

## Wildfire Smoke Tip Sheet

The Northwest Healthcare Response Network (NWHRN) works with healthcare coalition partners to prepare for wildfire and smoke-related impacts. This tip sheet equips facilities and organizations in their planning efforts and serves as a reference if/when fire and smoke impacts are anticipated. Organizations are most resilient to climate-related hazards when partners are proactive in their planning efforts, share and learn from each other, and work together.

### Planning for Wildfires and Smoke Impacts

Wildfires are increasing in duration, frequency, and intensity. These events 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 alike, especially when smoke events are long in duration, or air quality is particularly harmful. Wildfire smoke can increase demand for healthcare services, impact critical infrastructure, and challenge healthcare operations. NWHRN shares regional air quality forecasts with coalition partners as they are available. Individual facilities, health systems, and response agencies should incorporate wildfire smoke into their planning efforts, which may include creating wildfire-specific plans.

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

- HVAC-system vulnerabilities and environmental control mitigation measures.
- Cascading and concurrent hazards that often accompany wildfire smoke.
  - Impacts to transportation, electricity, and communications.
    - Compounding implications for staff needs and availability.
- Patient surges related to smoke and/or wildfire, 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 include, but are not limited to:
  - 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 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.
  - 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.

### 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 and continuity plans.
  - 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 those 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.
- **Educate patients and families.** The best way to manage a surge in patients is to prevent it. The WA State Department of Health (DOH) 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.

## Support from NWHRN

If you anticipate or are currently experiencing impacts from wildfire smoke, please reach out to NWHRN so we can support you.

### NWHRN will:

- Provide situational awareness specific to the event.
- Activate, as needed to support healthcare partners, which may include activities such as coordination of information and response activities, including resource requesting, coordination with local public health and emergency management partners, real-time convening of impacted organizations to share information and work to collectively problem solve, provide patient tracking support and other assistance, as needed.

NWHRN works with partners through the varying organizational and reporting structures specific to their community. NWHRN recognizes that healthcare systems cross-geographical boundaries and are not bound by a specific jurisdiction. Because of this, NWHRN mirrors this multi-jurisdictional, regional healthcare approach and adapts to meet the needs of healthcare while honoring local health jurisdiction oversight. NWHRN maintains updated contact information for healthcare coalition members and will notify appropriate partners upon activation.

### Contacting NWHRN:

- **24/7 Duty Officer Line at 425-988-2897.**
- Regular NWHRN Coalition coordination calls such as the All-Hazards call.
- Distribution of situational awareness reports. To join the distribution list, please email [info@nwhrn.org](mailto:info@nwhrn.org).

## 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](#)
- 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](#)

- [Ventilation and Air Quality for Reducing Transmission of COVID-19](#)
- Department of Natural Resource, [Information on Wildfires](#)
- [Washington State Smoke Blog](#)
  
- Puget Sound Air Quality Agency [Sign Up for Alerts](#)
  
- DOH links to all [LHJ websites](#).

**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>