



Lead Rule Advisory Group Meeting Minutes Friday, August 18, 2023, 9-11am, Zoom

Attendees:

Linda Pressnell, Oregon OSHA	Athina Watkins, Oregon OSHA	Robert Snyder, ODOT
Angie Marsh, Oregon OSHA	Dr. Zane Horowitz, Oregon Poison Center OHSU	Kerry Spurgin, Oregon Association of Shooting Ranges
Brian Hauck, Oregon OSHA	Julie Love, Oregon OSHA	Steve Patterson, Clarios
Greig Lowell, Oregon OSHA	David Dreher, Oregon Health Authority	Jason Dunton, Hoffman Construction
Jennifer Ekdahl, Oregon OSHA	Steve Eversmeyer, IH, NW Natural	Chris Zimmer, Oregon OSHA
Ted Bunch, Oregon OSHA		

Linda Pressnell started the meeting at 9:04am.

Linda: This meeting is to review the health elements related to Blood Lead Levels (BLL).

But Agenda item #1 is the Review of Electronic Recordkeeping Federal Rule

- Federal OSHA's recordkeeping requirement changes become effective Jan. 1, 2024

- Establishments with 100+ high-hazard employees must submit the 300 log and 301 log annually—but Oregon OSHA uses the 801 in place of the 301, which requires us to conduct rulemaking to be in compliance/retain our current requirements. We have a Recordkeeping RAG led by Ted Bunch.

No questions from the attendees regarding this item.

Linda: Agenda Item #2 – Employee blood lead levels

- Different sources are summarized in federal OSHA's Federal Register of Proposed Rules. Paragraphs marked "summary" are a review of many studies from a number of organizations. This is the "gold standard" in regard to rulemaking, so we're looking at information and language within.

- Dr. Zane Horowitz from OHSU/Poison Control agreed to attend this meeting to offer explanation and expertise.
- Linda shared her screen, where a summary notes: “Exposure to lead is associated with adverse health effects on the reproductive, cardiovascular, neurological, respiratory, and immune systems.” Also, studies in adults have found effects at lower levels than previously documented.
- Key players mentioned include: the Association of Occupational and Environmental Clinics (AOEC), American College of Occupational and Environmental Medicine (ACOEM), the Department of Defense (DOD), Natural Resource Council, and NIOSH.
 - Note the DOD lowered the medical triggers in military for medical removal to: at or greater than 20 ug/dL.
 - Health effects of lead exposure in the overall population have declined, which is largely attributed to the regulated removal of lead from gasoline and consumer paint.
 - Yet it was noted in the summary: “BLLs as low as 5 ug/dL have been associated with impaired kidney and reproductive function, high blood pressure and cognitive effects attributed to prenatal exposure.”
- Linda shared from the Federal Register:

Table 1 – Overview of Adverse Health Effects Associated with Exposure to Lead in Adults.

Effects listed include: reproductive, developmental, vascular/cardiovascular, hematological, neurological, renal, respiratory, endocrine, hepatic, musculoskeletal, gastrointestinal, body weight (reduction), immunological, and cancer.

 - Dr. Zane: The vast majority of these rarely occur; I generally don’t see these effects below 70 ug/dL. If a patient comes in with a read of 60 ug/dL, and aren’t allowed back to work until they’re at 15 ug/dL, then they’re never going back to work. Maybe the military threshold is low because those in the military are generally young and of reproductive age. The average middle-age worker presents with anemia or high blood pressure, which we can treat. Strokes and the like are downstream effects from *not* treating high blood pressure. This table makes it seem extreme.
 - Linda: Studies offered a tremendous amount of information to create this table. Most were conducted within the last 10-15 years. We do have the option of changing the PEL; as of now, federal OSHA hasn’t pursued this.
- Linda introduced Routes & Kinetics of Lead Exposure.
 - Lead exposures in adults above baseline are typically associated with occupational exposures.
 - Lead accumulates in the body with continued or chronic exposure. In adults, 90% of lead is stored in bone.
 - Dr. Zane: Lead can be mobilized from bone, more so during pregnancy and lactation. It’s a 3-compartment model we’re looking at: bone, brain, and blood. Since we can’t really measure lead in the bone and brain, we mostly measure blood lead

levels. I've seen lead levels go from 40-50 to 90 when a woman gives birth, and this is passed to the infant. This is a main concern for detecting lead.

- Linda: Do we want to look at what is detected over time? Or there may not be sufficient data.

- Linda shared from the Federal Register:

Table 2 – Overview of Health Effects Associated with BLL in Adults

BLL(ug/dL) Effects

5-10	Elevated blood pressure, etc.
10-20	Miscarriage, hypertension, etc.
20-40	Fatigue, sleep disturbance, etc.
40-60	Sperm effects, renal damage, cognitive dysfunction
60-80	Stroke, renal failure
80+	Central nervous system effects, hearing loss, gout, etc.

- Dr. Zane: I might dispute the lower level results as solely from lead, except for those related to pregnancy.
- Kerry Spurgin: Doctor, why is hearing loss included above 80?
- Dr. Zane: Lead does enter the blood and could be a contributing factor to hearing loss or gout, but is likely not the sole factor. This table is again showing an aggregate of what could possibly happen rather than what we typically see. But I don't dispute that people should work in a lead-protected environment.
- Linda: I'd like this group to comment on their own employee exposures and what they've seen; these studies are probably not where we see the 'peak' of people suffering these effects.
- Brian Hauck: Would it ever be acceptable to initiate a standard based on gender and age? What I'm hearing is that the effects of lead are acute in pregnancy and younger workers.
Also, it's important to hear these rebuttals because these are comments we'll get from industry. Some research may be overreaching.
- Linda: To answer your question, with protections specific to pregnant individuals, we should ask, what can we do? We do have to look at discrimination in employment. A historic case of women suing over being reassigned lesser (lower-paying) roles in pregnancy won in court.
- Robert Snyder: Employment laws should offer protections.
- Linda: Our rulemaking may have to stick with specifics.
- Robert: Tables show evidence of effects in certain groups, for example, at 20 ug/dL. We may need workarounds for these groups; I'd like to see us explore this.
- Chris Zimmer: There are toxicological studies that show direct health effects for adults, both acute and chronic at lower levels—20 or below. It's important to note there is no real level of lead without effects because it's a heavy metal, and hundreds of studies back this.

- Dr. Zane: Lots of studies conflate children with adult workers. I will challenge the statement that hundreds of studies show this in adults.
- We may have to agree to disagree.
- Linda: We have time to look at these studies and perspectives. We do need to ask: How far in the range does our rulemaking address?
- Robert: Is there going to be mandatory training associated with the new rule? We'll have to provide references to health effects and levels.
- Linda: Our decision document has to include explanations of why we arrived at this rule, and the documentation behind this. Stakeholders in this group and the public comments will address the reasoning behind the rule.
Question for Doctor Zane: Say there's an adult worker doing bridge maintenance where lead exposure is high—we know there's a high PEL—could the person be exposed to lead dust through housekeeping issues, through their skin?
- Dr. Zane: I've seen ingesting it as more common. The risk in this case is the constant exposure, which is inherent in stripping bridge paint. Prevention is key. The other part is surveillance, where the vast majority are detected.
- Linda: Is exposure the same through different routes—inhalation vs. ingestion?
- Dr. Zane: Really it's mostly ingestion.
- Robert: When removing lead-based paint from a bridge, as we see at ODOT, there are different routes of exposure that come from different methods. There are newer methods besides sandblasting. Safe harbor tables in the rule could help prevent the exposure.
- We struggle with that hygiene piece—handwashing specifically. From COVID to fentanyl exposure, we see this as an issue.
- Dr. Zane: I agree that precautions are needed.
- Kerry: Our firearm range looks to limit exposure.
- Dr. Zane: There is precautionary training that can apply across industries.
- Linda: Inadvertent exposure is a part of the rule that could be strengthened. I've looked previously at other states rulemaking, and can look at what Washington is doing.
So, what I'm hearing is that we could control for BLL. It seems that surveillance catches lead symptoms; we could use this.
- What could the BLL be to return to work? And with what treatment options?
- Dr. Zane: There are two schools of thought for adults: the textbook treatment, which is to remove the person from work and provide iron treatment. But, say the person comes in with a level of 70, and we do the usual treatment of 19 days of oral meds, then a 2-week equilibration period, then if they'd dropped to less than 40, I'd advise them to consider their work environment. They'd need maximum protection from lead to work, and may have to repeat this same cycle.
- For severe cases, I've used IV solution, but these drugs are going scarce in the U.S.

- Linda: So at what level is treatment?
- Dr. Zane: When I was working at the Poison Center, a level of 70 and anemia would be treated with iron supplementation for 14 days. But sometimes this was pica-related, such as in pregnant women who have lead accumulation.
- Linda: So would a medical removal at 50 mg/dL be sent to you? With no symptoms?
- Dr. Zane: I'd check the person with a neurological and psychological exam and testing, and monitor kidney function.
- If an employee is removed from work, but a doctor is not finding symptoms, how long would it take to get to 20 mg/dL?
- Dr. Zane: There's no real formula for this. Lead is going to keep coming out of the bone; you may not be able to really reach that level. In children, we aim for 44. For adults, I generally treat at 70. The unfortunate truth in our healthcare system is that when people can't afford treatments, they opt out.
- Kerry: There's a huge gap here to get to 20 mg/dL.
- Dr. Zane: Is it that they couldn't work with elevated levels, or they couldn't work at the same job?
- Robert: So it's possible the rule and medical treatment do not align. Would workers comp be available for extensive medical removal?
- Linda: That is worth looking at, how it would come into play.
- Brian H.: My lead experience is primarily with radiator shops, where it's really not feasible to find non-lead exposing jobs for those employees, which presents a challenge.
- Chris: And in the construction industry, it's hard to find equivalent jobs—they can be trained for new jobs.
- Dr. Zane: Are there references for Table 2?
- Linda: I can provide links to the original studies themselves, as well as more specific studies. I can also look at other states' decision documents to see how they made this work. I do want to bring in materials relating to surface contamination, hygiene, and housekeeping.

Linda: Focus for upcoming meetings:

September: We'll look at what our rule should include & begin drafting language.

October: We'll continue building the draft language.

Meeting adjourned at 10:52am. Next meeting: Friday, September 15, 2023.