

Wildfire Smoke Tip Sheet

August 2021

The Northwest Healthcare Response Network (NWHRN) continues to work with local response partners to prepare for potential wildfire and related smoke impacts. This Wildfire Smoke Tip Sheet is designed to support facilities and organizations in their planning efforts and to reference if fire/smoke impacts are anticipated. State and regional responses to climate-related hazards continues prove that organizations are most resilient and effective when partners are pro-active in their planning efforts, share and learn from each other, and most importantly, work together.

Planning for Wildfires and Smoke Impacts

Wildfires are increasing in duration, frequency, and intensity due to climate change. These accelerating changes have led to a rise in human exposure to harmful smoke. Wildfire smoke can lead to significant challenges for vulnerable individuals, communities, and healthcare facility operations, especially when smoke events are long in duration, or air quality is particularly bad. Wildfire smoke events have been shown to increase demand for healthcare services, impact critical infrastructure such as transportation, and challenge healthcare operations when unprepared. The NWHRN will share regional air quality forecasts with coalition partners as they are available. In the meantime, individual facilities, health systems, and response agencies should incorporate wildfire smoke into their planning efforts.

Hospital organizations should consider the following facility-level vulnerabilities, limitations, and strategies in their planning efforts:

- HVAC-system vulnerabilities and environmental control mitigation measures
- Cascading and concurrent hazards often accompanying wildfire smoke
 - Impacts to transportation, electricity, and communications
 - Compounding implications for staff needs and availability
 - Extreme heat and wildfire impacts
- Patient surges related to smoke and/or heat, and shortages of medical equipment and supplies due to an increase in respiratory and cardiac patients

Pre-hospital EMS providers should consider the following vulnerabilities, limitations, and strategies in their planning efforts:

- Increase in 911 calls and significant emergency department patient drop-off delays
- Identify thresholds of concern; notify key response partners such as the local health jurisdiction (LHJ), emergency management, and NWHRN when threshold(s) are reached. Thresholds to consider:
 - Duration and intensity of smoke
 - Overall call volume and percentage of call volume related to respiratory/cardiac events
 - Delayed response times, turn-around times at hospitals, and additional transportation hazards
- Understand/review PPE requirements for long-duration smoke events
- Cascading and concurrent hazards often accompanying wildfire smoke
 - Impacts to transportation, electricity, and communications
 - Compounding implications for staff needs and availability

Non-hospital healthcare organizations, such as ambulatory surgery centers, skilled nursing facilities, and other healthcare facilities that utilize medical oxygen should consider the following:

- HVAC-system vulnerabilities and environmental control mitigation measures
- Long-term care facilities should consider:
 - Evacuation protocols if HVAC systems fail during high-risk air quality events
 - Local guidance on when to cancel outdoor activities for residents
 - Taking extra precautions for residents at particularly high-risk for impacts from smoke exposure
- Thresholds for postponing non-emergent or urgent procedures, testing, vaccinations, and/or other activities to reduce patient and staff exposure to smoke
- Additional standalone filtration units that reduce particulate matter without producing ozone
- Appropriate PPE (respirators and eye protection) for staff exposed to smoke on the job.

During a wildfire smoke event

Healthcare organizations and response agencies experiencing or anticipating prolonged or acute poor air quality should take additional steps to prepare for direct and indirect impacts:

- **Review facility preparations.** As early as possible:
 - Consult your engineering/facility staff to understand your HVAC system’s filtration capabilities and limitations, such as the use of high-efficiency filters (MERV 13 or higher)
 - Review inventory of key respiratory, burn and related equipment/supplies
 - Review facility evacuation procedures
 - Prepare for power outages, which pose a serious threat to patients and facilities
- **Prepare staff for smoke and fire impacts.**
 - Staff may want/need to sleep at your facility if conditions warrant. Review procedures, communicate with staff, and advise them on issues of personal and home preparedness
 - Take into consideration the possibility of staff having to evacuate their home and resulting complications with staffing and support needs
 - Review staff and patient emergency alert procedures
 - Review schedules of staff with respiratory expertise to ensure coverage—and breaks
- **Monitor air quality conditions:** Sign up for local emergency management and public health alerts and regularly review weather and smoke forecasts. When air quality is forecasted to be “Unhealthy” for greater than 24 hours or very unhealthy or hazardous (based on [forecasts](#) such as that from the WA State Department of Ecology), it may be worthwhile to assess indoor air quality and monitor for fine particulate matter (PM 2.5) for facilities where people who are sensitive to smoke live or stay.
- **Share information.** Facilities in your area may be differently affected by smoke conditions, making them more or less able to admit or care for patients.

Stress the risk to patients and families. The best way to manage a surge in patients is to prevent it. The Department of Health and local public health jurisdictions have information geared toward helping individuals and families avoid the dangers of fire and smoke. Reiterate these messages in all public- and patient-facing communication.

Links and Resources

Wildfire and Smoke Resources

- ASHRAE [Planning Framework for Protecting Commercial Building Occupants from Smoke During Wildfire Events](#)
- AirNow: [U.S. Air Quality Index](#) / [AirNow Fire and Smoke Map](#)
- Centers for Disease Control & Prevention [Wildfire Smoke Safety](#)
- Healthcare Evacuation
 - [ASPR TRACIE, 'The Last Stand: Evacuating a Hospital in the Middle of a Wildfire' \(interview with Kaiser Hospital Santa Rosa \(CA\) officials sharing their experiences with the 2017 wildfire requiring evacuating\)](#)
 - [ASPR TRACIE, 'Evacuating and Receiving Patients in the Midst of a Wildfire' \(interview with Colorado healthcare officials who responded to a 2019 wildfire\)](#)
- Washington State:
 - [Department of Ecology Air Monitoring Network | Washington clean air agencies](#)
 - Department of Labor & Industries: [Washington among the first to issue rules to protect workers from wildfire smoke](#)
 - Department of Health: [Recommendations for wildfire smoke and COVID-19 during the 2021 wildfire season](#)
 - [Ventilation and Air Quality for Reducing Transmission of COVID-19](#)
 - [Wildfire smoke guidance and resources](#)
 - [Smoke from Fires](#)
 - Department of Natural Resource, [Information on Wildfires](#)
 - [Washington State Smoke Blog](#)
- Puget Sound Air Quality Agency [Sign Up for Alerts](#)
- Local Health Jurisdictions:
 - Public Health – Seattle & King County, [Wildfire smoke preparedness](#)
 - Tacoma-Pierce County Health Dept., [Wildfire Smoke: How to protect your health from the haze](#)

Articles on the links between Climate Change and Wildfires

- Fourth National Climate Assessment, Chapter 6 - <https://nca2018.globalchange.gov/chapter/6/#key-message-1>
- Particulate air pollution from wildfires in the Western US under climate change - <https://link.springer.com/article/10.1007/s10584-016-1762-6>
- Wildfire and climate change adaptation of western North American forests - <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.2432>

How to reach NWHRN

If you anticipate or are currently experiencing impacts from wildfire smoke, do not hesitate to reach out to the NWHRN so we can support you.

Support from the NWHRN

- 24/7 duty officer line - **Duty Officer at 425-988-2897**
- Regular NWHRN Coalition coordination calls
- District coordination meetings. These are held generally every month and are a good opportunity to discuss plans and concerns outside an immediate response. [Check the calendar](#) for the next district meeting or [contact your district coordinator](#)