

Lead in Drinking Water in Schools and Child Care Facilities Meeting Summary

December 7, 2004
Wyndham Washington Hotel

Facilitated by Steve Heare, U.S. Environmental Protection Agency

Meeting Format

- Welcome and introductions
- Two case study presentations followed by group discussion
- Case study presentation followed by group discussion
- Panel sub-group discussions and report outs
- Closing remarks

Welcome

Steve Heare, Director, Drinking Water Protection Division, Office of Water, EPA

This workshop is part of a series hosted by the United States Environmental Protection Agency (EPA). The objective of this series is to provide a forum to exchange information, learn about participants' experiences, and discuss options and approaches with national experts on implementation of the Lead and Copper Rule (LCR). Today's workshop was developed to discuss the topic of lead in drinking water consumed by children in child care centers and schools.

Meeting Kick-Off

Ben Grumbles, Assistant Administrator, Office of Water, EPA

EPA Assistant Administrator Ben Grumbles began the meeting by discussing the meeting's objectives and the role of EPA in this process. A goal of this meeting is to obtain insights from water industry professionals and school/childcare practitioners regarding current activities, programs, challenges and opportunities related to lead in the drinking water of schools and child care facilities. This should not imply that lead in drinking water is the greatest risk facing today's children, nor is it a growing national problem; however, national attention has recently been focused on this subject, and EPA sees this as an opportunity to support a course of action to reduce lead in drinking water.

It is important to review the current state of affairs to determine whether additional guidance, regulatory revisions, or additional training and workshops are necessary. A health risk does exist and families have been losing faith in their drinking water. This workshop will focus on bringing the environmental and educational components of society together by sharing insights, tools used, and lessons learned to reduce risk and improve communication.

EPA's Office of Ground Water and Drinking Water (OGWDW) has focused its efforts on Lead and Copper Rule (LCR) revisions. OGWDW will continue this accelerated review and will look at areas of targeted revisions. It will also focus on nonregulatory approaches and building partnerships--collaborative efforts with school districts, public utilities, and other federal agencies. The LCR went into effect 12 years ago, on December 7, 1992.

It is important to emphasize the “Three T’s”: training, testing and telling. These are not new regulatory mandates, but are tools. ‘Training’ is following up on workshops and providing tools to school officials, custodians, and local and statewide drinking water officials to raise awareness of the issue and promote better monitoring of drinking water. ‘Testing’ deals with the importance of monitoring. The federal government cannot mandate states to monitor drinking water in schools except where the schools are a public water system. However, the importance of accurate and timely monitoring and testing cannot be understated. “Telling” addresses the importance of communication and sharing results with the public. The federal government cannot directly require that test results be made public; however, it is in everyone’s interest to ensure the community or concerned stakeholders (e.g., parents, teachers, local leaders) know the results of any testing that takes place.

Many other health issues compete for priority with school and local government officials (e.g., asbestos, lead-based paint) and it is a challenge to devote the appropriate attention and commit the necessary funding to each priority. Another goal of this process is to address how the government and its partners can join together to find the resources to focus attention on drinking water quality.

The Office of Water is not the only office at EPA focused on healthy schools. The *Tools for Schools* program addresses indoor air quality and asthma triggers. The Office of Toxic Substances deals with lead in paint and dust (as well as asbestos) and has a lead campaign for Head Start programs.

EPA is not focused on finding new Federal mandates to impose on schools and state and local water administrators. Rather, EPA is more interested in forming collaborative relationships (e.g., with the Department of Education). EPA would like to see more examples of partnerships that will encourage public water systems to be more responsive to customer needs.

**Dana Carr, Program Specialist
Office of Safe and Drug Free Schools, Department of Education**

Dana Carr spoke briefly about the objectives of the workshop from an education standpoint.

Children spend significant amounts of time in schools and child care facilities. Schools are particularly vulnerable to lead because of the nature of school buildings and the water use patterns (age of the buildings, plumbing and fixtures as well as periods of little or no water usage). Long-term effects of lead (e.g., lowered IQ, behavioral problems) are concerns, especially in light of recent news stories which reported the levels of lead that have been discovered in some schools.

DOE’s Office of Safe and Drug-Free Schools protects the school environment so that children will be ready to learn while they are at school. Prevention (maintaining healthy facilities) is a large part of this process. Voluntary testing is a challenge, particularly considering schools’ competing financial priorities. The testing itself may be costly, and the responsibility of needing to take action once you are aware of a problem is even more costly.

Schools face increasing pressures to take responsibility for identifying and addressing lead problems, and providing the funding to do so. DOE’s approach is to build and maintain partnerships with appropriate parties and to expand training of school staff.

Panel Members and Observer Introductions

Panel members introduced themselves and gave a brief summary of their background relevant to the workshop topic (see **Attachment A** for the attendance list). Audience members were also invited to introduce themselves. Ben Grumbles welcomed organizations and individuals who have not previously been involved in this discussion.

Mr. Grumbles conveyed the EPA perspective that this issue has not necessarily received the attention it deserved over the years. There are approximately 53,000 public elementary schools in this country; about 10,000 of which meet the definition of public water supply. The remaining 43,000 are not regulated by the Safe Drinking Water Act. Ensuring these places are safe havens for the nation's children will require forming proactive partnerships with utilities, and focusing on training, testing, and sharing. It is hoped that this workshop will generate ideas and proposals to ensure drinking water in schools and child care centers meet minimum standards.

After these introductions, two case studies were presented to the panel.

Case Study #1: Presentation of a Water System's Experience Stephen Gerwin, Washington Suburban Sanitary Commission

Stephen Gerwin presented the first case study. The Washington Suburban Sanitary Commission (WSSC) serves two counties in Maryland (Montgomery and Prince George's) and has always met LCR requirements. The water system serves a population of 420,000; including almost 350 public schools. The distribution system is newer than that used by the District of Columbia and does not have any known conventional lead service lines.

Background on Lead

Lead from paint, dust, and soil is the major source of lead in the domestic environment. Drinking water has never been the sole source of exposure in a case of a child with elevated blood lead levels. Since lead in water from the Potomac River, where WSSC obtains its water, is near or below the detection limit, any lead found in drinking water originates in the distribution system. Lead components do not exist at the water plant or in transmission mains (although older cities, like the District, may have lead service lines); therefore, the main source of lead in water is from plumbing within the home. Lead is added to the brass used in plumbing fixtures to aid in machining. It can also leach from lead "pigtailed," water meters, and lead solder in copper pipe. Corrosivity is believed to be the main cause of lead leaching into drinking water. Most often, pH is raised to lessen the water's acidity and reduce corrosion. Previously, WSSC produced water with a pH of 7; they now produce water with a pH of 8, a substantial increase.

WSSC's LCR History

WSSC was required by the LCR to identify the homes considered most at-risk for lead problems. Attention was focused on homes built after 1982. WSSC distributed testing over the two counties, but focused some sampling around an area that experienced high growth in the 1980s. WSSC sampled over 100 homes to see whether the 90th percentile exceeded the lead action level of 15 ppb. The 15 ppb level is an action level, not an MCL or health based standard. The sampling process is intended to give a picture of general system-wide lead levels.

The first round of sampling, in the early 1990s, indicated that the system had exceeded the action level. WSSC developed a corrosion control plan which was approved by the Maryland Department of the Environment in 1995. Lead levels have been declining in the distribution system over the past decade. In 2002, a sampling of 50 homes for lead found no sites exceeding the 15 ppb action level (maximum detection was 7 ppb). In late 2003 WSSC introduced a corrosion inhibitor to address copper pipe pinhole leaks. In 2004 they wanted to ensure that the chemical was not impacting lead levels. Testing indicated that lead levels had generally improved since 2002.

Recent School Testing

Schools that are not regulated as public water systems are subject to the Lead Contamination Control Act (LCCA), not the LCR, and are therefore responsible for their own water sampling and remediation. WSSC decided to support school water sampling by providing free lab services and technical expertise as needed. Stakeholders from Montgomery and Prince George's counties were assembled in 2004 to determine whether testing would be desired. This involved the cooperation of diverse groups, including representatives from public schools, public health officers, county environmental staff, and WSSC. Public health officers wanted to test the drinking water for assurance; everyone assumed that the testing would show that there were no problems with lead in the drinking water.

Initial results indicated that 10-20 percent of the fixtures tested were over the recommended limit of 20 ppb. The team immediately notified the schools and developed a plan for flushing and identifying safe sources of water. The results were obtained in the early afternoon and by the next morning schools had already begun implementing a flushing plan. They originally expected 5,000-6,000 samples, but over 30,000 samples were eventually analyzed for the school systems (WSSC covered the \$25/sample fee). Results did not seem to correspond to school age.

Action

The two counties chose to address the issue in different ways. Montgomery County wanted to test all the fixtures in all school buildings; Prince George's County focused on testing primary sources of drinking water (water coolers and bubblers). If a first draw sample yielded high results, additional first and second draw samples would be taken. The sources of water children used most often usually had low levels detected due to frequent use. Some of the highest numbers were obtained from fixtures that were rarely used.

WSSC felt that it was critical that the issue of lead in school drinking water be separated from the issue of lead in residential water.

Case Study #2: Presentation of a School's Experience Ron English, Deputy General Counsel, Seattle Public Schools

The second case study was presented by Ron English and focused on the experiences of the Seattle School District. The district has faced many challenges related to lead in drinking water in the past year, but was finally able to adopt a new policy on December 1, 2004.

Background

The Seattle School District is an inner-city district (42 percent of 47,000 students qualify for free or reduced lunch) with an aging stock of buildings. They purchase their water from Seattle Public Utilities. In 1991-1992 lead testing was conducted. About 25 percent of drinking water fountains were found to exceed 20 ppb. The bubblers at these fountains were replaced, but not the plumbing. A flushing program was instituted, but was not consistently applied. Recommendations that the plumbing at 4 schools in the district be replaced were not implemented due to levy failures. The results of the testing were never made public and no action was taken from 1992 until 2003.

In 2003, parents became aware of and publicized problems with iron in school water. Testing also exposed elevated lead levels. High lead levels were found in a kindergarten classroom. One student was reported to have become ill after she was introduced to the classroom and improved after she left; however, she was never tested for lead.

Action

The school district immediately provided bottled water for all schools over 7 years old (60 schools) and hired a consultant to create a comprehensive testing program for the district. Testing took place at all schools (included testing for lead, cadmium, iron, copper, *E. Coli*, color and turbidity). A decision was made that water was not to be consumed from any fountain/tap until testing showed that it was safe. Water from drinking fountains in hallways, classrooms, and sinks were tested after an 18-hour period of stagnation following flushing. Testing indicated lead over 20 ppb in 25% of locations.

The testing program revealed lead levels rebound to their original levels in just 2-3 hours, so a drinking fountain must be used frequently throughout the day to keep levels down. Replacing the bubbler didn't completely solve the problem because the 250-mL test samples also drew water from 7-feet of piping behind the fountain. In the summer of 2004 the plumbing was replaced at the 4 schools where this had been recommended in the 1990's.

Most of the kitchens in the district use pre-packaged foods and therefore use minimal water. These taps were not considered high priority. Age-appropriate warning signs have been posted in all restrooms warning children not to drink the water from these taps.

Letters were sent to every parent in the district.

Iron Removal

Iron was the original problem that brought water quality issues to light in 2003. Now, the iron standard for Seattle Public Schools is almost as strict as that used for public water systems. One option for removing high iron is to install filters. It was determined that drinking water filters work at about half the rated capacity. They tend to clog after a few hundred gallons and therefore cannot be relied upon for the entire year.

The school district did not want to use point-of-entry treatment since they would then be considered a water system and subject to more rules. Seattle Public Schools will look at all the technologies available for completely replacing the plumbing in 11 schools; however, this is expected to be a very expensive program.

2004 Policy

Seattle's approach is to "provide access to ample quantities of clean, safe, aesthetically pleasing water; establish and maintain public confidence; and be proactive." Seattle Public Schools decided to set a lead standard even lower than that recommended by EPA (10 ppb vs 20 ppb) for standing and flushed water. Even so, there was still a problem of many parents in the community distrusting the District and the toxicologist hired by the District.

The remediation program includes: fixing or disabling any fountain found to be over 10 ppb lead, testing for iron in 50 schools, complete replacement of pipe in 11 schools, and retesting every 3 years.

Seattle Public Schools reported the comprehensive results on their web site. A 4-page question and answer section was reviewed by technical experts and will be included soon.

Credibility

Even though the Seattle School Board recently adopted a water policy, their credibility had been lost due to previous inaction. The public has little confidence in the drinking water in Seattle schools. The Board is working hard to regain credibility. The new policy establishes a public oversight committee that will produce briefings and be proactive. The committee, consisting of a water quality consultant, county and state health departments, Seattle Public Utilities, and toxicologists has already met several times and will oversee all actions. Unlike some school districts who indicate only whether or not their water quality passed minimum safety standards (which could hide instances of exceedances), Seattle Public Schools decided to disclose all results of the testing.

Conclusion

School districts lack the time and expertise to develop a good water quality program. A standardized recommendation from EPA, not necessarily a law or regulation, would be very helpful. This could address what schools should test for, how often schools should test, and protocol nuances.

Panel Discussion

After the case studies, the facilitator solicited comments from panel members about issues brought up in the case studies. **Attachment B** contains the list of comments.

Case Study #3: Presentation of a State Program Steve Messer, Connecticut Department of Public Health, Drinking Water Division

The final case study was presented by Steve Messer, Supervising Sanitary Engineer for the Compliance Section of the Connecticut Department of Public Health (DPH) Drinking Water Division.

In the State of Connecticut, 3 community water systems (CWSs) serve 87 percent of the state. There are 4,000 small public water suppliers.

A small focused work group was created in 1995 to effectively regulate more than 2,600 noncommunity public water systems. They were faced with minimal staffing and charged to utilize innovative techniques. This work group immediately prioritized schools and daycare centers, as they serve high risk populations.

The work group focused on forming collaborations with other vested entities and improving outreach activities. At the time, the compliance rate for schools was 46 percent, while daycare centers had a 12 percent compliance rate. Issues addressed included inadequate sources such as dug wells and springs, buried wellheads, coliform bacteria (*E. coli*), lead and copper exceedances, and schools running out of water (due to having only one supply source). The work group was able to eliminate about 99 percent of bacteria and *E. coli* problems.

There were political concerns that water testing requirements would drive businesses out of the state. Since daycare centers are usually in rented facilities, they sometimes faced eviction from owners who didn't want to spend the money on water testing and possible remediation. Despite all these problems, public sentiment backs clean water. The general public takes for granted that the drinking water provided to them at all establishments is acceptable unless notified otherwise.

The following organizations participated in the work group's efforts: DPH Drinking Water Division (DWD), DPH Day Care Licensing Program (DCLP), DPH Food Protection Program (FPP), local health departments and districts, the Department of Education School Facilities Unit, and EPA Region 1 staff. The DPH DCLP implements existing drinking water regulations, while the FPP regulates food service at schools.

Daycare Facilities on Noncommunity Public Water Systems

The public health department connection is key to child care facility compliance since the DPH licenses daycare facilities. When the collaboration started there were only 65 identified nontransient noncommunity (NTNC) public water supplies (PWS) serving daycare centers. However, 93 more potential NTNC PWSs were identified after a search of DPH's daycare licensing files. Collaborative efforts emphasized teamwork between daycare licensing staff and drinking water engineers. Daycare staff and local health officials participated in drinking water training sessions. A new daycare licensing form and procedures were developed to identify any remaining daycare centers which may qualify as a PWS and to ensure compliance at existing centers. DPH committed to collecting and covering the cost of

analyzing a one-time complete water quality profile for “newly identified” daycare centers. Current compliance rates at daycare centers is now approaching 100 percent, with over 170 regulated facilities.

Schools on Noncommunity Public Water Systems

Connecticut’s Capacity Project for schools identified poor drinking water infrastructure at many Connecticut schools. Single source systems often experience water outages and school closings. Poor management and technical capacity have led to several statewide issues. Staff completed 147 sanitary surveys in 60 days at schools and cited infrastructure deficiencies in addition to public health code violations.

As a result of CT’s program, 15 schools have committed to connecting to a municipal water supply, 36 have installed or are in engineering design for completely new water facilities, 48 have been identified as needing completely new facilities, and the remaining 48 schools have been identified as requiring minor to moderate improvements to their existing facilities. Some of the new facilities are state-of-the-art.

Schools that have signed DPH consent orders for necessary improvements are eligible to receive grant funding ranging from 20-80 percent reimbursement, depending on the relative wealth of the community. This project was featured in the Spring 2004 “On Tap” magazine. Most school systems fall in the 60-80 percent reimbursement rate. However, political situations have prevented some from seeking help, even though funding is available.

Daycare Facilities

In Connecticut there are 1,622 licensed daycare centers. 130 are on non-public wells, 8 are on transient public water systems, 162 are on nontransient public systems, and 1,322 are on community public water systems. CT’s program requires that when any child care center or group home is licensed, a first draw sample is required as part of the initial license application and at every 2-year renewal. If the sample is elevated, the facility is required to use bottled water. Elevated test results from child care programs served by LCR-compliant community water systems are submitted to the Division of Water and the community water system is notified.

When a licensed child care center is a NTNC it is subject to LCR requirements; if test samples come back elevated, letters will be sent to the child care center including language requiring the center to provide bottled water.

All compliance water quality data for public water systems is maintained in the Safe Drinking Water Information System (SDWIS). The DPH DCLP maintains all licensure information for daycare facilities in a Microsoft Access database. The DPH DWD works with the DPH DCLP to link the two databases.

What’s Missing?

Schools and daycare centers served by noncommunity water systems are covered under the SDWA for monitoring requirements. Connecticut’s daycare centers, including those served by community water systems, now monitor for lead every 2 years as part of their licensing renewal requirements. The only missing piece is schools served by community water systems. There are no existing laws, licensing, or procedures in place to ensure monitoring, and therefore protection, in these schools.

Conclusion

CT's voluntary measures have been developing over the past 9 years and lean heavily upon the regulations and licensing procedures of others for enforcement. Involved organizations usually have many other responsibilities. Voluntary measures take a back seat when other daily required activities cannot be met. Mandatory measures will eventually get done. Awareness of drinking water issues (especially in schools and daycare centers) has been raised through electronic media and communication and are at an all-time high. The public demands and expects no less than perfection for their own children.

Mr. Messer suggests immediately implementing as many voluntary initiatives as possible with willing participants. Schools and daycare centers could be added to current Tier 1 sample sites under the LCR for CWS and should be prioritized over single family homes. Money for public health protection should also be used effectively.

Panel Discussion

After the case study, the facilitator solicited comments from panel members and audience members. **Attachment C** contains the list of comments.

Observer Comments

Members of the audience were further invited to share their comments. Comments from observers are as follows:

- Exposure regulations should be instituted across the board, no matter what kind of system is serving the water. Health effects are not dependent on source.
- Many houses still have their own wells and septic systems and their potential lead problems are not being addressed.
- There are many demands on water systems and schools. A shortage of funds is always a big issue.
- Lead in drinking water is a national, not a local, issue.
- There needs to be immediate remediation or action at schools and child care facilities where lead levels in water are high.
- Long-term issues include: prioritizing public health criteria, determining "lead-free" manufacture standards, and incorporating building codes (some older schools were originally designed as bomb shelters). Long-term priorities should be put in the spotlight as well as immediate problems.

Reports from Issue Sub-panels

The topics were divided into two issue groups for further discussion.

- Testing - how to promote testing, testing program components, funding
- Building partnerships - who and how? Communicating results - message and delivery

Specifically, the sub-panels were asked to identify issues associated with their topic(s), challenges and opportunities, strategies to address challenges, and critical information gaps. After discussing and considering the issues, each sub-panel summarized their topic for the full group.

Testing

- Funding for testing and remediation is the biggest issue. Who will pay for testing? Perhaps this can be addressed partially through financing such as taxes.
- Accountability - the public utility is responsible for the corrosivity of their water; however, once water enters school property, the plumbing is the school's responsibility. The school and utility should partner together to address water quality issues.
- Enforcing recommendations requires time and money. Hopefully, addressing water quality issues can progress from mandates to voluntary programs with incentives.
- EPA can help by developing a package of materials to include the following types of model materials available to school districts: school ordinances, school policies, protocols (what to test for, how to test and how often), a list of basic health information, plumbing standards for fixtures, background information (e.g., what is lead?), and scientific risk-based information. The target audience is school superintendents, principals, or maintenance managers.
- What are alternatives to remediation?

Partnerships and Communications

- In partnerships, it is the role of the utility to start the process.
- Partner with a broad audience (schools, parents, PTA, advocacy groups); get to know the partner before forming a collaboration.
- Tailor the message to the audience, but maintain a consistent message.
- Differentiate between schools and child care providers; messages may not resonate the same way.
- Pediatricians and primary care physicians are often primary sources of information. It is important to keep them involved as well. Lead exposure is especially critical in the first 3 years.

Adjournment

EPA will post the meeting summary and, with permission, a list of participants and contact information. EPA will continue to revise materials, consider revising 11-year-old guidance for voluntary programs, and evaluate whether any changes need to be made to the LCR.

Attachment A

Lead in Drinking Water in Schools and Child Care Facilities Meeting December 7, 2004 Washington, D.C.

Participants

Claire Barnett	Healthy Schools Network
Jim Bogden	National Association of State Boards of Education
Barry Brooks	Centers for Disease Control and Prevention, Lead Poison Prevention Program
Gary Burlingame	Philadelphia Water Department
Dana Carr	US Department of Education, Safe and Drug Free Schools
Ron English	Seattle Public School District
Sherry Everett-Jones	Centers for Disease Control and Prevention, Division of Adolescent School Health
Stephen Gerwin	Washington Suburban Sanitary Commission
Shelli Grapp	Cedar Rapids Water Department
Brenda Greene	National School Boards Association
Ben Grumbles	US EPA, Assistant Administrator, Office of Water
Gregg Grunenfelder	Washington State Department of Health, Drinking Water Program
Steve Heare	US EPA, Office of Ground Water and Drinking Water
Julia Krall	Campaign for Safe and Affordable Drinking Water
Jim Loving	National Child Care Association
Steve Messer	Connecticut Department of Public Health, Drinking Water Division
Kenton Pattie	Fairfax County Council of PTA's Health and Safety Committee
Larry Pauling	Prince George's County Public Schools
Alan Roberson	American Water Works Association
Carleen Wallington	National Head Start Association
Camile Welborn	US Department of Education, Safe and Drug Free Schools

Attachment B

Issues Identified on Lead in Drinking Water in Schools and Child Care Facilities

First Panel Discussion

General Issues

Use same networks at local level as those set up for counterterrorism.

Why test? Public relations and legislative potential.

Enhanced voluntary approach may be the best approach.

What can EPA do?

- can be an advocate for federal funding.

The process is as important as the product

- building partnerships, engaging the press. Creating advisory committees or building on existing committees is important.

Transparency is critical. Once trust is lost, it can take decades to restore.

Blood Lead Levels and Health

Blood lead levels are often perceived as a translation from drinking water lead levels.

Hate to see resources changing the focus of lead exposure from dust or paint (bigger problem) to drinking water.

Is there data regarding blood lead levels? Is there convincing science indicating there is a problem?

- D.C. did some testing. Found that blood lead levels in children are typically decreasing, but where lead was high in water, blood lead levels did not decrease.

Each local health department has a person tasked with testing blood lead levels who can be used as a resource.

How long does lead stay in the bloodstream? (Question from floor)

- when introduced to the body it gets into the blood quickly
- ½ life is approximately 30 days until it is absorbed or excreted

Daycare/Childcare

What is water system's role with child care centers and how to reach them?

The LCR regulates lead at private homes with the action level at 15ppb, must also protect kids at schools or child care facilities with the same level of protection.

What experience have people had trying to make contact with child care centers?

Child care centers that do not own their building do not have control over the plumbing in a leased space. Hold building owner responsible, not the child care provider.

- one owner's solution in CT was to threaten to kick the daycare out.

Schools

It may be tough to sell this as an issue to schools. Isn't the key age of concern at preschool ages?

- 0 to 72 months are key ages to test

Schools need to be aware that water systems do not monitor them under the LCR - monitoring is school's responsibility.

How to prioritize individual school testing vs. comprehensive testing of all schools.

The Health Department is critical source to help with health effects information for schools.

Question for Ron English regarding the activist parents and where they are now.

- They are pleased with the policy in place but will be watching implementation carefully.
- Parents are a powerful constituency. They push state regulations. They also add a degree of complication

"No Child Left Behind" has a vehicle in place that could be utilized.

- The Department of Education has a web site (edfacilities.org) that deals with design information.

Are taxpayers more likely to pass school levies if problems with lead in drinking water are fully disclosed?

Alternative Sources/Flushing

How do you assure that kids can get water when taps with high lead are shut off?

- bottled water, use of other taps, limiting some points as long as you have other taps available is not as critical

Has any connection been made to addressing design standards?

- can design standards address new school plans as well as rehab/retrofit?
- design standards for new school buildings should focus on water quality.
- clearly define flushing - typically what people think they do is flushing, but in actuality they just stir up sediment

Flushing protocols may not be appropriate for all schools, based on plumbing.

Are the testing protocols different for pre- and post-1997 construction?

Low lead versus no lead

- “Lead free” means less than 8 percent. These can still leach quite a lot of lead.
- Lead-free fixtures are available for fountains, but not for sinks.
- All replaced components, bubbler heads, and plumbing need to be lead-free.
- Engineers, architects and plumbers need to be educated about this.
 - Plumbers may not know what they are installing or what is required.
 - Some of these issues could be addressed at time of purchase by schools.

Sanitation of bottled water when provided. Are there protocols for cleaning bottled water dispensers? (Question from floor)

Flushing may not address the problems at aging schools or perhaps different protocols should be developed, based on the age of the facility.

What is the appropriate frequency of testing? This is unclear for most schools. Is there an EPA recommendation? (Question from floor)

NSF 61 addresses leaching of lead (and other metals), but needs greater education and enforcement of its use by plumbers. (Comment from the floor)

- How much of the brass in the faucet comes in contact with the water?
- What about products produced outside of U.S.?
 - Regulation of plumbing includes Uniform Plumbing Code, international standards, also some states have their own codes

Attachment C

Issues Identified on Lead in Drinking Water and Child Care Facilities

Second Panel Discussion

General

It can be difficult to convey the 15 ppb action level under the LCR to parents.

Harmonize the approach for all NTNC schools and those served by PWSs.

What immediate actions should be taken to deal with high lead levels found in drinking water?

What are long-term issues and how should they be addressed? (building codes with drinking water emphasis, public health designs for schools)

Utilities deal with many contaminants in drinking water, not just lead.

- Other health issues form competing priorities.

Testing

To address exposure, school testing is needed

Should EPA require water systems to sample at schools and child care facilities as Tier 1 under the LCR?

- puts burden on utility to change water chemistry
- could skew overall water system results by shifting focus to large building plumbing problems
- LCR distribution system monitoring was designed to get a statistical sense of the water system as a whole and evaluate utility's corrosion control.
- Is LCR the best place for this, or should there be a new regulation for schools and daycare facilities?
 - LCR has action levels, not MCL
 - "safe" amount of lead is zero
- LCCA is possible mechanism - problem is funding
- results at schools with higher lead could force testing at all school

What are the testing costs for lead sample?

- Testing costs \$25/sample.

Washington state has set aside money for school testing. There are typically funding shortfalls for testing.

Where to test? Testing should give a representative sample of drinking water and cooking water supply.

Testing after remediation is also important to ensure problem is resolved.

- Highest success for eliminating problem is through the replacement of faucet fixtures.

Funding

Question for Steve Messer - where does Connecticut get funding to provide grants to school facilities?

- state budget (general fund).

Blood Lead Levels

More research is needed on how the level of lead in drinking water affects blood lead levels.

- EPA has some information. However, correlation between blood lead levels and lead in water is dependent on a host of parameters, not just level in the water, which may be more variable and unknown (other sources of lead, nutrition, etc).
- CDC is looking at other models and studies.

Schools

Competing resources for schools - can EPA help prioritize environmental health risks?

- Coordinate between EPA programs.
- Drinking water quality must be considered a priority in order to compete with other issues.

Is ground water contamination an issue for schools with their own water supplies?

- Often there is self-contamination of wells by schools; contaminated soils can also contribute to the contamination of wells.
- Address ground water contamination at schools.

Public education for high lead in drinking water at the public water system does not always get to schools.