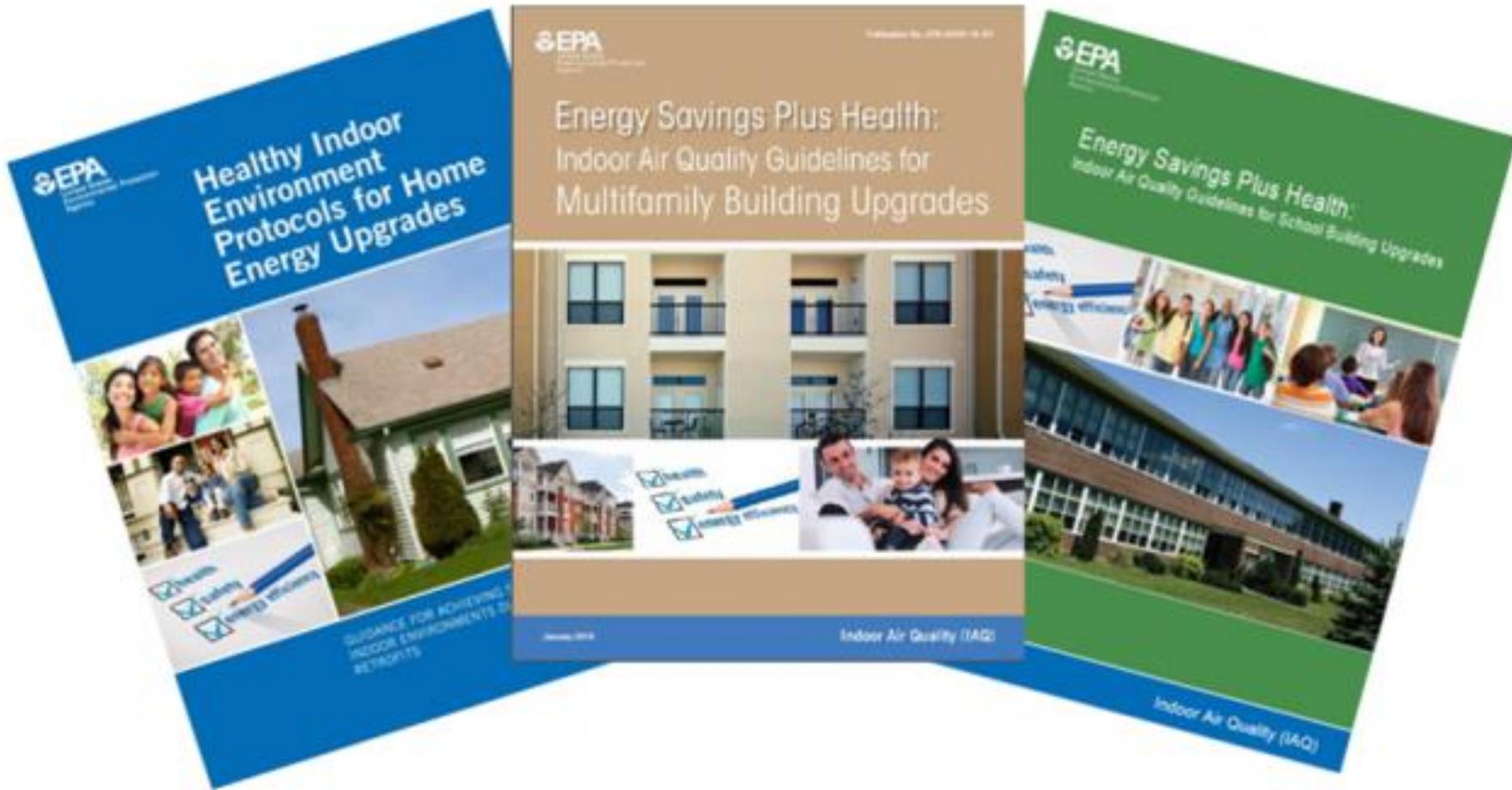

Health Co-Benefits of Healthy, Resilient Efficient Buildings

Presentation to the Legislative Task Force
on Resilient Efficient Buildings

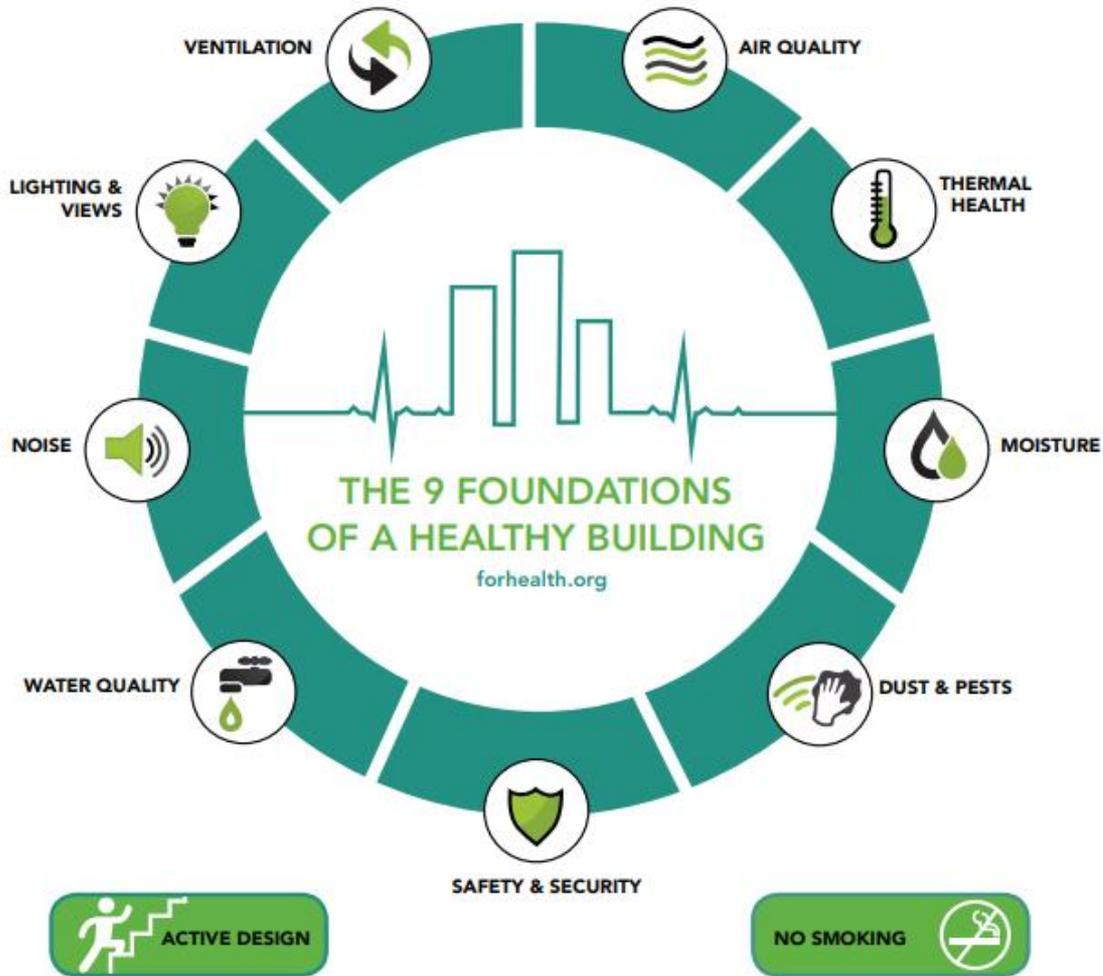
Gabriela Goldfarb, MPP, Manager
Environmental Public Health Section

May 3, 2022





A HEALTHY BUILDING



*The 9 Foundations
of a Healthy
Building –*
Harvard T.H. Chan
School of Public
Health

Energy efficiency, air pollutant reductions and health

- Energy efficiency improvements that reduce byproducts of fossil fuel combustion are shown to reduce emissions that harm health, including:
 - Particulate matter
 - Nitrogen dioxide
 - Sulfur dioxide
 - Polycyclic aromatic hydrocarbons
 - Mercury
 - Volatile organic compounds

Source: Climate Change and Public Health in Oregon (2018)

Health impacts from exposure to particulates

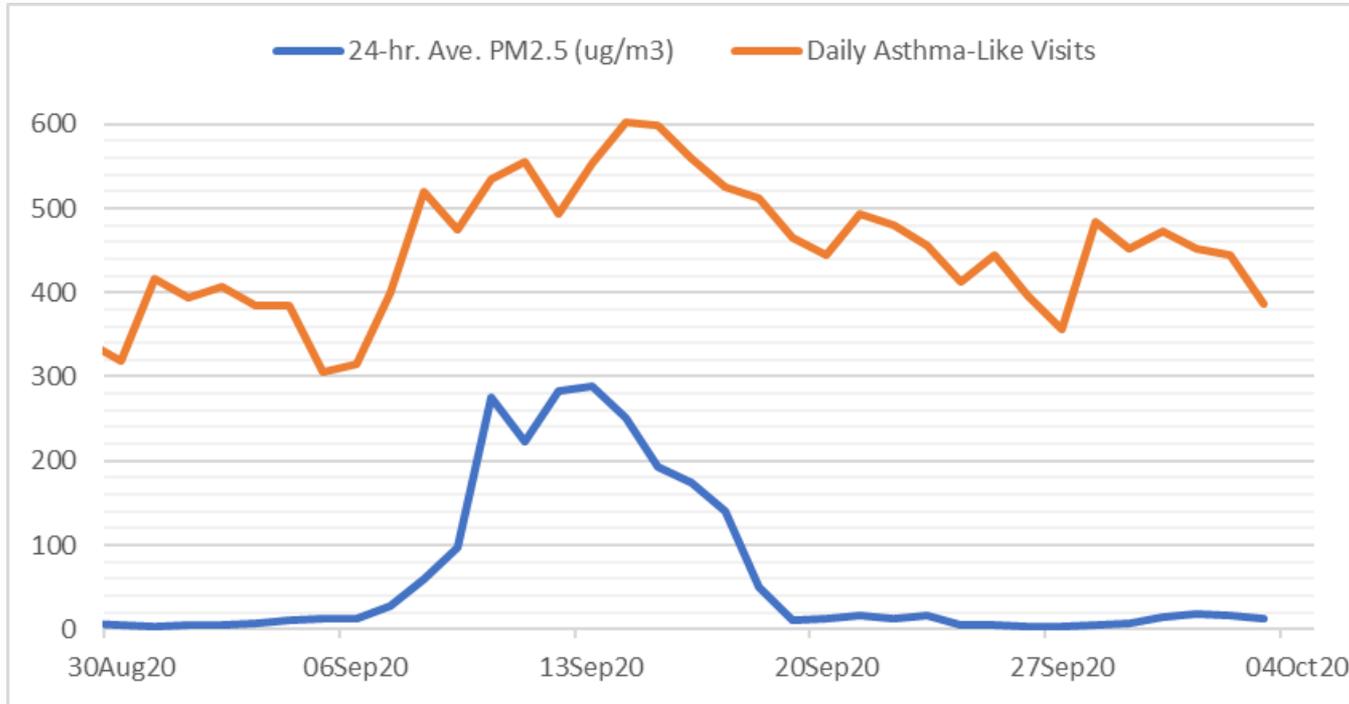
- Strong evidence that exposure to particulate air pollution increases risk of:
 - Heart disease
 - Respiratory disease
 - Stroke
 - Cancer

...four of the top five leading causes of death in Oregon.

Inequitable impacts from air pollution

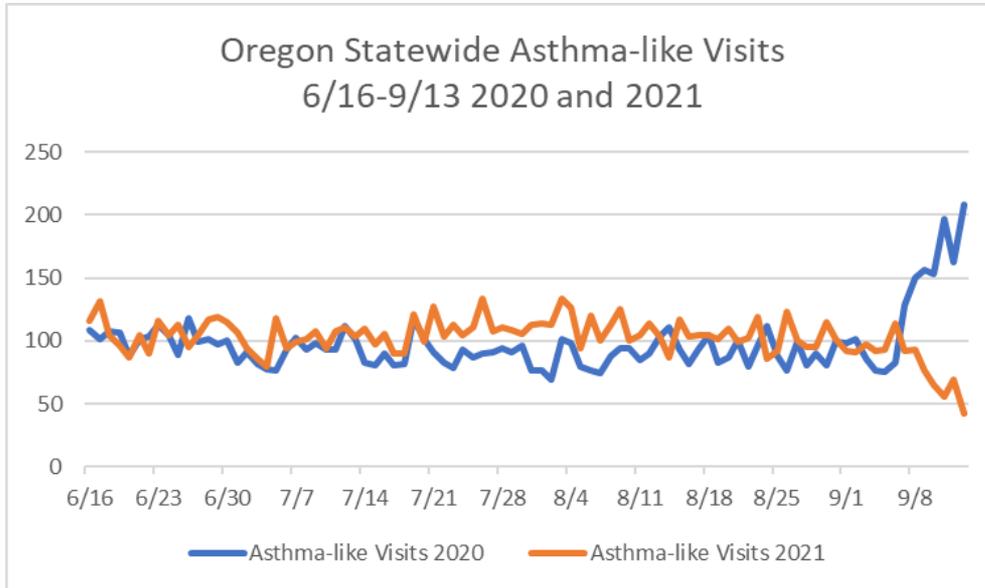
- Nationally: low-income communities, communities of color more likely to be exposed to air pollution where they live, work, and go to school.
- Also more likely to have higher background rates of these diseases.
- Oregon:
 - Adults with household incomes < \$20,000 have 3X likelihood of heart attack compared to those with incomes > \$50,000
 - African Americans, American Indians and Alaska Natives = higher prevalence of heart attacks than other racial and ethnic groups in Oregon.

September 2020 wildfire health impacts



- PM2.5 daily 24-hr average concentrations (provisional data from state, regional and tribal air quality monitoring)
- Emergency department and urgent care asthma-like visits from near-real-time syndromic surveillance (ESSENCE)

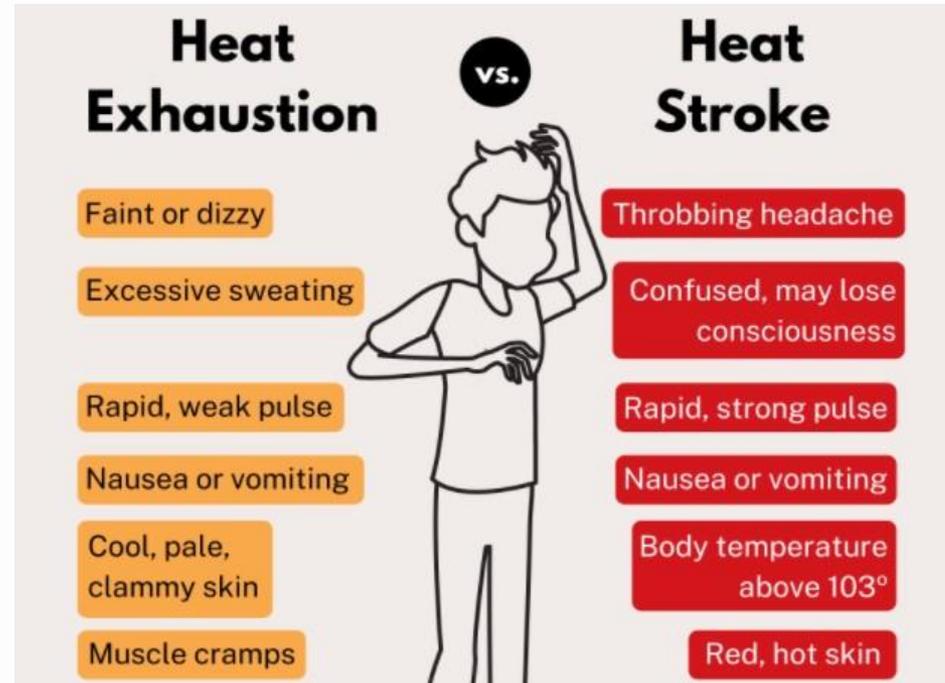
Oregon statewide wildfire smoke health impacts: 2021 vs 2020



- 2021: 74/90 days had higher PM2.5 levels than the same day in 2020
- Deschutes County: 20% higher ALI ED visits in 2021 than 2020
- Klamath-Josephine-Jackson Counties combined: 20% higher ALI ED visits in 2021 than 2020
- Lake-Harney-Malheur combined: ~ as many 2020 & 2021 ALI ED visits
- Statewide 5% more asthma-like illness (ALI) emerg. dept. (ED) visits in 2021 than in 2020

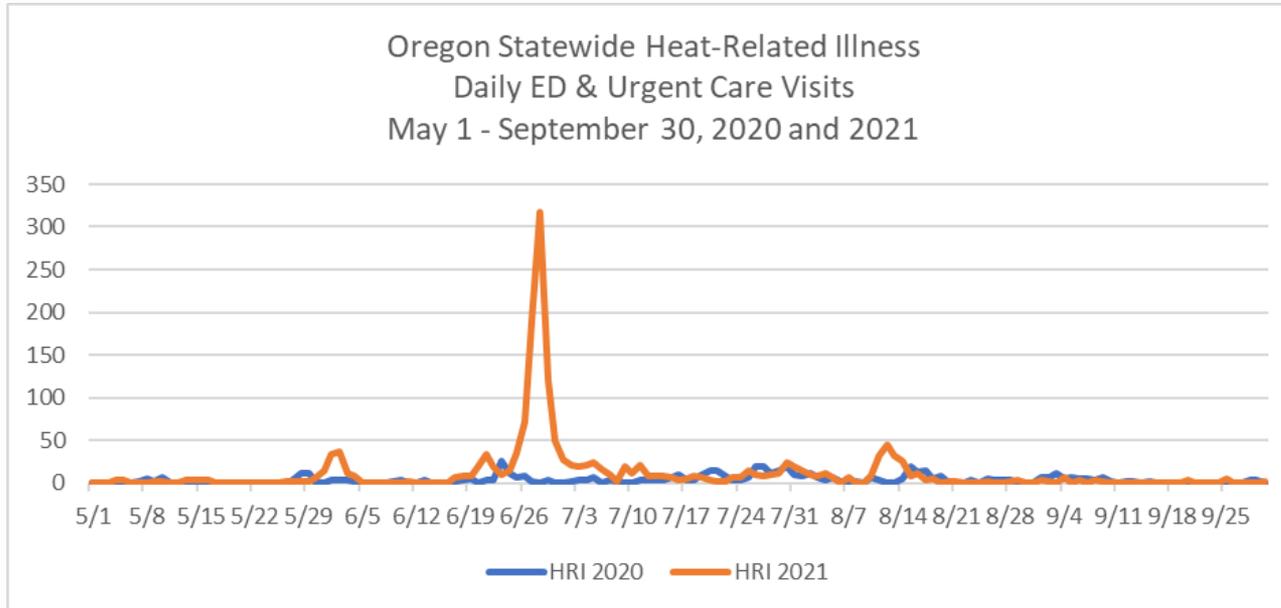
Excessive heat health impacts

- Heat stroke – most serious, body unable to control its temperature – Call 911
- Heat exhaustion – milder illness, caused by prolonged exposure to high temperatures, especially when not drinking enough or right kind of fluids



Oregon Statewide Heat-Related Illness 2020 and 2021

Oregon Statewide Heat-Related Illness
Daily ED & Urgent Care Visits
May 1 - September 30, 2020 and 2021



- Statewide: 190% more heat-related ED & urgent care visits in 2021 than 2020 (1719 versus 593)

- 59% of heat-related illness ED visits in 2021 were from zip codes with a median household income below \$50,000
- At least 109 deaths solely attributed to heat in summer 2021

Factors Affecting Indoor Air Quality

- Use of Pesticides and Toxic materials
- Ventilation:
 - Moisture/mold from cooking/bathing/cleaning
 - Fuel burning appliances
 - Off gassing of building materials
 - Exhalation of CO₂
- Filtration:
 - Smoke, dust, dirt, pet dander, mold
- Outdoor air infiltration:
 - Wildfire smoke
 - Vehicle exhaust (near highways/airports)
 - Manufacturing
 - Agricultural
 - Radon
 - Ozone

Oregon Healthy Housing Statistics



In Oregon, **32% of children live in households with a high housing cost burden**, and 16% of children live in poverty.



53% of Oregon housing was built before 1978 and is likely to contain lead-based paint; 11% was built before 1940.



About **12% of adults** and **7% of children** have **current asthma** in Oregon (2018).



In 2018, there were **1,163 hospitalizations due to asthma in Oregon**, totaling **\$9.2 million in direct charges**.



In 2018, **120 Oregon children tested had an elevated blood lead level** (5 µg/dL or more); **28 of them had blood lead levels of 10 µg/dL or higher**. Average blood lead testing activity **fell by 33% in the spring of 2020** due to the COVID-19 pandemic.



On average, **16 Oregonians die annually from carbon monoxide exposure** (2014-2018).



In 2018, **unintentional falls were responsible for 689 deaths** among Oregonians over the age of 65.



28 ZIP codes in Oregon are considered "high risk" for indoor radon, with as many as 62.5% of homes testing above the EPA action level. There are approximately **276 radon-related lung cancer deaths in Oregon each year**.

National Center for
HEALTHY HOUSING

February 2021. For **references**, additional **state-specific** healthy homes information, and to learn how you can **engage your members of Congress** on these vital issues...

visit: <http://bit.ly/StatePro>

contact: sgoodwin@nchh.org

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Energy Efficiency and Health

Benefits

- Decreased heating/cooling costs
- Improved comfort
- Well-designed HVAC upgrades can improve IAQ and improve respiratory health
- Replacing older wood burning stoves improves both indoor and outdoor air quality

Cautions

- Improvements such as sealing, insulating, window replacement may have a negative effect on IAQ
- Disturbing lead-based paint/asbestos may expose occupants to hazards
- Increased ventilation improves IAQ, but also increases heating and cooling costs



Healthier Together Oregon

Build climate resilience among priority populations.

81st OREGON LEGISLATIVE ASSEMBLY--2021 Regular Session

Enrolled

House Bill 2842

Relating to healthy homes

*OHA Climate Change and Youth
Mental Health Study – May 2022*

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

Thank you

Gabriela.G.Goldfarb@dhsoha.state.or.us

<https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENT/Pages/index.aspx>

The logo for the Oregon Health Authority. It features the word "Oregon" in a smaller, orange, serif font positioned above the "H" of the word "Health". The word "Health" is in a large, dark blue, serif font. Below "Health", the word "Authority" is written in a smaller, orange, serif font. A thin blue horizontal line is positioned just above the "Authority" text, extending from the left side of the "H" in "Health" to the right edge of the "Authority" text.

Oregon
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