

Smoke and Excessive Heat Rulemaking

March 25, 2021

1pm

Agenda

- Speaker introductions
- Meeting ground rules
- Advisory Committee member roles
- Future meeting dates
- Future meeting objectives
- Wildfire smoke exposures: Curtis Cude (OHA) and Carol Tenga (OHA) Air pollution and health effects
- Discuss scope of Oregon OSHA's wildfire and smoke rule
- Break
- Excessive heat exposure: Crystal Weston (OHA)
- Washington's and California's rule scopes
- Recommendations on Oregon OSHA rulemaking

Tom Bozicevic started the meeting at 1:05pm

- Meeting ground rules were stated (OSHA Slide) (Tom Bozicevic)
- Advisory Committee member roles were stated (OSHA Slide)
- Future RAC meeting dates (OSHA Slide) – Renée Stapleton (Oregon OSHA) we would like to have two listening and speaking sessions for workers (one in English and one in Spanish). End of April, beginning of May. We would like to know days of the week and times of day that might work best.
 - Suggestions from attendees: Sunday afternoon, later in May; weekday evenings 6-7pm; end of May, one night during the week and one weekend afternoon; T, W, Th after 6pm. Consider offering small incentive if not paid time.

See Oregon OSHA website under these topics for presentations from previous meeting.

- OHA slide presentations are available on the Oregon OSHA website, Advisory Committees separate webpages for Excessive Heat and Wildfire Smoke
 - <https://osha.oregon.gov/rules/advisory/heat/Pages/default.aspx>
 - <https://osha.oregon.gov/rules/advisory/smoke/Pages/default.aspx>

Smoke PowerPoint from OHA

Curtis Cude (OHA)

- Slide 1 on land acknowledgement was read
- Slide 3 Definitions for health and health equity stated

Carol Tenga (OHA)

- Slide 5 Outline of discussion
 - What's in wildfire smoke?
 - Risk factors
 - Smoke inhalation health effects
 - Symptoms from smoke exposure
 - Air pollution in Oregon from wildfire smoke
 - Health impacts from smoke in Oregon
 - Limitations of tracking health impacts from smoke
 - Recommendations from the CDC National Institute of Occupational Safety and Health
- Slide 6 Wildfire smoke contents; who is at increased risk; need to consider access to health care; social and economic disparities.
- Slide 7 What is Airborne Particulate Matter? Size of particles compared to human hair size. PM10 is important in terms of some of the toxicology and health effects; however, for the finer particles are more

likely to cause more severe health effects (PM2.5 and smaller) because they can travel deep into the lungs. Both particle sizes are regulated by the EPA. National Ambient Air Quality Standards for PM2.5 are 35 ug/m³ over 24 hours and 12 ug/m³ for annual average. There is currently no short term, hourly or sub-daily standard for PM2.5.

- Slide 8 Effects Beyond the Lung: listed health impacts of air pollution. Image on slide shows oxidative stress starts in the lung and then spreads to the rest of the body.
- Slide 9 Symptoms and Effects of Breathing Wildfire Smoke (both immediate/short-term and long-term) Exposure to wildfire smoke can lead to asthma. Long-term effects need more study.
- Slide 10 AQI Health Guidelines (airnow.gov) Typically calculated for PM 2.5. Chart of colored levels was reviewed. Higher the AQI value, the higher the health concern. Based on anticipated 24 hours average exposure. Not a good index of cumulative exposure. There is a lot of question about transient effects and how long the effects from a single exposure last as opposed from effects from multiple exposures over multiple days.
- Slide 11 Map shows number of days different areas of Oregon had unhealthy air quality. Most areas experienced at least 8 days of unhealthy air quality when looking at December date range on map.
- Slide 12 Increasing trend in all areas of the state that we have data for the number of days for unhealthy for sensitive groups. Air quality nationally except in areas where wildfires are increasing in frequency and magnitude.
- Slide 13 Isn't actually a measure of PM2.5. Top of moderate on chart corresponds to PM2.5 NAAQS = 35 ug/m³ (24-hr Average)
 - Slide 14 Data on PM2.5 daily 24-hr average concentrations (provisional data from state, regional and tribal air quality monitoring) and Emergency department and urgent care asthma-like visits from near-real-time syndromic surveillance (OR ESSENCE) *This type of tracking misses many less severe cases, cases diagnosed differently and people who did not seek care.
 - Slide 14 September 2020 Wildfire Health Impacts. High levels for nearly 14 days. Overall increase in asthma visits during this time. We had an overall of 25% increase of asthma-related visits during September compared to the previous month. 30% increase for Hispanic/Latino/a populations; 22% for non-Hispanic/Latino/a populations. In-depth study on the disparity is being done now.
 - Slide 15 Asthma Caused or Made Worse by Job: Self reported data showing different age groups of people who reported that asthma was caused or made worse by their job. Some was reported to healthcare provider. Access to healthcare can affect people having an asthma management plan.
- Slide 16 2017 Excess Asthma-related Costs: in Oregon, millions of residents are in those counties and millions of dollars are estimated in costs related to Eagle Creek/Gorge and Chetco Bar fires.
- Slide 17 Approved CDC NIOSH Particulate Filters. Filtering facepiece respirators described. People may not have a cleaner air option when they are not working.
- Questions for Carol Trenga (OHA):
 - Q. Attendee: Are these values based on one exposure?
 - A. They are based on a 24 hour exposure, that may be predictive if data are for shorter times.
 - Q. Attendee: Assuming we are using an 8 hour time weighted average for occupational exposure concerning particulate matter in air; response to this that if the regulation uses AQI then it would not be an 8-hour time weighted average
 - A. There are not a lot of clear occupational regulations for fine particulates. There are some industry-specific guidelines; categories of particulates not otherwise regulated that are based on some TWAs. CDC, NIOSH, OSHA have some differing guidance on those as well. There is need to decide what is going to be the quantitative basis for these rules.
 - Q. Attendee: Do the asthma visits (previous slide) include all ages, worker vs home based?
 - A. Data we have looked at is on adult general population, 18 and over. Project still needs to look at finalized, certified data that includes ER visits and hospitalization. Will have access to better data on race, ethnicity and ages. Data that was reported that may not have made it to claim system. Claims data tends to lag by months.
 - Q. Attendee: What does asthma-like data look like for previous years?
 - A. Usually asthma visits are 5-7% of overall visits and during that wildfire period, it was around 10%.
 - Q. Attendee: Please comment on why marginalized groups would be less likely to seek medical assistance during that time.

- A. Yes, can assume those populations are going to need special consideration during this rulemaking process and at OHA for attention to equity. Curtis Cude: Perhaps anxiety on employment status in that population.
 - Q. Attendee: Is WC data available for this information?
 - A. We weren't looking at WC claims. Discussion on that is better directed to OSHA. A. In regards to NIOSH wildland firefighter study mentioned, I believe that has moved to the analysis stage. Likely going to have to rely on broader air pollution like PM 2.5 effects on the population. Paused research during COVID pandemic but moved into data analysis phase.
 - A: Renée Stapleton (Oregon OSHA): we have been compiling WC claims but it is not as easy as we would like it to be based on how claims are coded. Some information is brief. It will be shared with the group in form of basic information once we have everything that we can capture. We anticipate an under reporting because workers may be experiencing symptoms but may not know they are WC related or workers may be fearful of pursuing a claim (or not have the time to pursue claim).
 - Comment: Carol Trenga: Point made about other indoor jobs that would also be affected by hazardous air outdoors. Important to look at how spaces are defined for this rulemaking process.
 - Q. Attendee: Washington kept referring to a Washington Air Quality advisory level.
 - A. Washington state has their own WAQI that is more health protective than the one from the EPA.
 - Carol Trenga: looking at OSHA PELs, we will be looking at those for wildland fires and prescribed fires, but the challenge is that they are not for fine particulate matter. We will be looking at those for what the equivalents might be, related to AQI and fine particulates.
 - Q. Attendee: With the AQI, there should be some correction for acute exposure along with long-term impact, 8-hour with respirable intake from physical work and 24-hour normal person exposure. What are your thoughts on short and long term exposures?
 - A. We have brought this up multiple times to EPA which is studying those factors in terms of short-term exposures for general population. In 2009, there was a movement to have a one hour PM2.5 standard. Guideline that has been developed, is not a standard. Need to be looking at person/time exposures (hours of exposure and activity levels) with this rulemaking process so it is as protective as possible.
 - Q. Attendee: During the Eagle Creek fire, there was a low number of the population who had doctor visits.
 - A. That wildfire was very different than September 2020 wildfires in terms of population exposed. We are working on better exposure characterizations; having less crude than a county level monitor for example.
- **Questions to Oregon OSHA**
 - Q. Attendee: need to exempt wildland firefighters from the discussion. First effort is to put the fire out. Evidence that they are not suffering from these effects. Second Attendee: believes they are exempt. But feels like we need to wait until NIOSH results are in to conclude what the effects may or may not be.
 - A. Tom Bozicevic: they are not currently exempt but we are noting discussions about the desired exemption of wildland firefighters. Are exempt in Washington per slide, but we are not sure of the reason behind that decision.
 - Q. Attendee: In parts of Washington, there are numbers of low cost sensors. Have those been deployed in Oregon and do we have a sense of their accuracy?
 - Renée Stapleton (Oregon OSHA): In Washington, they mentioned a couple of sensors that EPA considered a decent proxy. We haven't gotten far enough along to see that those are available and an option in Oregon.
 - Ted Bunch (Oregon OSHA)—OSHA slide on overview of California rule's scope and exceptions. Looking at it as a starting place, not necessarily adopting California's scope for Oregon.
 - Attendee: Logging exemption suggested too because many do engage in wildland firefighting.
 - Tom Bozicevic: are there any other suggestions on types of workplaces or activities that committee feels should be excluded from the rule? [None were mentioned by committee at this time.]
 - Recommendations for Oregon's OSHA's scope of Wildfire Smoke.
 - Discussion on **scope**
 - Attendee: we are in favor of a broad standard that does not exempt; should cover all workers who are working outside, no exemptions other than indoor workplaces and vehicles.

- Attendee: Important to address time duration, making sure it is a practical rule (for example if a worker is outside for 30 seconds).
- Renée Stapleton: When we talk about scope, we need to think about if we are going to exclude a particular activity or set of workers, we need to think about what protective measures are in place. Consider if there is there a reason why a specific activity should be excluded.
- Attendee: Look at time as opposed to the category of work.
- Tom Bozicevic: This topic (including action and exposure levels) will be further discussed at a later point in the rulemaking process to gain more information.
- Q. In chat: What types of fires would this be pertaining to?
- A. Tom Bozicevic: for wildland fires: non-structural fires or non-prescribed fires that occur in the wildland areas.
- Attendee: My concern is the broad brush stroke that everyone needs to have the protection in place to manage this. Does every person engaged in wildland firefighting have to be wearing self-contained breathing apparatus? There would be a lot of financial concerns and our approach to work will be hampered by these rules. This would go beyond firefighters as well.
- Tom Bozicevic: Is your suggestion to exempt emergency responders in general?
- Attendee: Just taking the approach of making exemptions based on classifications of job titles doesn't get you where you need to be. Needs to be discussion that this is the minimum level of PPE needed for this fire event or hazard. But to say we have to provide this protective breathing apparatus is probably not going to bode well for the workforce.
- Attendee: I am concerned about the transfer of risk from one inherent thing to another [with use of certain PPE]. That creates other hazards down the line (working in super hot environments, with dirt and smoke).
- Tom Bozicevic: discussion of scope will not end with this meeting and will continue to be discussed in future meetings of this topic.
- Attendee: stay away from using AQI as the trigger. That puts us out of alignment with Oregon's PELs. Requiring the use of a respirator in some situations could create additional hazards. Continue on the path of voluntary use.
- Attendee: workers are afraid to ask for things that are voluntary vs mandatory.

Break

Heat Presentation from OHA Curtis Cude (OHA)

- Slide 1 on land acknowledgement was read
- Slide 3 Definitions for health and equity were read
- Slide 4 OHA's Health Equity Definition was read
- Slide 5 Outline -- Crystal Weston (OHA)
 - Heat illness and progression
 - Symptoms
 - Acclimatization
 - Temperature levels and heat hazard
 - Limitations of tracking heat illness in Oregon
 - Heat illness in Oregon: what we know
 - Recommendations from the CDC National Institute of Occupational Safety and Health
- Slide 6 Heat Stress overview discussion
 - Heat stress = heat load from metabolic heat + temp and humidity + clothing requirements (including PPE)
- Slide 7 Heat Illness bodily effects described
- Slide 8 "Classic" vs. Exertional heat stroke table shown: individual person characteristics listed, classic vs exertional heat stroke based on those individual characteristics. Occupational/exertional standpoint is looking more at people ages 15-45 years old.
- Slide 9 Diagnosed heat illness (OR-ESSENCE). Heat illness cases as temperature changes. If there is a large amount of smoke, that can also reduce the temperature. And there can be changing effects in that regard.

- Slide 10 Work-related heat illness in Oregon: cases in Oregon and California in 2016 and 2017, per 100k employed people. It is hotter in California than Oregon. Noted: This type of tracking misses many cases that are less severe or are coded differently.
- Slide 11. Risk factors for workers listed.
- Slide 12 CDC NIOSH Acclimatization recommendations, Increase worker exposure to a hot working environment over time. Recommended transitions for new workers vs workers with previous experience with the job (% of work day)
- Slide 13 List of physiological adaptations to heat stress that workers gain during acclimatization
- Slide 14 What is "Safe" for workers? CDC NIOSH has RALs for unacclimatized worker and acclimatized workers. Safety models include: Temperature (humidity, wind, radiant heat), Work intensity
- Determining the following (slides 15-19): Argonne National Laboratory (ANL) has developed a utility and app using algorithmic equations to get WBGT from weather data.
 - Slide 15 1. Wet Bulb Globe Temperature
 - Slide 16 2. Wet Bulb Globe Temperature, *Effective*
 - Slide 17 3. Metabolic work rates (how hard are the workers working)
 - Slide 18 4. Is there a hazard?
 - Slide 19 American Conference of Governmental Industrial Hygienists (ACGIH) -- chart on WBGT effective °F
- Slide 20 CDC NIOSH Heat Illness Recommendations: List of steps employers and immediate supervisors can take
- Questions?

Ted Bunch: Excessive Heat Overview

- OSHA slide: Scope of CA and WA Heat Rules (list of elements per state)
- OSHA slide: Exceptions to CA and WA Heat Rules (list of elements per state)
- Recommendations for Oregon OSHA's scope for Excessive Heat from the committee?
Questions/comments?
 - Attendee: Logging does not fit this scenario of people working in hot climates in Oregon. The issue is how to identify if someone is in trouble? No way logging can perform its function if every new employee has to be acclimated for two hours as such. We need to look at this carefully and decide if employer has obligations that are beyond this capacity.
 - Q. Attendee: Do CA rules apply to forestry workers?
 - Ted Bunch: CA heat rules apply to all outdoor places of employment. Ted will follow up and make sure.
 - Q. Attendee: how are outdoor places of employment defined? Some workers may be indoor/outdoor in their jobs.
 - A: Ted Bunch: will follow up on CA rules discussion on this. Renée Stapleton: maybe another way to think of it is not indoor vs outdoor; maybe it should look at effects of outdoor climate/heat causing distress.
 - Q. Comment. Attendee: We would like to see more broad scope in regards to exposure to heat; no exemptions for certain industry of workers; indoor places where heat is not caused by the work itself as a result of the heat from outdoors should also be considered in discussion of this rulemaking.
 - Any additional questions or comments on **heat**? [None stated during meeting]
 - Any further discussion on **wildfire smoke**? [None stated during meeting]

You can go to Oregon OSHA website if there are additional questions or comments on smoke or heat.

Q. Attendee in chat: Is there an interplay between these provisions and COVID 19 going forward? Issues with heat stress may also be affected by additional PPE, etc. with COVID with what we expect is the norm. We should take that into account if it hasn't been already in the COVID provisions. This could also relate to transportation in terms of enclosed space and the desire to crack a window in these spaces.

Q. Attendee: Is there a deadline for written comments?

A. Renée Stapleton: No, there is not a specific deadline. But the quicker we have the information, we can apply it to the process. Tom Bozicevic: yes, presentations from OHA are available online on the Oregon OSHA website. Renée Stapleton (Oregon OSHA): there are limitations to posting the recording based on technical/space and data integrity issues.

Q. Attendee: [In regards to] long rows of covered crops with sheets of plastic, is there agreement that that situation would be covered in the rule? I would think this would be in the same scope as outdoor work.

A. Ted Bunch: I think you are referring to hoop houses.

A. Renée Stapleton: we don't know yet what will be covered in the rule. That is one of the goals of this discussion. Introducing the idea of spaces that have exposure to the heat-related climate and not specifically indoor vs outdoor.

Q. Attendee: I would think a situation like that [work in hoop houses] it would be covered as a growing area in agriculture and workers have quite a bit of problems with it.

Q. In chat: how does this apply to independent contractors?

A. Renée Stapleton: Oregon OSHA cares about the health and well-being of all workers. But if they are truly defined as an independent contractors and looking at Oregon OSHA's jurisdictions, if they do not fall under the scope of the rule, this rule would not have an impact on independent contractors, if it meets the definition that we have in our rule set as well as the statute. It could be a good training tool for independent contractors but it could not be enforced by Oregon OSHA.

Ted Bunch shared links to OHA presentations (placed at beginning of these minutes)

Next meeting April 15, 2021 at 1pm

Focus will be on identifying determining factors and action levels on worker protections

Meeting adjourned at 3:37pm