Governor's Directive on Lead, 16-06

Department of Health Recommendations

October 2016

Washington State Department of Health

Environmental Public Health

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Department of Health Recommendations

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Special acknowledgment to the state agencies, local health jurisdictions, workgroup members, and other stakeholders who contributed to the development of this report.

JAY INSLEE
Governor

STATE OF WASHINGTON
Office of the Governor

DIRECTIVE OF THE GOVERNOR
16-06

May 2, 2016

To: Washington State Department of Health and Other Agencies as Needed

From: Governor Jay Inslee

Subject: Assisting community and agency responses to lead in water systems.

Recent detections of lead in drinking water systems have raised public awareness of the importance of safe drinking water as a foundational service of water utilities, school water systems, and our public health departments.

While everyone in Washington has some exposure to lead (click here for more information about lead), one common source is our water infrastructure. Fortunately, the State, utilities, schools, and others have resources dedicated to water sampling, testing, repairs, and for necessary health care measures; but, due to the deteriorating nature of our drinking water systems, we need further investments and funding for foundational public health services and infrastructure.

Therefore, I am directing the Department of Health (DOH) to continue to provide technical assistance and guidance regarding voluntary water quality tests that school districts may perform to ensure those tests meet water sample collection protocol standards. The DOH will partner with local officials, utilities, the Office of Superintendent of Public Instruction, schools, and other agencies as necessary, and it will hold workshops for schools to raise water quality awareness and advise how to correctly test and remediate any identified drinking water issues.

I further direct:

1. DOH, the State Board of Health (BOH) and the Office of Financial Management (OFM) shall review and, if necessary, update WAC 246-366A, known as the "School Rule,", which promotes healthy and safe school environments. As part of this review, DOH in coordination with BOH shall prepare a decision package to implement the School Rule, with an emphasis, if necessary, on implementation of the portion of rules related to lead exposure.

2. DOH shall determine the viability and potential policy changes associated with developing a Lead Rental Inspection and Registry Program, to require residential rental properties built before 1978 to register and complete a lead inspection and demonstrate safety at each change of occupancy.

3. The Department of Early Learning, in collaboration with DOH and OFM, shall assess the need for, and viability of, policy changes that would require child care providers located in buildings constructed in whole or in part before 1978 to complete an evaluation for sources of lead exposure including the testing of drinking water.

4. DOH shall work with stakeholders to improve the efficiency of the blood level monitoring system and ensure full implementation of local public health outreach activities to families having children with blood lead levels meeting action levels. DOH shall develop a decision package and explore financing means, as part of a larger foundational public health system improvement package, for consideration next biennium. This should include:

    - transitioning the Child Blood Lead Registry to a fully electronic reporting system, which would be more efficient and effective for lab and clinic reporting; and
    - assessing the funding needs for local public health programs to fully implement lead investigations and remediation work for children who have blood level test results requiring action.

5. DOH shall work with the Health Care Authority to improve lead screening rates among children at the highest risk who are on Medicaid, and provide case management services to children with elevated blood lead levels and their families. DOH shall also work with the Office of the Insurance Commissioner to determine whether private payers provide for lead screening and case management services and whether any further coverage policy change may be necessary.

6. DOH shall prioritize the removal of lead service lines and other lead components in water distribution systems when considering a funding proposal through the Drinking Water State Revolving Fund, which provides low-interest loans to eligible public water systems to address public health concerns. As part of this effort, DOH shall work with stakeholder groups to develop policy and budgetary proposals with a goal of removing all lead service lines and lead components in Group A Public Water drinking systems within 15 years. DOH shall work with each Group A Public Water system to identify all lead service lines and lead components within two years.

7. DOH shall work with the Department of Ecology and the Environmental Protection Agency to seek additional federal assistance on these issues, including but not limited to:

    - Requesting additional funds to assist communities in expediting removal of lead in drinking water systems;
    - Supporting revisions to the Federal Lead and Copper Rule;
    - Considering regulatory requirements for testing in child care settings; and
    - Seeking funding for drinking water distribution line improvement.

DOH shall take necessary action immediately and, by no later than October 2016, report to me potential budget and policy recommendations regarding the various items listed above, while ensuring other affected parties and legislative leadership are also fully informed.

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Governor's Directive on Lead
Executive Summary

Overview

On May 2, 2016, Governor Inslee issued Directive 16-06 (the directive) in response to the growing concerns about lead being found in drinking water in schools and homes across the state. However, he also recognized that water is not the primary source of lead exposure for children. So in addition to asking for recommendations to reduce exposure through drinking water, he asked the Department of Health (DOH) to provide leadership to reduce exposure to lead and other environmental hazards where children live, learn, and play.

Summary of Overall Approach

There is no known safe level of lead, and despite several national efforts in the past century to reduce people's exposure, it is still a hazard for people and the environment in Washington. Children are the largest and most vulnerable group affected by lead. As such, these recommendations focus on protecting children from lead to prevent exposure and respond when children with elevated blood lead levels are found. DOH identified two priorities for reducing lead hazards:

- **Primary Prevention – Remediate known sources to prevent future exposures:**
  - **Drinking water infrastructure and fixtures with lead.** Work with Group A public water systems (public water systems with 15 or more service connections) to identify and eliminate lead components. Require testing of drinking water in schools and licensed early learning settings and address fixtures with elevated lead levels.
  - **Lead paint hazards in rental housing, licensed early learning settings, private homes, and schools.** Implement local inspection programs for all schools and increase outreach to licensed early learning operators and landlords regarding potential hazards. Seek funding assistance for remediation.
- **Secondary Prevention – Identify children with elevated blood lead levels, the sources of lead exposure and remediate the specific source of exposure:** Improve lead screening rates among children at the highest risk and provide case management for those with elevated blood lead levels.

Summary of Workgroup Recommendations

School Rules

Directive

"…review and, if necessary, update WAC 246-366A, known as the "School Rule"…As a part of this review, DOH in coordination with BOH [*sic*]* shall prepare a decision package to implement the School Rule, with an emphasis, if necessary, on implementation of the portion of rules related to lead exposure."

* State Board of Health (SBOH)

Recommendations
All children, regardless of the community they live in, should be able to attend schools that are built, maintained, and operated to assure a safe and healthy environment. DOH has concluded that until the suspended rules can be implemented, the largest gain in public health lies in the partnership between local health jurisdictions (LHJs) and schools. The best incremental step toward improving health and safety in schools is to implement the current rules with an additional water quality sampling requirement. DOH has created a decision package to request funding for the following without implementing the suspended rules:

- Test drinking water in all schools for lead as part of a statewide school environmental health and safety inspection program.
    - Conduct LHJ school inspections at least every three years based on existing chapter 246-366 WAC, Primary and Secondary Schools, requirements.
    - Test drinking water over a six-year period using U.S. Environmental Protection Agency's (EPA) *3Ts for Reducing Lead in Drinking Water in Schools*, giving highest priority to elementary schools without recent tests. The "3Ts" means training, testing, and telling.
    - Support the Office of Superintendent of Public Instruction (OSPI) funding request for lead remediation, including fixture replacement.
- Update the *Health and Safety Guide for K–12 Schools in Washington State.*
- Gather data over the next six years to evaluate and update chapter 246-366A WAC, Environmental Health and Safety Standards for Primary and Secondary Schools.

Rental Inspection and Registry

Directive
"Determine the viability and potential policy changes associated with developing a Lead Rental Inspection and Registry Program, to require residential rental properties built before 1978 to register and complete a lead inspection and demonstrate safety at each change of occupancy."

Recommendations
DOH concluded creating a statewide rental registry and inspection program is not viable based on the indeterminate costs to the public health system. However, lead in older homes poses the greatest risk of exposure to children; therefore, DOH recommends the primary prevention approach of assessing pre-1960 rental units for lead hazards. Municipalities are positioned to adopt comprehensive rental inspection programs that address not only lead, but also other health risks found in homes. DOH recommends the Legislature:

- Amend the Residential Landlord-Tenant Act to require lead assessment of all rental units built before 1960 to determine if there are lead hazards present, and to require remediation if a hazard is identified.
- Direct DOH to work with municipalities and stakeholders to explore development of a state-supported training program for cities to increase participation in rental inspection programs.
- Create a remediation fund for landlords providing low-income housing.

Child Care Building Lead Evaluation

Directive

"…assess the need for, and viability of, policy changes that would require child care providers located in buildings constructed…before 1978 to complete an evaluation for sources of lead exposure including the testing of drinking water."

Recommendations

Washington should institute a licensed early learning setting water quality testing and lead hazard program that includes appropriate sampling and testing for lead contamination in all licensed early learning settings in the state. This can be accomplished through amendments to Department of Early Learning's (DEL) rules. Findings from such testing would be made available to all parents of children enrolled in the facilities where testing is performed. If lead is discovered through this testing, immediate remediation would be required.

- DEL should amend their licensing rules to require:
    - Testing drinking water for lead in all licensed early learning facilities using EPA's *3Ts for Reducing Lead in Drinking Water in Child Care Facilities: Revised Guidance*. The "3Ts" means training, testing, and telling.
      Evaluating licensed early learning facilities for lead paint hazards and soil hazards based on age of facility and historical land use; and require remediation when lead hazards are confirmed by a Department of Commerce (Commerce) certified renovation, repair, and painting lead assessor.
- DOH should partner with the Commerce to provide training to DEL licensors and licensed early learning providers on how to identify lead hazards and provide best practices for avoiding lead exposure.
- The Legislature should create a remediation fund for early learning facilities providing services to low-income families.

Blood Lead Registry

Directive

"…improve the efficiency of the blood level monitoring system...DOH shall develop a decision package and explore financing means…transitioning the Child Blood Lead Registry to a fully electronic reporting system, which would be more efficient and effective for lab and clinic reporting…"

Recommendations

A fully electronic reporting system is critical to the goal of efficient identification and case management of children with elevated blood lead levels. Washington should provide funding and follow through with policy changes to ensure this critical component of the system is created.

- Request the SBOH to amend the notifiable conditions rules to require labs to report all notifiable conditions electronically, including blood lead tests.
- Build on Washington Disease Reporting System (WDRS), including the property tracking module, to create a fully electronic lead database capable of receiving Meaningful Use Stage 3 electronic blood lead case reporting via the Health Information Exchange.

Screening and Case Management

Directive

"DOH shall develop a decision package…assessing the funding needs for local public health programs to fully implement lead investigations and remediation work for children who have blood level test results requiring action."

"…work with the Health Care Authority to improve lead screening rates among children at the highest risk who are on Medicaid, and provide case management services to children with elevated blood lead levels and their families…also work with Office of Insurance Commissioner to determine whether private payers provide for lead screening and case management services and whether any further coverage policy change may be necessary."

Recommendations

All Washington children with a confirmed blood lead level greater than or equal to 5 µg/dL should receive standard public health services that respond appropriately to their lead exposure. The following recommendations are intended to build the capacity of the public health system to provide these foundational services. DOH has created a decision package requesting funding for the following:

- Build public health system capacity to identify and respond to children with elevated blood lead levels by:
    - Increasing screening of children on Medicaid and other children at high risk of lead exposure through outreach to doctors and parents.
    - Creating a consistent statewide system for case management and follow-up of children with elevated blood lead levels.
- Support Health Care Authority (HCA) in working with Centers for Medicare and Medicaid Services to allow Medicaid funding of case management and secure state Medicaid match funding.

Remediation

Although various federal grant programs currently exist to assist a limited number of homeowners with lead remediation, there is a large gap between the need and the availability of help. With increased screening, the number of children with elevated blood lead levels is expected to increase the need for remediation. Through outreach, DOH hopes to encourage licensed early learning operators, landlords, parents (homeowners), and private schools to remediate their facilities before a child is exposed to lead and prevent lead poisoning in children.

Recommendation

By proactively removing lead before a child is identified with an elevated blood lead level, we can prevent the harm caused by exposure.

- Create a pilot program, Lead Remediation Revolving Fund, to provide grants and no- or low-interest loans to landlords, licensed early learning operators, parents (homeowners), and private schools to remediate lead hazards.

Activities Underway

Education and Technical Assistance for Schools

Directive
"DOH will partner with local officials, utilities, the Office of Superintendent of Public Instruction, schools, and other agencies as necessary, and it will hold workshops for schools to raise water quality awareness and advise schools how to correctly test and remediate any identified drinking water issues."

Next Steps
DOH will continue to:

- Provide training through a statewide webinar to all Educational Service Districts (ESDs), school administrators, and school facilities managers.
- Work with various school districts, helping them develop messages to parents and the media when they encountered high levels of lead in the school's water.
- Attend public meetings in communities to help share messages on lead when asked.
- Work with Office of Superintendent of Public Instruction to provide messages to schools.
- Provide resources to school districts statewide via direct mail and DOH's public website.
- Collect sampling data from schools districts who submit this information voluntarily.
- Provide technical assistance to school districts and ESDs, and help them interpret their sample results.
- Look for opportunities to communicate needed updates to schools.

Lead Free Group A Water Systems

Directive
"…DOH shall work with stakeholder groups to develop…proposals with a goal of removing all lead service lines and lead components in Group A Public Water drinking systems within 15 years. DOH shall work with each Group A Public Water system to identify all lead service lines and lead components within two years."

Next Steps

- Conduct a survey of Group A public water systems to help identify lead service lines.
- Revise Drinking Water State Revolving Fund criteria to prioritize lead service line replacement.

Seeking Federal Assistance

Directive
"DOH shall work with the Department of Ecology and the Environmental Protection Agency to seek additional federal assistance on these issues, including but not limited to:

- Requesting additional funds to assist communities in expediting removal of lead in drinking water systems;
- Supporting revisions to the Federal Lead and Copper Rule;
- Considering regulatory requirements for testing child care settings; and
- Seeking funding for drinking water distribution line improvement."

Next Steps

- Work with EPA to seek federal assistance for removal of lead in drinking water systems.
- Create a matrix of funding opportunities and eligibility requirements.
- Support Commerce's 2017 application for the U.S. Department of Housing and Urban Development Lead Hazard Control Grant.
- Continue to support development of EPA's Lead and Copper Rule, Long-term Revisions.

I. Introduction

On May 2, 2016, Governor Inslee issued Directive 16-06 (the directive) in response to concerns about lead being found in drinking water in schools and homes across the state and nation. However, he also recognized that lead in drinking water is not the primary cause of lead poisoning for children. Therefore, in addition to asking for recommendations to reduce exposure through drinking water, he asked the Department of Health (DOH) to provide leadership to reduce children's exposure to lead and other environmental hazards where they live, learn, and play.

In order to respond to the Governor, DOH relied on the expertise of DOH staff, other state agencies, federal agencies, and stakeholders to build on the findings and recommendations of the Washington State *Lead Chemical Action Plan* and the State Board of Health's (SBOH) rules, chapter 246-366A WAC, Environmental Health and Safety Standards for Primary and Secondary Schools. Secretary John Wiesman convened an Executive Leadership Team that included representation from the Department of Ecology (Ecology), Department of Early Learning (DEL), Department of Commerce (Commerce), Office of Superintendent of Public Instruction (OSPI), Health Care Authority (HCA), Office of the Insurance Commissioner (OIC), SBOH, local health jurisdictions (LHJs), the Governor's Office, and DOH to guide the work.

DOH formed the following seven workgroups to address each of the seven areas of the directive:

- School Rule Review – Review chapter 246-366A WAC, Environmental Health and Safety Standards for Primary and Secondary Schools, to plan implementation with emphasis on lead reduction.
- Lead Rental Inspection and Registry Program – Determine the viability and potential policy changes associated with developing a Lead Rental Inspection and Registry Program. This program would require residential rental property owners to register and complete a lead inspection and demonstrate safety at each change of occupancy for properties built before 1978.
- Child Care Building Lead Evaluation – Assess the need and viability of policy changes to require licensed early learning settings built or remodeled before 1978 to complete an evaluation for sources of lead exposure, including drinking water testing.
- Child Blood Lead Registry, Inspections, and Remediation – Improve efficiency of the blood level monitoring system by transitioning to a fully electronic Child Blood Lead Registry reporting system and fully implementing public health system lead investigations and remediation work.
- Lead Screening and Case Management – Improve lead screening rates and case management for children with elevated blood lead levels and families for children at highest risk who are on Medicaid. Determine whether private payers provide for lead screening and case management services, and whether any further coverage policy change may be necessary.
- Lead Free Group A Water Systems – Prioritize removal of all lead service lines and other lead components in Group A public water systems. Identify all lead service lines and lead components within two years, and remove all lead service lines and lead components within 15 years.

- Federal Assistance for Group A Water Systems – Seek additional federal assistance by requesting additional funds to assist communities in expediting removal of lead in Group A public water systems, supporting revisions to EPA's Lead and Copper Rule, Long-term Revisions, considering regulatory requirements for drinking water testing in licensed early learning settings, and seeking funding for drinking water distribution system improvements.

For a complete list of workgroup members, see Appendix A.

II. Background

The unacceptable levels of lead in water in Flint, Michigan and resulting preventable cases of lead poisoning created a heightened awareness of the dangers of lead exposure through contaminated drinking water. In Washington, we have been concerned about lead exposure and ways to reduce lead hazards. In 2009, Ecology and DOH completed the *Lead Chemical Action Plan*. This report provides a comprehensive picture of the human and environmental risks associated with lead exposure, and makes science-based cost-effective recommendations for reducing that risk. These recommendations are based on research that shows no living organism requires lead to live or to function, and no organism has been found that is not harmed by lead. The negative health effects of lead on humans have been known for thousands of years. It affects the central and peripheral nervous systems, cardiovascular system, kidney, blood, gastrointestinal system, immune system, and reproductive system.

In 2009, SBOH adopted chapter 246-366A WAC, Environmental Health and Safety Standards for Primary and Secondary Schools (school rules). The school rules include health and safety standards for the whole school environment to better protect the overall health and safety of students ranging from playground safety to mold identification and removal. Some of the requirements are specific to lead in drinking water, while others take a more comprehensive approach so that schools are able to address lead as one of many potential environmental health hazards within a school.

Both the *Lead Chemical Action Plan* and school rules went through extensive stakeholder processes. DOH did not try to duplicate that work. Rather than repeat that process, DOH's recommendations in response to the directive are based on the recommendations made in the 2009 *Lead Chemical Action Plan* and the school rule requirements adopted by SBOH in the same year.

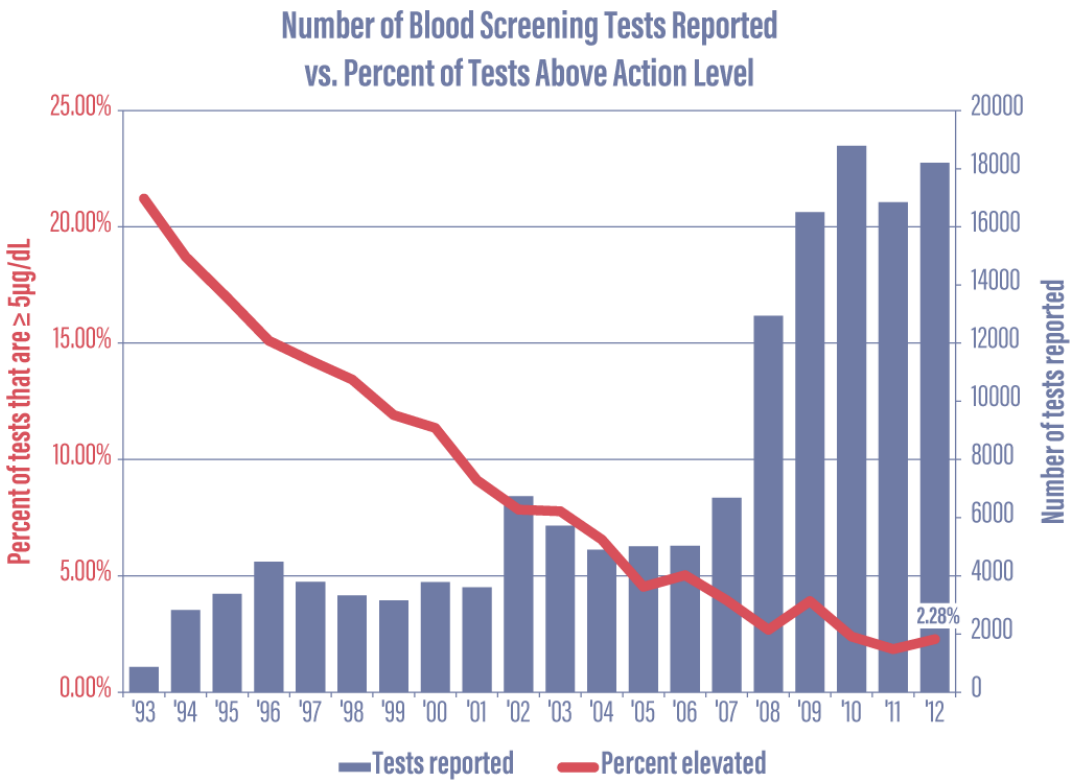
The directive focuses on protecting children. Lead exposure, like so many other toxic exposures in our environment, contributes to health disparities. Results from the National Health and Nutrition Examination Survey show that "as the numbers of lead-poisoned children have declined, the disparities of the disease have become more pronounced. While lead poisoning crosses socioeconomic, geographic, and racial boundaries, the burden of this disease falls disproportionately on low-income families and families of color living in older, poorly maintained housing. For example, in the U.S., African-American children are at two times greater risk than whites, according to the most recent data available on the disparities of the disease."[1]

[1] http://www.nchh.org/What-We-Do/Health-Hazards--Prevention--and-Solutions/Disparities-in-Risk.aspx

As stated in the *Lead Chemical Action Plan*, there is no known safe level of lead, and despite efforts to reduce people's exposure, it is still a hazard for people in Washington.

III. Current Status of Public Health Work on Lead

In Washington, we have made progress in reducing the use of lead in our homes. The use of leaded gasoline and lead-based paint in homes was phased out in the 1970s, and public water systems no longer install lead pipes. These improvements have led to dramatic declines in blood lead levels.



The chart above shows a decline in blood lead levels in children; however, the lead deposited in the environment over time remains in our homes and in soil. Children today are exposed to these sources of lead; which, even at relatively low levels of exposure, can permanently damage developing brains, resulting in lower test scores and increased behavioral problems. Sources include lead in:

- Paint.
- Soil.
- Consumer products.
- Water pipes and fixtures.
- Industrial and auto emissions.
- Contaminated dust from parent's work and hobbies.
- Dust on pets.
- Folk remedies.

DOH works with health care providers to test children at high risk for lead exposure. The results of all blood lead tests are reported to DOH. DOH alerts LHJs of elevated blood lead cases within their jurisdictions. The LHJ works with the child's health care provider to assure appropriate medical follow-up for the child. They also work with the family to identify and remove the sources of the lead exposure in the child's environment. In this way, the public health system protects these children from further effects of lead exposure, and protects other children from any exposure to these same lead sources.

Unfortunately, there are holes in every part of this system. Many of our children at highest risk for lead exposure have not received a blood lead test. DOH database used to track elevated blood lead tests and report them to LHJs is inadequate. Local health jurisdictions lack the resources to appropriately investigate elevated blood lead cases. And so, the public health system does not identify and remove sources of lead from the environment. This means children continue to be exposed to lead from sources that could have been removed.

The following workgroup recommendations and discussion of activities already underway are intended to address these known gaps in the system.

IV: Workgroup Reports

A: School Rule Review

School Rule Review Directive

"DOH, the State Board of Health (BOH) and the Office of Financial Management (OFM) shall review and, if necessary, update WAC 246-366A, known as the "School Rule," which promotes healthy and safe school environments. As part of this review, DOH in coordination with BOH shall prepare a decision package to implement the School Rule, with an emphasis, if necessary, on implementation of the portion of rules related to lead exposure."

School Rule Review Background

SBOH adopted chapter 246-366A WAC, Environmental Health and Safety Standards for Primary and Secondary Schools[2] (school rules or suspended rules), after a lengthy rule development process in 2009. These rules were intended to replace chapter 246-366 WAC, Primary and Secondary Schools[3] (current rules), that has been in place for more than 45 years.

In 2009, the legislature suspended implementation of chapter 246-366A WAC through a budget proviso. The proviso has appeared in each subsequent budget and DOH has not requested funding given the proviso.

The 2009 suspended rules include updated health and safety requirements for:

- School inspections.
- Construction.
- Operations and maintenance.

[2] http://apps.leg.wa.gov/wac/default.aspx?cite=246-366A
[3] http://app.leg.wa.gov/wac/default.aspx?cite=246-366

The 2009 suspended rules cover topics such as:

- Moisture control and mold prevention.
- Water quality monitoring.
- Playground, lab, and shop safety standards.

Concerns about school drinking water as a potential source of lead are not new for Washington. In early 2005, OSPI and DOH jointly implemented a grant program to partially reimburse Washington public elementary schools for the cost of initially testing their drinking water. Thirty percent of the 455 schools that participated had at least one fixture that exceeded the 20 parts per billion (ppb) action level set by EPA. Overall, approximately 7.2 percent of the samples collected exceeded the lead action level. While there is no state mandate for schools to test their water for lead, some school districts elected to continue testing their water fixtures after the 2005 funding for the testing ended. This year, public concern for lead in drinking water prompted a number of school districts to test or retest their drinking water.

The 2009 suspended rules require schools to:

- Regularly test water fixtures for lead if they are used for drinking water and cooking.
- Maintain records regarding the tests and take corrective action for fixtures that have test results exceeding 20 ppb of lead.
- Notify staff, parents, students, and the local health officer when elevated lead levels are found.

The water testing requirements reflect nationally recognized best practices developed by the EPA. This guidance, developed for school officials, is called *The 3 Ts for Reducing Lead in Drinking Water in Schools.*[4] The "3Ts" stand for training, testing, and telling.

- Training promotes an understanding of the health effects and sources of lead and how drinking water is regulated. It helps school officials establish a testing plan to identify and prioritize testing sites.
- Testing provides guidance on how to test water appropriately, and to pinpoint and respond to the potential causes of elevated lead levels.
- Telling identifies techniques for notifying parents, teachers, and employees about plans for lead testing and the subsequent results.

The directive requires SBOH and DOH to review and update the school rules if necessary. However, the budget proviso prohibits SBOH and DOH from amending or implementing the school rules. So, without additional direction from the legislature, the rules cannot be amended.

In response to the directive, SBOH and DOH convened a workgroup consisting of state agencies, and school and LHJ representatives. The workgroup reviewed each section for clarity and relevance, and specifically identified individual sections related to lead. They also reviewed costs associated with the school rules based on the 2009 cost-benefit analysis. In order to narrow the scope of the review and complete it within the limited timeframe, the workgroup agreed that it would not make recommendations to expand the 2009 suspended rules, nor would it rewrite the cost-benefit analysis.

[4] https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf

The review of the school rules is not a typical review because chapter 246-366A WAC is suspended. Therefore, there are no data about the chapter's effectiveness and performance. Rule reviews often include surveys of those who are implementing them to gauge clarity and to help identify potential technical problems. Neither SBOH nor DOH surveyed schools or LHJs due to the school rules suspension and the limited timeframe for conducting the review.

School Rule Review Findings

In conducting the rule review, the workgroup evaluated the school rules in several ways. The workgroup considered the relationship to lead hazard reduction, relevance of references and terms, clarity of requirements, potential gaps in regulatory oversight, and estimated cost of implementation. See Appendix B for detailed review findings.

The review identified a number of sections related to lead in addition to the drinking water testing section, a number of sections that need to be updated to current standards, and a number of sections that should be revised for clarity and to address gaps in regulatory oversight. The review also identified a number of sections that could be implemented without additional costs to schools. While the directive suggests that the SBOH should update the suspended rules, this cannot happen until the budget proviso prohibiting their implementation is lifted.

The workgroup acknowledged that only nine of 35 LHJs have school environmental health and safety programs. The programs vary and the types of services they provide depend on local funding. The first step toward understanding the effectiveness and cost of the school rules is to support LHJ environmental health and safety programs, including regular inspections with an emphasis on guidance and technical assistance.

There are significant fiscal constraints for schools and LHJs that limit their ability to comply with the 2009 suspended rules. Financial inequities between large and small districts create disparities among districts and their ability to respond to health and safety requirements and potential hazards. The funding for these activities, if not provided by the state, falls to school districts and is often made up through property tax levies. The amount of money that districts are able to raise through property tax levies varies based on the total value of all property in the district. While Local Effort Assistance established under chapter 28A.500 RCW provides some additional funds to property poor districts, it does not make up the difference and there is still a significant financial equity issue.

The public health system faces similar funding challenges. Funding and service levels vary greatly across the state, and system wide chronic underfunding has resulted in critical gaps in the basic infrastructure of the public health system. For example, some LHJs no longer have the capacity to respond to communicable disease outbreaks, such as measles. As federal and state funding to LHJs has diminished, LHJs have been forced to reduce programs, or rely on local funds, such as county general funds, licenses, permits, and fees for services.

School Rule Review Options Considered

In considering the options, the workgroup and DOH recognized that the school rules cannot be changed until the proviso is changed or eliminated. The options considered and DOH recommendations reflect a way to move forward without amending the suspended or current rules.

Water Testing
WAC 246-366A-130 requires school officials to conduct water sampling for plumbing fixtures that are regularly used for drinking or cooking, and to have those samples tested by an accredited drinking water laboratory. Some schools regularly test their water, but the majority of schools in Washington do not. One of the challenges for meeting the testing requirement is assuring that the sample is taken appropriately. Schools that test may rely on contractors or maintenance staff to conduct the testing. If staff are not trained to take samples correctly, test results may show false positive for lead. The workgroup suggested the state encourage schools to seek assistance from water purveyors for testing fixtures to assure fixtures are tested correctly the first time, instead of using staff who may not be trained or familiar with water testing protocols.

The workgroup also recommended the Legislature and Governor provide funding to test water fixtures used for drinking water or cooking in public and private schools, and funding for remediation, including fixture replacement.

Inspections
Under the current rules, all LHJs conduct site review and pre-occupancy inspections. The current rules also require LHJs to conduct periodic inspections of school facilities. Only nine LHJs have school environmental health and safety programs that do some form of regular inspection. These programs recoup their costs by charging fees to schools. The workgroup suggested that the state pay for inspections instead of requiring LHJs to charge fees to schools, similar to the arrangements made for fire marshal inspections.

One of the important aspects of the rule review was identification of activities that are relevant to identifying and addressing lead in the school environment. LHJ inspections help identify areas or activities that may increase potential exposure to lead and other health and safety hazards. LHJ staff can also provide important technical assistance in addressing those hazards. Site review, and pre-occupancy and regular environmental health and safety inspections assure facilities are built, operated, and maintained in a manner that provides a safe and healthy environment for children. In order to prevent exposure to other potential sources of lead, the workgroup strongly recommends funding be provided to LHJs so every community's public and private schools are regularly inspected under the current rules, chapter 246-366 WAC.

Shared Services
Activities like school inspections and site reviews would provide a good testing ground for shared services. Through sharing resources between two or more LHJs, on a regional basis, or through state and local partnerships, the public health system is able to maximize the resources available statewide.

K–12 Guide
The *Health and Safety Guide for K–12 Schools in Washington State* (K-12 guide) has not been updated since the legislature suspended implementation of the school rules in 2009. The workgroup acknowledged the need to update the K–12 guide to reflect changes in state and federal requirements and provide a framework for consistent inspection practices across the state. The workgroup recommended the Legislature and Governor direct DOH and OSPI to update this guidance document.

The proviso directs DOH to develop a cost estimate for implementing the suspended rules. Without data on the condition of schools throughout the state, a thorough cost estimate cannot be created. To begin understanding the beneficial effects and costs of implementing the

suspended rules, environmental health and safety programs must be consistently implemented according to the current rules, including regular inspections with an emphasis on guidance and technical assistance.

School Rule Review Recommendations

All children, regardless of the community they live in, should be able to attend schools that are built, maintained, and operated to assure a safe and healthy environment. DOH has concluded that until the suspended rules can be implemented, the largest gain in public health lies in the partnership between LHJs and schools. The best incremental step toward improving health and safety in schools is to implement the current rules with an additional water quality sampling requirement. DOH has created a decision package to request funding for the following without implementing the suspended rules:

- Test drinking water in all schools for lead as part of a statewide school environmental health and safety inspection program.
    - Conduct LHJ school inspections at least every three years based on existing chapter 246-366 WAC.
    - Test drinking water over a six-year period using EPA's *3Ts for Reducing Lead in Drinking Water in Schools*, giving highest priority to elementary schools without recent tests. The "3Ts" means training, testing, and telling.
    - Support OSPI funding request for lead remediation, including fixture replacement.
- Update the *Health and Safety Guide for K–12 Schools in Washington State.*
- Gather data over the next six years to evaluate and update chapter 246-366A WAC.

B: Rental Housing Inspection and Registry

Rental Housing Inspection and Registry Directive

"DOH shall determine the viability and potential policy changes associated with developing a Lead Rental Inspection and Registry Program, to require residential rental properties built before 1978 to register and complete a lead inspection and demonstrate safety at each change of occupancy."

Rental Housing Inspection and Registry Background

There are over 500,000 renter-occupied housing units in Washington State built before 1978.[5] Based on this research, DOH estimates that approximately 28 percent, or 146,859, of those units contain lead hazards. In 1996, EPA passed the Real Estate Disclosure Rule that requires landlords who own buildings built before 1978 to provide tenants with information about protecting themselves from lead exposure. A more thorough policy background is available in the *Lead Chemical Action Plan.*

Recommendations 4 and 5 from the *Lead Chemical Action Plan* are pertinent to the task assigned by the Governor.

> Recommendation 4 – Require remediation of lead hazards in rental housing if it is a confirmed source of an elevated blood lead level.
>
> Recommendation 5 – Require mandatory assessment and disclosure of lead hazards in pre-1960 rental housing at new tenancy.

[5] Jacobs, David E., et al., "*The prevalence of lead-based paint hazards in US housing,* "*Environmental Health Perspectives,* October 2002, 110(10), A599-A606

The *Lead Chemical Action Plan* recommended targeting pre-1960 housing because it would more accurately target risk. As illustrated in Table 1 below, the Childhood Lead Poisoning Prevention Program estimates that pre-1960 housing is less than half of the rental market and has 77 percent of the at-risk units.[6][7]

Table 1: Targeting Pre-1960 vs Pre-1979 Rental Housing

	Pre-1979	*Pre-1960*
Number of Units	1,480,334	693,664
Number of Renter Occupied	516,371	225,404
Percent with Lead Hazards	28%	55%
Estimate Number of Units at Risk	146,859	123,582

Currently the Residential Landlord-Tenant Act gives municipalities authority to create rental housing inspection programs. The City of Seattle has a rental housing inspection program that covers approximately 16 percent of all rental housing units in the state and 19 percent of pre-1979 units. Seattle's program includes lead hazard reduction measures such as requiring that peeling paint be remediated. The cities of Pasco, Tukwila, and Bellingham also have rental housing inspection programs. Cities have authority under the Residential Landlord-Tenant Act, chapter 59.18 RCW, to establish rental housing inspection programs.

Rental Housing Inspection and Registry Options Considered

DOH provided the workgroup information about lead poisoning, results of the literature review, and relevant recommendations from the *Lead Chemical Action Plan*. To create policy options, the workgroup reviewed local and state laws relating to lead in rental housing and associated peer-reviewed literature on their effectiveness.

After reviewing the literature and considering feedback from our stakeholders, DOH considered the following options.

Pre-1978 Rental Registry and Inspection Program

The first option considered was a statewide lead rental inspection and registry program as suggested in the Governor's directive. Initially this would require identification of all rental units in the state. This would also require lead inspections of pre-1978 rental housing units every three to five years. If the unit is lead safe, a city rental housing inspection agency or DOH would issue a certificate of occupancy. If the unit is not lead safe, the landlord would be required to hire a renovation, repair, and painting (RRP)-certified firm with RRP-certified workers to abate or remediate lead risks in the unit and pass clearance testing. DOH would establish clearance testing standards through rule making. Results of lead inspections and clearance tests would be stored in a statewide lead registry maintained by DOH. Given the number of rental units in the state, this would require a system that can manage and track the condition of several hundred thousand units and their owners. Changes would need to be made in the Residential Landlord-Tenant Act to require inspections and clearance testing and appoint DOH rule making authority to adopt health protective clearance standards.

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[6] U.S. Census American Community Survey 5-year estimates, Table B25034* & B25036

Jacobs, David E., et al., "*The prevalence of lead-based paint hazards in US housing,* "*Environmental Health Perspectives,* October 2002, 110(10), A599-A606

Pre-1960 Rental Unit Assessment and Remediation
DOH also considered a second option to remove lead from rental units before a child is exposed – primary prevention. Under this option, all landlords with units built prior to 1960 would be required to assess rental units for lead and remediate when hazards are found. The landlord would be required to keep assessment and remediation records and provide them to tenants and city rental housing inspection programs. This would require the Residential Landlord-Tenant Act be amended.

Under this option, DOH would build on existing statutory authority for cities to have rental housing inspection programs. DOH would work with cities and stakeholders to explore development of state-supported tools, training, and model ordinances. This would support cities that currently have rental housing inspection programs and increase participation among cities that do not.

Rental Housing Inspection and Registry Conclusion
The cost of developing and maintaining a registry, and providing technical assistance to the landlords of the estimated 500,000 rental units built before 1978 is indeterminate, but certainly in excess of $5 million a year. A system including a robust compliance component would be even more. This is not a viable option.

Based on data on rental housing from the U.S. Census,[8] DOH estimates there are about 225,000 pre-1960 rental homes. Based on research on lead hazards in homes,[9] DOH estimates that 55 percent of those, or 123,522 units, would have lead hazards. In Rochester, New York, the average cost of complying with their policies to reduce lead in rental housing was $1,700.[10] In Washington, this would be approximately $382 million in compliance costs for landlords. Many of the expenses are one-time expenses and compliance costs will likely go down over time.

Identifying and remediating pre-1960 rental housing is proven primary prevention that directly prevents lead poisoning in children. This option also reduces costs to landlords by limiting assessment and remediation to pre-1960 rental units. These units are significantly more likely to have lead paint hazards than rental units built between 1960 and 1978 as reflected in Table 1 above. DOH is working with the Commerce, landlords and other stakeholder groups to explore draft legislation requiring lead assessment as a requirement of the Residential Landlord-Tenant Act.

DOH also acknowledges the potential negative impacts of increasing costs to landlords providing low-income housing. In order to pay for remediation of known lead sources, landlords may need to increase rent to those who are least able to pay. To mediate these impacts, DOH has submitted a capital budget request for a remediation fund that would provide low interest loans and grants to landlords that provide low-income housing. (See section IV, F. Remediation, of this report.)

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[8] Jacobs, David E., et al., "*The prevalence of lead-based paint hazards in US housing,* "*Environmental Health Perspectives,* October 2002, 110(10), A599-A606
[9] Jacobs, David E., et al., "*The prevalence of lead-based paint hazards in US housing,* "*Environmental Health Perspectives,* October 2002, 110(10), A599-A606
[10] Korfmacher, KS., et al., "*Rochester's lead law: Evaluation of a local environmental health policy innovation," Environmental Health Perspectives*, February 2012, 120(2), p 309-15

Rental Housing Inspection and Registry Recommendations

DOH concluded creating a statewide rental registry and inspection program is not viable based on the indeterminate costs to the public health system. However, lead in older homes poses the greatest risk of exposure to children; therefore, DOH recommends the primary prevention approach of assessing pre-1960 rental units for lead hazards. Municipalities are positioned to adopt comprehensive rental inspection programs that address not only lead, but also other health risks found in homes. DOH recommends the Legislature:

- Amend the Residential Landlord-Tenant Act to require lead assessment of all rental units built before 1960 to determine if there are lead hazards present, and to require remediation if a hazard is identified.
- Direct DOH to work with municipalities and stakeholders to explore development of a state-supported training program for cities to increase participation in rental inspection programs.
- Create a remediation fund for landlords providing low-income housing.

C: Child Care Building Lead Evaluation

Child Care Building Lead Evaluation Directive

"The Department of Early Learning, in collaboration with DOH and OFM, shall assess the need for, and viability of, policy changes that would require child care providers located in buildings constructed in whole or in part before 1978 to complete an evaluation for sources of lead exposure including the testing of drinking water."

Child Care Building Lead Evaluation Background

Children under six years of age are of greatest concern for lead exposure. Children's developing bodies and brains are particularly sensitive to lead exposure. In addition to this sensitivity, the developmental behaviors of children under three years of age, like crawling and putting fingers and toys in their mouths, place them at higher risk of exposure than older children and adults.

Drinking water and water available for food preparation in licensed early learning settings may be the source of lead and other hazards for children. Currently federal and state regulations do not require city, county, or state authorities to routinely test water in various licensed early learning and preschool settings.

Washington has approximately 5,500 licensed early learning settings with capacity for approximately 160,000 children. Between 50 – 60 percent of children are in licensed early learning settings at some point in their lives and most of them spend more than six hours a day there. Children in licensed early learning settings could be exposed to lead from paint dust inside the facility, contaminated soil outside the home, or in drinking water. Lead paint hazards are primarily present in structures built prior to 1978. Licensed early learning settings built in the plumes of former metal smelters or on former orchard land could have contaminated soil. Drinking water is of particular concern for infants who are exclusively formula fed using powdered formula mixed with tap water.

The *Lead Chemical Action Plan* identifies that 60 percent of homes in Washington were built before 1978 and half of those were built prior to 1960. For purposes of this report, DOH assumes this percentage also applies to licensed early learning facilities. This would mean approximately 3,300 facilities were built prior to 1978 and 1,650 are older than 1960.

In considering the directive's request regarding evaluating licensed early learning facilities, it is important to understand the regulatory framework of licensed early learning facilities and the regulatory structure of lead remediation and renovation activities. Licensed early learning operators are licensed by DEL in three categories: Child Care Centers, Family Homes, and School Age Care. Lead-based paint remediation activities are regulated by Commerce under their renovation rules. Any activities in child-occupied facilities need to be done by certified contractors following Commerce's requirements.

Currently, licensed early learning operators of all facility categories are required to address lead hazards if they know about them. However, they are not required to evaluate their facilities to determine if there is a problem. This creates a disincentive to look for any problems because they fear the high cost of addressing any problems that might be found.

In considering the potential costs of requiring evaluation and then remediation if a hazard is found, this report relies on the estimate in the *Lead Chemical Action Plan* for the cost of assessment which is $750 for home and soil testing. Using estimated remediation costs from Commerce and several other states, the average cost for remediation ranges from $2,000 to $20,000.

The directive asked DOH to consider evaluation of licensed early learning facilities built prior to 1978 because that was when the lead in consumer paint was limited to 0.06 percent (600 parts per million). Buildings built after 1978 have a much lower risk of containing a lead hazard. Lead in plumbing fixtures, however, could be a problem in newer homes because lead-free fixtures were not required until 2014. DOH also consulted with Ecology on the results of their Yard Cleanup and Soil Safety programs. These programs work in the smelter plume areas and former orchards to assess and clean up both arsenic and lead.

The workgroup reviewed licensed early learning regulations specifically for lead in all 50 states and the District of Columbia. There is a wide array of requirements for lead testing and remediation. Twenty states do not identify any requirements in licensed early learning settings; however, most stated that the licensed early learning setting should be free of hazards. Twenty-seven states do not allow the use of lead paint. Connecticut, Nebraska, and New Hampshire have requirements for testing lead in drinking water. Only Mississippi requires soil to be tested for lead. Some states require lead-paint testing for buildings constructed before a certain date. Five out of eight states used 1978 as the threshold for lead paint testing.

Child Care Building Lead Evaluation Options Considered

The workgroup considered specific recommendations in the *Lead Chemical Action Plan* as a starting point:

Recommendation 6: Encourage assessment of lead hazards in homes, schools and child care facilities.

- Develop guidelines, standards, and protocols for lead hazard evaluation of child care facilities.

Lead in Drinking Water

The workgroup first considered the idea of testing drinking water in licensed early learning facilities. Due to the high concern for infants who are exclusively formula fed combined with the relatively low cost to test water, drinking water testing was the highest priority for adding to the DEL rules.

DOH recommends licensees have all drinking water fixtures tested for lead in accordance with *3 T's for Reducing Lead in Drinking Water in Child Care Facilities*.[11] If the test results are at or above the EPA action level of 0.020 mg/L, the licensee would immediately notify DEL, DOH, and the parents. The licensee would follow any directive from DEL or DOH to make the drinking water lead-safe.

Lead in Buildings
According to DOH data, dust containing lead from paint is the largest source of exposure for children with elevated blood lead levels. The current DEL rules require operators to address known lead hazards. In order to make sure that lead hazards are identified, the workgroup considered adding a requirement for a visual assessment of painted surfaces inside and outside the building. The state would provide training to licensors and providers on how to identify lead hazards in the form of peeling, chipping, flaking, or chalking paint as part of the regular inspection process.

Lead in Soil
The workgroup considered additional language be added to rules for soil testing. In considering whether to include a recommendation for soil assessment in the rules, the workgroup looked at the results of Ecology's area wide toxic cleanup program. As an example, in the Tacoma Smelter Plume Soil Safety Program, 944 licensed early learning facilities were assessed with 799 requiring sampling. Of those sampled, 89 required action to clean up. However, almost all the properties requiring cleanup exceeded the action level for arsenic and not lead.

The workgroup discussed an option of targeting certain licensed early learning facilities for soil testing based on age of the building and historical land use. Further consideration was also given because lead is pervasive in our soil from the historic use of lead in gasoline and chipping house paint. This means that general good practices to reduce lead exposure, like washing hands after playing outside and taking shoes off, should always be used.

Remediation
DOH also acknowledges the potential negative impacts of increasing costs to early learning facilities providing services to low-income families. To mediate these impacts, DOH has submitted a capital budget request for a remediation fund that would provide low interest loans and grants to early learning facilities that provide services to low-income families. (See section IV, F. Remediation, of this report.)

Child Care Building Lead Evaluation Recommendations
Washington should institute a licensed early learning setting water quality testing and lead hazard program that includes appropriate sampling and testing for lead contamination in all licensed early learning settings in the state. This can be accomplished through amendments to DEL's rules. Findings from such testing would be made available to all parents of children enrolled in the facilities where testing is performed. If lead is discovered through this testing, immediate remediation would be required.

- DEL should amend their licensing rules to require:
    - Testing drinking water for lead in all licensed early learning facilities using EPA's 3Ts guidance for child care facilities consistent with schools.
    - Evaluating licensed early learning facilities for lead paint hazards and soil hazards based on age of facility and historical land use; and require remediation

[11] http://www.harwichwater.com/assets/Documents/quality/LeadinSchools.pdf

when lead hazards are confirmed by a certified renovation, repair, and painting lead assessor.

- DOH should partner with Commerce to provide training to DEL licensors and licensed early learning providers on how to identify lead hazards and provide best practices for avoiding lead exposure.
- The Legislature should create a remediation fund for early learning facilities providing services to low-income families.

D: Child Blood Lead Registry

Child Blood Lead Registry Directive

"DOH shall work with stakeholders to improve the efficiency of the blood level monitoring system and ensure full implementation of local public health outreach activities to families having children with blood lead levels meeting action levels. DOH shall develop a decision package and explore financing means, as part of a larger foundational public health system improvement package, for consideration next biennium. This should include:

- Transitioning the Child Blood Lead Registry to a fully electronic reporting system, which would be more efficient and effective for lab and clinic reporting; and
- Assessing the funding needs for local public health programs to fully implement lead investigations and remediation work for children who have blood level test results requiring action."

Child Blood Lead Registry Background

Blood lead is a notifiable condition under chapter 246-101 WAC. State law requires laboratories performing blood lead testing to report all blood lead test results to DOH. Health care providers using a point-of-care blood lead testing system (LeadCare®II) are also required to report all results. All elevated blood lead levels must be reported to DOH within two business days. Elevated blood lead levels are defined in chapter 246-101 WAC as 5 µg/dL (micrograms per deciliter) or higher in children under age 15, and 10 µg/dL or higher in adults. All non-elevated test results must be reported within one month.

DOH receives over 25,000 individual test results a year. In 2015, over 70 percent of the test results were faxed to DOH. Receiving results in this manner requires a data compiler to manually type the information into an electronic database. This is resource intensive, requiring at least one full-time data compiler and may result in human error. In addition, many of the test reports do not have all the required information. In 2015, over 40 percent of the test results did not contain the information needed for a complete surveillance system. Currently, DOH uses an antiquated data system. The system relies on multiple methods to collect and store surveillance data, putting data at significant risk for loss or corruption.

All test results are converted to electronic format either manually or using electronic lab reporting. However, without mandatory electronic reporting and a central registry, data is stored in multiple formats. The electronic storage method depends on how the data is received and whether the data is provided to LHJs or the Department of Labor and Industries for investigation.

DOH does not have the resources to create a registry. A registry is necessary to consolidate electronic records, making them more functional. A registry allows DOH to search data more precisely, identify individual case information, efficiently provide case management services,

identify state and county trends over time, and provide data summary reports to federal, state, and local agencies.

Child Blood Lead Registry Options Considered

The first option considered is for the SBOH to revise the notifiable conditions rules to require electronic reporting of blood lead test results. Currently, the SBOH rules allow non-electronic reporting. Electronic reporting has been available for 10 years. However, even with the incentives offered by the Centers for Medicare and Medicaid Services Meaningful Use Stages 1 and 2, labs have been slow to convert to electronic lab reporting. A mandate will help DOH meet the Governor's "fully electronic" directive within three to five years.

An option considered to replace DOH's antiquated data system is to use the CDC's Healthy Homes and Lead Poisoning Surveillance System. This system has the advantage of having all the functionality required by the CDC Childhood Lead Poisoning Prevention grant, including allowing tracking homes with lead hazards. DOH has attempted to use this system for several years, but has been unsuccessful in converting our data and fully implementing this system. After several years of working on this, DOH has decided that further investments in this system are unwise.

Several registry options were considered using the Washington Disease Reporting System (WDRS). The first requires no modifications:

- A DOH initiative has been underway since 2014 to migrate all notifiable conditions to WDRS, a new disease reporting, surveillance, and case management system. When complete, the system will link electronically to laboratory reports and ultimately to other vital blood lead case information. This will allow labs to report lead testing data directly into WDRS using the Electronic Lab Reporting or other electronic reporting methods. The WDRS will also allow DOH and LHJs to initiate, monitor, and communicate about blood lead cases more efficiently.
- This system can serve as the Childhood Blood Lead Registry, but does not allow for tracking homes with lead hazards and would require burdensome data entry for health care providers who provide point-of-care lead testing.

WDRS with modifications to track houses and link with the Health Information Exchange:

- The WDRS system work described above provides a framework for a fully electronic system, but has a few deficiencies that must be remedied before it can function as a fully electronic lead registry. These steps are consistent with recommendation 3 of the *Lead Chemical Action Plan* to "improve the Childhood Blood Lead Registry":
    - **Tracking Property with Lead Risks:** WDRS will help DOH identify and provide services to children with elevated blood lead levels. There is a "property tracking" module available for WDRS suitable for entering and maintaining information about homes that are the source of lead exposure, including geographic location. This module can link the lead hazard information to the lead exposure case information. This module has been used by several states for lead exposure tracking, and could be incorporated into the WDRS system in late 2017. If included in WDRS, the module will allow DOH to track remediation of lead properties and prevent other children from being poisoned in these homes. Adding this module will essentially provide WDRS the same functionality as the CDC's Healthy Homes and Lead Poisoning Surveillance System, while consolidating all DOH notifiable conditions in a single registry.

- **Connections to Health Information Exchange:** Lead testing is no longer done solely at commercial laboratories. Many health care providers now offer point-of-care screening for lead. However, the test results are sent to DOH using non-standard methods. With the national guidelines for Meaningful Use Stage 3, providers can report these test results to us through the Health Information Exchange. This would improve the completeness and timeliness of lead reports and reduce the reporting burden on health care providers.

Child Blood Lead Registry Recommendations

A fully electronic reporting system is critical to the goal of efficient identification and case management of children with elevated blood lead levels. Washington should provide funding and follow through with policy changes to ensure this critical component of the system is created.

- Request the SBOH to amend the notifiable conditions rules to require labs to report all notifiable conditions electronically, including blood lead tests.
- Build on WDRS, including the property tracking module, to create a fully electronic lead database capable of receiving Meaningful Use Stage 3 electronic blood lead case reporting via the Health Information Exchange.

E: Lead Screening, Investigation, and Case Management

Lead Screening, Investigation, and Case Management Directive

"DOH shall work with stakeholders to …. ensure full implementation of local public health outreach activities to families having children with blood lead levels meeting action levels. DOH shall develop a decision package and explore financing means, as part of a larger foundational public health system improvement package, for consideration next biennium. This should include:

- Assessing the funding needs for local public health programs to fully implement lead investigations and remediation work for children who have blood level test results requiring action.
- DOH shall work with the Health Care Authority to … provide case management services to children with elevated blood lead levels and their families. DOH shall also work with the Office of the Insurance Commissioner to determine whether private payers provide for lead screening and case management services and whether any further coverage policy change may be necessary."

Lead Screening, Investigation, and Case Management Background

Screening rates in Washington are well below the national average. In 2015, 10 percent of U.S. children under 72 months of age were screened. In 2012, the last year DOH has complete data, only 3.3 percent of children under 72 months of age were screened. Of the children screened, 2.3 percent had results greater than or equal to 5 µg/dL. This is approximately 400 children with elevated blood lead levels.

Currently, LHJs respond to elevated blood lead cases based on their county's capacity. According to a DOH phone survey conducted in 2014 with LHJs, 12 percent reported they did not have the capacity to respond to any elevated blood lead level cases. Only 44 percent of LHJs had the capacity to respond to elevated blood lead level cases using an action level of

greater than or equal to 5 µg/dL. The remaining 44 percent only responded to cases when the elevated blood lead level was greater than or equal to 10 µg/dL.

In addition, Medicaid reimbursement is not available in Washington for case management. Several other states (Texas, Ohio, and Georgia) have case management programs that include children eligible for Medicaid. These state-level programs show appropriate case management can achieve measurable results. These results include decreasing lead exposure, decreasing blood lead levels, and improving the health of children and their families. Case management can prevent lead poisoning among younger siblings or friends of a lead poisoned child, as well as future residents of homes where lead remediation has occurred.

HCA recently sent all Medicaid providers direction to screen children aged 12 and 24 months for lead. In addition, DOH worked with an expert panel to develop lead screening guidelines in 2015.[12] These screening guidelines enhance the efforts of HCA to screen all children at greatest risk of lead poisoning based on the following factors:

- Age of housing.
- Poverty level of 130 percent Federal Poverty Level.
- Sibling or frequent playmate with elevated blood lead level.
- Recent immigrant, refugee, foreign adoptee, or child in foster care.
- Caregiver who works with or has hobbies using lead, such as painting, mining, and fishing.
- Use of traditional, folk, or ethnic remedies or cosmetics.

In addition to these risk factors, providers should consider testing children according to their clinical judgment.

The OIC also ensures blood lead screening for children is included as part of the preventive services guaranteed under the Affordable Care Act. Treatment for children with elevated blood lead levels is also guaranteed under the Affordable Care Act. However, case management services to include investigation of the source of lead exposure and lead remediation is not covered under the terms of any insurance plans in Washington.

These current activities are consistent with part of recommendation 2 of the *Lead Chemical Action Plan.*

b. DOH should identify high-risk populations to prioritize screening efforts.

d. Medicaid-eligible children should be screened for lead exposure risk factors at 12 and 24 months.

Lead Screening, Investigation, and Case Management Options Considered

Screening

DOH coordinated among programs within the public health system as well as with sister agencies when considering options to increase lead screening among children. To build on current activities and implement more of the *Lead Chemical Action Plan* recommendations, DOH considered expanding programs to:

[12] *A Targeted Approach to Blood Lead Screening in Children, Washington State: 2015 Expert Panel Recommendations,* Washington State Department of Health, Publication No. DOH 334-383, May 2016 (rev)

- Communicate with providers practicing in high-risk areas and encourage them to use DOH's clinical screening guidelines to identify the highest risk children to test for lead exposure.
- Create a pilot project with WIC clinics in high-risk areas to test children at 12 and 24 months of age for lead using point-of-care blood lead testing equipment.
- Provide information to parents on the importance of lead screening and resources available through CHILD Profile mailings.[13]

In addition, DOH explored partnering with the Pediatric Environmental Health Specialty Unit at the University of Washington to train medical and nursing students on the importance of lead screening. Pediatric Environmental Health Specialty Unit would also conduct trainings on lead screening at medical conferences, grand rounds, and practice group in-services. Trainings components would include interpretation of screening blood lead levels, risk translation, and patient and family counseling.

DOH expects the Washington screening rate to increase over time as a result of the outreach efforts to parents and providers described in this report. DOH hopes to increase the Washington screening rate of 3.3 percent to the national average of 10 percent by 2020. If the current elevated rate remains the same (2.3 percent), over 1,200 children with elevated blood lead will be identified per year starting in 2020.[14]

Case Management

Washington's current public health system is not equipped to provide appropriate follow-up case management to the number of children expected to be identified with elevated blood lead levels by 2020. A consistent statewide program is necessary to ensure all children at risk of exposure are screened and receive necessary case management services.

DOH consulted with HCA to explore the possibility of providing Medicaid funding for case management activities for children eligible for Medicaid. Currently, about one third of the children with elevated blood lead levels are on Medicaid. HCA consulted with Medicaid representatives from the states of Texas, Ohio, and Georgia about their lead screening case management coverage policies and suggested amending an existing Administrative Contract with DOH. Through this contract, DOH would receive the federal matching funds for case management activities. DOH may subcontract with LHJs as needed to ensure a shared service model for case management is efficient.

All Washington children with a confirmed blood lead level greater than or equal to 5 µg/dL should receive standard public health services that respond appropriately to their lead exposure.

Procedurally, when DOH receives a confirmed elevated blood lead test of a child less than 15 years of age, the case is assigned to the LHJ where the child resides. DOH would only assign cases that are confirmed greater than or equal to 5 µg/dL. If the result received is a positive capillary test, DOH would contact the health care provider to conduct a confirmatory test.

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[13] http://www.doh.wa.gov/YouandYourFamily/Immunization/ChildProfileHealthPromotion

[14] Projection based on the Office of Financial Management population projection for 2020 for the number of children under 6 years of age: 552,774.

The LHJ would follow the case management protocol based on range of blood lead level. (See Appendix E for a detailed description of the case management protocol.) For Medicaid reimbursement, an in-person interview by a case manager must take place. Based on the blood lead level, home environmental investigations may be conducted by state or local public health staff with an X-Ray Fluorescence instrument. DOH would purchase an X-Ray Fluorescence and have staff trained to conduct home environmental investigations in LHJs that request assistance. Complete case management information would be reported to DOH through the WDRS Lead Module. The role of the case manager is to collaborate with clients by assessing, facilitating, planning, and serving as an advocate for their health needs on an individual basis.

Lead Screening, Investigation, and Case Management Recommendations

All Washington children with a confirmed blood lead level greater than or equal to 5 µg/dL should receive standard public health services that respond appropriately to their lead exposure. The following recommendations are intended to build the capacity of the public health system to provide these foundational services. DOH has created a decision package requesting funding for the following:

- Build public health system capacity to identify and respond to children with elevated blood lead levels by:
  - Increasing screening of children on Medicaid and other children at high risk of lead exposure through outreach to doctors and parents.
  - Creating a consistent statewide system for case management and follow-up of children with elevated blood lead levels.
- Support HCA in working with Centers for Medicare and Medicaid Services to allow Medicaid funding of case management and secure state Medicaid match funding.

F: Remediation

Remediation Directive

"…DOH shall develop a decision package and explore financing means, as part of a larger foundational public health system improvement package, for consideration next biennium. This should include:

- Assessing the funding needs for local public health program to fully implement lead investigations and remediation work for children who have blood level test results requiring action."

Remediation Options Considered

There was no specific workgroup formed for remediation. Rather, the topic of remediation was discussed and considered a top priority for each of the workgroups. Lead-based paint is the most frequent cause of childhood lead poisoning. Properly remediating lead paint hazards is the most important action we can take to prevent lead poisoning in children.

This recommendation is intended to provide some assistance in remediating the areas where there are known lead paint hazards: homes, licensed early learning facilities, rental properties, and private schools.

CDC's "HI-5" Initiative (Health Impact in 5 Years) highlights 14 community-wide interventions that have shown positive health impacts, results within five years, and cost effectiveness.[15]

[15] http://www.cdc.gov/policy/hst/hi5/homeimprovement/index.html

These interventions include home improvement loans and grants for low-income families to repair their homes, make improvements, and remove health and safety hazards, including lead.

Even with various federal grant programs to assist homeowners with lead remediation, there is a large gap between the need and the availability of help. With increased screening, DOH anticipates identifying a much greater number of children with elevated blood lead levels resulting in an increased need for remediation. Through outreach, DOH and DEL hope to encourage licensed early learning operators and landlords to remediate their facilities to prevent lead poisoning in children.

In response to the directive, OSPI is requesting increased grant funding for remediating drinking water fixtures in public schools. Group A public water systems can apply for Drinking Water State Revolving Funds (DWSRF) to remove lead service lines and lead components.

The return on investment for lead remediation is well documented in peer-reviewed literature. The U.S. Department of Health and Human Services calculated in 1991 that the cost benefit ratio of lead hazard remediation was approximately 1:2. Since 1991 additional research has emerged about lead's impacts on IQ, learning, attention deficit hyperactivity disorder (ADHD), and crime. Considering this new research, the benefits of lead paint abatement had a cost benefit ratio between $1:17 and $1:221.[16] A Washington-specific analysis from the *Lead Chemical Action Plan* found that IQ loss alone accounts for $675 million to $1 billion in unrealized income each year.

Remediation Recommendation

Lead-based paint is the most frequent cause of childhood lead poisoning and we know that structures built before 1978 can contain lead. The most effective way to prevent lead poisoning is to remediate the places where we know lead exists. By proactively removing lead before a child is identified with an elevated blood lead level, we can prevent the harm caused by exposure.

- Create a pilot program, Lead Remediation Revolving Fund, to provide grants and no- or low-interest loans to landlords, licensed early learning operators, parents (homeowners), and private schools to remediate lead hazards.

V. Activities Underway

A: Education and Technical Assistance for Schools

Directive

"DOH will partner with local officials, utilities, the Office of Superintendent of Public Instruction, schools, and other agencies as necessary, and it will hold workshops for schools to raise water quality awareness and advise schools how to correctly test and remediate any identified drinking water issues."

[16] Gould, E., "*Childhood lead poisoning: Conservative estimates of the social and economic benefits of lead hazard control,"* Environmental Health Perspectives, July 2009, 117(7), p 1162 – 1167.

Background

The heightened concerns for lead in drinking water incentivized testing for lead in schools. Because the 2009 SBOH school rules (chapter 246-366A WAC) were suspended, there were no specific requirements for water testing in schools. The lack of guidance and technical assistance resulted in some unreliable test results. In response, DOH created a technical assistance program and:

- Provided training through a statewide webinar to all ESDs, school administrators, and school facilities managers.
- Worked with various school districts, helping them develop messages to parents and the media when they encountered high levels of lead in the school's water.
- Attended public meetings in communities to help share messages on lead.
- Continues to work with OSPI to provide messages to schools.
- Provided resources to school districts statewide via direct mail and DOH public website.
- Continues to collect sampling data from schools districts who submit this information voluntarily.
- Provided technical assistance to school districts and ESDs, and helped them interpret their sample results.

Next Steps

To ensure schools conducting water testing have adequate information, DOH will look for opportunities to communicate needed updates to schools.

B: Lead Free Group A Public Water Systems

Directive

"…DOH shall work with stakeholder groups to develop…proposals with a goal of removing all lead service lines and lead components in Group A Public Water drinking systems within 15 years. DOH shall work with each Group A Public Water system to identify all lead service lines and lead components within two years."

Background

Nationally, water system infrastructure renewal and rehabilitation requirements are expected to exceed $1 trillion over the next generation. Washington is no exception in facing a significant infrastructure funding gap.

Some Group A public water systems in Washington have lead components. While the challenge is greater for areas of the country that were developed earlier, Washington is still faced with identifying and removing lead service lines and components. The American Water Works Association (AWWA) sponsored a national water utility survey of lead service lines (without reference to other lead components) in 2011 and again in 2013. Based on a very limited number of responses, the subsequent report summarized in the AWWA Journal (April 2016) estimates 27,000 lead service lines are still in service in Washington.

Historically, replacement of lead service lines and components did not meet Washington eligibility criteria to receive a DWSRF loan. Group A public water systems had no direction to specifically replace this aged infrastructure. Water systems replaced these components as part of other water system improvement projects.

Next Steps

The information provided by the AWWA surveys is not sufficient to identify service lines and lead components as requested by the Governor. Therefore, DOH proposes to survey all Group A public water systems to help identify lead lines and components. DOH will prioritize processing responses from the 250 Group A public water systems serving 1,000 or more connections. These systems serve 90 percent of all Group A public water system customers. Proposed implementation:

- Conduct a survey by the end of 2016.
- In early 2017, tabulate and sort responses and prepare a final report.
- Throughout 2017, help Group A public water systems to identify lead service lines and other lead components they believe may exist, but have not yet confirmed.

To prioritize replacement of lead service lines and components within the next 15 years, DOH has modified the eligibility criteria for DWSRF construction loans starting August 2016. Systems that can document the presence of lead service lines and components will be placed in Risk Category 2 for DWSRF loan consideration.

State and local decision-makers, water utility representatives, and community groups should collaborate to garner support for water system re-investment (through local service rates and state funding mechanisms), while balancing potential impacts on low-income populations. Stakeholders should work to define new and innovative water service pricing and funding approaches to advance water affordability and universal access to service.

C: Seeking Federal Assistance

Directive

"DOH shall work with the Department of Ecology and the Environmental Protection Agency to seek additional federal assistance on these issues, including but not limited to:

- Requesting additional funds to assist communities in expediting removal of lead in drinking water systems;
- Supporting revisions to the Federal Lead and Copper Rule;
- Considering regulatory requirements for testing child care settings; and
- Seeking funding for drinking water distribution line improvement."

Background

There are numerous federal agencies and funding sources addressing lead. DOH worked with the Ecology, Commerce, Public Works Board, EPA, and U.S. Department of Housing and Urban Development (HUD) to identify and categorize the funding opportunities that might be available to assist Washington.

Based on collaboration with the above noted agencies, the following potential federal funding opportunities have been identified:

- EPA
  - DWSRF
    - Can use DWSRF set-aside money for special studies to identify the location of lead lines and components.
    - DWSRF construction loans can be used for removal and replacement of lead service lines and components on private property as well as in the distribution system.

        - Two draft bills pending in Congress that would provide additional funding for Lead Service Line Replacement projects. Status and fate of these draft bills is unclear.
        - There is the possibility of increased funding for the DWSRF capitalization grant for federal fiscal year 2017.
    - Water Infrastructure Finance and Innovation Act (WIFIA)
        - Can be used for lead service line and component replacements on private property as well as in the distribution system.
        - EPA directs low interest financing for construction projects that are nationally or regionally significant costing no less than $20 million dollars. Modeled after Transportation Infrastructure Finance and Innovation Act of 1998 that has provided over $16 billion in assistance to projects costing nearly $60 billion and attempts to fill the gap left open by the DWSRF programs by providing subsidized financing for large projects. The $20 million dollar threshold can be met by bundling multiple lead replacement projects statewide.
        - Group of projects can be bundled into one WIFIA loan.
        - Interest rate will be higher than the DWSRF and based on long-term U.S. Treasury bonds.
        - Direct federal loan and federal procurement requirements would apply.
        - WIFIA will be administered by EPA Headquarters, not Region 10.
- United States Department of Agriculture, Rural Development
    - Water-Wastewater Funds
        - Cannot be used for lead service line replacement on private property. Could be used for replacement of lead components within the distribution system.
        - Limited to communities with a population of 10,000 or fewer.
        - Last year received $19 million in loans and over $5 million in grants for water/wastewater projects. Most likely a similar amount will be available for Washington next year.
        - Have the ability to go back to National Office if more money is needed to fulfill additional project applications.
        - Interest rates are between 1.625 - 2.75 percent. This percentage changes quarterly.
    - Community Facilities Direct Loan & Grant Program
        - Identified as potential funding opportunity to address the directive; however, complex program requirements limits funding application.
        - Community Facilities Program funds cities and towns, community based nonprofits, and federally recognized tribal lands with no more than 20,000 residents according to the latest U.S. Census data are eligible for this program. Can fund improvements to daycare facilities, public hospitals, clinics, etc.
    - Single Family 504 Program Housing Repair Loans and Grants
        - Can be used for lead service line replacement on private property.
        - Loans may be used to repair, improve, or modernize homes or remove health and safety hazards.
        - Grants must be used to remove health and safety hazards.
        - Maximum loan is $20,000.
        - Maximum grant is $7,500.
        - Loans and grants can be combined for up to $27,500 in assistance.
        - These grants can pair up with others on a case-by-case basis.
    - Rural Community Development Initiative

        - National program for an entity that gives funding for training others; for example, how to implement corrosion control.
        - Fund an intermediary to do educational training or testing in the area of lead – up to $250,000 per year.
        - Competes on a national basis. Requires a 50/50 match.
- Commerce
    - Community Development Block Grant, General Purpose Grants
        - Can be used for lead service line replacement on private property and lead components in the distribution system.
        - Projects must benefit low to moderate income entities.
        - Limited to cities and towns serving fewer than 50,000 people and counties with fewer than 200,000 people.
    - HUD, Lead Hazard Control Grant
        - Commerce did not receive the 2016 grant for Washington to identify and control lead-based paint hazards in privately owned housing for low-income or very-low-income families.
- Ecology
    - Current rules allow for fund transfers between Clean Water State Revolving Fund and DWSRF on an as needed basis.

Next Steps

In addition to the federal funding sources identified above, the following may also be valuable in the advancement of the directive:

- Work with EPA to seek federal assistance for removal of lead in drinking water systems.
- Create a matrix of funding opportunities and eligibility requirements.
- Support Commerce's 2017 application for the HUD Lead Hazard Control Grant.
- Continue to support development of EPA's Lead and Copper Rule, Long-term Revisions.

VI. Additional Activities

Department of Labor and Industries Rule Revision

In addition to DOH's work under the directive, the Department of Labor and Industries (L&I) filed a Preproposal Statement of Inquiry for rule making on April 19, 2016. The purpose of the rule making is "to update existing lead standards in both general industry and construction in light of increasing evidence of the hazards associated with occupational lead exposure. …possible areas of focus could include such things as changing Permissible Exposure Levels based on scientific data, updating "housekeeping" standards including Personal Protective Equipment and ventilation requirements for employers operating in areas where there is increased lead exposure, and updating reporting requirements for employers." While L&I is not named in the directive, their work to improve occupational safety standards is consistent with recommendations 9 and 11 of the *Lead Chemical Action Plan*:

- Update education and outreach materials and continue to provide technical assistance.
    - L&I should continue to develop and provide up-to-date information and materials for health care providers, business owners, and workers about the hazards of lead to adults and ways to reduce exposure.
    - L&I should encourage more businesses to utilize DOHS consultations.
- L&I should harmonize and update occupational lead regulations.

United States Department of Housing and Urban Development

DOH submitted a letter of support to HUD proposed rule changes entitled "Requirements for Notification, Evaluation and Reduction of Lead-Based Paint Hazards in Federally Owned Residential Property and Housing Receiving Federal Assistance: Response to Elevated Blood Lead Levels." This proposed rule lowers the threshold for environmental assessment and intervention from 20 µg/dL by adopting the CDC's reference value of 5.0 µg/d. The proposed rule aligns HUD with current science regarding the damaging effects of low-level lead exposure to children. The change will reduce lead exposure and enhance the response to cases of elevated blood lead levels in children.

VII. Potential Funding Mechanism

One of the things discussed during the *Lead Chemical Action Plan* stakeholder process was potential funding for implementing recommendations. New Jersey passed legislation to divert a portion of sales tax collected on paint products to the Lead Hazard Assistance Program. In Washington, the discussion focused on a $0.25 per gallon sales tax. In 2009, there was an estimated 16 million gallons of paint sales per year which would generate $4 million of revenue for lead exposure prevention.

VIII. Conclusion

There is no known safe level of lead, and despite several national efforts in the past century to reduce people's exposure, it is still a hazard for people and the environment in Washington. Children are the largest and most vulnerable group affected by lead. As such, these recommendations focus on protecting children from lead to prevent exposure and respond when children with elevated blood lead levels are found. DOH identified two priorities for reducing lead hazards:

- **Primary Prevention – Remediate known sources to prevent future exposures:**
  - **Drinking water infrastructure and fixtures with lead.** Work with Group A public water systems (public water systems with 15 or more service connections) to identify and eliminate lead components. Require testing of drinking water in schools and licensed early learning settings and address fixtures with elevated lead levels.
  - **Lead paint hazards in rental housing, licensed early learning settings, private homes, and schools.** Implement local inspection programs for all schools and increase outreach to licensed early learning operators and landlords regarding potential hazards. Seek funding assistance for remediation.
- **Secondary Prevention – Identify children with elevated blood lead levels and remediate the specific source of exposure:** Improve lead screening rates among children at the highest risk and provide case management for those with elevated blood lead levels.

The Governor's Directive has given public health an opportunity to explore the shared services model for delivering foundational public health services statewide. Through sharing resources between two or more LHJs, on a regional basis, or through state and local partnerships, the public health system is able to maximize the resources available statewide. The work to prevent children's exposure to lead is foundational and needs to be consistently implemented across the state. The shared services model can help assure that capacity exists everywhere in Washington.

The Governor's Directive provided an opportunity to review the good work and many recommendations that have been made over the past 10 years on how to reduce children's lead exposure. The recommendations in this report represent a starting place from which to begin making progress in removing lead from the places children live, learn, and play. DOH has submitted decision packages for consideration by the Governor to implement the recommendations of this report.

IX. Appendices

Appendix A: Workgroup Participants

School Rules Workgroup

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Appendix B: School Rule Review Findings

In conducting the rule review, the workgroup evaluated the school rules in several ways. The workgroup considered the relationship to lead hazard reduction, relevance of references and terms, clarity of requirements, potential gaps in regulatory oversight, and cost of implementation.

Relationship to Lead Hazard Reduction
The workgroup determined 10 individual rules are related to lead. They are:

WAC 246-366A-010, Definitions This rule defines terms used within the chapter, including terms such as “very low lead plumbing fixture” and “water cooler” and terms related to drinking water testing including “first draw sample” and “flush sample.”

WAC 246-366A-015, Guidance This rule identifies the *Health and Safety Guide for K–12 Schools in Washington State* (K–12 guide) as the principal source of guidance for schools and local health jurisdictions; it has not been updated since the rule was adopted. This particular guidance includes references to plumbing and drinking water requirements in other WACs, RCWs and the universal plumbing code.

WAC 246-366A-020, Responsibilities - General This rule requires schools to maintain conditions within the school that will not endanger health and safety. It requires school officials to identify, assess, mitigate, or correct health and safety hazards and notify staff, parents, and students when doing so. Local health officials must conduct annual inspections. DOH must report to the SBOH regarding local rule implementation, technical assistance, etc. This section would help schools identify areas or activities that may increase potential exposure to lead and other health and safety hazards.

WAC 246-366A-030, Site assessment, review and approval This rule requires a Phase 1 Environmental Site Assessment for developing new school facilities on undeveloped properties or properties or facilities that were previously used for other purposes. This section would enable schools and local health to identify potential sources of lead on the building site before construction begins.

WAC 246-366A-040, Construction project review This rule adds greater specificity to the local health officer construction review role. Construction review is limited to projects greater than 5,000 feet, or 10 percent of facility replacement value, unless the alterations are for shops/labs. Through construction review a local health officer can identify potential hazards such as lead, and identify ways to reduce exposure.

WAC 246-366A-065, General operation and maintenance requirements This rule requires safe use and storage of hazardous materials. The section also requires schools to use only products that comply with American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 to coat, line, seal, or patch drinking water contact surfaces, if the interior of water piping or plumbing fixtures is coated or lined.

WAC 246-366A-130, Water quality monitoring–Lead This rule requires school officials to take water samples from drinking water fixtures and fixtures used for cooking every five years. If a school finds lead, it must prevent use of the fixture, retest the fixture, and notify staff, parents, and students of test results that exceed established standards. The section rolls out

implementation cycle that prioritizes testing of elementary school and schools with preschools first, followed by middle schools, then high schools.

WAC 246-366A-160, Laboratories and shops–Construction requirements This rule requires chemical labs and shops to have eyewash fountains and showers, emergency shut-offs for gas and electricity, and exhaust ventilation for hazardous material storerooms in labs and shops where activities may produce air contaminants of public health importance. This section applies only to new construction or alterations.

WAC 246-366A-165, Laboratories and shops – Operation and maintenance requirements This rule requires school officials to select supplies and procedures that reduce exposure to hazardous materials. It prohibits use/storage of compounds that are shock-sensitive explosives and that are lethal at low concentrations when inhaled or in contact with skin. Requires students to be instructed in the proper use of hazardous materials and equipment and must be provided appropriate personal protective equipment. Schools must maintain mechanical exhaust and ventilation consistent with manufacturer recommendations.

WAC 246-366A-190, Complaints This rule requires schools to develop written procedures for addressing complaints.

Relevance of References and Terms
The workgroup identified outdated terms and references to national consensus codes adopted in the school rules. They include:

WAC 246-366A-010, Definitions This rule defines the term “very low lead plumbing fixture” as plumbing fittings or fixtures … that contain less than 0.3 percent lead by weight. In 2011, Congress passed the Reduction of Lead in Drinking Water Act. The new “lead free” standard is a weighted average of 0.25 percent lead.

WAC 246-366A-030, Site assessment, review, and approval This rule requires a Phase 1 Environmental Site Assessment for new construction. The draft references a 2005 standard (ASTM 1527-05) that was updated in 2013 (ASTM #1527-13).

WAC 246-366A-065, General operation and maintenance requirements This rule includes a reference to the 2007 ANSI/NSF Standard 61 for lining, sealing, or patching drinking water contact surfaces. This standard was updated in 2015 to keep pace with EPA requirement to reduce potential exposure to lead.

WAC 246-366A-070, Moisture control, mold prevention, and remediation This rule includes a reference to EPA 402-K-01-001 March 2001. These procedures were updated in September 2008 as EPA 402-K-01-001.

WAC 246-366A-150, Playgrounds This rule requires school officials to install only playground equipment and fall protection surfaces that meet ASTM F 1487-01: Standard Consumer Safety Performance Specification for Playground Equipment for Public Use. The equipment and surfaces must be installed to meet manufacturer’s instructions and Consumer Product Safety Commission Handbook for Public Playground Safety, 2008. The ASTM F-1487-01 standard is now ASTM F-1487-11. The 2008 CPSC Playground Safety Guide is now Publication 325 November 2010.

Clarity of Requirements
The workgroup identified opportunities for providing greater specificity regarding current LHJ authorities and improved clarity regarding applicability and implementation.

School representatives indicated it would be helpful to identify laws that specifically grant local health official powers and duties. For example, WAC 246-366A-140, Water Quality Monitoring for other Contaminants allows the local health officer to require sampling of drinking water when public health concerns exist about water contaminants other than lead or copper. This rule requires schools to take corrective actions in response to sampling results and notify staff, students, parents, and the local health officer. Local health officers have broad disease investigation authority under RCW 70.05.070 to control and prevent the spread of dangerous, contagious, or infectious diseases, and could, over the course of an investigation, test drinking water for contaminants other than lead and copper.

WAC 246-366A-005, Applicability This rule identifies the types of facilities subject to chapter 246-366A WAC. It clarifies that the school rules are in addition to other requirements that apply to schools (such as food service, water recreation, sewage and public water system requirements, as well as Labor and Industries requirements for employee safety and health, and the state building code). The applicability rule also lists rules within the chapter that only apply to schools undergoing alterations or additions, and changes to existing building systems such as heating and ventilation systems when they are included in the permit for these alterations and additions. These sections only apply to those projects that are permitted after the effective date of the school rules and include:

- WAC 246-366A-040, Construction project review.
- WAC 246-366A-060, General construction requirements.
- WAC 246-366A-090, Heating and ventilation – Construction requirements.
- WAC 246-366A-100, Noise control – Construction requirements.
- WAC 246-366A-110, Lighting – Construction requirements.
- WAC 246-366A-120, Restrooms and showers – Construction requirements.
- WAC 246-366A-150, Playgrounds – Construction and installation requirements.
- WAC 246-366A-160, Laboratories and shops – Construction requirements.

School representatives indicated it would be helpful to clearly state within each of these sections that the requirements only apply to schools undergoing alterations or additions, and when the requirements become effective. This change would simplify the applicability section substantially.

Potential Gaps in Regulatory Oversight

WAC 246-366A-005, Applicability This rule indicates that chapter 246-366A WAC applies to preschools that are a part of K–12 facilities. Since the school rules were adopted in 2009, some school districts have started developing stand-alone preschools. The workgroup raised the question of whether stand-alone facilities would be included in health and safety site review, construction, or inspection requirements for K-12 schools.

Cost of Implementation

The workgroup determined 11 individual rules do not impose new costs, three impose nominal new costs, and eight rules are likely to impose costs. See Appendices B through D for a brief description of each section by category of potential cost of implementation.

School Rules that Impose No New Costs

As the workgroup reviewed the rules, it determined that the following sections would not impose any new costs on schools or local health if the Legislature lifted the suspension on the rules. The asterisked sections are substantially the same as the current rules, chapter 246-366 WAC.

WAC 246-366A-001 Introduction and Purpose establishes the intent for the rules "to provide for environmental health and safety of school facilities." Indicates that this chapter will replace chapter 246-366 WAC when the legislature allows full or partial implementation.

WAC 246-366A-003 Implementation identifies the circumstances for implementing the rule, and the steps that the SBOH will take to prevent implementation until the suspension is lifted, includes requirements for interested party notification.

WAC 246-366A-100 Noise Construction Requirements* sets noise control design standards for school construction.

WAC 246-366A-105 Noise Operation and Maintenance* sets operation and maintenance requirements for school background noise and noise exposure limitations.

WAC 246-366A-110 Lighting Construction Requirements* sets construction requirements for lighting intensity in schools.

WAC 246-366A-115 Lighting Operation and Maintenance* sets operation and maintenance requirements for school lighting intensities.

WAC 246-366A-120 Restrooms and Showers Construction Requirements* sets shower facility, locker and dressing room construction requirements.

WAC 246-366A-170 Variances allows school officials to require a variance from the requirements in these rules from the local health officer. Sets review response deadlines for local health. Requires local health to report such requests to DOH.

WAC 246-366A-175 Temporary Emergency Waivers for Disaster Situations allows the local health officer to grant school officials an emergency waiver from all or some of the rule if a facility is not safe for occupation.

WAC 246-366A-180 Appeals allows local health officer decisions to be appealed to the local board of health.

WAC 246-366A-200 Severability.

School Rules that Impose Nominal New Costs

The workgroup identified three sections that may impose nominal costs depending on current practices:

WAC 246-366A-005 Applicability clarifies that the school rule applies to preschools that are part of K–12 school facilities. We do not have data that indicates whether or not preschools are currently inspected, and so the potential cost depends on current local health jurisdiction

inspection practices. The original cost benefit analysis assumed that it would add one hour of additional work for a local health inspector to inspect a preschool that is part of a K–12 school.

WAC 246-366A-050 Preoccupancy Inspections. All newly constructed or remodeled schools are currently subject to pre-occupancy inspections by local health officials under the existing rule. The update in this section requires increased coordination between the site project manager and the local health jurisdiction as well as new notification requirements between schools and local health jurisdictions. We assume a nominal increase depending on current pre-occupancy inspection practices.

WAC 246-366A-140 Water Quality Monitoring for other Contaminants allows the local health officer to require sampling of drinking water when public health concerns exist about water contaminants other than lead or copper. The section requires corrective actions in response to sampling results and notification of staff, students, and parents. We believe that this is consistent with health officer authority under RCW 70.05.070, to control and prevent the spread of dangerous, contagious, or infectious diseases. And the health officer could currently undertake this effort. During disease investigations, local health often bears the expense of the investigation. There may be costs to the school if there is corrective action required to address the drinking water contamination.

School Rules Likely to Impose New Costs

The workgroup affirmed that the following sections impose more than nominal costs on schools or local health. The asterisked sections apply only to new construction or additions. DOH continues to develop costs for implementing these sections:

246-366A-060 General Construction Requirements* adds clarity and performance based standards to existing requirements for health and safety regarding non-slip surfaces of steps, cleanable flooring, pest (vermin) control, sufficient space for safe storage of instructional equipment, and control of excessive sunlight. New to the rule is a standard for fall protection.

246-366A-070 Moisture Control, Mold Prevention, and Remediation requires school officials visually monitor for water intrusion, begin corrective action within 24 hours of discovering water intrusion or moisture accumulation; eliminate the cause of moisture (dry affected areas); investigate extent of mold growth; limit exposure and remediate; inform staff, students and parents if the affected area is greater than 10 square feet (consistent with EPA remediation guidance).

246-366A-080 Safety–Animals in School Facilities requires school officials to develop a policy to prevent the spread of zoonotic disease, injuries, and allergic reactions if animals are allowed in school facilities.

246-366A-090 Heating and Ventilation-Construction Requirements* expands current ventilation requirements. Fresh air intakes must be situated away from building exhaust vents and other sources of air contaminants of public health importance (e.g., bus exhaust, parking areas, areas where pesticides and herbicides are applied) to meet or exceed the international mechanical code adopted by the state building code council (chapter 51-52 WAC). This section also requires use of ducted air returns for new construction, or additions to an existing school where ventilation systems are independent of existing systems. Facilities that the local permitting

jurisdiction has received a completed building permit within three years of the effective date of the section are exempt from this requirement.

246-366A-095 Heating and Ventilation–Operation and Maintenance maintains the current temperature requirements of 65° F (60°F in gyms). Requires school facilities constructed prior to the effective date of the proposed rule to strive (through proper maintenance, including repairs and replacing filters) to ventilate occupied areas during school hours and school sponsored events, consistent with Chapter 51-52 WAC. School facilities constructed after the effective date would need to ventilate these areas consistent with Chapter 51-52 WAC. The section also requires schools to limit student exposure to air contaminants of public health importance from office equipment by placing equipment in appropriately ventilated spaces and providing instruction to users on how to operate and maintain equipment as recommended by the manufacturer. Schools must take corrective action when air contaminants of public health importance, such as vehicle exhaust, are drawn into the building or ventilation system.

246-366A-125 Restrooms and Showers–Operation and Maintenance requires tempered water (between 85 and 110 degrees Fahrenheit) for those handwashing plumbing fixtures that do not allow the user to select water temperature. For fixtures that mix water, the temperature needs to be within the required range.

246-366A-135 Water Quality Monitoring for Copper (one-time costs) requires water quality monitoring for copper (same water samples used for lead sampling may be used for copper). Schools must test water samples from 25 percent of each type of plumbing fixture (drinking fountains, water coolers, and faucets), used for drinking and cooking. There are two groupings by age—those prior to 1999 and those since 1999. The testing is rolled out by school type, with elementary schools first. If the test results show elevated copper (1.30 milligrams per liter or 1300 parts per billion), schools must notify staff, students, and parents and the local health official.

246-366A-150 Playgrounds–Construction and Installation* requires school officials to consult with the local health officer regarding installation, modification, or addition of playground equipment and fall protection surfaces. The local health officer may require review and approval of playground plans and equipment specifications and inspect playgrounds to verify that installation complies with the rules. Installation of playground equipment and fall protections services must meet ASTM F 1487-01: Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, and must be installed consistent with manufacturer instructions and Consumer Product Safety Commission's 2008 Handbook for Public Playground Safety. Prohibits the use of chromated copper arsenate or creosote treated wood (currently banned by EPA).

246-366A-155 Playgrounds–Operation and Maintenance requires school officials to monitor and operate playgrounds so that surfacing and use zones are maintained and so that equipment is properly anchored and free of puncture, crushing, shearing, entanglement, and entrapment hazards. Use of chromated copper arsenate or creosote treated wood to repair or maintain playground equipment is prohibited.

* Applies to new construction/alterations

Appendix C: Public Health Case Management Recommendations for Children with Elevated Blood Lead Levels

August 22, 2016

This document was created by combining best practices from Minnesota, Ohio and Wisconsin.

Introduction

These recommendations were developed to ensure that all children in Washington State with a confirmed blood lead level ≥5µg/dL receive a standardized, minimum amount of care for lead exposure. The recommendations are intended to help build the local public health capacity for providing services to children with elevated blood lead levels.
Complete case management information needs to be reported to the Washington State Department of Health (WA DOH) through the Washington Disease Registry System (WDRS) Lead Module. This is also the system through which the elevated blood lead cases will be assigned to local health.

Activities
Case Management
Contact provider: confirm/complete information
Call or visit family and assess family needs
Interview family to collect environmental and health histories and assess potential exposure factors (Use interpreter if needed)
Develop care plan (including follow up testing)
Provide health education (exposure sources, housekeeping, nutrition, etc.)
Coordinate provision of developmental and nutritional assessments and interventions; refer family to resources (WIC, CSHCN, etc.)
Ensure other children in household under six years of age receive blood lead test
Environmental Assessment*
Conduct environmental home investigation and assessment (Certified Lead Risk Assessor with XRF) Use interpreter if needed
Lead Hazard Remediation*
If necessary, relocate family during lead hazard reduction process
Remediation: correct lead-hazardous conditions or remove non-residential exposures
Case Close out
Exposure sources removed, blood lead level below 5µg/dL

* For cases ≥10 µg/dL

Case Manager Roles and Responsibilities

Role definition

The role of the case manager is to collaborate with clients by assessing, facilitating, planning, and serving as an advocate for their health needs on an individual basis.
Case management should be expected to achieve measurable results in terms of decreasing exposure, decreasing blood lead levels, and improving the health of children and their families, particularly young siblings. Case management programs should be expected to measure and report relevant program outcomes. Program outcomes may include reduced blood lead levels and reductions in environmental lead hazards.

Communication with the case management team is critical for effective case management. Team players include, but are not limited to: the case manager, the family, medical providers, social service providers, WA DOH, licensed lead risk assessors, paraprofessional home visitors, local funding sources, and other community resources. The ability to work collaboratively with various outside groups and organizations to reach common goals is also essential. Recommended skills include: positive relationship building; ability to effect change, perform critical analysis, and efficiently plan and organize; effective written and verbal communication; and effective promotion of client/family autonomy. It is crucial that the case manager have knowledge of resources, services, clinical standards, and outcomes for elevated blood lead levels prevention and treatment.

Recommended areas of knowledge and training

- Case management
- Nutrition and hygiene
- Growth and development
- Physiology and adverse effects of elevated blood lead level
- Environmental sources of lead, and lead hazard reduction methods
- Referral services/resources in the community

Staffing recommendation

The WA DOH recommends that the case manager be a professional with case management and lead training or experience. Recommended qualifications for a case manager are as follows:

- If possible, the case manager should be a public health nurse (PHN) with a four-year nursing degree.
- If a PHN is not available, the case manager should be a health professional (e.g., a health educator or a registered nurse (RN) without a bachelor's degree).
- If neither a PHN nor a health professional is available, the case manager can be any professional with a health-related degree (e.g., a social worker or risk assessor).

Case Management Protocol

The case manager often plays a central role in assessing the child and assuring effective interventions are provided to limit the child's lead exposure. Once a child is identified with an elevated blood lead level (defined as a confirmed blood lead level of ≥5 µg/dL), the case manager should do the following:

- Contact provider to gather more information on case.
- Call family and schedule home visit.
- Visit the child's residence (and other sites where the child spends significant amounts of time) at least once.

- Interview family and assess factors that may impact the child's blood lead level (including the conditions of painted surfaces in the dwelling, other potential sources of lead, nutrition, access to services, family interaction, and caregiver understanding).
- If warranted, contact WA DOH to request the state lead risk assessor conduct an environmental investigation and assessment.
- Assess the child's health and developmental status.
- Develop a plan of care.
- Provide education to the parents/caregivers.
- Encourage blood lead testing of other children less than 72 months of age in the home.
- Refer the family to other service providers as appropriate.
- Coordinate services and communicate with members of the case management team.
- Evaluate the outcome(s) of interventions and referrals; revise the care plan as needed.

Note: The home visit and health education should be conducted and provided in the primary language of the family whenever possible.

Contacting the medical provider

In all cases, the first step should be contacting the child's medical provider to ensure the case is confirmed. A confirmed case is defined as (1) a second capillary blood draw with a blood lead result of ≥5 µg/dL within 12 weeks of the first blood lead capillary draw ≥5µg/dL; OR (2) a venous blood draw with a blood lead result of ≥5 µg/dL. Confirming the blood lead result before initiating case management is crucial. False positive results can cause undue alarm for families and strain public health resources.

The medical provider will also be able to provide additional case information, such as details on why the test was performed, plans for follow up testing and medical management, information on the family (i.e. additional siblings, parental occupation, associated medical history, preferred language.)

Assessing environmental lead exposure factors

The case manager should begin the on-site public health lead investigation at the property most likely to be the source of the child's lead poisoning. Assessing the lead-poisoned child on-site allows observation of possible sources of lead exposure and the child's access to any deteriorated painted or varnished surfaces.

The case manager should interview the family/caregiver and complete the questionnaire available through WA DOH: http://www.doh.wa.gov/Portals/1/Documents/4000/Child-blood-lead-investigation.pdf.

This questionnaire covers environmental exposures and behavioral risk factors to help determine the source of exposure.

A visual assessment of the property should be performed to assess the following:

- Overall building condition
- Areas of bare soil

- Interior and exterior surfaces with deteriorated paint
- Painted surfaces that are impact points or subject to friction (such as windows and doors)
- All other deteriorated, painted surfaces
- Chewable surfaces
- Other non-painted, non-structural sources such as toys, furniture, ceramic ware, imported spices and candies, traditional remedies, etc.

The results of the visual examination should be recorded on the questionnaire form.
If the case manager is not able to determine the source of exposure and the blood lead level exceeds 9.9 µg/dL, a request can be made to WA DOH for a lead risk assessor to conduct to an environmental investigation with an XRF instrument. WA DOH will decide if environmental assessment will be performed.

Assessment of the Child

Assessment of the child with lead poisoning is a vital component of case management. The assessment provides the basis to plan interventions to reduce lead exposure and make appropriate referrals. The assessment includes the child's health status, development status, behavior, nutrition and risk factors for lead exposure. Another important part of this assessment is to determine the primary concerns of the family related to lead poisoning, and identify other family issues that may influence the child's blood lead level.

Assessment of health status
An assessment of the overall health of the child with lead poisoning provides a baseline and allows the case manager to identify concurrent medical conditions that may influence the child's response and resiliency to lead poisoning. The assessment includes obtaining a thorough health history from the parent/caregiver. The case manager should determine if the child has a history of lead exposure/poisoning.

Developmental and behavioral assessment
Because the primary toxicity of lead poisoning in young children is to the brain and central nervous system, the case manager should conduct a developmental screening test during the home visit. The case manager can also refer the child to a local community program that administers developmental screening tests. This assessment will determine a baseline by which future changes can be weighed, as well as identify the need for referrals to assist the child and family in addressing any delays as soon as possible. If delays are noted in the screening test, a referral should be made to the child's physician or the Birth to Three Program for a thorough developmental assessment.

Nutritional assessment
Nutrition is an important factor in managing lead poisoning. Certain nutrients, such as iron and calcium, may reduce the child's absorption of lead. Children with elevated blood lead levels are

often at risk for poor nutrition, and their caregivers should receive nutritional counseling to help these children obtain a well-balanced and age-appropriate diet.

Assess other risk factors for lead exposure
The case manager should look for and ask about risks for lead exposure in the child's environment. Lead-based paint and lead-contaminated dust are the primary sources of exposure for children. Other risk factors for lead exposure may include, but are not limited to, the following:

- Iron deficiency (often co-exists with lead poisoning and can potentiate central nervous system effects).
- A history of pica, persistent chewing on varnished or painted surfaces, evidence of frequent hand-to-mouth activity, or accidental ingestion of any non-edible substance.
- Infrequent handwashing, especially after play, before eating and napping.
- Use of imported cosmetics or home/traditional remedies that may contain lead.
- Parents or other household members engage in a lead-related occupation or hobby.

Educational interventions for parents/caregivers
Educational interventions with parents/caregivers are vital to prevent or limit children's exposure to lead. Educate parents on the risks of lead poisoning, the sources of lead, the impact of lead toxicity on young children, and steps they can take to prevent lead exposure.
This information should include the following important topics:

- Child's blood lead level and what it means
- Sources of lead exposure
- Reducing the sources of lead to decrease the duration of exposure
- Temporary measures the parent can take to decrease lead exposure (wet cleaning areas with lead paint chips and dust; blocking access to lead hazards; handwashing before naps, meals, and after play; using only cold tap water for food and formula preparation, and flushing pipes each morning)
- Follow-up blood lead testing schedule
- Neurodevelopmental assessment
- Nutritional advice on adequate intake of certain nutrients, such as iron and calcium
- Potential for the child to develop learning or behavior problems at a later age
- Testing of siblings under six years of age

Developing a Plan of Care

Based on the above assessments, the case manager should develop a plan of care with the family that describes steps needed to lower the elevated blood lead level, prevent re-exposure

and identify services needed to treat the lead poisoning. Areas the plan should cover include the following:

1. Reduction/elimination of environmental hazards
    - Assessment of all possible exposure sources
    - Temporary/short-term hazard reduction (including temporary relocation to lead-safe housing if needed)
    - Long-term hazard elimination (including permanent relocation to lead-safe housing if needed)
    - Identification and removal of non-residential exposures
2. Improvement of nutrition
    - Caregiver counseling
    - Referral to WIC or other community food resources
3. Caregiver lead education
    - Counseling re: lead and lead-exposure risks, decreasing identified risks, importance of follow-up blood lead tests
4. Medical follow-up care
    - Child with lead poisoning
    - Siblings or other at-risk children living in home
5. Follow-up of other identified issues
    - Counseling/referral for medical services, early intervention and developmental assessment, housing services, social services, Head Start, and parental support

The case manager need not directly provide all follow-up care, but she/he is responsible for seeing that needed care is provided, including medical follow-up, and follow-up on referrals for other identified problems. Ongoing review and revision of the plan of care should be done with the family.

Referrals to Community Resources

An important aspect of the case manager's role is making referrals. The case manager is responsible for connecting the family of a child with an elevated blood lead level with services and resources that are available in the local community or at the state or national level. The need for the following referrals should be considered:

- Ongoing source of health care if the child doesn't have a primary care provider.
- Agencies that can provide a thorough developmental evaluation and/or treatment if delays were noted on the screening test. These agencies may include Birth to Three, Early Head Start, Head Start or other early childhood programs.
- Nutritional counseling or WIC.
- Financial assistance from local housing or weatherization agencies for lead hazard reduction work on the property.

- Blood lead testing for and other children under six years of age in the household who share exposure to lead hazards.

Communication among multi-disciplinary team members

The case manager performs the role of prime communicator between the multiple professions that are providing services to the child and family. Several strategies are suggested to keep the entire team updated on the status of the child, the environment, and the family. Not only does this facilitate the work of all team members, but it keeps the child as the focus, preventing the services from becoming categorical or overlapping.

Exchange information regularly with the child's primary health care provider. Make sure that he/she is aware that public health services are being provided to the child and family, and what those services include.

Convene case conferences on lead poisoned children being served by the county. Include the risk assessor, WIC nutritionist, early childhood program staff, social services, and any others providing services to the child and/or family. Discussion and problem solving should revolve around the outcomes defined by the plan of care (medical, environmental, nursing, nutritional, developmental, educational, etc.), and any ongoing issues and concerns.

Evaluation of Care

The case manager should evaluate the plan of care on an ongoing basis and modify the plan as needed to assure progress toward the desired outcomes. This evaluation includes monitoring the child's health status and assuring that environmental interventions are completed in the shortest time possible to limit the child's exposure to lead.

Specific measures that can be used to evaluate progress include, but are not limited to, the following:

- The child's blood lead level is decreasing.
- The child is living in a lead-safe environment.
- The child is receiving supportive services for other identified medical conditions, developmental delays or behavior problems.
- The parent/caregiver has adequate knowledge of prevention and management of lead toxicity.

Case Closure

It often takes an extended period of time to achieve all elements of case management for lead poisoning. The child's case follow-up and the property investigation follow-up are two primary components of case management. The child's case record should not be closed until it is determined that the child lives in a lead-safe environment.

The following is the minimum criteria to close an elevated blood lead level case:

- The child's blood lead level has remained <5 mcg/dl for at least three months.

- Lead hazards have been controlled or eliminated within the child's environment.
- There are no new lead exposures.

The case manager can also administratively close the child's case record when:

- The family moves and referral has been made to the receiving local health jurisdiction.
- The parent/caregiver refuses further public health intervention.
- The family moves and cannot be located.