



March 28, 2023

Senator Wlnsvey Campos, Co-Chair
Representative Andrea Valderrama, Co-Chair
Joint Ways and Means Human Services Sub-Committee
900 Court Street NE
State Capitol
Salem, OR 97301

Dear Co-Chairs and Committee Members:

Please find below information requested by members of the Joint Ways and Means Human Services Sub-Committee after the March 20 meeting on Public Health.

1. What are the data on the hospital admissions for children related to wildfire effects?

Looking at three wildfires– the 2017 Eagle Creek Fire, the 2020 Labor Day fires, and the 2022 Cedar Creek Fire – OHA saw clear effects of wildfire smoke on the proportion of visits by children ages 0-17 (compared to visits by adults 18+) who went to non-federal emergency departments and some urgent care centers out of the total of all people with air quality-related respiratory complaints (that is, not related to infectious diseases). Comparing visits for respiratory complaints by children ages 0-17 for a reference period preceding the fires compared to an exposure period after the start of the fire, data show:

- For the 2017 Eagle Creek Fire, there was a 29.5% increase in the proportion of visits among 0-17-year-olds during the exposure period across the seven-county region impacted by the fire (Clackamas, Columbia, Hood River, Multnomah, Wasco, Washington, Yamhill).
- For the 2020 Labor Day Fires, there was a 7.5% increase in the proportion of visits among 0–17-year-olds statewide during the exposure period.
- For the 2022 Cedar Creek Fire, there was a 31.4% increase in the proportion of visits among 0–17-year-olds across a three-county region during the exposure period (Crook, Deschutes, Lane).

Hospitalization data are useful for identifying the most severe outcomes, but OR-ESSENCE, the near real-time reporting of visits to non-federal emergency departments and urgent care centers, provides a more complete picture of health effects to people in Oregon and can be useful for identifying trends in some vulnerable populations. All emergency departments in Oregon have been reporting the number and reason for visits since mid-2015. With this consistent statewide data, in the future OHA will be in a position to compile a multi-year analysis to provide a clearer understanding of health outcomes in Oregon related to wildfires.

2. Do we see any effects on school attendance due to wildfires? If so, what are the data?

OHA does not have data about school attendance during periods of wildfires; however, it is an area of concern. With current public health modernization funds, OHA has a new position focused on healthy homes and schools, who will be the lead for efforts across OHA and with state agency, local public health authority, community-based organization, and other partners to support action to keep children safe from climate and other environmental health threats in the school environment. One example is providing support to strengthen Healthy and Safe School Plans, as required of school districts by Oregon Department of Education rules since 2016.

3. What are the measurable outcomes from wildfire smoke inhalation on:

- **Pregnant people?**
- **Babies who were in utero during periods of wildfire smoke/smoke inhalation?**

When pregnant people are exposed to wildfire smoke, their fetuses are exposed as well. Pregnant people are at higher risk than the general public for the most immediate health impact of wildfire smoke, i.e., breathing problems.

Pregnant people are more vulnerable to the effects of any type of air pollution. They are more likely to experience the harmful effects of bad air quality along with other high-risk groups that include infants and young children, people with chronic lung conditions, and those who are over 65 years old.

The exposure of the fetus can result in premature birth and low birth weight. These each can have long-term health effects for the child.

For infants whose birthing parent was exposed to air pollution while pregnant, associations have been found with premature birth, low birth weights, certain birth anomalies/birth defects, Sudden Infant Death Syndrome, and issues in brain development (such as ADHD, autism spectrum disorder, overall mental abilities). Exposure to air pollution while in the womb has also been connected with long-term lung, heart and circulatory, and immune system problems that can extend through childhood and into adulthood.

Wildfire smoke is a particular form of air pollution, and research has primarily focused on effects on the fetus of an exposed pregnant person. Multiple toxins are present in wildfire smoke, but PM2.5 exposure is a useful general marker. These tiny particles can cross the placenta to the fetal circulation. PM2.5 levels decreased in the past decades in the United States *except* in wildfire-prone areas. The contribution of wildfire smoke to PM2.5 levels is expected to drastically increase in the next decades. It is of note that there is a significant association between

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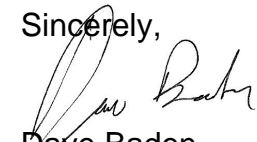
PM2.5 exposure and preterm birth. Babies born preterm can have childhood health issues that extend into adulthood.

Epidemiologic literature specific to wildfire smoke shows that:

- Pregnant peoples' respiratory symptoms are most commonly short-lived, but the stress and anxiety from wildfire exposures continue longer term.
- Recent research of 2.5 million pregnancies in California found that wildfire smoke exposure was associated with increases in spontaneous preterm birth when the exposure took place in the first trimester (0-13 weeks) or at pregnancy weeks 14-20. Each additional day of smoke exposure slightly increased the odds of delivering prematurely. (This study did not include the second half of pregnancy, which is weeks 21-40.)
- A systematic review of many studies looking at the association between wildfire exposure during pregnancy and the risk of adverse birth outcomes found that maternal exposure to wildfire, particularly during *late* pregnancy, can be linked to reduced birth weight and premature birth.
- Well-designed comprehensive studies are needed to better understand the perinatal effects of wildfires. One of these is currently taking place in Klamath County, where public health and Oregon State University are working with people exposed to wildfire smoke during pregnancy and looking at their infants' health.

Please do not hesitate to reach out if you have any further questions or clarifications.

Sincerely,



Dave Baden
Interim Director