Sewer Authority has communicated to its customers, everyone living and working in the District of Columbia can confidently drink the water.

Mr. Chairman, thank you for the opportunity to offer this testimony. I look forward to responding to any questions you or other members of the subcommittee may have.

[The prepared statement of Mr. Jacobus follows:]

DEPARTMENT OF THE ARMY

U.S. ARMY CORPS OF ENGINEERS

COMPLETE STATEMENT OF

**Thomas P. Jacobus
General Manager, Washington Aqueduct**

BEFORE THE

**Committee on Oversight and Government Reform
Subcommittee on Federal Workforce, Postal Service and
the District of Columbia**

UNITED STATES HOUSE OF REPRESENTATIVES

On

**“Lead Exposure in D.C.: Prevention, Protection and Potential
Prescriptions”**

June 15, 2010

Mr. Chairman and Members of the Subcommittee, I am Tom Jacobus, General Manager of Washington Aqueduct. Thank you for inviting me to testify today concerning strategies for reducing lead exposure via drinking water.

Washington Aqueduct is committed to insuring that it delivers safe, high quality drinking water to its customers. Every action we take as an organization is focused on achieving this. Washington Aqueduct is a wholesale water utility that serves the District of Columbia, Arlington County, Virginia, and the City of Falls Church's service area in Northern Virginia. Washington Aqueduct is part of the United States Army and the U.S. Army Corps of Engineers, and we have been purifying water drawn from the Potomac River and serving our customers since 1862.

The General Manager of the District of Columbia Water and Sewer Authority, the County Manager of Arlington County and the City Manager of Falls Church serve as the principals of the Washington Aqueduct Wholesale Customer Board. It is this board that sets the strategic direction for Washington Aqueduct and approves operating, maintenance and capital improvement budgets. All funds come from the wholesale customers.

Washington Aqueduct is regulated by Region 3 of the United States Environmental Protection Agency, and even though it is federal in nature, it operates essentially like every other regulated public water utility.

Washington Aqueduct has an exceptional record of producing and delivering safe, reliable, cost effective water service to its customers. We are guided by the regulations promulgated under the Safe Drinking Water Act. These regulations set maximum contaminant levels, treatment techniques, and action levels that are there to protect the public's health as they drink and use the water.

The elevated levels of lead in drinking water in some homes in the District of Columbia that were reported in the media in January 2004 were caused by a treatment change made in November 2000. Washington Aqueduct switched from chlorine to chloramine as the disinfectant in the distribution system to keep the water free from bacterial while it was in the water mains on the way to the customer's tap. That change was made to be more protective of chronic exposure to disinfection byproducts. However it resulted in unforeseen changes to the corrosion control measures being used. As a result, the water in contact with the lead service lines was too reactive and lead was leached from those lines

To reduce the possibility of leaching lead from the lead service lines,, a technical solution to restore effective corrosion control was researched and tested and then applied to the treatment process and delivered to the entire distribution system in August 2004. By adding orthophosphate as a corrosion inhibitor, lead levels measured at the tap in accordance with the Safe Drinking Water Act's Lead and Copper Rule

began dropping as predicted. The use of a chemical additive as a corrosion inhibitor in the Washington Aqueduct treatment process will continue indefinitely.

It is important to note that lead gets into drinking water *after* the water has been produced at the treatment plants. Our source water, the Potomac River, is regularly tested for lead. Most samples have no detectable lead. If it is detected, it is at a trace amount, more than an order of magnitude less than the action level threshold for the household tap sampling in the Lead and Copper Rule. Nothing in the treatment process adds lead to the water, and the network of public water mains that transports the water to the homes does not add lead. Lead can only be introduced to the drinking water if lead service lines connect a residence to the water main (or if there is galvanized pipe in a residence which has had a lead service line), if there is lead in solder joints in home plumbing, or if there is lead in plumbing fixtures in the homes.

The mechanism for lead to enter the water is leaching from the lead service lines, the lead solder, or household plumbing fixtures that contain lead. However, if the treatment plants have optimal corrosion control techniques, the possibility of lead leaching into the drinking water in the home can be very significantly reduced, because the corrosion inhibitor creates a non-reactive surface inside the pipes and fixtures.

To confirm analytical calculations and bench tests of corrosion control chemistry, Washington Aqueduct built an array of lead pipe loops and set it up at the treatment plant to mimic water use conditions found in some DC homes. We have seven sets of these loops. We used them to determine the optimum concentration of the corrosion inhibitor to add. Water samples were collected daily over a period of months and from that data, the Environmental Protection Agency specified the optimum corrosion control treatment in terms of pH and concentration of orthophosphate. This corrosion control chemistry has been in use since late summer 2004, and has been very effective in establishing the protective film inside the household plumbing. This has resulted in our customers achieving compliance with the provisions of the Lead and Copper Rule. For the last six years, we have continued to keep one of the set of seven loops operating so that, at the treatment plant, we can monitor the effectiveness of the corrosion control in the water leaving the plant.

Looking forward, this lead pipe loop array will be a test bed for analysis of the effects of any future change we may make in the chemistry or the treatment techniques applied to the drinking water. We will use the lead pipe loops to investigate thoroughly what happens to corrosion control before any change is made and water is sent to the distribution system and on to homes and businesses. All of this will be evaluated by our consultants and then by the Environmental Protection Agency before any future treatment change is made.

We have followed this review procedure with the current change from using pure chlorine delivered by trucks and stored at the treatment plants in pressurized metal cylinders, to receiving an aqueous form of chlorine that is much safer to transport and use. It will provide the same degree of disinfection. But, because it is a different

chemical form and affects other aspects of water chemistry, we did a thorough consultant-led review and then coordinated several reviews with the Environmental Protection Agency prior to implementation. We expect that the Environmental Protection Agency will, over time, promulgate new maximum limits for contaminants that are currently unregulated, or perhaps adjust some of the existing standards for those that are already regulated.

Washington Aqueduct is currently engaged in a comprehensive risk-based study to determine what changes might be required to the current treatment processes to ensure that the public is protected and to make sure that we can meet future stricter regulatory limits. National experts, government agencies, our wholesale customers, and stakeholders representing public interests are working with us on this project.

We are confident that through precise water chemistry control our customers can maintain compliance with the Lead and Copper Rule. That confidence is based not only on science, but also on collaboration with our customers. We have the very best equipment for analyzing lead concentrations, and we share the data with our wholesale customers. We have regular meetings to discuss water quality, and we get excellent feedback.

It is important to understand that even with optimum corrosion control chemistry in a system that is fully compliant with the Lead and Copper Rule, as long as homes have lead service lines (or have galvanized pipe and had a lead service line in the past), lead solder, and lead in fixtures, the water flowing through the pipes may pick up some concentration of lead. However by following the directions that the District of Columbia Water and Sewer Authority has communicated to its customers, everyone living and working in the District of Columbia can confidently drink the water.

Mr. Chairman, thank you for the opportunity to offer this testimony, and I look forward to responding to any questions you or other Members of the Subcommittee may have.

Mr. LYNCH. Mr. Hawkins, you are now recognized for an opening statement for 5 minutes.

STATEMENT OF GEORGE S. HAWKINS

Mr. HAWKINS. Mr. Chairman, Congressman Chaffetz, and my Congressman, Congressman Norton, it is a delight to be here today. My name is George Hawkins.

For 16 years you would have heard the name D.C. WASA for the enterprise I run. Just this morning we changed the name to D.C. Water. Our new logo and new phrase can be seen here on the shirt. It is "Water is Life." I will come back to that. But it is not just a change in name, it is embodying a commitment we have to step forward and take proactive steps not only for the health and welfare of every customer, every citizen, every resident, every visitor in this city, but every living thing in this city, because water is the fundamental of life.

Just to clarify and to recap, we purchase our water from the aqueduct. Our friend Mr. Jacobus' Federal agency, treats the water. We purchase the water and distribute it to every building in the city through 1,300 miles of pipes, 36,000 valves, a pump system that is complicated throughout the city. I would love to show you. Then, once it is used and goes down the drain, it goes through 1,800 miles, because it includes sewage coming from our suburban jurisdictions to the Blue Plains, what I consider a water recycling plant, and we return over 300 million gallons of cleansed water every single day to the Potomac from whence it originally came.

Now, to clarify here, previously I was the director of the District Department of the Environment. We are joined by Christophe Tulou. We are very lucky to have you. He is an excellent addition to service here in the District.

While I was at the Department of the Environment—I have many of my prior colleagues with me, behind me—we were very proud to have consolidated and coordinated the lead program for the District. What used to take five agencies to work we narrowed to two. What used to be a responsive system—we waited until a child was poisoned by lead until we could act—now is a proactive system where we can go out and test and monitor and act in areas where we think there may be a problem before it happens. That has been a very positive step, and I know that has continued under Director Tulou's leadership at the Department of Environment.

I had the great pleasure of joining what is now D.C. Water in December 2009. I believe that addressing the threat of lead in drinking water is one of our absolute top priorities. Make no mistake, lead in water is a public health problem, and we must be active in its solution.

The issues of 2000 to 2004 severely undermined customer confidence in our system and our enterprise, and it is up to us to demonstrate that there should once again be D.C. water here on this table and everywhere else, because I would argue that it is cleaner than what we know is in this bottle. But I need you to believe that more than I need me to believe that. The recent investigation and studies about CDC suggest that these problems still linger.

Most important to us is that lead in water and lead as a threat is preventable. This is a problem we can solve, and this enterprise that I have joined and am pleasure to be part of is committed.

What about our responses? Initially in 2002, it has been mentioned about the partial lead service replacement. That was not an optional program. That was a required action by the U.S. Environmental Protection Agency under the Lead and Copper Rule. We were required to replace 7 percent of the public service lines in any given year.

The question has always been partial service line replacements. As information has come forward, we have determined, really all of us, that partial lead service line replacement does not only not drop lead in the system in the long term, in the short term can actually cause a spike in lead in the water, in fact, because when the lead lines are replaced, there is a lot of agitation to the pipes themselves which can dislodge lead into the system and cause a surge.

So as lead in the water, in fact, was reduced because of the change to orthophosphate in 2004, it became clear that we were no longer required to do partial lead service line replacements. So we have eliminated that program. Where we were doing more than several thousand partial lead service line replacements in a year, they are still done in the several hundreds in a year. But I want to emphasize, there are no lead service lines that are replaced for that reason on the partial basis.

When a water main is replaced in the street, the lines that come from our customers are no longer the right length because the water main is not put in exactly the same place. Some will be too long; others will be too short. So we have replaced those lines not because they are lead, they just don't fit the system. So we have put new lines in.

In some cases if the older line was a lead line, that has the effect of being a partial lead service line replacement. That is not why it is done. However, in those situations we communicate with that customer 6 months in advance, we provide ample information we believe about what risk there is involved, we offer to do a full lead line replacement, and will offer funding to lower-income residents. We will provide free certified-for-lead-removal water filters for those customers for at least 6 months or until the lead numbers have gone down below the 15 part action level.

So we have changed our response and are being very proactive in our protections for our customers.

Thanks so much.

Mr. LYNCH. Thank you.

[The prepared statement of Mr. Hawkins follows:]

**LEAD EXPOSURE IN D.C.: PREVENTION, PROTECTION
AND POTENTIAL PRESCRIPTIONS**

UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
SUBCOMMITTEE ON FEDERAL WORKFORCE, POSTAL SERVICE
AND THE DISTRICT OF COLUMBIA

HON. STEPHEN F. LYNCH, CHAIRMAN



TESTIMONY OF GEORGE S. HAWKINS, ESQ.
GENERAL MANAGER
DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

TUESDAY, JUNE 15 AT 2 P.M.
RAYBURN HOUSE OFFICE BUILDING, ROOM 2154

Good afternoon Chairman Lynch, Congresswoman Norton and members of the Subcommittee on Federal Workforce, Postal Service and the District of Columbia. My name is George Hawkins and I am the General Manager of the District of Columbia Water and Sewer Authority. Known throughout its 16-year history as DC WASA, the agency just today began doing business as DC Water. (More on that in a moment.) I'd like to thank you for inviting me to testify today on the challenge of eliminating lead poisoning. This is a critical public health question and one in which DC Water must play an active role.

First, by way of background, DC Water purchases treated drinking water at wholesale from our federal partner, the Washington Aqueduct, which is a unit of the U.S. Army Corps of Engineers. We then deliver this water through our pumping stations and pipes to our retail customers in the District of Columbia. We also operate the world's largest advanced wastewater treatment plant, at Blue Plains, for the benefit of our customers in the District and several suburban jurisdictions.

Today I'd like to discuss some of the principal issues associated with limiting lead exposure, as well as the steps DC Water is taking to address those issues. To date, my involvement in lead issues in the District has been on two fronts. Prior to becoming General Manager at DC Water, I served as the Director of the District Department of the Environment (DDOE), which is the primary coordinating agency for the District's response to lead poisoning cases. DDOE also oversees efforts to prevent lead poisoning and limit exposure. In this capacity, I became familiar with the many exposure sources, as well as the efforts needed to reduce them. Much of DDOE's work and enforcement authority at the time related to lead-based paint and dust sources. The agency was responsible for implementing the District's 2008 Lead-Based Paint Prevention Act, as well as the Environmental Protection Agency's (EPA's) Renovation, Repair and Painting Rule. During my time at DDOE, I'm proud to say that we built a comprehensive lead and healthy housing program, which consolidated efforts and resources previously spread across agencies to respond more effectively to poisoning cases and to address lead-based hazards preemptively.

I arrived at the Water and Sewer Authority knowing that addressing the threat of lead in the drinking water must be a top priority of the enterprise. It is my view that the events from 2000 to 2004 severely undermined customer confidence in our system and did not adequately focus on the public health implications of the crisis. The recent congressional investigation into the 2004 Centers for Disease Control (CDC) study highlighted the extent to which questions still linger and the importance of providing accurate and proactive information to the public. I want to be absolutely clear here: I am acutely aware of our agency's past history on the lead-in-water issue, and of my responsibility to move us forward in a new direction. Public health and public service demand nothing less.

Lead poisoning is known to cause learning and behavioral disabilities, nervous system and kidney damage, slowed growth and, in extreme cases, seizures or death. However, perhaps the most troubling characteristic is that lead poisoning cases are absolutely preventable. By aggressively identifying and eliminating hazards from all sources—paint, dust, water, soil and tainted consumer products—we can successfully counter the needless poisoning of District children.

Since the initial exceedance of lead levels in the District's water, DC Water has undertaken a number of actions in response. Our response strategy evolved as new information became available on the effects of lead in water. In 2002, once the Authority exceeded the lead levels prescribed by the EPA's Lead and Copper Rule (LCR), we began the mandated replacement of public lead service lines, at the rate of seven percent annually. This program continued until 2008, when new information emerged on the potential harm of partial pipe replacements. At that time, our Board of Directors passed a resolution that severely curtailed the rate of partial pipe replacements. In addition, since the 2004 chemistry change aimed at lowering lead levels in District water, DC Water sampling under the LCR has remained below the action level of 15 parts per billion. DC Water continues to conduct sampling twice annually and has remained in compliance since 2005. In fact, under the terms of the LCR, DC Water is eligible to apply for reduced monitoring, in which a smaller number of homes would be tested only once a year, and

has elected not to do so. We believe that a higher frequency of sampling is necessary to instill customer confidence and adequately track the state of our water.

However, I believe that DC Water can and must go further in actively addressing lead and water issues. To that end, we are currently focusing our efforts on three main areas: pipe replacements; public information; and sampling and research. A concerted effort on each of these fronts will have a tremendous impact on reducing exposure to lead sources and restoring the confidence of our customers.

Pipe replacements have been the largest component of DC Water's response strategy to date. In addition to being a federally-mandated part of the LCR, replacing lead service lines remains one of the primary ways to reduce potential lead sources. However, recent data demonstrates that partial pipe replacements, in which only the public portion of a lead service line is replaced, can cause a lead "spike"—a temporary elevation of lead levels in the affected property. This elevation may last anywhere from days to years and varies home by home, often dependent on a multitude of factors. As a result, the 2008 Board of Directors resolution limits partial pipe replacements to situations in which the Authority is replacing a water main and at this time, residents are encouraged to replace the private side service line. In addition, we replace service lines if a property owner elects to replace the private portion at the same time, thus avoiding a partial. The impact of the resolution was immediate. In FY2008, the Authority completed 2,404 partial pipe replacements. In FY2009, following the resolution, partial pipe replacements fell to 372.

Limiting partial pipe replacements from the outset will certainly be an important step. However, in late 2009, the CDC alerted us to preliminary research showing that children in homes that undergo a partial pipe replacement have a higher risk of elevated blood lead levels. As a result, DC Water has implemented a program in which homes that are subject to a partial replacement receive a six-month supply of filters, as well as follow-up testing to assess whether a lead spike exists after replacement. We also provide information to property owners with tips to reduce exposure, such as flushing faucets, using certified filters and methods for identifying other household sources that may contribute to lead in water. While budgets are always an issue for an agency funded

primarily by ratepayers, we are openly exploring different ways to reduce potential lead exposure for all customers – and new funding strategies for these efforts.

The next major response element is the need for accurate public information. The challenge in designing an effective public outreach campaign is the differing circumstances from home to home. We believe the responsibility for reducing exposure to lead in water is a shared one – among the agencies that collect, treat and distribute the water, and the owners and occupants of the buildings where the water is used. In addition to exposure through lead service lines, plumbing fixtures and solder within homes can contribute to lead levels in water. This means that even if water chemistry is optimal *and* service lines are replaced, there is a risk of exposure within homes with these lead-containing elements. The solution is to provide public information that enables homeowners to understand their individualized risk of exposure, as well as empowers them with steps they can take to limit that exposure. This includes developing profiles of homes that may be more likely to contain these elements; providing information to interested customers about the composition of their service lines; and offering sampling to concerned homeowners, so they can verify lead levels and take appropriate action if needed. I'm pleased to report that DC Water is working toward all of the above steps. We've also begun a productive collaboration with community advocates and public health focused non-profits – especially those who have been sharply critical of our agency in the past – to refine our existing messages and ensure that we are reaching wider audiences.

In addition to providing more specialized information, DC Water must serve as a trusted and accurate source of general information about lead and water, potential exposure routes and prevention strategies. A major challenge in this regard is our ability to reach the entirety of the customer base. Of the millions of people who drink DC Water on a daily basis, only about 130,000 customers receive a bill. Without monthly access to all of those mailboxes, we are left to communicate with everyone else through other means. To that end, we are finding new media for customer communications – including Facebook, Twitter and YouTube. We are revamping our website, partnering with community groups and non-profits to reach new populations, and proactively

communicating any notice of potential problems through news outlets. Reporters, editors and customers alike have already praised this new approach for its openness in contrast to the way this agency has done business in the past. While DC Water has not had a system-wide lead exceedance since the initial crisis, we have acted quickly in a number of other scenarios with potential impacts on public health – including boil-water alerts and “do not use” advisories. In any case where public health questions have arisen, the Authority has taken a stance of releasing as much information as possible in a short timeframe, so that the public may take the appropriate precautions. Should water quality issues occur in the future, we are prepared to do the same, having learned valuable lessons from 2004.

Earlier in my testimony, I mentioned that the District of Columbia Water and Sewer Authority is now known as DC Water. We decided to make that change, along with adopting a new tagline, “Water is life,” as of today. While the timing of the rebranding announcement on the same day as this hearing is purely coincidental, I believe this very moment is an important opportunity to explain how the team and I are taking this agency in a different direction. We chose DC Water because water is at the heart of everything we do, and because it refers both to the organization and the life-giving resource we provide every minute of every day. The 1,000-plus employees of the Authority, whom I refer to as Team Blue, and I, are absolutely committed to restoring public confidence in the District’s drinking water. To do so, we must raise our profile, so the public thinks about us when everything is going right and not just when we have a problem. The residents, employees and visitors of the nation’s capital should be as proud of their water supply as anyone in any major city of the United States, and I believe we will get there in time. We also aim to continue bringing local attention to the nationwide problem of aging water infrastructure, along with the need for federal investment in this area.

Finally, DC Water is committed to supporting good science and strong methodologies, which will yield better information about the nature of exposure routes. While our current sampling protocol has shown lead levels to be below the LCR action level, important questions have been raised about the usefulness of the LCR and its protocols from a public health perspective. Specifically, the LCR is designed to measure

corrosion within a system, not the public health impacts of lead levels. It is widely acknowledged that no level of lead is safe. Indeed, this is a goal for all water systems to strive to achieve. However, in the short-term, we are investigating sampling options that might provide a fuller picture of the lead in water profile at selected homes.

It is also critical that the Authority continues to contribute to research on this topic, to develop insights into the many outstanding questions about lead exposure. In September 2009, we announced findings of a long-running study of the relationship between lead levels and galvanized iron plumbing. Our research unearthed a previously unexamined correlation, in which the presence of galvanized iron appears linked to the likelihood of higher lead levels. These findings allow us to provide better information to the public, by isolating yet another property characteristic that may indicate relative risk of higher lead. We continue to participate in studies conducted through CDC and professional associations. In addition to conducting research, we're seeking ways to introduce greater transparency into the data produced, so as to spark scientific dialogue and promote greater confidence in the state of the District's drinking water.

In a system-wide sense, lead levels in the District's water have been improving since the 2004 chemistry change. However, as public health advocates will readily tell you, the only good lead in water is no lead. DC Water and our federal, local, and community partners must continue to focus on the public health impacts that stem from individual property conditions, relative risk, and a lack of clear information. Through a blend of effective policy solutions and public outreach, we are committed to reducing lead in water and protecting the health of our customers.

Mr. Chairman, members of the Subcommittee, this concludes my prepared remarks. Thank you again for the opportunity to testify, and I look forward to answering any questions you may have.

Mr. LYNCH. Mr. Tulou, you are now recognized for 5 minutes for an opening statement.

STATEMENT OF CHRISTOPHE A.G. TULO

Mr. TULO. Thank you Mr. Chairman, Ranking Member Chaffetz, and my Congresswoman Ms. Norton. Thank you very much for this opportunity to testify before you today. My name is Christophe Tulou. I am the acting director of the District Department of the Environment [DDOE].

Lead is among our most nefarious environmental toxins. It steals our most valued treasure, our children's potential. Because of that, there is no safe level of lead in children's blood, and I can assure that you getting lead out of their bodies and their environment is a top priority for Mayor Adrian Fenty and for DDOE.

I would like to take a moment to reflect back on the period 2000 to 2003 and D.C.'s lead-in-the-water crisis. As you know, the House Science Subcommittee recently completed a report that questioned the discrepancy between the number of blood lead screenings in 2003 and the numbers in the adjacent years.

Prior to that report, DDOE undertook its own rigorous review of the data to determine the extent to which children with elevated blood levels might have slipped through the cracks. I am pleased to say that we did receive those screening reports and, most importantly, determined that the overwhelming majority of children with elevated blood levels did indeed receive District services.

Originally we determined that 10 children had blood levels above 15 micrograms per deciliter who may not have been tracked, but after further analysis we found that 5 had either received the service, did not need the service because their blood levels indeed were not elevated, or actually their levels had been recorded in our lead track data base.

Nonetheless, we inspected all 10 properties involved, notified owners that failed inspection, and we have given those folks 30 days to correct the violations.

Much has happened since 2003. Most importantly, in 2008, Mayor Fenty signed into law a Nation-leading measure that makes prevention of lead poisoning a front-burner District policy, building on our efforts to respond effectively to high lead levels when we find them.

The District's new lead law, which has been implemented for just over a year now, creates vigorous new enforcement programs that, among other things, makes chipping and peeling paint in a pre-1978 home a presumptive lead hazard enforceable by DDOE, thus shifting the burden to the landlord to prove that deteriorating conditions are safe.

The law consolidates lead enforcement in one agency, that is DDOE, allowing quick action when a hazard is identified, and it requires landlords to test their property for lead hazards and document the property is cleared before renting that property to a tenant who is pregnant or who has children under the age of 6.

DDOE is also expanding its complaint response for reports of unsafe work practices and property conditions. It is minimizing data problems by requiring testing labs to submit their results, but also

to a separate read-only back-up server. By comparing data in these two places, we will provide improved data integrity.

We are also joining two other jurisdictions around the country—

Mr. LYNCH. Mr. Tulou, I am not sure what happened to your audio there. We are losing you.

Mr. TULOUE. I am back in service.

We are also joining two other jurisdictions around the country to include water testing as part of its followup investigation of a poisoned child's home, allowing inspectors to advise parents on ways to reduce risk from lead in the water supply.

We are also reaching out to families with children whose blood levels are below the usual action level of 10 micrograms per deciliter, and in this case between 5 and 9, to teach them how to reduce home lead levels.

We are targeting proactively the highest-risk areas around the city for enforcement. So, for example, if a child with an elevated blood level lives in a multifamily property, the owner-manager of that property is contacted to ensure lead-based compliance for all their units.

We are collaborating with local Medicaid officials on data sharing to ensure that Medicaid children are screened for lead poisoning on time, a strategy that has led to double-digit jumps in screening rates in other jurisdictions.

We are participating in monthly meetings with community members and multiple District agencies to find and implement better ways to prevent lead poisoning.

Finally, the agency is strengthening its relationship with the District's Office of Attorney General, resulting in greater focus on and stronger actions against those who violate the law.

In closing, the District's leadership on lead issues is truly a community effort, ranging from concerned parents to knowledgeable and passionate advocates, and enlightened city council members, and an engaged and forceful Mayor, and, of course, a team of expert and committed DDOE staff, several of whom are with me today, for whom this is not only a mission, but also their life's work.

Thank you again for this opportunity. I will be glad to answer any questions you may have.

Mr. LYNCH. Thank you.

[The prepared statement of Mr. Tulou follows:]

**“LEAD EXPOSURE IN D.C.: PREVENTION, PROTECTION,
AND POTENTIAL PRESCRIPTIONS”**

**UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM**

**SUBCOMMITTEE ON FEDERAL WORKFORCE,
POSTAL SERVICE, AND THE DISTRICT OF COLUMBIA**



**TESTIMONY OF CHRISTOPHE A. G. TULOU
ACTING DIRECTOR
DISTRICT DEPARTMENT OF THE ENVIRONMENT**

TUESDAY, JUNE 15, 2010

Good afternoon Chairman Lynch, Ranking Member Chaffetz and members of the Subcommittee. My name is Christophe Tulou and I am the Acting Director of the District Department of the Environment (DDOE). Thank you for the opportunity to present testimony today about our ongoing efforts to prevent lead exposure in the District of Columbia.

As an environmental toxin, lead steals that which we most treasure in our children – their potential. It diminishes their capacity to succeed in school. It harms their ability to enjoy productive lives. It diminishes their chances of gaining and maintaining a good job. Therefore, I want to make clear that preventing childhood lead poisoning in the District of Columbia is a top priority for Mayor Adrian Fenty and the District Department of the Environment.

DDOE believes that there is no safe level of lead in the human body and that even levels less than 10 micrograms per deciliter can cause cognitive difficulties for children. We know that lead, no matter the source, has a harmful cumulative effect on the human body, making it critical to eliminate every incidence of exposure to lead a child may have. No lead level is acceptable, and every source of lead must be targeted.

The District's Response to the Lead-in-Water Crisis

Let me now turn to the period of 2000-2003 when the District experienced an unfortunate lead-in-water crisis. As you are aware, there have been serious discrepancies and differing accounts of the number of children exposed to lead in 2003. As the agency charged with responding to every incident of lead poisoning in the District, DDOE has invested considerable time and resources in looking back at this period.

DDOE undertook a rigorous data review to determine if reported instances of children with elevated blood lead levels were missed in 2003. This particular year was targeted because it is the year that another Congressional panel had alleged a large gap between the number of blood lead screenings reported by the District, and the number screened in adjacent years. The critical question for DDOE was: Why does it appear there were approximately 6,000 fewer blood lead

level screenings in 2003, and does that mean a large number of children with elevated lead levels may have been missed?

After a thorough review I am pleased to say that DDOE did receive those screening reports, and most importantly, the overwhelming majority of children with elevated levels did indeed receive District services. DDOE's initial conclusion was that there were ten cases that appeared to involve blood lead levels of 15 µg/dL or more and appeared not to have been tracked by the District. However, further analysis revealed that out of the ten DDOE had initially believed may not have received case management services, five had either received case management services, did not require case management services because their blood lead levels were in fact not elevated or their levels had been indeed recorded in LeadTrax. Still, all ten properties have been inspected, notified if they failed the inspection, and have been given thirty days to correct the violations, if any exist.

The District's Current Efforts to Reduce Infant and Childhood Lead Exposure

Since 2003, DDOE has undertaken several initiatives and process changes to further reduce infant and child exposure to lead-based paint in the District. Most importantly, in 2008, Mayor Fenty signed into law an innovative measure that makes prevention of lead poisoning the policy of the District. The new law calls for mandatory lead testing for homes that will be occupied by children and holds landlords accountable when they behave irresponsibly.

The District's new lead law has allowed for the creation of a vigorous new enforcement program that works with the Childhood Lead Poisoning Prevention Program (CLPPP) to implement orders to eliminate lead-based paint hazards, and conduct proactive strategies in geographic hotspots for lead poisoning. In prior years, no enforcement was possible without an expensive risk assessment to determine whether chipping and peeling paint was a lead hazard. Now, the law makes those conditions in a pre-1978 home a presumptive lead hazard that is enforceable by DDOE, thus shifting the burden to the landlord to prove to DDOE and the tenant that deteriorating conditions are safe.

Also, the 2008 law consolidated lead enforcement authority in a single agency, DDOE. Accordingly, once a lead-based paint hazard is identified, DDOE is able to issue very quickly a Notice of Violation or an Order to Eliminate Lead-Based Paint Hazards.

The new law also sets a national precedent by requiring landlords to test their property for lead hazards and to document that the property is cleared *before* renting their property to a tenant who is pregnant or who has children under the age of six. DDOE has also expanded its complaint response for citizen reports of unsafe work practices and unsafe property conditions. More than ever, residents can expect a timely response when they witness dangerous renovation practices occurring in their neighborhoods. Additionally, DDOE works with the affected parties to ensure compliance with the specific property, as well as any other property units that the contractor may work on, or that the owner/property manager controls.

With regard to surveillance and the tracking of elevated blood lead levels in children, DDOE has established broad quality assurance programs to ensure that there are no future data discrepancies like those reported in 2003. District labs have been contacted and directed to submit their test results not only to DDOE's database, but also to a separate, "read-only" backup server. Periodically, to verify that the records in both are identical, the CLPPP can then compare the records in its current database with the records in that protected server, and thus provide a new measure of data integrity.

In addition, since late 2007, the District has become one of only three jurisdictions in the country to require its lead inspectors to routinely take water samples as part of the follow-up investigation of a poisoned child's home. If lead is found in the water supply, DDOE urges at-risk residents such as pregnant women, nursing mothers, and parents of children under the age of six to consult their physicians, and possibly take such extra safety precautions as regularly cleaning and replacing aerators, using the first water of the day for a purpose other than drinking and using certified water filters if reconstituting milk or food for an infant.

Another District initiative that has garnered national recognition from the Center for Disease Control's Advisory Council is the District's program for providing some services to families

with children who have blood lead levels between 5-9 ug/dl. Upon discovery of blood lead levels in this range, the District sends a contractor who goes to the home and provides education to the family on reducing home lead levels.

DDOE has also undertaken a proactive campaign to target the highest risk areas of the city for enforcement and a comprehensive lead compliance property registry currently being developed. If a child is identified with an EBL and they live in a multi-family property, the owner/manager is contacted to ensure lead-based paint compliance for *all* their units, not just the unit potentially responsible for the EBL condition. Another promising initiative is DDOE's data sharing process with local Medicaid officials to ensure that Medicaid children are screened for lead poisoning on time. Other jurisdictions that have implemented this strategy have seen double-digit jumps in screening rates.

DDOE also participates in two monthly working groups – one community-based and the other federally mandated – to explore, create and refine lead poisoning prevention activities. It hosts an interagency task force of more than one dozen DC agency representatives for the purpose of ensuring the coordination of government activities and resources.

Finally, since 2003, the District's lead program has strengthened its relationship with the District's Office of the Attorney General (OAG). Today, OAG attorneys participate as full partners in the District's efforts to prevent lead poisoning and eliminate lead-based paint hazards. OAG attorneys actively follow up on enforcement cases where the property owner has failed to comply with an Order to Eliminate Lead-Based Paint Hazards. Since the summer of 2007, OAG has initiated at least thirty cases against property owners, all of which have resulted in consensual or judicial orders of abatement, or other dispositions resulting in abatement.

Conclusion

As my testimony indicates, the District is fully committed to eliminating lead exposure in the District of Columbia. Much progress has occurred since 2003 on the lead poisoning prevention

front in the District, with blood lead levels and the number of lead poisoning cases continuing to decline.

The District's efforts to reduce instances of childhood lead poisoning have been robust, successful, and continuous and the District is vigorously improving its efforts to limit children's present and future exposure to lead-based paint hazards. The District has expended significant resources to understand the extent of any problems that may have occurred in 2003 and ensure that the mistakes of 2003 are never repeated. Still, this administration knows that the large number of homes that still have lead paint in the interior means that the prevention of lead poisoning will continue to be a significant issue for many families and their children. We also acknowledge that we must do everything we can to be vigilant in our monitoring of the District's pre-1978 housing stock and the quality of our water supply.

Thank you again for the opportunity to testify and I look forward to answering any questions you may have.

Mr. LYNCH. Dr. Silbergeld, you are now welcome to make an opening statement for 5 minutes.

STATEMENT OF ELLEN SILBERGELD

Ms. SILBERGELD. Thank you very much. Thank you for giving me the opportunity to provide testimony on this topic and on the broader context in which this topic arises. As has been noted, I am professor of environmental health sciences, environmental health engineering and epidemiology at the Johns Hopkins Bloomberg School of Public Health in Baltimore, but I am appearing as a private citizen.

I want to cover three specific topics: our current understanding of health hazards of lead to young children and others; the contribution of lead in drinking water to exposures and toxicity; and the importance of interventions after exposure to mitigate toxicity to children.

As you know, there is extensive scientific consensus now that lead is associated with significant risks to health at blood levels well below the guidance level set by CDC in 1991, some 20 years ago.

For adults there are also significant health impacts of exposures below 10. And I want to stress this, that it is very important to extend our public health purview to adults in light of the serious health effects of lead exposure that occur after childhood. For children we know that these exposures are associated with problems in neuro development in children, but in adults they are associated with increased risks of cardiovascular disease, including increased risks of death due to stroke at the same levels. We also recognize that lead-induced impairments in neuro-development in children that are measured early in life are followed by highly significant risks expressed in adolescents and young adults, which speaks of the importance of intervention.

In terms of drinking water, lead exemplifies the importance of cumulative risk; that is, the importance of considering all exposures in evaluating the significance of any specific exposure. In fact, as our understanding of lead toxicity increases, we really are impelled to reevaluate guidelines and standards for all media and all potential sources of lead. For example, it has been calculated that a child drinking 2 liters of water per day at the current action level of 15 parts per billion would exceed a blood lead level of 5 micrograms per deciliter within a year under conditions of frequent consumption.

Moreover, if we accept the conclusions of research on the toxicity of lead and reset our guidance to 5 micrograms per deciliter or lower, we can no longer assume that housing is the main source of elevated lead exposures, and the risk metric that has been developed by CDC and by a committee that I was part of is no longer reliable for preventing lead exposure or even prioritizing preventative actions.

As you may know, EPA is currently recognizing the importance of reconsidering many standards and guidance related to environmental concentrations of lead, most recently with the National Ambient Air Quality Standards for lead in air. I was a member of the SAB panel for EPA that reviewed the scientific justification for the

current drinking water standards. The enforceable standard was set at 15 parts per billion, but it is my scientific opinion that given what we know now, this current standard is not acceptable, nor is the current strategy for intermittent sampling and most certainly the recommendations to consumers that flushing the waterline will prevent exposure to drinking water lead an acceptable way to prevent exposure.

Now, on the last point, in terms of interventions, lamentably many children in the United States, particularly, but not only, in our Nation's Capital, as well as in other major cities, including my own, continue to be exposed to lead. Thus, we cannot ignore the importance of considering interventions that can mitigate the short- and long-term impacts of these unprevented exposures.

Clinical and experimental researchers have examined the efficacy of educational and behavioral interventions for children, expressing the characteristic impairments of lead toxicity, including neurocognitive delays, impulsivity, attention deficit disorder and heightened aggressiveness. Some of this research has been conducted by my colleagues at Hopkins, such as the Kennedy Krieger School. In fact, this is an approach that has been adopted by parents and in school systems, and, in fact, is one of the focal points of the CDC lead poisoning program; that is, the delivery of interventions to children with elevated lead exposures. And I am a member of the advisory committee for the CDC that considers this topic.

This is a very important response, and if we fail to meet the needs of lead-exposed children, this will increase the risks of school failure, learning disabilities and sociopathic behaviors in the next generation of young adults.

Thank you for your attention. I am ready to answer any questions that I can.

Mr. LYNCH. Thank you, Doctor.

[The prepared statement of Ms. Silbergeld follows:]

Testimony: Dr Ellen K Silbergeld- June 15, 2010

TESTIMONY OF DR ELLEN K. SILBERGELD

JUNE 15, 2010

**“LEAD EXPOSURE IN D.C.: PREVENTION, PROTECTION AND
POTENTIAL PRESCRIPTIONS”**

SUBCOMMITTEE ON FEDERAL WORKFORCE, POSTAL SERVICE
AND THE DISTRICT OF COLUMBIA

COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

Testimony: Dr Ellen K Silbergeld- June 15, 2010

STATEMENT OF DR ELLEN K SILBERGELD

Thank you for the invitation to provide testimony on lead in drinking water in the context of preventing lead toxicity and on the value of interventions to improve the outcomes of prior lead exposure. I am Ellen Kovner Silbergeld, Professor of Environmental Health Sciences and Epidemiology at the Johns Hopkins Bloomberg School of Public Health in Baltimore MD. I attach a copy of my professional resume, and I note those positions and activities relevant to the topics of this hearing. I have conducted research on lead toxicity, both epidemiological and mechanistic, for over 30 years as a research fellow at Hopkins, a staff fellow at NIH, and a professor at the University of Maryland Medical School, as well as at Johns Hopkins. At present I am an investigator on a research project on lead funded by NIH, in which we are examining the associations between early life exposures to lead and later risks of cardiovascular disease. I have published over 400 papers, chapters and scientific abstracts, including reviews of childhood and adult lead toxicity. I have served on several US government committees concerned with lead as an environmental health risk, including scientific advisory committees for EPA on lead in air and water and for HUD on lead in paint, and to CDC on guidelines for preventing childhood lead toxicity. I also chaired the Maryland State Advisory Council on Preventing Lead Poisoning in Children. Currently I am a member of a CDC advisory committee on interventions for lead-exposed children.

I will present testimony to you on three topics: our current understanding of the health hazards of lead to young children and others; the contribution of lead in drinking water to exposures and health risks; and the importance of interventions after exposure to mitigate toxicity to children.

1. Health hazards of lead

At present, there is extensive scientific consensus that lead is associated with significant risks to health at blood lead levels well below the guidance level for children set in 1991 (10 ug/dL) (Jusko et al 2008). For adults, there are also significant health impacts of exposures below 10 ug/dL. I note the importance of extending our public health purview to adults in light of the serious health effects of lead exposures that occur after childhood. I agree with the recent conclusion of the Human Biomonitoring Commission of the German government that it is not possible to set a level of lead exposure that is without risk due to the millenia of lead extraction

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and use throughout the world. To provide an appropriate context, it has been demonstrated that a blood lead level of 1 ug/dL is more than 100 times the blood lead level experienced by human populations as recently as the 1500's (Silbergeld 1997).

The health risks of lead exposures below 10 ug/dl include impairments in neurodevelopment in children and increased risks of cardiovascular disease (and related mortality) in adults. Moreover, we now recognize that lead-induced impairments in neurodevelopment children that are measured early in life in terms of neurocognitive function are followed by highly significant risks for adolescents and young adults. Early elevations in blood lead are associated with failure to complete high school, attention deficit disorder, learning disabilities and disruptive behavior (Froehlich et al 2009; Braun et al 2006 and 2008), and a range of sociopathic behaviors including delinquency and drug use (Nevin 2009). In a national study of young adults (whose mean blood lead levels were under 2 ug/dL), there was a three-fold increase in major depressive disorders related to increases in blood lead levels (Bouchard et al 2009). Thus the early impacts of lead not only persist throughout later life, but also their severity and social impacts appear to be amplified.

Moreover, with respect to the risks of lead to adults, over the past decade our knowledge has undergone a revolution such that we can no longer ignore the risks and sources of lead exposure for the rest of us. As reviewed in several recent papers by my colleagues and me, as well as others, the scientific literature supports a causal association between very small increments in blood lead – from 0.5 to 3 ug/dL – and highly significant increases in blood pressure, risks of atherosclerosis, and premature death due to cerebrovascular disease and stroke (Navas Acien et al 2007; Navas Acien et al 2004). Cardiovascular disease is the leading cause of death in the US, and the possibility of reducing this burden by reducing both early childhood and adult lead exposures is of very great importance.

2. The contribution of lead in drinking water to elevations in blood lead levels

Lead exemplifies the importance of cumulative risk, that is, the importance of all exposures to lead in evaluating the significance of any specific exposure source. We are not "lead free" – everyone of us carries a burden of lead in our blood and possibly more importantly in our bones, which results from the sum of past and present uses of lead in our environments. Lead in drinking water is important as part of the overall contribution of lead in our environment to lead

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in our bodies (Fertmann et al 2004). As reviewed by Maas et al (2005), it was estimated by EPA in 1991 that lead in drinking water at that time contributed between 14-20% of total lead exposure in the US. Additionally, as our understanding of lead toxicity impels us to re-evaluate guidelines and standards, the contribution of this source becomes more important. Maas also calculated that a child drinking 2 L of water per day at the current action level of 15 ppb would exceed a blood lead level of 5 ug/dL within a year under conditions of regular consumption.

The importance of identifying and preventing exposures to lead in drinking water can be seen in the recently published revision by CDC of screening data from DC: 30% of the children from homes with lead service lines had blood lead *levels greater than or equal to 5 ug/dL*, as compared to 15% of children from homes without the suspect lines (MMWR 5/21/2101; vol 59(19) 592).

This information challenges our current strategies for testing children and preventing lead exposures. Under current guidance from CDC (developed in 1991), local health departments are advised to establish programs that are designed to take action when children's blood lead levels exceed 10 or 15 ug/dL. Under this recommendation, the CDC guidance for risk assessment has prioritized housing and housing in poor repair as a strategy for targeted screening and interventions. However, if we accept the conclusions of research since 1991 and reset the health guidance to 5 ug/dL or lower, then the assumption that housing is the main source of elevated lead exposure no longer holds. We undertook an analysis of blood lead screening data in Baltimore City several years ago, in which we confirmed that there was a strong association between housing sources and children with blood lead levels >10 ug/dL (Aloe and Silbergeld, unpublished). However, we found no reliable association with housing for children with blood lead levels less than 10 and greater than 5 ug/dL. This same attenuation of the relationship between housing and elevated blood lead levels, for levels greater than or equal to 5 ug/dL, was observed in a national study (Bernard and McGeehin 2003).

It is noteworthy that EPA has recognized the importance of reconsidering its standards and guidance for environmental concentrations of lead. As you know, the EPA recently proposed a significant lowering of the national ambient air quality standard for lead, to 0.15 ug/m³ and this regulation was recently upheld in court. EPA is currently considering revisiting the drinking water standard for lead, as reported in Inside EPA on June 7th. I was a member of the Science Advisory Board panel that reviewed the justification for the current drinking water lead standard,

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and members of that panel recommended adoption of zero as the maximum contaminant level goal, on the basis of our knowledge at that time. The enforceable standard was set at 15 ppb. Given what we know now, the current SDW standard is not acceptable, nor is the strategy for sampling in the current regulations. Congress should consider oversight of EPA's current programmatic evaluations of the drinking water standard for lead and its implementation.

3. Interventions for lead exposed children

Lamentably, many children in the US – particularly but not only in our Nation's capital as well as other major cities including Baltimore -- continue to be exposed to lead. Primary prevention -- the elimination of exposures -- is the most effective way to prevent the individual and societal impacts of lead, but we cannot ignore the importance of interventions that can mitigate the impacts of these unprevented exposures. For that reason, there has been important research examining options for interventions after the fact of poisoning. The first studies were undertaken to determine if there were any health benefits from more aggressive chelation therapy for children with blood lead levels below 30 ug/dL. The results of a multi-site clinical trial, in which Johns Hopkins researchers participated, did not support this strategy. More recently, clinical and experimental researchers have examined the efficacy of educational and behavioral interventions for children expressing the characteristic impairments of lead toxicity such as neurocognitive impairments, impulsivity and attentional deficit disorder, and heightened aggressiveness. Some of this research has also been conducted by my colleagues at Hopkins. The Kennedy Krieger School -- which is dedicated to developing and testing interventions for children with untreatable developmental disorders as well as lead poisoning -- has developed specific curricula and pedagogical approaches that respond to the cognitive and behavioral dysfunctions associated with lead toxicity. Experimental research, led by Prof Tomas Guilarte (now at Columbia University) demonstrated that social enrichment strategies could reverse both learning deficits and actual neurobiological changes in rats exposed to low levels of lead early in development (Toscano and Guilarte 2005).

This is an approach that has been adopted by parents and in school systems and is one of the focal points of the CDC Lead Poisoning Program. I am a member of the advisory committee that the CDC has established to consider this topic. In many respects, we have information on the efficacy of some relevant intervention programs because of the overlap between developmental lead toxicity and other major neurobehavioral problems in children, including

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conduct disorder, learning disability, and attention deficit disorder. In some school districts, a diagnosis of lead toxicity based on elevated blood lead level is one of the eligibility criteria for children to receive educational and behavioral interventions. This is an important response: as indicated above in this testimony, failing to meet the needs of lead-exposed children will increase the risks of school failure, learning disabilities, and sociopathic behaviors in the next generation of young adults.

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To summarize this testimony:

- The health impacts of lead on children are well established to occur at blood lead levels well below 10 ug/dL, and these impacts persist throughout childhood and early adulthood.
- Adults are also at risk at blood lead levels below 10 ug/dL; increased risks of cardiovascular disease and mortality associated with CVD have been demonstrated.
- Drinking water is a significant source of lead exposure for children and adults. With concern over lower levels of exposure, the contribution of lead in drinking water is of increasing importance
- Educational and behavioral interventions are important methods to mitigate the impacts of early lead exposure on the child and on society.

Thank you for your invitation and attention, and I would be pleased to respond to your questions and comments on this statement.

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Mr. LYNCH. I now yield myself 5 minutes for a first round of questioning.

Ms. Arias, thank you very much for your willingness. I know you had to pinch hit at the last minute when your Director Dr. Frieden was out of the country, and I appreciate your testimony here today.

To begin, you mentioned in your testimony that as a result of the lessons learned during the 2000 to 2004 lead-in-the-water crisis, that the Center for Disease Control instituted an automated surveillance reporting system and required that all data be reported directly to CDC.

I must confess I was not in place at that time, and I am curious to know how much of a change that presented to what was going on previously, and how is that working today? And can you point to any enhancements or changes that might bring improvement to that whole system?

Ms. ARIAS. Thank you very much for that question.

The system is not fully implemented yet. We are expecting that by the end of December of this year, we will have 15 programs who are submitting their information on a very timely basis directly to CDC. And by "timely" I mean quarterly reports as opposed to reports on an annual basis, and maybe even longer than that, that unfortunately in the past had the potential, as it did in D.C., leading to a lag between what was going on in a jurisdiction and our knowledge of it to be able to intervene.

In addition to the fact that the information is coming in directly to CDC and more quickly, it is also coming in in raw form, so we are actually doing the analyses as opposed to having the local programs do the analysis of the data and then submit those summary results to us. What that means is that we again will have the raw numbers more quickly and available to detect any significant changes in a jurisdiction that may require a significant response.

Mr. LYNCH. Let me ask you, what data are you actually collecting?

Mr. ARIAS. Well, we are collecting the results of testing of the water and then the blood levels in children that are being tested primarily. So what we are interested in tracking is are there any changes that are being reported or that are being detected in blood levels of kids who are being tested in those areas.

Mr. LYNCH. And let me ask you further, the level—there has been a number of witnesses on the panel as well that have talked about the standard, how many parts per billion, and there is some direct testimony that the old standard should be revised to recognize a greater danger, and that the old standard—is it 15 parts per billion?

Ms. ARIAS. In the water, 15 parts per billion, yes.

Mr. LYNCH. I think Dr. Silbergeld testified that was unacceptable, if I can quote you. Are we still testing at that 15-parts-per-billion level, which was, I think, instituted back in the 1990's?

Ms. ARIAS. We are testing at that level. There are two levels that are of particular concern to the CDC. One is the level in the water, and then the other is the blood level as well, so the 10 micrograms per deciliter. One of the things that we are going to be—and Dr. Frieden has already charged the leadership of the National Center

for Environment Health in ATSTR to work with the advisory committee on lead to revisit both of those levels.

In the case of the 15 per billion, it is a recommendation that we would make to EPA and others, and then they would have to essentially take that information and make the final recommendation of what it is, what the standard ought to be.

In the case of the sort of level of concern of blood levels, we are again sort of going to work with the advisory committee to determine, No. 1, what is the best language to use so that we do not confuse people and misrepresent or lead to confusion about the fact that no level of lead is safe. So we are working on both of those.

Mr. LYNCH. Given the timing of this, we are talking about the crisis that was identified as 2000 to 2004, I also understand that you are only testing children until age 6. At least that is what I read. If that is not the fact, you can educate me on that.

Given the nature of the problem here in D.C. and the long time period, and we are still not getting full compliance with the reporting requirements, wouldn't it be helpful to continue the testing beyond age 6 to catch maybe some children beyond that age that might have been exposed earlier?

Ms. ARIAS. The recommendations speak to those ages because they are at highest risk for the negative health consequences of exposure to lead. However, CDC would be supportive of testing all kids to make sure that all kids are equally protected from exposure to lead, and not just those who are at highest risk, along with pregnant women and women who may be breast feeding because of the infant issues.

Mr. LYNCH. Thank you. I notice my time has expired.

I now recognize the gentleman from Utah Mr. Chaffetz for 5 minutes.

Mr. CHAFFETZ. Thank you, and thank you all for being here.

Ms. Arias, are you familiar with this report by the majority staff of the Subcommittee on Investigations and Oversight of the Committee on Science and Technology, subcommittee chairman Brad Miller?

Ms. ARIAS. Yes, I am.

Mr. CHAFFETZ. Dated May 20, 2010. This is such a damning report. It is pretty shocking, the accusations that they throw around in here at how inept the CDC was. What is your response to this report?

Ms. ARIAS. As followup to today, we can provide you a more detailed sort of account and side-by-side of what was in the report and then the actions that we took either prior or in response to the criticisms that have been raised to improve our work.

One of the things—in general, I think it is the case that we regret the fact that we did not become knowledgeable of the situation in D.C. any earlier than we did. However, what we have been very clear about is how we are still confident of the response that we did when we did become aware of the issue, that it was an appropriate response, it was an adequate response, and it was a response that maximized the safety of children and all others in the home at that time.

Mr. CHAFFETZ. I am sorry, my time is so short, I have to move from subject to subject here.

This is page 2. "The CDC cannot produce the raw data used in the cross-sectional study. Both CDC and the District Government claim they have no records containing the raw scientific data to substantiate the basis for this study."

Ms. ARIAS. The cross-sectional study was not a CDC study; the longitudinal one was. Both studies were presented in the same dispatch, in the MMWR. So we never had the data for the cross-sectional study. We have tried to get those in order to look at the analyses that were done and compare and see if they were accurate, but we do not have that.

Mr. CHAFFETZ. "The subcommittee's investigation has found that the number of D.C. children with elevated blood levels in 2002 and 2003 was at least three times greater than the CDC claimed in 2004." Is that accurate?

Ms. ARIAS. That is on the basis of cross-sectional data.

Mr. CHAFFETZ. "The CDC failed to provide reliable public health guidance when it published the emergency dispatch based on known, missing data.

Ms. ARIAS. I will have to provide you with followup information, because there are a number of different discrepancies that have been alluded to or that have been pointed out in that report, and so I will have to look into the exact one that you are referring to and get you that information in followup.

Mr. CHAFFETZ. Part of it, it says later on page 8, "There was a mysterious drop of almost 6,000 in the number of children tested in 2003 compared to the year 2000."

Ms. ARIAS. In the longitudinal study that CDC did conduct, we did find that there were a number of cases that were missing. We have since collected that information and done the reanalyses to be able to provide more accurate information. All of that information has been then corrected in the MMWR and all the materials that CDC makes available to the public and other professionals.

Mr. CHAFFETZ. In the conclusion of this report, "It is inexplicable that the CDC, the Nation's premier public health agency, promoted as credible a report that countered every single piece of research that outside scientists, the agency and its own advisory committee had previously issued on dangers of elevated lead levels," and it continues on.

It can't get any more aggressive in saying how bogus this is. I guess we don't have time to go through the details of this, but this certainly warrants a very thorough explanation and a side-by-side analysis. If you are willing to provide that, we would appreciate it. The contrast in what you are saying and what this report says is huge. This is not like one little minor difference here. It basically says the whole report is something we shouldn't believe in.

Mr. ARIAS. We will provide that to you.

Mr. CHAFFETZ. Thank you. I appreciate that.

Mr. Hawkins, welcome. I like the new logo. I will get one of those patches for my suit, I guess.

Mr. HAWKINS. Say the word.

Mr. CHAFFETZ. There you go.

Mr. HAWKINS. You said it.

Mr. CHAFFETZ. I will call you. I will call you, yes.

Let me ask you here, there was an analysis done where there were 20 different recommendations. Can you give me a sense of how thorough these recommendations have been implemented? This was back from the report from Eric Holder. This is a summary of the investigation reported to the board of directors of the District of Columbia Water and Sewer Authority, July 16, 2004. There were 20 recommendations. Have they been implemented, not implemented?

Mr. HAWKINS. I will have to get back to you about that specifically, because we can answer 1 through 20, exactly what we have done on each.

In short, the Water and Sewer Authority—which, by the way, the legal name has not changed, so that is still the name. This is just as D.C. Water, as we are doing our part—

Mr. CHAFFETZ. I can appreciate that, yes.

Mr. HAWKINS [continuing]. Has adopted a very aggressive strategy across the board. So the partial lead service line replacements, as I mentioned, was a required step. We, in fact, are doing advanced monitoring. Any one of our customers that is concerned about lead in the water can ask for a testing kit, which we will send them. We will analyze the result. If there are results that indicate—

Mr. CHAFFETZ. Can you send me one of those?

Mr. HAWKINS. We will send you one of those as well.

Mr. CHAFFETZ. I would love to see the water that is coming out of the sink in my office, what that looks like.

Mr. HAWKINS. OK. We would be delighted. And if there is an issue, we will also advise you on what steps to take in response.

Mr. CHAFFETZ. Believe me, I will call you.

Mr. HAWKINS. From soup to nuts. The monitoring we do, in fact, because we have been under the action level of 15 parts per billion, we could seek from EPA to reduce the level of monitoring we are required to do. We have not done that. We think the expanded level of monitoring that you put in place when there is a problem is warranted to continue, because we want to make sure we can demonstrate to our customers that which we believe is true but want to make sure the numbers demonstrate.

You can see the water monitoring that we do on our Web site, so we release the monitoring that is done. We are working with advocates to look at all of our materials and communications to make sure that which we are describing to the customer is true or is as carefully worded as possible.

As I mentioned, in partial lead service line replacements, if we believe there is an issue in your home, we will provide you with the certified lead removal filters for your home for at least 6 months or until we are both convinced that the numbers have gone below the action levels.

We work with the aqueduct to make sure that from the distribution system, on research, this is board-initiated as well with the support of the enterprise. Last year, at the end of last year, we did our own research that revealed a connection between lead in water and galvanized pipes. That is something we did on our own, we released to the public and are taking steps.

So one for one on the Holder report, we can absolutely go one for one. But the story is—this is a serious question. There is more research to be done to know what the level is, the right number. In our view, the statement the chair said from the beginning, the only good lead is no lead, and the question is how can it be done in a cost-effective, thoughtful manner? It is a public health threat, and we want to be proactive in our response.

Mr. CHAFFETZ. Thank you. I appreciate it.

Thank you, Madam Chair. I yield back.

Ms. NORTON [presiding]. Thank you.

For reasons that are perfectly obvious, I am taking the chair, pending the full vote for the residents of the District of Columbia. It will come.

Dr. Arias, just to clear up, before we get to prevention, it is my understanding that the position of the CDC is the public misinterpreted the 2004 mobility weekly findings. Now, if there was a misunderstanding, what steps has CDC taken to clear up this misunderstanding?

Ms. ARIAS. There are two sets of steps that have been taken. One is to address the information provided in that document and how it is that then that information can be used, or how we are encouraging that it be used.

And the other is what we're doing to rectify processes that led to those difficulties. On the first hand, what we have done is, again, identified the information that was not available to us at that time, have gotten that information and redone the analysis to make sure that the most accurate information is available. As a result of that, then we have made all the corrections and have put special notices on all the documents in the MMWR and on our Internet pages that refer to the original 2004 article and so have the corrected information there.

We also then contacted all the lead programs in the country with the updated information to make sure that they understood what the correct information was.

In terms of processes, again, what we're doing is improving those surveillance systems so that we do not find ourselves in a situation again where we find out about potential or actual increases in either water levels or blood levels of lead from the media or accidentally, after a long period of time of exposure. So that we're making sure that we are aggressive both in collecting the information and then having the program work with the programs and the State and locals to make sure that the information is being submitted and that we then analyze it in a timely basis and act appropriately.

Ms. NORTON. Mr. Hawkins, I have a question for you in light of Dr. Arias' testimony.

First, I note that you eliminate the word "sewer" from your title. You're marketing your agency a little differently, I guess. I can understand that, although I think it could create some confusion with Mr. Jacobus' work. And some of us consider your work on sewers to be of exquisite importance.

So I know sewer can sound like a dirty word, but the fact is that it is that part of your jurisdiction that some of us up here, especially me, because I am the prime sponsor of the Anacostia River bill, the comprehensive bill, the first that the Congress has ever

passed to clean up the river, there are some of us who like the notion of calling attention to the sewers, particularly considering their effect on the Anacostia River and ultimately on water. But, you know, I just want you to know that some of us aren't fooled by your eliminating sewer from your title.

I'd like to know when CDC first informed you or, for that matter, Mr. Tulou, of the new findings that children in the homes with partial lead line replacements had four times the likelihood of elevated blood test levels. When did that occur?

Mr. HAWKINS. My recollection—I'll have to check, so I can go get a more specific answer—was 2009. But I can confirm that.

Ms. NORTON. Yes, Mr. Tulou.

Mr. TULOU. And we're not aware of exactly what that time is either.

Ms. NORTON. Well, we have—that's the date that's been given to us.

And, Ms. Arias, I have to ask you what took CDC so long. You knew before September 2009, about this misinformation, shall we call it. Why wasn't the District notified immediately?

Ms. ARIAS. On the partial line replacement issue?

Ms. NORTON. On lead in the water in 2004.

Ms. ARIAS. CDC was informed of the problem in 2004 by EPA. As soon as we were informed—

Ms. NORTON. Well, why did the District only learn about this matter in 2009?

Ms. ARIAS. I'm sorry.

Ms. NORTON. I'm talking about partial line replacements.

Ms. ARIAS. The line replacements.

Ms. NORTON. Yeah—were four times as likely than children in homes with lead service lines, so that Mr. Hawkins would know that.

Ms. ARIAS. We did not have that information until much later, and it was information that—or data through 2006. So it was in 2007 when we did the initial analysis, and then we were waiting—

Ms. NORTON. You mean CDC only recently had the view that partial line replacements can, in fact, increase exposure to lead? You didn't know that before 2009?

Ms. ARIAS. No, that was a longitudinal study that we did after the MMWR.

Ms. NORTON. When did you do that study? I remember that in the early 2000's there was testimony in this committee precisely of that matter, that even while WASA was proceeding, there was no explanation given as to why that would help and why that might not indeed exacerbate the situation. And you were unfamiliar with the fact that partial replacement might, indeed, exacerbate lead in the water?

Ms. ARIAS. I can send you, as a followup, a full detailed chronology of when it is that information became available.

Ms. NORTON. Has CDC informed jurisdictions around the country about the possible effects of partial line replacement?

Ms. ARIAS. Yes, we have.

Ms. NORTON. When did you do that?

Ms. ARIAS. I can get that information to you.

Again, there was an initial communication, and then there's been a more recent one. I think the first one was in 2009. And then more recently we have reached out and again and again posted information on our Web and sent out letters to our lead programs informing them of the findings.

Ms. NORTON. Let me ask you, Ms. Silbergeld, and you, Ms. Arias, is there anything that can be done now that these households have knowledge that they may have been exposed? Is there anything that can be done that can remedy the situation as far as they're concerned?

Ms. ARIAS. What we are recommending in D.C. specifically is making sure that children—No. 1, that the water is tested and making sure that it's in compliance with the Lead and Copper Rule.

Ms. NORTON. I want to know—we know the preventative work is very important, and maybe this is all a case of prevention. I want to know, if I was pregnant—2 months pregnant in 2002 and I now have that child, what is it that I should do?

Ms. ARIAS. Contacting a medical professional and getting testing, No. 1, not only to look at current lead levels in the blood but then also looking at any potential developmental problems associated with lead that may be present either in that child or in that adult woman herself.

Ms. NORTON. Suppose lead is found? Then what? What can do you to get the lead out? Can you?

Ms. ARIAS. Then some case management, depending on the level, that would determine the response of exactly what would be done. But it certainly then would be case management and then continuing to do a very careful assessment of the home and removing all possible sources of lead.

Ms. NORTON. Ms. Silbergeld, are these parents and children just out of luck or is there something you know of that could be done after the fact for such families?

Ms. SILBERGELD. Well, in my testimony I reviewed this in somewhat more detail than I did in speaking. But very briefly, to summarize, I think that it is the opinion of professionals in education, child psychiatry, etc., who have been dealing with this problem of children who were exposed to lead, in fact, for most of these children you can't get the lead out of the body. NIH sponsored a large clinical trial, of which Hopkins was a participant, to see whether pharmacologic treatment at lower levels of lead would, in fact, do anything to reduce lead in the blood and to improve the status of the child. The answer was no. So what we're looking at now are interventions that are targeted at what we know to be the at-risk outcomes for children with early lead exposure.

And there have been schools and researchers, including the Kennedy Krieger school in Baltimore, which is affiliated with Johns Hopkins, which have developed specific curricula which speak to the particular behavioral and cognitive problems that have been widely described in children with these exposures.

So I would support Dr. Arias' statement of having a very early assessment, as early as possible. Because we know, in general, for developmental disabilities that the earlier that an accurate diagnosis is made and a program is developed that fits the needs of the

child, the more likely we are to mitigate and potentially remediate the effects of those earlier exposures. So I think that is an issue of very high priority; and, in fact, it is a focus of the lead poisoning prevention program at CDC.

Ms. NORTON. Well, I know Mr. Tulou can perhaps answer this. There is some kind of targeting focus on homes presumed to perhaps be more vulnerable, have children more vulnerable to lead. I'd like to know how those homes are selected.

For example, my family and I have lived in a—what we on Capitol Hill call a historic house. You can't do certain things to these houses because it was built so long ago. Why wouldn't the targeting simply be every child under a certain age, whatever you choose, in the District of Columbia? And if it is not that, how do you decide which children should be tested?

Mr. TULOU. Well, actually, the requirement is that every child under the age of two must be blood tested.

Ms. NORTON. So that means that today, if you—whether you go to a private physician or deliver as a Medicaid patient, you get those results, 100 percent results.

Ms. Silbergeld is shaking her head. You say that you don't.

Ms. SILBERGELD. Well, unfortunately not. That has been the recommendation of the American Academy of Pediatrics, by the CDC and others, that we should have universal screening. Because, as you rightly say, there's kind of a diffuse picture of risk. And living in an old house such as yours—and I, too, had children in an old house in Baltimore. I can tell you that there's lead paint present and that in any house that has lead paint present there are higher levels of lead and dust than in a house that does not have lead paint present, no matter how well maintained it is. Those are studies that we have actually published.

Ms. NORTON. Are you saying that the Federal law does not require universal testing?

Ms. SILBERGELD. The Federal law has been softened so that priority is given to Medicaid children and to other children receiving services. And, as I mentioned in my testimony, there has been a risk assessment which was well designed by CDC in 1991 which focused really on priority to prevent exposure to lead-based paint. And so then—

Ms. NORTON. All right. Lead from any place it would detect, though, from any source.

Ms. SILBERGELD. Well, but what happened was the children that received the priority for screening were, I think as Mr. Tulou mentioned, primarily based on the assumption that the major source of risk to produce a blood lead in excess of 10 or even 15, which is the action level in many cities, that was more often than not associated with the presence of lead-based paint.

However, if we become—as I suggested, if we become concerned, as I think we should, about levels down to the level of five, then that metric and that risk assessment is no longer fully predictive; and at that point lead in drinking water, lead in other sources, perhaps, as well become major contributors to the blood lead elevation. And this is going to be something that I'm sure that Dr. Arias, Dr. Frieden, and others are going to have to take into account as they develop new guidance and new recommendations.

Ms. NORTON. And I understand they're doing that. They're developing new guidance.

I don't understand the screening notion. I can understand the Medicaid for those who get their health services through the public. But I don't understand, since we learned during the health care crisis—sorry, the health care bill debate, that most people have health insurance. I don't understand why you wouldn't simply say, just like every child has to be vaccinated, every child has to be tested. Let us say a child below two has to be tested.

Ms. SILBERGELD. That has been said under EPSDT and other programs, but it has not been enforced as a universal requirement, to the best of my knowledge.

Ms. NORTON. Dr. Arias, why in the world doesn't CDC simply mandate or recommend or whatever you do that every child in the United States, whether seen by a private physician or through some other source, be tested for lead? If—particularly if, as I've heard it, prevention is the only cure here.

Ms. ARIAS. Sure. We don't have the authority to do that. What we do, however, is make sure that we educate medical professionals to make sure that they do engage in testing parents, etc.

Ms. NORTON. OK. I get sick of CDC. Every time you ask them something, they tell you, well, they can't mandate something. I understand that. We've been with CDC through a lot of things in this town, I must tell you. Does CDC make recommendations to public health authorities as to what should be done? I'm just trying to get a straight answer.

Ms. ARIAS. Yes, we do; and we do recommend universal testing for children up to the age of two.

Ms. NORTON. This is, it seems to me, very, very important. This notion of universality is very important. I don't know whether you keep record of it, how often you do it. When's the last time you made such a recommendation and looked to see whether or not people were doing that? Dr. Arias.

Ms. ARIAS. We work with the lead programs to make sure that they are aware and that they are aware of our recommendations and work with their coalitions to make sure that then those recommendations get adopted in those local jurisdictions.

Ms. NORTON. I have to tell you, I'm very concerned. Because I needed to hear, and I have heard, let no lead in the water now, at least if we use your standard, and I can understand you're working on that standard. But if you were pregnant or if you were a young child, the most we can tell you is to get tested. That means that a very heavy, a very heavy burden is on the CDC not only to make a recommendation once in a blue moon but to check to see if this is being done. And so I would urge in your protocols that you are preparing that something other than a recommendation that may be made a moment in time occur.

Yes, Ms. Silbergeld.

Ms. SILBERGELD. Out of respect for my good colleagues at CDC, who I think have been heroic in these recommendations over the past 20 years, I think there would be room for some investigation and oversight of the private insurance sector and some of the State health programs that are not funding this.

Ms. NORTON. And who would you suggest do that oversight? Do you think CDC has any role in that?

Ms. SILBERGELD. No, I think that's something that has to come from the Congress.

Ms. NORTON. The Congress can have hearings.

Ms. SILBERGELD. That's what I mean.

Ms. NORTON. But if, in fact, CDC says there should be universal testing, well, surely CDC doesn't say something that it then can't ask the jurisdictions to give them some information back up on.

Ms. SILBERGELD. Well, they do; and they do collect data on prevalence of testing. I know my State reports on this, and I think again that the results are very discouraging. But just as CDC—

Ms. NORTON. Ms. Arias, do you publish these results? Dr. Silbergeld says that in fact they do give their results to CDC.

Ms. ARIAS. Yes. For example, we know that in D.C. only 45 percent of 1- and 2-year-olds have been tested.

Ms. NORTON. How often do you publish these results?

Ms. ARIAS. I have to see what reports we actually do send out. I want to make sure that we're accurate in that.

Ms. NORTON. I wish you'd, within 30 days, tell us how often.

It does seem to us, particularly since, of course, CDC is not an enforcement agency, it would be important, it seems to me, to make jurisdictions know they're on the list by knowing, for example, that annually these results will be posted. You now have an increasingly aware population, and once they see they're not on list of people I think they will do our homework for us.

I wanted to make sure I understand Mr. Hawkins and the partial line replacement. This is something that has bothered me for some time. You gave a very intelligent and rational explanation.

I didn't understand, though, are you saying that the public portion of the pipe is in any case exposed so you've got to replace it when you are doing other work underground? Is that why you've just got to do it?

Mr. HAWKINS. Right. That essentially is true. When we're replacing a water main in the street, the new main is very rarely put in exactly the same place that the old main was located. So if you think of the street and the main being 2 feet to the left of where the previous main had been, that means all the lines coming from either side of the street are no longer the right length to connect into the main because it's too close on one side and farther away on the other. So we have to replace those public lines just to make them the right length to connect into the system.

For that reason, when we replace a water main—and we're going to be doing more water main replacements, not for lead. They're old, and they're breaking, and we need to improve the infrastructure in the city. When we do that, we will replace the lines because of this location question. When we replace the lines, some of those lines are lead, which yields a partial lead service line.

Ms. NORTON. I understand that, Mr. Hawkins. And if I understand you to say there's no way around it, there's no way around it. I'm very bothered by the fact that a remedy could have such an effect. And, of course, you have indicated there are a number of steps, and I commend you for the steps you have taken. I just won-

der whether or not people pay attention, I suppose, is my great problem.

When it comes to water, there are assumptions made. They turned out not to be true in 2000 to 2004, and you had the Nation's Capital really ridiculed for having a water crisis. We wouldn't like to see that happen again, largely because we wouldn't want families to be put in the position they were. There was something close to panic in this city at the time, and then they were put to rest. And now, of course, there's concern again.

That makes me want to ask Mr. Jacobus about the new chemical that made us feel more comfortable, orthophosphate. And in light of Mr. Hawkins' testimony and the fact that orthophosphate is supposed to be an inhibitor, a corrosion inhibitor, I wonder how effective you think orthophosphate has been since 2004 on what Mr. Hawkins is doing with respect to partial replacement or, for that matter, on ordinary lines as they exist today.

Mr. JACOBUS. Sure. Let me just borrow his microphone as a water line. If this was the water main where my left hand is, the water that comes from the treatment plant has this chemical, orthophosphate. What orthophosphate does is, when it passes through the water line that goes into a house and into the house plumbing and comes to the tap, a chemical reaction occurs on the inside of that pipe, and it physically—the chemical and the orthophosphate compound physically integrates into the wall of the pipe.

So if that pipe was lead, after the orthophosphate has taken hold in there and the chemical reaction has accomplished itself, and that will take a matter of months, and since we've been doing it since 2004, it's well established in there. From the water's point of view, the water going through the pipe, even though the pipe is lead, the water doesn't see lead. The water sees this protective film which is a phosphate coating, and that is the mechanism by which we can protect the public from having a lead pipe, by changing the chemical composition of the inside of pipe.

And that has worked extremely well. It works as it goes through the copper pipes. If you had lead solder in the older homes where copper pipes are soldered together, it coats those junctions, and it even coats the inside of faucets which could have some amount of lead in the machining of those or in the metal fabrication. So that process working extremely well, as we knew it would. And so we're happy with that.

But if you come for a partial service line replacement and you clip the line here, as Mr. Hawkins said, in the process of doing that you can shake off this film and you can get little pieces of lead coming through. So you have to take good precautions to the people using that for several weeks. But then that film will re-establish itself. So over time you have now a copper pipe or some other metal that's joined with the lead. The corrosion inhibitor will repair that, and it will be OK.

That's why I said in my statement that we commit—because it's the right thing to do for the chemistry and for the public health—that we will continue to use a corrosion inhibitor indefinitely. So that as things happen in the distribution system, people jostle things around or things change or even if someone were to have

some illegal solder and solder connections together, we can take care of that through the water chemistry. So that's, I think, a good news story on the technical side.

Ms. NORTON. And, Mr. Hawkins, you do say you inform people and you inform them a long time in advance. It just makes me very nervous to think that there is a 1-year-old child or a pregnant woman, who, during that time when orthophosphate is taking hold, may, in fact, be contaminated. It's very bothersome. Although I must say the only thing that saved the hearings we had before was that we learned about orthophosphate.

I'd like to know if you're still using the chloramine to treat drinking water here in the District of Columbia. That was what was corroding, I understand.

Mr. JACOBUS. Right. The chloramine is a secondary disinfectant that lowers this class of chemicals called disinfection byproducts. Those are chronic potential carcinogens.

Just to quickly review what we found out after the fact. We did not know this ahead of time or, obviously, we never would have done it. Chloramine was a very effective chemical used widely in the United States to lower the level of disinfection byproducts. Under the Lead and Copper Rule in 1991 when it was promulgated, by 1994, between Washington Aqueduct and EPA Region 3 had decided upon a technique which would give optimal corrosion control treatment, and that would be the use of lime to control the Ph of the water. What we did not know and what nobody knew except looking back a year or so after this was that the chlorine itself in the distribution system was acting as a corrosion inhibitor, and when we changed that to chloramine it started chemically eating away at the chlorine film that had been put there. And until we could establish a phosphate film, we had that period of time when we had unknowingly disrupted the corrosion control that had existed on behalf of chlorine. And, obviously, we never would have done that if we knew the chemistry; and out of all of this came a lot of thought and a lot of concern. The Lead and Copper Rule was changed nationally to be more protective. And I think that a very unfortunate situation. We did react quickly, but there was a period of time when people were exposed.

Ms. NORTON. So chloramines are or are not still——

Mr. JACOBUS. They are still used.

And what is a little bit confusing about this, ma'am, is that in the late winter, early spring, annually, we will change the distribution system chemistry to be more effective at killing bacteria that may have grown in the distribution system, biofilm, if you will, and by letting it see chloramine followed by chlorine for a period of couple months, it will, sort of like spring cleaning. That again is a very common practice in the industry.

But throughout all of that we are now using a corrosion inhibitor. Had we been using a corrosion inhibitor, an orthophosphate corrosion inhibitor in 2000, we wouldn't be sitting here today.

Ms. NORTON. Yeah. Are there other chemicals used to treat the city's water?

Mr. JACOBUS. Yes, ma'am. We add fluoride to the water for dental prophylaxis. We use, well, of course, lime to help change the Ph of the water to make it less reactive to the orthophosphate. To

make the water coagulate, we use aluminum sulfate and, of course, the disinfectant, the chlorine. We use various versions of polyaluminum chloride. We use various polymers.

These are all done to either enhance the coagulation and sedimentation or to improve filtration or to do good solid Ph control. Caustic soda is another agent that we use. All of these chemicals are certified by EPA for water treatment use.

But back to the couple of comments in my testimony, we have set up these lead pipe loops. We have pipes that have been harvested from the District of Columbia distribution system. There are arrays of these in the basement of the water treatment plant on McArthur Boulevard. We run water through those, and we measure it as simulating the water in a house. And we can see the effectiveness of the day-to-day treatment, but we can also use various versions of those loops, various—we have seven—actually, 21 pieces of pipe, but that's OK—that, if we want to change chemistry, if we anticipate a change, we will run that water in the proposed chemistry through those pipes and analyze it for a period of time, look at those results with our own consultants, and then go to EPA with those results to then have a very high assurance that any change we make in the future will have been tested on pipes that water would be expected to see in the District of Columbia so that there would be no unexpected outcome of a future water treatment change.

Ms. NORTON. So, please make me understand. Who monitors the water supply in the District of Columbia?

Mr. JACOBUS. EPA Region 3 is responsible for enforcement of the Safe Drinking Water Act.

Ms. NORTON. Yeah, but who monitors the water on a monthly basis?

I mean, for example, Mr. Hawkins, WASA was on the hot seat, frankly, for not, in fact, informing residents about lead in the water. And I am confused still about whose job it is to offer this information. I mean, is it Mr. Tulou's job? You know, whose job is it to tell the public the real deal here and how often?

Mr. JACOBUS. I misunderstood what you said about monitor. I mean, we send the results to EPA, and they look for compliance. Washington Aqueduct, as do all water utilities, we are responsible for our own process control.

Ms. NORTON. You sent it to the EPA in 2000 as well and 2001 and 2002 and 2003 and 2004. I'm trying to find out who is responsible for monitoring the water in the District of Columbia and if there is an issue informing residents about that issue.

Mr. JACOBUS. We share that responsibility here.

Mr. HAWKINS. Yes, Congresswoman, my answer to that is that both the aqueduct and DC—now DC Water—would share that responsibility.

As you know—and this is part of our proactive strategy—twice since I've been on this job we've had to do a limited boil water alert. We did it as a precaution, but that's because the monitoring that we do, which is in addition to the monitoring the aqueduct does, we now take an—almost an extremely proactive look. If we see something that we believe could be a threat, we will release that information. We will take whatever protective steps are nec-

essary. We will go to the public. We will walk door to door, which we did in both instances. So the aqueduct does actually more physical monitoring events than we do, but we do thousands as well. It is on our Web site so you can see it.

Ms. NORTON. So WASA would once again have the task of informing residents if, in fact there was some reason, something for them to know.

Mr. HAWKINS. Yes. We believe we have the responsibility, as the distributor of the water, to inform our customers. There may be occasions where the aqueduct does as well. But we take that responsibility very seriously on our part and will do it in every way we can to make sure the citizens know exactly what's happening as soon as we know.

Mr. JACOBUS. There are very strict rules in the Safe Drinking Water Act that require utilities to coordinate with EPA within hours of any treatment or other event that falls into a whole range of categories, and then a decision is made very quickly of what kind of notice should be made.

Ms. NORTON. Mr. Jacobus, I'm not concerned, frankly, that people didn't find out. I know one thing they didn't find—the public didn't find out for 4 years. I'm concerned about public information; and Mr. Hawkins has said, as was the case before, it is the job of WASA. WASA, which had a marvelous reputation, because the agency had to be rebuilt, until that time, really did much to spoil its reputation by taking actions that could only be called cover-up actions.

Now, Mr. Tulou, the public needs to know why it is you, for example, are the lead agency on the lead prevention work and not, as is usually the case, the public health agency in a local jurisdiction. How did that happen? And what is your—

Mr. TULOU. Well, the key response in terms of dealing with prevention that came out of this experience in 2003 was the realization that we had too many agencies of the District government involved in the process. So if there was a problem it took forever to actually get some response.

The old way is the Department of Health would receive a report from a blood test screen. They would make a report to DDOE, which would followup to check to see whether or not there was a cause of concern within the home of the child that had the elevated blood level. And then, if that was the case, then DDOE would send a report over to DCRA, which is the consumer regulatory administration, to actually enforce.

So what has happened in 2008 with the law that the Council passed and the Mayor signed is to consolidate all those responsibilities within DDOE. One of the primary reasons for that is that this is indeed an environmental threat.

Ms. NORTON. And a public health threat.

Mr. TULOU. Well, it's a public health implication, but if you have peeling paint in a home or you have lead in the water, then, in essence—and you know there's no real reason it would have to be an environmental agency. It just needs to be an agency that is willing to step up, realize that there's a problem and take action. We have been designated that agency.

I have to give Mr. Hawkins a great deal of credit for having made DDOE the kind of agency that can respond as well as it does to these sorts of things and to the folks sitting behind me who have made it their life's work to make sure that we discover where the problem is and we take action to deal with it.

Ms. NORTON. Dr. Arias, I have another question for you. In light of your testimony, at page 7, where you say that the rate of elevated blood levels was actually lower when the CDC included the new evidence, evidence that was not available to you before, did these findings account for the residents or the households who knowingly, knowing perhaps that they had lead service lines or high levels of lead in the water, had switched, therefore, to drinking bottled or filtered water?

There were people who didn't know. Those were the people who were particularly panicked. There were others who had switched because a lot of people were switching during that period to drinking water that we're told often is the same water that comes to us out of the pipes.

Were you able to account for those who had switched and therefore might be in the sample as well?

Ms. ARIAS. The information that we added when we did the re-analysis was information back from the initial exposures. We did have information about who was drinking tap water, but we did not have information about who had switched to bottled water or was drinking bottled water.

Ms. NORTON. And there was no way to find that out? I mean, are those people perhaps in the sample?

Ms. ARIAS. I would have to check with—we would have to check the raw data. I'd have to check with my colleagues back at CDC and look at that more closely.

Ms. NORTON. I would appreciate your doing that and providing information to the subcommittee within 30 days.

Looking again at your testimony, page 8, you indicated that among the data that was missing in 2004 were results from 100 children, you say, who had elevated blood levels in 2003. How many of these children were tested for poisoning in 2003, and how many of them had elevated blood levels?

Ms. ARIAS. The 100 are the ones who, according to those tests, appear to have elevated blood levels that is above 10. When we then followed up with the Department in the District, it turns out that there were five children, I think it was—I don't remember if it was—I'm sorry. There were three children who actually had lower levels than that, were below 10. Ninety-five of the children did have elevated blood levels between 16 and 28 micrograms per deciliter. Those 95 children have received appropriate services and case management so that it was documented that they had received appropriate case management.

There were two children who—one was a resident of the embassy, and we don't have information about them, although we assumed that they got the appropriate services through their contacts and their providers, and then there is one child who the Department has not been able to locate and find out what the followup was after the positive test.

Ms. NORTON. How many total tests of children were taken?

Ms. ARIAS. I would have to get that information to you.

Ms. NORTON. Would you, within 30 days, to the chair of the subcommittee.

Some have suggested that—indeed, this is why I asked the earlier question about who monitors, it sounds like it's self-monitoring. Is there any reason to believe that there should be some independent oversight of water in the District of Columbia? Independent of the people who are in charge of delivering it? Dr. Arias. I mean, would that be a good practice to do in any case?

Ms. ARIAS. All of our lead programs are required to create coalitions of all of the agencies and then interested parties in those districts who have a role and have an interest in the quality of water and in the whole issue of lead. So we are in favor of providing that sort of type of oversight. The coalitions essentially are responsible for reviewing the programs, the activities.

Ms. NORTON. Who's responsible? I'm sorry.

Ms. ARIAS. The coalitions that are created by the lead programs. They're responsible for then essentially overseeing the programs, making recommendations about changes, working with us in doing that as well.

Ms. NORTON. Mr. Hawkins, how many partial lead replacements have taken place in the District of Columbia this year, for example?

Mr. HAWKINS. I will get you the exact number this year. In fiscal year 2009, the number was about 350.

Ms. NORTON. 350 in 2009.

Mr. HAWKINS. 2009. 2010, I can get you the number.

By way of contrast, when the program was full steam, it was doing 2,500 partial lead lines a year; and those were done on purpose for the reason of replacing the lead lines, as opposed to as incident with a water main replacement.

Ms. NORTON. You keep saying that Mr. Hawkins, but, in light of what we know, it doesn't matter the reason. Because, whatever the reason, as you earlier testified, you're going to tell people what to do—

Mr. HAWKINS. Absolutely.

Ms. NORTON [continuing]. To mitigate the lead issue. So I understand that you at least weren't doing them in order to control the lead in the water. Could I ask if, after our hearings in 2004, WASA continued to do these partial replacements on the theory that it would control lead in the water?

Mr. HAWKINS. WASA continued doing partial lead replacements. I actually do have the letter from the CDC informing us of the study you mentioned. It was in September 2009—it was September 2008 when the Board of Trustees, because there had been a board level resolution to do—to support this program which had initially been a requirement of the Lead and Copper Rule by U.S. EPA. So the initial response—

Ms. NORTON. You regard it as a requirement today?

Mr. HAWKINS. It is not a requirement today. Once the sampling that had been done showed that the numbers of lead in water had gone below the action level for a period of time, then EPA removed the requirement that we had to do partial lead service line requirements. When they removed the requirement, we had all this new

information showing that it was not working, in fact was not achieving its desired goal.

Ms. NORTON. Well, what made EPA think it was working?

Mr. HAWKINS. Pardon me?

Ms. NORTON. If EPA was mandating partial replacement, on the basis of what scientific evidence were they proceeding?

This is very troublesome. We had some problems on the national level with CDC. Now you tell me the EPA said do partial lead replacements, which is something that almost common sense would have told you if you knew anything, as, of course, as professionals do, might lead to leaching or leaking of lead. Can anyone tell me what the source of that recommendation was in the first place, to do partial lead replacement—I mean partial pipe replacement.

Mr. JACOBUS. Well, I can speak not to the theory behind it, but, in fact, in the Lead and Copper Rule, if a system exceeds the 90th percentile of 15 parts per billion, which is the action level threshold on the Lead and Copper Rule, in addition to public notification it must begin a partial system replacement of 7 percent, I think, of the lines per year until the system achieves compliance of the hundred samples taken in a 6-month period, the 15 parts per billion. So it was a formula worked out in the Lead and Copper Rule to cause a system to begin to replace service lines, if only partially and, at the same time, to re-establish corrosion control.

Now, the scientific theory behind that I cannot speak to.

Ms. NORTON. Ms. Silbergeld.

Ms. SILBERGELD. Yes, I was on the SAB committee, and I'm afraid it was a political science consideration more than an engineering science. It had to do—and I think you spoke to this as well. Part of this problem is because the sources of lead can be within private property and within public property. And at the time of the evaluation of recommendations to EPA for the Safe Drinking Water Act in the Lead and Copper Rule there was a reluctance to try to engage the political issues that would arise if recommendations were made that the private sector of the lead line might have to be replaced as well.

Ms. NORTON. If I could just finish this question, but did they know at the time that if you did only replacement of one part of the line that would perhaps be harmful and therefore why recommend any replacement?

Ms. SILBERGELD. I don't think that it was clearly known that partial replacement would potentially actually increase levels. There was some sense that any reduction of lead in the system would tend to reduce levels of lead overall. So that was not an issue of scientific knowledge or assumption. But the main driver, I would have to tell you, based on my recollection, was political rather than scientific.

Ms. NORTON. Thank you very much, Mr. Chairman.

Mr. LYNCH [presiding]. I thank the gentlelady. I appreciate you taking over the responsibilities of the chair during votes. It helped us, I think, utilize our time well.

I had a number of questions here, but I think in my absence we were able to ask a few of them, so I don't want to—is this OK? All right.

Based on testimony that was given earlier today, as I understand it, the CDC has taken issue with the fact that the District only tests approximately 38 percent of children so far. And this sort of relates to my earlier question about is it smart, given the history here, to only test children up to age six? Obviously, given the history, we'd like to see 100 percent of the kids tested, children tested. How do we get there and how close are we to getting where we need to be?

Ms. ARIAS. As I mentioned earlier, we know that only about 45 percent of the kids even between the ages of one and two, who are at the highest risk, are being tested. One of the things that we're doing is working very closely with the District to make sure that enforcement of that law for universal screening in that age group, No. 1, is being conducted. The reason for starting with the high-risk kids is the obvious reason. We want to make sure that they are optimally protected.

However, in addition to them making sure that kids who are at the highest risk are tested, we want to make sure that others as well. So even going up to the age of three, especially a child who's 3 years old and has never been tested, making sure that child is tested, catching them again before they enroll either in daycare or at school and making sure that they get tested at that time.

Mr. LYNCH. Ms. Arias, what puts a child into a high-risk category?

Ms. ARIAS. The age, No. 1. And given that they are most likely to suffer significant health effects as a result of even low exposures or any exposure associated with lead, again, because their brains are still developing so rapidly during that time.

Mr. LYNCH. I understand. I guess it's the risk of exposure is what I'm getting at. Prior to being a Member of Congress, I actually did a lot of volunteer legal work for—in public housing. Basically, I grew up in the housing projects and ended up representing a lot of the families that I used to live with, you know, and they had lead paint. They had asbestos on the pipes. Some of the housing was substandard, to say the least. And are we targeting any populations like people, families that are in public housing, older public housing developments that might be at greater risk?

Ms. ARIAS. We are targeting them through various—in various ways. One of the things that we are working very hard to do is making sure that those homes get assessed very carefully, looking at all sources of lead. So looking at water, looking at air quality, looking at other kinds of things that also may increase exposure to lead in those homes.

Mr. LYNCH. OK. But, right now, we're only getting 38 percent. So do we have a plan in place? Is that a goal? Are we testing 38 because we're looking for a sampling?

Ms. ARIAS. No, the only reason 38 are being tested is because we have to step up and make sure that individuals who should be doing the testing are going to do it, children who should be tested are going to be tested. So it's a matter of providing both the education and the oversight to make sure that the laws that are in place, the regulations that are in place are being enforced and are being carried out.

Mr. LYNCH. OK. Let me ask, Dr. Silbergeld, you raised some concerns around this same area. What's your read on this in terms of our inability to really get a more complete assessment of the risk to these children?

Ms. SILBERGELD. That is a very complicated question. I'm glad you're pursuing it.

As pointed out, CDC has consistently made the recommendation for universal screening; and I also would note that I think your questions about extending the point of screening beyond six is something that should be taken under advisement by CDC as well.

The problems really arise that this is actually implemented on a State level. The funding through national health programs is limited and, therefore, its decisions that are made on the basis of health priorities by various States. At present, relatively few States, I believe, Dr. Arias, have actually legislated universal screening. My State is one of them. We're not achieving that yet either. And a lot of it does involve speaking with the health care community, private and public, in terms of insuring that this message goes out. But this is an issue, I think, of the very highest priority, and anything that can be done to stimulate more attention to this, I think, would be very welcome by everyone in public health.

Ms. NORTON. Mr. Chairman—

Mr. LYNCH. I'm just about done, so I would yield to the gentlelady.

Ms. NORTON. I just have a question just to followup your question.

While you were gone I don't think I had heard that 38 percent number. The chairman's question about 38 percent made me wonder why in the world the District has such a low number, especially in light of the fact that it was here that you had a national lead-in-the-water crisis where you would have expected us to have a larger number tested for paint and for water and wherever lead comes from.

Ms. SILBERGELD. Well, actually, I must say, taking a national view—and one of my students has just reviewed this. I'm sorry to say this as an American, but that's at the upper end of prevalence of testing in the United States. There are some States where we're down around 10 or 15 percent.

Ms. NORTON. Well, this is what I want to know. We're supposed to have universal testing here, and we can only get to 38 percent.

Ms. SILBERGELD. Well, we're supposed to have universal vaccination, and we don't get that either. So we have, you know, these are the problems of delivering health.

Ms. NORTON. Mr. Tulou, we had the crisis, and we got 38 percent. I think it sounds awful—I don't care compared to whatever—and I'd like to know why we don't have a higher figure than that.

Mr. TULO. And I think the point's very well taken.

We in the District, by the way, do have a law that requires testing twice of young children before they're the age two.

One of the things I mentioned in the testimony that we're doing is working with Medicaid officials on some data sharing, which will help us to make sure that Medicaid children are at least getting

their testing on time which in other jurisdictions has led to very significant increases in that screening rate.

But it's like a lot of other mandates. If there is a reluctance on the part of the health providers to do this, for whatever reason, you would think the health officials would be the first ones to want to test their patients for these things. It creates somewhat of a problem, and it's obviously something we're aware of, and we'd like to improve those numbers as well.

Ms. SILBERGELD. Just one other point. I believe that the city of Providence instituted a program whereby children had to present evidence of having been tested for lead prior to school entry, including preschool. And that has had a dramatic effect on increasing the rates of testing. So there are other actions that can be taken by jurisdictions. Again, not something that CDC mandates but ways of linking this in a very real way to the risk of school failure.

Mr. LYNCH. That may be the answer right there. Thank you. That's very helpful.

Madam Chairman, I'll yield 5 minutes to you, if you like.

Ms. NORTON. Mr. Chairman, I've gotten to ask all of my questions and even some of yours. Thank you very much.

Mr. LYNCH. And again, Mr. Tulou, the lack of compliance, if we're looking for universal testing, where is the logjam here? If we're at 38 percent, is it because we're not making families aware or we're not making providers aware? Where are we falling down on this?

Mr. TULOU. I think it's—we have a fairly considerable amount of effort going on to make the health care providers aware. What we have found in our experience is that they sometimes, for whatever reason, don't particularly want to listen to us in this regard.

I think there is general authority under the law for the District to enforce against those who are not providing the screening. I don't think that has been rolled out and has not been used. Certainly we're open to other ideas to find ways to encourage these tests to happen.

If it relates to entry into school, I think part of the downside of that is that kids are already well beyond their second year of age by the time that they're looking for entry onto school or preschool programs. But certainly that would be a way down the line to find out whether or not that testing had occurred.

Mr. LYNCH. You would think, though, that newborns, you know, just checkups in those very early months and years, that, given the circumstances here, we had a crisis from 2000 to 2004, so this isn't just a general population. This is a population that we've already identified as having some considerable risk, and the exposure possibilities are there. So now we're responding to that by trying to institute this testing.

You would think there would be a greater urgency among providers to make sure, whether it's a health center, community health centers, you know, see a lot of these children, whether or not they're aware of this and are taking the opportunities to test these kids when they do come in. You know, I'm just not sure where the gap is.

Mr. TULOU. Well, Mr. Chairman, I'm dumbfounded, given the experience that D.C. had back in that period of time, that this isn't much higher on providers' list of concerns.

I have to say, for kids who tend to be at highest risk, there are a lot of other health issues that providers are dealing with them and their families on. But I can assure you that we're going to go back, and we're going to take a look at those numbers, and we're going to find a way to bring those numbers up.

Mr. LYNCH. Yeah. You know, I do agree with the doctor that making it a condition of enrollment in school is one way. But, as you pointed out, considerable time goes by that there may be damage being done.

Mr. TULOU. Let me say just another thing that I mentioned in my statement is we are being very proactive. We are identifying, through a combination of GIS and places where we've noticed high blood levels in the past, to find hot spots in the District; and we are going to those properties and making sure that those owners and managers of those properties are inspecting their units for hazards.

Also, now, we are, when we respond to an elevated blood level and we're inspecting a home, we're also checking the water.

So, in other words, the bottom line here is there are a lot of different ways that a child's blood level could be high for lead. We don't want any of those opportunities and any of those ways of introducing lead into their systems to go unchecked.

Historically, of course, peeling and flaking paint was an obvious one. The law now says that if that is happening in a pre-1978 home, it is assumed that is a hazard and so it's up to that property owner and that manager of that property to prove to us that it's not. So we enforce against them and we make sure that those cleanups are done.

But by adding the water monitoring to the other environmental checks that we do within those homes it's going to give us a helpful check to what the aqueduct and what George is doing at WASA on whether and to what extent water is a part of that situation.

Ms. NORTON. And, Mr. Chairman, could I—

Mr. LYNCH. Please.

Ms. NORTON. Just following up on your 38 percent question, when my children were born and you have to take children to the hospital—I mean, to the doctor all the time in those years, it's mandated and people do it. I didn't remember knowing to ask the doctor what things John and Catherine Norton should have to immunize them. That wasn't from me. It was from him.

He would say, Ms. Norton, you are due in 2 months for this child to have X, Y and Z vaccination.

Why does the District of Columbia Act solve this problem by saying to health professionals, this is on your list to tell a family it is required. Now, we know you can refuse certain kinds of vaccinations, and we get in a lot of trouble for that. But why isn't that simply added to the list of shots—shall I call them—like the polio shot, all the rest of them, diphtheria, all of that, and lead in the water, particularly because the District of Columbia has had an issue on that?

Mr. TULOOU. And it is on the list, and that is why I am mystified. I don't know why the physicians aren't requiring those tests to be done for those children.

Ms. NORTON. I guess you don't know then whether the other tests are being done either, because if it is on the list, you now scare me.

Mr. TULOOU. I think that is right. And if I were a parent of a child going to a doctor, I would want to know what is on the list, and then I would ask the provider.

Mr. LYNCH. Reclaiming my time, now may I ask Mr. Hawkins and Mr. Jacobus if you could just amplify around this point that we are talking about? Was there any effort to do a public communications campaign, radio, TV, on the Metro or anything, to say you need to be testing your child; given the history we have had here, you need to be making sure that your child within these ages needs to be tested for lead levels?

Mr. HAWKINS. We have done very extensive outreach about lead in water and what is the risk factors. One of the areas that we share with the department of environment is trying to be proactive in profiling where the problem is most likely to exist so we can focus our resources most intently; identifying either neighborhoods, streets, types of buildings, age of buildings, where should we focus our time. But to all of our customers, in all of what we distribute, we have information about the risk of lead in water.

I don't think, although I will check, that we have included recommendations on getting tested lead in blood for children, and that is something that is a good idea that we could add, because we do regularly communicate, unlike many other agencies—because we send a bill, we communicate with our customers every month; that we can add that, and that is a good idea.

Mr. LYNCH. That would be helpful. If you could make sure you communicate with the committee and Ms. Holmes Norton on what we are going to do on that. I would like to redouble our efforts and see if we get that number up from 38. I know ironically, Doctor, you are probably right; it is higher than elsewhere, but not nearly where we need to be.

Mr. JACOBUS, anything you could add on this?

Mr. JACOBUS. I would add, sir, that our role is to make sure that the treatment of the water is meeting the standards that we have set for ourselves. We meet with our customers, the District of Columbia Water and Sewer Authority, Arlington County and Falls Church, regularly in various forums. We have a monthly water quality meeting, and we review the treatment chemistry, we review the data back and forth so we are aware that the quality of water getting to them is meeting a specific standard.

We do not speak directly to the retail customers, but we are very active in making sure that amongst the wholesale customers, everybody knows where the water is. If anybody has any concerns, we discuss those to make adjustments to make sure they are getting exactly what they want and stuff that exactly meets the drinking water standards. So we are very much open, proactive, and communicating all the time with our customers.

Mr. LYNCH. Thank you.

Doctor, I know you wanted to add something.

Ms. SILBERGELD. I think it would be useful for someone to survey insurance companies to find out how many of them actually reimburse for lead testing.

Mr. LYNCH. That is a great point.

All right. Well, I think you have suffered enough. I want to thank you for your willingness to appear before the committee and help us with our work. As normal, we have several hearings going on at the same time, so I am going to leave the record open for 5 legislative days so that Members, if they would like, can submit questions to you all.

Thank you very much for your help in addressing this problem. We will continue to be in touch with each of you. I want to thank you for your testimony here today, and I wish you good day. Thank you.

This hearing is now adjourned.

[Whereupon, at 4:09 p.m., the subcommittee was adjourned.]

[The prepared statement of Hon. Gerald E. Connolly and additional information submitted for the hearing record follow:]

Opening Statement of Congressman Gerald E. Connolly

“Lead Exposure in D.C.: Prevention, Protection, and Potential Prescriptions”

Subcommittee on Federal Workforce, Postal Service, and District of Columbia

June 5th, 2010

Thank you, Congresswoman Norton for your diligence in pursuing this important public health issue for the District of Columbia. Subjecting young children to dangerously high levels of lead in drinking water simply is unacceptable. Lead in drinking water also undermines the District’s appeal as a home for young families. To address traffic congestion and air quality in our region we need to ensure that the District can accommodate additional residents, a goal that unsafe drinking water undermines.

Continued oversight is necessary to protect the health of District residents whose homes may still have pipes with lead in them. This is a major health threat because lead can cause developmental disabilities in children, in addition to lethargy, seizures, comas, and digestion problems. These problems occur even at low levels of lead ingestion. We need to ensure that pipe replacement does in fact lower lead levels. If it does, we must ensure there are programs in place for working class families to afford these retrofits. Although the District’s Water and Sewer Authority will replace public water lines if a homeowner replaces his or her pipes, this replacement could be prohibitively expensive for working class families.

Lead terminology could also be improved. For example, lead levels below the official “level of concern” should still be a concern for District families, so we need to ensure that we are maintaining a robust public education efforts so people are aware of potential lead problems.

I look forward to working with the Committee to develop long term solutions to remove lead from District pipes. Thank you again Congresswoman Norton for your diligence in addressing this issue.



DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY | 5000 OVERLOOK AVENUE, SW | WASHINGTON, DC 20032

July 28, 2010

The Honorable Stephen F. Lynch
 Chairman
 Subcommittee on Federal Workforce, Postal Service and the District of Columbia
 2157 Rayburn House Office Building
 Washington DC 20515

Dear Chairman Lynch,

I am pleased to provide the following information in response to your July 12th letter, which requested responses to questions posed at the June 15th hearing on lead exposure in the District of Columbia. DC Water remains committed to reducing potential lead sources and exposure.

- 1) When did the CDC first inform you about their new findings that children in homes with partial lead line replacements were approximately four times more likely to have an elevated blood lead level (above ≥ 10 $\mu\text{g}/\text{dl}$) than children in homes without lead service lines?**

DC Water was initially notified of CDC's impending study results in a September 4, 2009 letter to my predecessor, Interim General Manager Avis Russell. As Director of the District Department of the Environment at that time, I received the same letter from CDC and thus was aware of the findings upon arriving as General Manager.

Although the formal study results are still undergoing peer review, DC Water has taken a number of steps to strengthen our outreach to partial pipe replacement recipients. All recipients receive a filter and a six-month supply of replacement cartridges. In addition, we conduct sampling four months after the partial pipe replacement, to ascertain whether elevated lead levels remain. In the event that sampling results indicate elevated lead in water levels, we request the customer's permission to conduct a complete lead profile of the home to discover any potential sources. Customers also receive extensive information on how to reduce their potential lead exposure.

- 2) How many partial pipe replacements are being done annually by WASA now, and under what circumstances are they being done?**

In FY2010, DC Water anticipates completing 230 partial pipe replacements. In addition, we will expect to replace 160 full lead service lines. According to the terms of a September 2008 Board of Directors resolution, DC Water only completes a partial pipe replacement in the event of a simultaneous water main replacement or rehabilitation. This coordination is to ensure that service lines are the correct length to connect to the newly installed main. When this work is

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scheduled, DC Water undertakes advance outreach, so that customers slated for a partial pipe replacement have the opportunity to replace the private side of the service line as well.

3) Can we identify the homes that had the highest lead levels during the lead in water crisis and, if so, should we be taking some remedial steps with regard to those homes?

Over 20,000 samples were collected and analyzed during the 2001-2004 period in which lead in water was above the EPA action level. While DC Water has retained this data, the single most important step to remedy the situation has already been taken—the addition of orthophosphate in 2004 by the Army Corps of Engineers largely counteracted the chemistry change that initially caused greater corrosion, which in turn resulted in higher lead leaching. Since the addition of orthophosphate, DC Water has had 11 consecutive EPA monitoring periods in which lead in water was below the federal action level of 15 parts per billion.

Today, the most likely sources of lead in water in a given home are the presence of a full or partial lead service line, old galvanized plumbing in homes that have or had a lead service line, and/or leaded plumbing fixtures, such as faucets or welded components. Therefore, we are currently focusing our efforts on outreach and a message of shared responsibility, so that customers can identify factors within their own homes that may contribute to lead exposure. Sampling presents a snapshot of lead levels at a given moment. Rather than relying on sample results from six years ago, we're looking to enhance our current sampling policies. DC Water recently expanded on-request sampling to any residential home in the District. In addition, we are examining our protocol to see if changes to the methodology may capture a wider range of lead sources. We believe that these efforts represent the most effective use of resources to protect the health of District residents.

Should you have any further questions, please do not hesitate to let me know. Thank you again for the opportunity to testify on this important issue.

Sincerely,

George S. Hawkins, Esq.
General Manager

dcwater.com

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1. Please provide a specific accounting and explanation of each correction that the CDC purports to have made on its Web site with regard to the 2004 findings that it believes the public has misinterpreted

To put in context CDC's correction and clarification of its findings in the 2004 *MMWR*, it is important to note that CDC used a combination of tools to inform the public of important public health recommendations and findings related to consumption of drinking water. In addition to (and in advance of) the *MMWR*, these included participation in public meetings; development and door-to-door distribution of notices, in conjunction with the D.C. Department of Health; and press interviews. Also, a key message in the *MMWR* was that because no threshold for adverse health effects in young children has been demonstrated, no safe blood level has been identified and all sources of lead exposure for children should be controlled or eliminated.

However, as Dr. Arias testified, certain statements in the 2004 *MMWR* left room for misinterpretation of our findings. CDC has taken several steps to address the resulting concern that the *MMWR* understated the threat from high lead levels in the water.

On May 21, 2010, and June 25, 2010, CDC published notices to readers, noting the limitations of methods employed, acknowledging that a sentence in the Editorial Note to the 2004 *MMWR* report was misleading; providing a complete accounting of missing laboratory data from a recapture and reanalysis of these reports from laboratories in D.C.; and restating key conclusions from the 2004 report regarding the importance of removing lead from all sources. As Dr. Arias testified, D.C. did not provide the missing data to CDC for its original review.

As described in Dr. Arias' testimony, the 2010 reanalysis of complete surveillance data clearly showed more residents had been exposed to lead than previously known to CDC. The more complete data did not alter our earlier findings that lead in water was associated with an increase in blood lead levels, and that people living in homes with lead service lines had higher blood lead levels than those people who did not live in homes with lead services lines.

Anyone accessing the 2004 *MMWR* paper electronically will automatically be directed to these notices. [May 21, 2010: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5919a4.htm>; June 25, 2010: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5924a6.htm>].

CDC also provided similar information in a May 20, 2010 letter to state and local lead poisoning prevention program managers. This letter also is posted on CDC's web site. [http://www.cdc.gov/nceh/lead/blood_levels.htm] And, on August 17, 2007, CDC posted a clarification to the website. [See attached Addendum.]

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In addition, on several occasions CDC communicated directly with WASA to correct misstatements regarding CDC's conclusions from the 2004 *MMWR* suggesting that residents had not been affected. See attached letter dated April 3, 2009, to WASA General Manager, Jerry Johnson.

CDC further reinforced the correlation between increased lead levels in water and increased blood lead levels through communications regarding important preliminary findings related to partial replacement of lead pipes. See attached letter dated September 4, 2009, to WASA Interim General Manager Avis Russell, the D.C. Department of Environment, and the EPA Office of Water.

2. Please provide documentation of the contact that it made with all the lead programs in the country regarding its new information.

See attached letters to Lead Poisoning Prevention Program Managers dated January 12, 2010 and May 20, 2010. Most recently, CDC's June 25, 2010 Notice to Readers [<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5924a6.htm>] provided public health officials with updated information.

3. Because the CDC's 2004 *MMWR* has been so widely misinterpreted, would the CDC consider retracting it entirely?

To address this, CDC has taken significant steps to ensure that anyone who accesses the 2004 *MMWR* electronically will automatically be directed to specific information that addresses the elements of this report that gave rise to confusion and misinterpretation. In recent months, CDC has published two Notices to Readers in the *MMWR*, and ensured that these notices are displayed prominently when a reader accesses the 2004 *MMWR*.

The first of these two notices (May) address the statement in the Editorial Note to the 2004 *MMWR* that caused confusion. CDC clearly acknowledged that the statement in the 2004 report that no children were identified with elevated blood lead levels was wrong. The second of these Notices (June) addressed other concerns, about the "cross sectional" assessment of high-risk homes, and made the inherent methodological limitations of that assessment clear to readers, and noted the importance of not using the report for purposes beyond those supported by the methods.

The May notice also addresses an intensive reanalysis that CDC conducted this year, and which addressed concerns that the report's conclusions were based on incomplete laboratory data. As referenced in this Notice, CDC took steps to assemble a complete accounting of laboratory tests from this period, reanalyzed this complete data, and

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directed readers to an Internet site with a complete, peer-reviewed reanalysis. This reanalysis did not alter the original conclusion reported in 2004 that lead in water was associated with an increase in blood lead levels.

4. How often does the CDC release results of the number of children under 2 that are tested for elevated blood level, as well as the number of those children tested that actually have elevated blood lead levels?

CDC posts lead surveillance data, including the number of children tested and the number of children with elevated blood lead levels, on its website annually, for states and jurisdictions that provide information to CDC. The data consist of test results for children less than 6 years old. It also posts national data annually.

Web page with index containing links to surveillance data:
<http://www.cdc.gov/nceh/lead/data/index.htm>

Web page with the District of Columbia's lead surveillance data:
<http://www.cdc.gov/nceh/lead/data/state/dcdata.htm>

We have recently redesigned the way in which lead surveillance data is presented on our website. We are working to post 2008 and 2009 data to the website in the new format. Data for 2010 will be available in 2011.

5. In your testimony (page 7) you state that the rate of elevated blood lead tests was actually lower when the CDC included the newly available 2003 tests, which were unavailable to it when it did its 2004 study. Did these findings account at all for the number of residents or households who, knowing that they had lead service lines or had high levels of lead in their water had switched to drinking bottled or filtered water before the tests were taken?

The blood lead surveillance system does not contain information on exposure sources in individual environments. CDC does not have data to account for bottled water use, or for how much tap water an individual consumed; therefore, this data cannot be used to determine the relationship between the amount of water consumed and blood lead levels. Additionally, the full picture of exposure to lead in water cannot be provided by asking only about bottled water use in the home – for example, people may drink other water at restaurants, at work, at school, and other locations. The surveillance data also do not account for other sources of lead such as paint, house dust or soil.

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- 6. In your testimony (page 8) you state that among the data missing from the 2004 analysis were tests results for the 100 children who had elevated blood lead levels in 2003. How many individual children were tested for lead poisoning in 2003? How many children had elevated blood lead levels?**

According to the D.C. Department of Environment (DDOE), 17,646 children received at least one lead screening test during 2003.

Also according to DDOE, there were 365 children with an elevated Blood Lead Level (BLL \geq 10 ug/dl) in 2003. This number includes those who may have already been identified as having an elevated BLL in 2002. DDOE reported that there were 233 “new cases” reported in 2003.

- 7. Can we identify the specific kids that were exposed during the lead in the water crisis? Should we provide any type of treatment for the children exposed to lead during the lead in the water crisis? Should we provide behavior or cognitive therapy?**

CDC cannot identify the specific children who were exposed to lead in drinking water. CDC receives aggregate data from states and local jurisdictions (including D.C.) and does not have access to the identifiable information on individual children. Individual case management services are typically provided by local health departments. Also, while lead service lines may account for the majority of the lead in water, it is possible that children without lead service lines were also exposed to some water with elevated lead levels.

Children’s blood lead levels decrease over time as children grow and their habits change (e.g. they have fewer hand to mouth activities). In this case, however, the children grew and the exposure stopped because the water lead levels decreased. Children who were 2 years old in 2002 are now 10 and there is no medical treatment that can reverse adverse effects that happened 8 years ago. CDC and the American Academy of Pediatrics recommend that children’s development be carefully monitored and those children who are identified with intellectual or behavioral problems, regardless of their cause, receive appropriate support services.

Additionally, CDC has identified a number of priorities for preventing childhood lead poisoning in D.C. First, the percentage of eligible children in D.C. who are being screened needs to be increased. In 2009, approximately 38 percent of children less than six years of age were screened. While D.C. has taken several steps to improve lead screening, public health officials need to encourage clinicians and parents to have all D.C. children tested. Second, officials should be concerned about all sources of lead, and

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assure that case-management practices consider all potential sources of exposure. Since 2007, D.C. has included routine sampling of drinking water every time it inspects homes with children having an elevated blood lead level.

8. What is your response to the Committee on Science and Technology, Subcommittee on Investigations and Oversight's report? What are the actions you took either prior or in response to the criticisms that have been raised?

After reviewing the Subcommittee's report of findings and conducting our own internal review of the events connected with the D.C. lead situation, CDC Director Tom Frieden and I have the following perspectives:

- There is no safe level of lead exposure for children, and all lead exposures in children should be controlled or eliminated. CDC stated this conclusion in the 2004 *Morbidity and Mortality Weekly Report (MMWR)*, and restated it in the *MMWR* Notice to Readers issued on May 20, 2010.
- Lead in water is an important issue, and should be addressed as part of a comprehensive approach that deals with all potential sources of exposure. Lead in drinking water should be as low as possible and not exceed the EPA action level.
- The lead levels in D.C.'s water supply in 2001-2003 did result in an increase in blood lead levels in children residing in homes with lead service lines. The data reported in the 2004 *MMWR* showed this impact, though the language in the Editorial Note inappropriately contributed to an impression of a minimal risk of lead in water.
- When the portion of the 2004 work that analyzed trends across multiple years (referred to as the longitudinal study) was published, we should have been more explicit in our listing of the limitation in the report that our analysis relied on incomplete surveillance data. When we are faced with the need to quickly publish tentative results that rely on incomplete data, we need to be sure that readers are aware of limitations of any conclusions.
- The assessment of homes with the highest water lead levels (conducted by the Public Health Service Commissioned Corps, and known as the cross-sectional study) had significant design limitations. CDC should have ensured that the authors more clearly identified these limitations. This project was designed for a limited purpose -- to get a snapshot of the blood lead levels in the homes with the highest levels of lead in water and to find and provide service to children at risk for lead-poisoning. The results of this assessment of selected homes should not have been used as an

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indication of whether any children had lead poisoning as a result of the level of exposure in water.

- Preliminary data show that strategies of replacing only the publicly owned portion of lead pipes (known as partial mitigation) had significant limitations and do not decrease (and may increase) blood lead levels. CDC notified EPA, D.C., and other jurisdictions when we had these preliminary findings, and we are following up on this issue with more definitive guidance.
- Key sentences in the 2004 *MMWR* were misleading and appear to have led some people to conclude that lead in the water was not a problem. On May 20, 2010 and June 25, 2010, we published *MMWR* Notices to Readers to correct the record.

On the above issues, I believe that there is no significant disagreement between our perspectives and those of the Subcommittee staff report. In other areas, however, we have additional observations and perspectives on the Subcommittee's findings:

- CDC worked closely with D.C. authorities on an effective intervention in 2004 to protect D.C. residents, advising them to take immediate steps to avoid exposure. These recommendations were clearly restated in the 2004 *MMWR* – that young children and pregnant or breastfeeding women should refrain from drinking unfiltered tap water; and that adverse health effects occur at blood lead levels less than 10 ug/dl, particularly in vulnerable populations.
- CDC stated unequivocally in the 2004 *MMWR* that no threshold for adverse health effects in young children has been demonstrated, no safe blood level has been identified, all sources of lead exposure for children should be controlled or eliminated, and (as above) individuals should take specific steps to protect themselves. The *MMWR* also stated that elevated water levels exceeding the EPA action level of 15ppb can result in an increase in the percentage of blood lead levels equal to, or greater than, 5 ug/dL. CDC statements on the impact of water on blood lead, the need for protection, and the importance of any level of exposure were reported in local media upon release of the 2004 *MMWR*. For example, a March 31 *Washington Post* article quoted CDC's Dr. Mary Jean Brown as saying "There is no safe level of lead... Even a small contribution, especially in small children, is not something that we want to happen... We don't want to increase the blood lead levels of those individuals by even 1 microgram if it can be prevented."
- CDC has worked effectively over the past 5 years to help improve D.C.'s lead program, and continues to work to make sure D.C. residents are protected.

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- CDC has continued to assess the impact of the D.C. water situation, and has a more detailed, long-term trend report pending publication. We have shared multiple drafts of this report with the Subcommittee and, as you are aware, we have waited to resubmit this for journal publication until we obtained a complete accounting of missing surveillance data. We alerted EPA as well as lead poisoning prevention programs in D.C. and across the country when this continuing analysis showed evidence to suggest that partial pipe replacement was not an effective strategy.
- We are committed to being forthcoming about our missteps. In the May 20, 2010 and June 25, 2010 issues of the *MMWR*, CDC published Notices to Readers about the findings in the 2004 *MMWR Dispatch*.

CDC has worked hard to address one of the central concerns the Subcommittee report raised – that CDC had relied on 2003 surveillance data that was incomplete. Since the Subcommittee initially raised these concerns, CDC has recovered those missing data, and the longitudinal findings of an increase in lead levels in homes with lead service lines of the 2004 *MMWR* has essentially been confirmed. CDC has made these new analyses public, but unfortunately, this new, more complete data set was not reflected in the Subcommittee’s report. The testimony of my colleague, Dr. Robin Ikeda, before the Subcommittee, included this important information:

Since the initial analyses attracted much interest, I would like to provide a little more detail about our reanalysis here. CDC conducted a more intensive data recovery and reanalysis because data reported in the 2004 *MMWR* did not include a substantial number of test results from blood specimens collected in 2003. Scientists outside CDC, lead poisoning prevention advocates, and Members of Congress have raised concerns that the missing test results might have resulted in an underestimation of the effect that elevated drinking water lead levels had on blood lead levels. To evaluate this potential bias, CDC recently collected all known 2003 blood lead test results and compared them to the subset of tests included in the *MMWR* article. This reanalysis was peer reviewed by experts from outside of CDC.

CDC received 2003 blood lead test results from D.C. on three occasions. In March 2004, CDC received 9,765 test results from surveillance data and included these in the analysis for the *MMWR* article. An additional 1,753 tests from 2003 surveillance data (that had not been received previously) were reported by July 2006. In the fall of 2009, CDC received 21,324 test results reported by the laboratories that ran tests for D.C. children. Of these tests, 7,701 had been reported previously as surveillance data, while 12,168 tests had not been previously reported to CDC. Of these, 1,455 were not included in analyses because they were either duplicates, not from 2003, or not from a D.C. address.

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CDC found that the percent of 2003 blood lead tests that were elevated were actually lower when using all known 2003 blood lead tests compared to the subset of tests used previously in the 2004 *MMWR* article. The only variable that systemically predicted whether or not a test had been reported as part of the D.C. surveillance datasets was the reporting laboratory processing the test. Previously missing but now-available 2003 data did not cause an underestimation for 2003 of the association between elevated blood lead levels and lead water service lines.

CDC has taken a number of important steps to ensure that we improve our performance, and apply the lessons learned from our intensive review of our experience in this situation. I outlined some of these in my written statement, and we have posted two “Notices to Readers” in the *MMWR* to make clear the limitations of the 2004 study. In addition, we have made a number of organizational changes to help institutionalize these improvements, including:

- Creating a new Office of Surveillance, Epidemiology and Laboratory Services, reporting to a new CDC Deputy Director (Dr. Steve Thacker), and charging that office with overseeing broad improvements in CDC’s surveillance systems.
- Establishing a new Office of State, Tribal, Local and Territorial Support, reporting to a new CDC Deputy Director (Dr. Judith Monroe), and charging that office with improving our support to local governments – and for new systems that ensure performance and accountability.

I am also pleased to note the announcement of Dr. Chris Portier, a distinguished environmental health scientist, as the new Director of NCEH/ATSDR. Among his important responsibilities will be to follow through on multiple systems improvements to ensure quality science at NCEH/ATSDR.