Updating Washington State's Occupational Lead Standards: Recommendations from Public Health-Seattle & King County

Lead Stakeholder Meeting
October 25, 2016

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Public Health-Seattle & King County

Public Health
Seattle & King County

Local Hazardous Waste Management Program in King County, Washington

Acknowledgments

- Michael Kosnett, University of Colorado
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- Walter Alarcon, NIOSH ABLES program
- Todd Schoonover, L&I's SHARP program, WA ABLES
- Jeff Duchin, Health Officer, PHSKC
- Sherry Baron & Greg Kuhn, Industrial Hygienists, King County

Previous Efforts in WA

- Proposed updates to DOSH lead standards by Joel Kaufman et al. (1993-1994)
- Appendix D to General Industry standard: "Recommendations to employers concerning high-risk tasks (nonmandatory)"
- Ecology's Lead Chemical Action Plan (2009): "L&I should harmonize and update occupational lead regulations"

Public Health's Petition to the Governor

Office of the Director
401 Fifth Avenue, Suite 1300
Seattle, WA 98104-1818
206-296-4600 Fax 206-296-0166
TTY Relay: 711
www.kingcounty.gov/health

Public Health
Seattle & King County

September 4, 2013

Governor Jay Inslee
Office of the Governor
PO Box 40002
Olympia, WA 98504-0002

Dear Governor Inslee,

I am writing to request that your office and the Washington State Department of Labor & Industries consider updating the Washington Administrative Code (WAC) related to occupational standards for lead. The two standards that are designed to protect workers from occupational exposures to lead are:

- WAC 296-62-07521: General industry lead standard (enacted in 1982)
- WAC 296-155-176: Lead in construction standard (enacted in 1993)

The science of the consequences of lead poisoning has evolved over the last twenty years, showing that lower and lower exposure levels can have significant health impacts. The national standards that our state follows have not kept pace with science, giving Washington State an opportunity to be a national leader in the adoption of updated standards.

Public Health's Petition to L&I

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July 15, 2014

Ann Soiza, Assistant Director
Division of Occupational Safety and Health
Washington State Department of Labor & Industries
P.O. Box 44000
Olympia, Wash. 98504-4000

Dear Ms. Soiza:

At the request of Dr. Todd Schoonover, with the Safety & Health Assessment & Research for Prevention (SHARP) program, I am writing to share some suggestions for updating the Washington Administrative Code (WAC) related to occupational standards for lead. Dr. Schoonover spoke with Dr. Steve Whittaker on our staff, and it is my understanding that the Department of Labor & Industries will be convening a panel to review the current occupational standards for lead.

In September 2013, I wrote to Governor Inslee, asking that his administration look at updating the two standards that are designed to protect workers from occupational exposures to lead. Those are:

- WAC 296-62-07521: General industry lead standard
- WAC 296-155-176: Lead in construction standard

L&I's Lead Stakeholder Process

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Rules & Requirements

- Find a Rule
- **New Rule Activity**
  - Rules Under Development
  - Public Hearing Calendar
- Rule Interpretations & Enforcement Policies
- Top 10 Rule Violations
- Related Laws (RCWs)

Lead Safety Stakeholder Meetings

Background

The Washington State Department of Labor and Industries (L&I), Division of Occupational Safety and Health (DOSH), would like to invite interested stakeholders to participate in a series of meetings to develop recommendations to update the current occupational lead standards and other future strategies to reduce worker lead exposures in the state.

Old or new paint and primers used on industrial or commercial structures may contain lead.
Courtesy of NIOSH

We share a goal of providing a safe and healthy work environment for employees. Business, labor, federal, state and local government representatives have worked hard to prevent occupational exposure to lead. We would like to leverage everyone's experience to prevent further occupational lead exposure.

Workers that work directly with lead or disturb lead are at risk for exposure. Construction workers disturbing paint containing lead during renovation and remodel of structures including bridges and homes face the risk of lead exposure. Workers manufacturing lead acid batteries and soldering on electronics may be exposed to lead. Lead may build up in a worker's body over months and years, potentially causing serious long-term health problems.

Public Health's Recommendations

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Public Health
Seattle & King County

Ann Soiza
Assistant Director
Division of Occupational Safety and Health
Washington State Department of Labor & Industries
P.O. Box 44000
Olympia, Wash. 98504-4000

June 23, 2016

Dear Ms. Soiza:

Thank you for the opportunity to provide comments in support of updating the two standards that are designed to protect workers from occupational exposures to lead:

- WAC 296-62-07521: General industry lead standard
- WAC 296-155-176: Lead in construction standard

We very much appreciate your efforts to gather information during the Lead Safety Stakeholder meetings and we look forward to working with you to update these standards.

As we noted in our petitions to the Governor and L&I, Washington state's current occupational standards for lead are based on outdated scientific knowledge about lead toxicity. A broad scientific consensus now recognizes the significant health consequences associated with exposure levels that were previously considered safe.

King County Board of Health

- Testimony - July 2016
- Resolution adopted:

King County

KING COUNTY

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

Signature Report

July 25, 2016

Resolution 16-07

Proposed No. 16-07.2 **Sponsors**

A RESOLUTION calling for meaningful actions to address lead poisoning and support for efforts to eliminate lead poisoning in King County.

Washington State Legislature

- House Labor & Workplace Standards Committee
- "Occupational Exposure to Lead" work session
- September 29, 2016
- Testimony from:
  - Ann Soiza (DOSH)
  - Jeff Duchin (PHSKC)
  - Brett Draven (Teamsters 763)
  - Bob Battles (AWB)

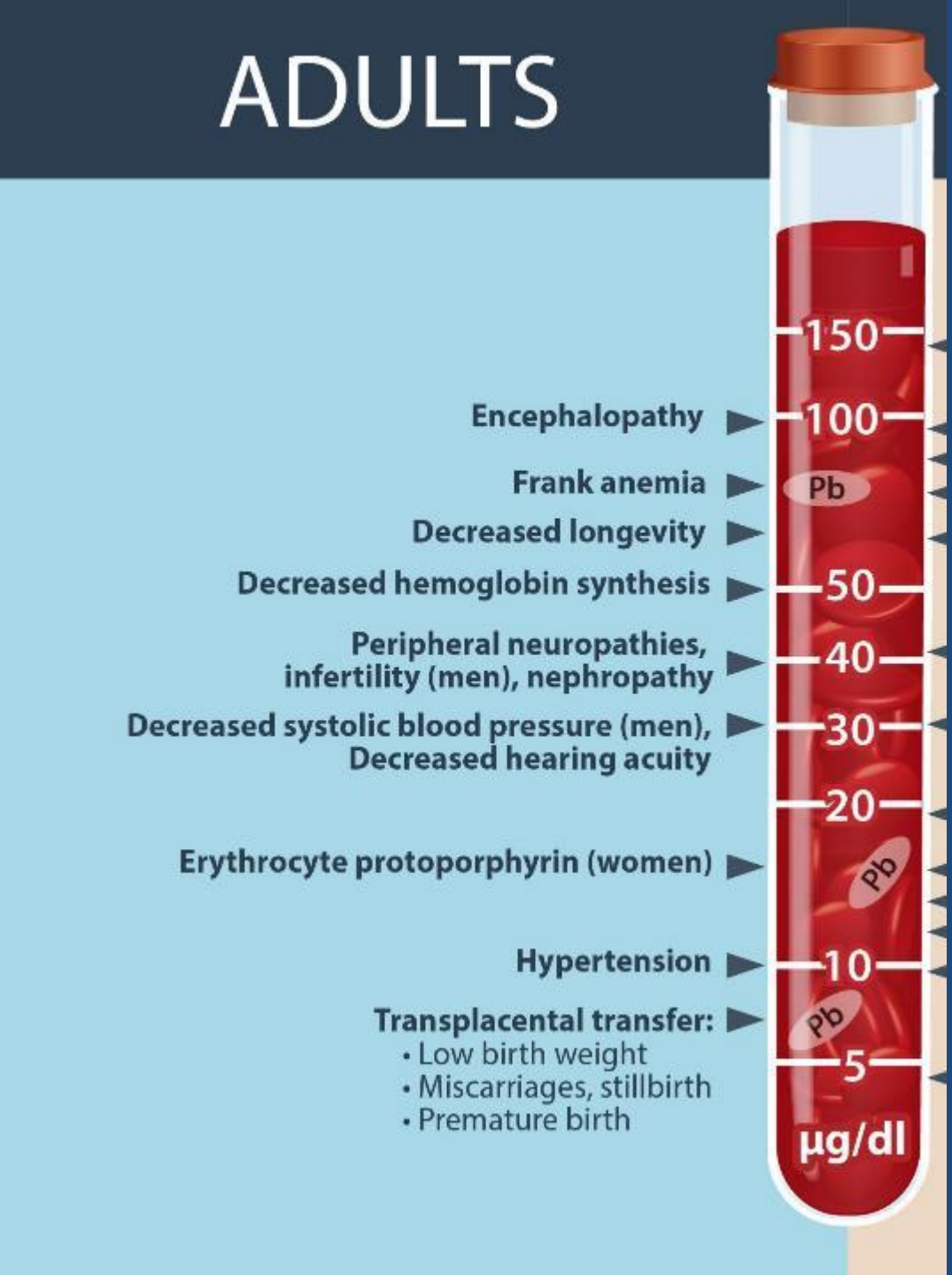
Source: *www.visitolympia.com*

Washington State's Lead Standards

General Industry: WAC 296-62-07521

Construction: WAC 296-155-176

- Equivalent to federal OSHA's lead standards
- Based on 1970s knowledge of lead toxicity
- Major effort in California to update Cal/OSHA's lead standards



Case Definition

Adopted by:

- NIOSH
- CSTE
- NNDSS

- Elevated BLL case definition (2015-2016)

Overarching Goals

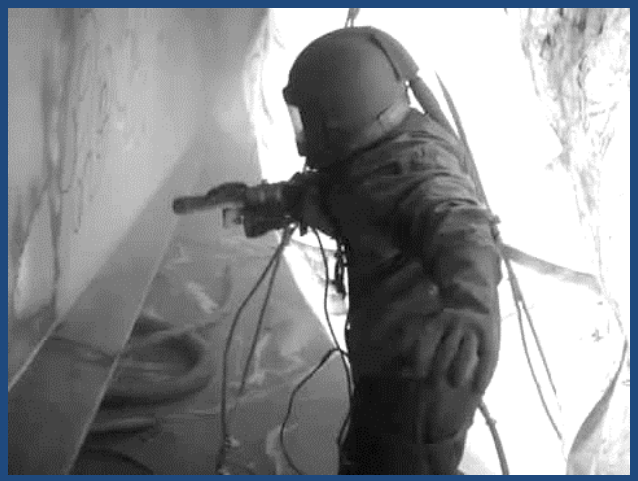
Maintain BLLs at 5-10 µg/dL

- More protective medical removal protection
- Reduce the Action Level (AL) and Permissible Exposure Limit (PEL)
- No longer rely on air monitoring to trigger medical surveillance
- Control lead exposures even when < PEL
- Enhanced training - tailored to literacy level in culturally-appropriate formats

Consider Feasibility

- Modifications or phased-in approach for:
  - Infrequent, relatively low-level exposures
  - High exposure industries/tasks:
    - Battery manufacture / recycling?
    - Abrasive blasting?

Source: *NIOSH Photostream*



Source: *www.pentekusa.com/hazards-of-sandblasting-in-lead-paint-removal/*

Triggering Medical Surveillance – General Industry

- "Threshold amount of lead work" (CA):
  - Altering or disturbing material that is known to contain, or reasonably anticipated to contain Pb ≥ 0.5% by weight
  - Torch cutting any scrap metal
- Exposed at Action Level (proposed 2 $\mu g/m^3$) ≥ 10 days/year

Triggering Medical Surveillance – Construction

- Performing trigger tasks (examples):
  - Manual and power scraping/cleaning of lead coatings or paint
  - Spray painting with lead containing paint
  - Using lead-containing mortar
  - Rivet busting
  - Abrasive blasting
  - Welding
  - Cutting
- Exposures at Action Level (proposed 2 $\mu g/m^3$) $\geq$ 10 days/year

Medical Surveillance

- BLL testing for all employees with potential lead exposure
- BLL test at least monthly for first 3 months or upon change to higher exposure task
- BLL ≥ 10 µg/dL: tested every 3 months
- BLL ≥ 20 µg/dL: tested every 4 weeks
- If three consecutive BLLs (at least four weeks apart) < 10 µg/dL: test every 6 months

Medical Surveillance (cont.)

- Employees on medical removal protection: test every 4 weeks
- All employees with potential lead exposure: annual blood pressure measurement and medical condition questionnaire
- Baseline medical exam for construction workers performing high-exposure trigger tasks

Medical Removal Protection

- One BLL ≥ 30 µg/dL, *or*
- Last two BLLs ≥ 20 µg/dL, *or*
- Average BLL in last 6 months ≥ 20 µg/dL, *or*
- Final medical determination of physician(s)
  - Physicians still have discretion to order removal at any BLL based on medical judgement
- [Employer required to develop a written plan to control the worker's lead exposure]

Medical Removal Protection

- Current DOSH protections still apply:
  - A worker removed from lead exposure because of an elevated BLL or a medical determination must receive full pay, benefits and seniority
  - Protected for 18 months during medical removal. Employer must pay earning protection even if there is no other job available for the employee
  - If a workers' compensation claim is filed, the employer must make up the difference between the time loss payments and the usual income

Medical Removal Protection (cont.)

- During medical removal protection:
  - Monthly BLL testing
  - No work ≥ Action Limit (proposed 2 $\mu g/m^3$)
  - No altering or disturbing lead materials (≥ 0.5% Pb by wt.)

- Return to work:
  - When two consecutive BLLs taken at least 30 days apart < 15 µg/dL, *or*
  - when employee no longer has health-related condition, including ability to procreate a healthy child, that places him or her at increased risk of material impairment from exposure to lead

Action Level

- Promulgated in 1978
- Currently 30 µg/m^3 as an 8-hr TWA
- Triggers BLL testing (if > 30 days per year)
- Limits workers' BLLs to 30 µg/dL
- "Commensurate with the beginning of potential risks to reproductive capacity"

  - *Attachments to the Preamble from the Final Lead Standard*

Permissible Exposure Limit

- Promulgated in 1978
- Currently 50 µg/m^3 as an 8-hr TWA
- Limits workers' BLLs to 40 µg/dL (average) or 60 µg/dL (maximum)

Proposed Airborne Exposure Limits

- Biokinetic modelling in CA:
  - PEL of 0.5 μg/m^3: 95% workers BLL < 5 μg/dL over 40-year working lifetime
  - PEL of 2.1 μg/m^3: 95% workers BLL < 10 μg/dL over 40-year working lifetime
- Public Health's recommendation:
  - Permissible Action Limit: 10 μg/m^3
  - Action Level: 2 μg/m^3
- Based on stakeholder feedback in CA

Protective Clothing

- Employers provide protective clothing and shoes
- Provide training in proper use
- Application:
  - General Industry: ≥ Action Limit
  - Construction: ≥ Action Limit or performing trigger tasks

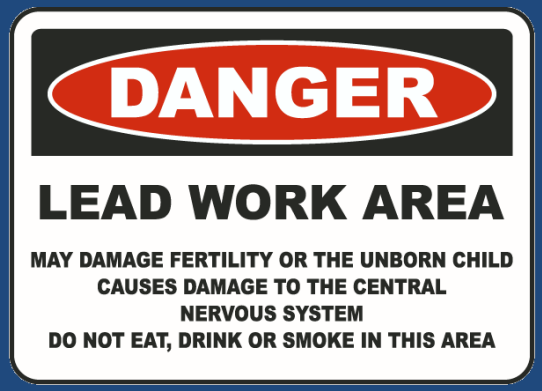
Hygiene

- No eating, drinking, smoking, applying cosmetics
- Require workers to wash up
- Employers provide clean eating and change areas
- Periodic surface testing required
- DOSH establishes cleanup levels
- More frequent testing if lead detected

Training & Warning Signs

- Quarterly employee training
- Participatory and hands-on methods
- Accessible formats
- Appropriate for culture and literacy level
- Emphasize potential for take-home exposure

Currently:



Engineering and Work Practice Controls

- Require work practice controls that minimize the potential for lead exposure
- Consistent with requirements of EPA' s Renovation Repair and Painting Rule
- Examples:
  - wet methods
  - local exhaust ventilation on power tools
  - isolation of work area
  - etc.

Equity Considerations

- King County adult residents (2010-2014)
- BLL range: 10-73 µg/dL
- Top 3 King County employers providing patients:
  - Battery manufacturer
  - Gun range
  - Bridge painting company
- Disproportionate burden on Hispanic and Asian workers

Contact Information

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Resources

- NIOSH's Adult Blood Lead Epidemiology and Surveillance (ABLES) program: *www.cdc.gov/niosh/topics/ables/*
- Department of Labor & Industries' SHARP Program: *www.lni.wa.gov/SAFETY/RESEARCH/OCCHEALTH/LEAD/DEFAULT.ASP*
- California's Occupational Lead Poisoning Prevention Program: *www.cdph.ca.gov/programs/olppp/Pages/default.aspx*
- Association of Occupational and Environmental Clinics' (AOEC) Medical Management Guidelines for Lead-Exposed Adults: *www.aoec.org/documents/positions/MMG_FINAL.pdf*

Resources

- Kosnett MJ et al. Recommendations for Medical Management of Adult Lead Exposure. Environmental Health Perspectives. March 2007, Volume 115, Issue 3, pages 463-471: *www.cdph.ca.gov/programs/olppp/Documents/medmanagement.pdf*
- Council for State and Territorial Epidemiologists (CSTE): Public Health Reporting and National Notification for Elevated Blood Lead Levels: *http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/2015PS/2015PSFinal/15-EH-01.pdf*
- National Toxicology Program (NTP) - Monograph on Health Effects of Low-level Lead: *http://ntp.niehs.nih.gov/ntp/ohat/lead/final/monographhealtheffectslowlevellead_newissn_508.pdf*

KEEP CALM AND ANY QUESTIONS?

BLL Data for King County Adult Residents

- Reporting period:
  January 1, 2010 – December 31, 2014
- 570 reports for 182 patients
- 33 employers
- Four patients: “recreational” exposures
- BLL range: 10 – 73 mcg/dL
- 74% patients employed in King County (24% not recorded)

BLL Data for King County Adult Residents

- Highest BLL (73 mcg/dL):
  - Hispanic male contractor at Wade's Eastside Guns
- Overall patient demographics:
  - 2% female / 98% male
  - 22% Hispanic / 43% Non-Hispanic / 35% Unknown
  - 31% White / 20% Other / 8% Asian / 2% Black / 35% Unknown

Employers with ≥5 patients in the Registry

Employer (NAICS)	No. patients	Percentage of total patients	Range of BLLs (mcg/dL)
Battery manufacturer (335911)	29	16%	14 - 46
Gun range #1 (532292)	29	16%	13 - 58
Bridge painting (238320)	29	16%	10 - 51
Specialty glass (327211)	6	3%	11 - 50
Gun range #2 (713990)	5	3%	14 - 37
Marine salvage (488330)	5	3%	10 - 29
Abrasive blasting & painting – marine (238320)	5	3%	17- 40
Unknown	43	24%	10 - 37

Number of patients by ethnicity – Top 3 employers				
Employer	Hispanic	Non-Hispanic	Unknown	Total
Battery manufacture	18 (62%)	10 (34%)	1 (4%)	29
Bridge painting	9 (31%)	14 (48%)	6 (21%)	29
Gun range #1	3 (10%)	12 (41%)	14 (48%)	29

Number of patients by race – Top 3 employers

Employer	American Indian or Alaskan Native	Asian	Black	Hawaiian / Pacific Islander	Mixed	Other	Unknown	White	Total
Battery manufacture	0 (0%)	10 (35%)	0 (0%)	0 (0%)	0 (0%)	17 (59%)	2 (7%)	0 (0%)	29
Bridge painting	2 (7%)	0 (0%)	2 (7%)	2 (7%)	0 (0%)	9 (31%)	6 (21%)	8 (28%)	29
Gun range #1	0 (0%)	2 (7%)	0 (0%)	0 (0%)	1 (3%)	0 (0%)	14 (48%)	12 (41%)	29