

# Health Messaging for Wildfire Season

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# Background

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- Wildfire smoke is an increasing threat to public health in Washington.
- Climate change and forest management practices have led to longer wildfire seasons with increased fuels, resulting in more smoke and increased air pollution
- Increasing need for wildfire smoke preparedness to protect public health and provide consistent messages across the state.



# History of the Advisory Group

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- In a wildfire smoke incident local health jurisdictions, tribal governments, and Washington State Department of Health provide health related information to the public and media in their communities.
- After 2017 wildfire season, local and state public health jurisdictions identified a need for more communication resources and greater statewide coordination of messages surrounding wildfire smoke impacts
- In 2018, local health jurisdictions and state agencies convened the Wildfire Smoke Impacts Advisory Group

# EPA's AQI verses Washington's WAQA

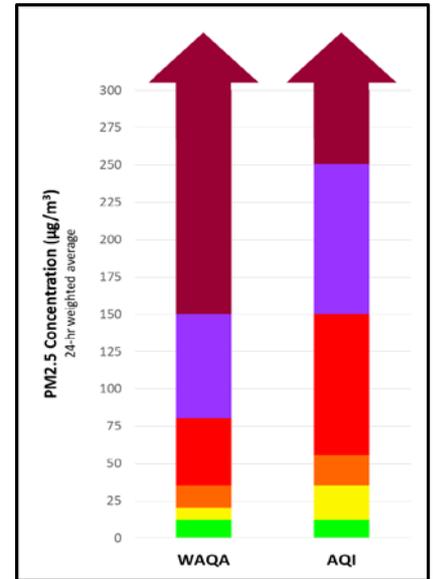
More health sensitive

Less health sensitive

Category
Good
Moderate
Unhealthy for Sensitive Groups
Unhealthy
Very Unhealthy
Hazardous

WAQA Concentration ( $\mu\text{g}/\text{m}^3$ )
0 to 12.0
12.1 to 20.4
20.5 to 35.4
35.5 to 80.4
80.5 to 150.4
>150.4

AQI Concentration ( $\mu\text{g}/\text{m}^3$ )
0 to 12.0
12.1 to 35.4
35.5 to 55.4
55.5 to 150.4
150.5 to 250.4
250.5 to 350.4
350.5 to 500



# Wildfire Smoke Impacts Advisory Group

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## 27 Members

Including Washington State Department of Health, local health jurisdictions, tribal communities, Department of Ecology, Labor & Industries, regional clean air authorities, University of Washington

## 3 Sub Workgroups to address 3 Priorities for the 2019 Wildfire Season:

### Communication Workgroup

Develop custom toolkit for local outreach and communication

### Closures Workgroup

Develop guidance for school and outdoor event closures

### Sensors Workgroup

Develop guidance for low-cost sensors to use for health decisions

# Goals of Communication Workgroup

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Plan and develop an Education Outreach toolkit, including:

- Consistent messaging for pre-, during and post-wildfire season
- Identified audiences and specific intervention goals
- Resource materials in a format that allows for local-agency identification for use in various mediums



# Goal 1: Messaging for pre-, during and post-wildfire season

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Call to Action for wildfire smoke exposure

- **Pre-Season**
  - Be prepared, educate yourself
- **During-Season**
  - Be aware of air quality conditions and respond accordingly
- **Post Season**
  - Identify oversights and determine corrective action for improving efforts

# Goal 2: Identify the Audiences

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- General Public
- Healthcare Providers
- Facility Managers for outdoor camps and athletic activities (i.e. coaches and coordinators)
- School K-12 (i.e. principals, superintendent's, and administrative staff)
- School nurses (i.e. members of school health team)
- Child care providers (i.e. daycares, preschools)
- Long-term Care and Assisted Living Facilities (i.e. living facility, long-term care, rehabilitation, skilled nursing)
- Planners of Public Events (Chamber of Commerce, Event Coordinators)

# During Wildfire Season

Audience	Key Message
General Public	<ul style="list-style-type: none"> <li>• Statement of Risk               <ul style="list-style-type: none"> <li>○ Wildfire smoke can be harmful to health; take steps to minimize exposure to smoke</li> <li>○ Monitor members of family that are sensitive to smoke exposure</li> </ul> </li> <li>• Track air quality and know your resources</li> <li>• How to protect yourself/family from wildfire smoke:               <ul style="list-style-type: none"> <li>○ Use a clean-air room in your home using a HEPA air cleaner</li> <li>○ Turn AC in home and vehicle to recirculate to avoid outdoor air intake</li> <li>○ Utilize a HEPA equiv. air filter for your vehicle(s)</li> <li>○ Use N95 masks and wear properly, if appropriate to use</li> <li>○ Relocate if necessary</li> <li>○ Seek shelter with improved/monitored air if available</li> <li>○ Monitor health and symptoms especially those with chronic heart and lung disease</li> <li>○ Follow healthcare provider's management plan for symptoms including contacting your provider if symptoms are uncontrolled.</li> <li>○ Recognize heat related symptoms and utilize public air-conditioned spaces</li> </ul> </li> <li>• Conduct alternative activities based on WAQA levels               <ul style="list-style-type: none"> <li>○ Choose indoor exercise options</li> <li>○ Limit outdoor activity</li> <li>○ Check air quality conditions before travel or attend outdoor events</li> </ul> </li> </ul>
Health Care Providers	<ul style="list-style-type: none"> <li>• Statement of Risk: Wildfire smoke can be harmful to health; manage patients to minimize impacts of smoke exposure. Talk to your patients about managing physical and mental symptoms from smoke impact.               <ul style="list-style-type: none"> <li>○ Be proactive with patients who have pre-existing heart and lung conditions.</li> </ul> </li> <li>• Track air quality and know your resources</li> <li>• Make necessary medication changes</li> <li>• Encourage limited outdoor activity to reduce smoke impacts (use epi lists)</li> <li>• Educate your patients to recognize when different sources have different triggering affects.</li> <li>• Provide alternatives to physical activity in a safe and healthy environment</li> <li>• Review plan with patients on when and where to seek medical care</li> <li>• Understand and communicate best practices for respirators for your patients</li> <li>• Educate patients to use best judgement for respiratory protection</li> <li>• Continuing education about air pollution health impacts (patients or providers? Include facts/references)</li> </ul>

# Goal 3: Review of available resources

- Collected communication resources from the Department of Health and participating LHJ's
  - ~ 100 collected

Num	Resource Title	Link	Type	Format	Size	Release Timing	Originating Agencies	Brief Description	AQI/WAQA	Audience Level	Primary Audience	Secondary Audiences	Access Level	Languages
1	Active Fire Mapping Program (Website)	<a href="https://fsa.pps.nwcg.gov/afm/">https://fsa.pps.nwcg.gov/afm/</a>	Report	Website/Web page (URL)		Ongoing/Not Timed	U.S. Department of Agriculture (U.S. Forest Service)	In addition to the Washington Smoke Blog, this site provides current information on wildfire activity. The Active Fire Mapping Program is an operational, satellite-based	Unknown or Unclear	Partners	Individuals and agencies tracking fire incidence	None	Online Open	English
2	Agricultural burning & permitting webpage (Dept. of Ecology)	<a href="https://ecology.wa.gov/Air-Climates/Air-quality/Smoke-fire/Agricultural-burning">https://ecology.wa.gov/Air-Climates/Air-quality/Smoke-fire/Agricultural-burning</a>	Guidance Document	Website/Web page (URL)		Ongoing/Not Timed	Washington State Department of Ecology	Describes process for and permitting of agriculture burns.	Does Not Apply	General Public	Farmers, land managers, and others who may have a need for permits for prescribed or agricultural burns	None	Online Open	English
3	Air Cleaning Devices for the Home: Frequently Asked Questions	<a href="https://www.arb.ca.gov/research/indoor/aircdsumm.pdf">https://www.arb.ca.gov/research/indoor/aircdsumm.pdf</a>	Educational Material	Document (PDF)	11 Pages	Ongoing/Not Timed	California Environmental Protection Agency	This informational document helps consumers decide if an air cleaning device would be useful as part of their solution to indoor air pollution, and if so, what type might be best to meet their needs.	Does Not Apply	General Public	Individuals seeking an indoor air cleaning solution for their home	None	Online Open	English

# Goal 4: Identification of Key Resources for Messages

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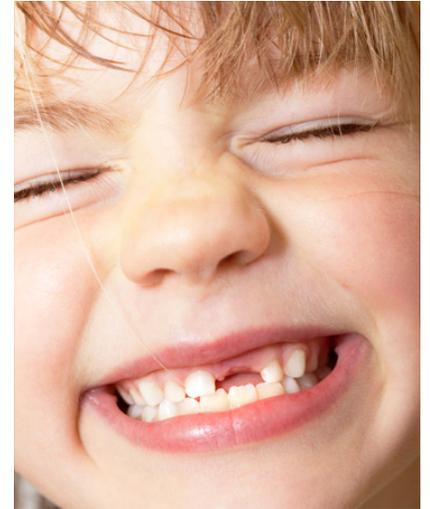
- Went through resources collected and identified resources for specific audiences and timing
- Identified resources based on comprehensives, consistency, WAQA vs. AQI

Audience	Key Messages	Appropriate Resources
School K-12 (includes principals, superintendents, administrative staff)	<ul style="list-style-type: none"><li>• Track air quality and utilize your resources</li><li>• Follow alternative plan for recess/outdoor school activities to smoke exposure</li><li>• Communicate and coordinate with local health jurisdiction and air quality authority</li><li>• Follow closure recommendations when conditions are met</li><li>• Takes steps to improve indoor air quality</li></ul>	4, 15, 28, 59, 68, 73

# Gaps in Resources Identified

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- In reviewing available resources we found **gaps** and inconsistent messages:
  - N95 Mask Communication
  - Improving Indoor Air
  - Outdoor Activity Guide for adults
- Decided to rework documents and include updated documents in toolkit
- Documents from other advisory subgroups are also important for our messages and will be included



# Improving Indoor Air Document

- Create a cleaner air room
- Improve ventilation/know your HVAC system – shut off outside intake
- Add HEPA filters to your system in houses
- Purchase an air cleaner for a room or house

## WILDFIRE SMOKE FACTSHEET



### Healthy Indoor Air

When wildfire smoke gets inside your home it can make your indoor air unhealthy, but there are steps you can take to protect your health and improve the air quality in your home. Reducing indoor air pollutant emissions during smoke events can decrease indoor particle levels, which may partially compensate for the increased particle loading from the outdoor air. For example, avoid burning candles, smoking tobacco products, using aerosol products, and avoid using a gas or wood-burning stove or fireplace. To avoid re-suspending particles, do not vacuum during a fire event, unless using a HEPA-filter equipped vacuum. Another step healthy indoor air is air filtration. This fact sheet discusses effective options for filtering your home's indoor air to reduce indoor air pollution. Staying inside with the doors and windows closed can usually reduce exposure to ambient air pollution by at least a third or more. People, especially at-risk individuals, who live in areas that are regularly affected by smoke from wildfires or who are in an area where the wildfire risk has been determined to be high, would be well advised to create a "clean room" in their home.

#### Create a clean air room at home

Designate a room in your home as a clean air room. A good choice is an interior room, with as few windows and doors as possible, such as a bedroom. Suggestions for maintaining a clean air room include:

- Pre-clean (vacuum and dust) your room and ensure you have on hand any filter replacements.
- During an event, keep windows and doors closed.
- Run your air conditioner or central air system, if you have one. If the air conditioner provides a fresh air option, keep the fresh-air intake closed to prevent smoke from getting inside. If you are using a central air system, run it continuously by switching the thermostat fan from "Auto" to "On".
- If you don't have central air, set up a properly sized room air cleaner, and check to ensure maximum filter efficiency.
- During a wildfire smoke event, do not vacuum anywhere in the house, unless using a HEPA-filter equipped vacuum.
- Do not smoke or burn anything anywhere in the house, including candles or incense.

*If it is too warm to stay inside with the windows closed, or if you are very sensitive to smoke, seek shelter elsewhere.*

#### Filtration Options

There are two effective options for improving air filtration in the home: 1) upgrading the central air system filter, and 2) using high efficiency portable air cleaners. Keep windows closed while using these options. Before discussing filtration options, it is important to understand the basics of filter efficiency.

##### Filter Efficiency

The most common industry standard for filter efficiency is the Minimum Efficiency Reporting Value, or "MERV rating." The MERV scale for residential filters ranges from 1 through 20. The higher the MERV rating the more particles are captured as the air passes through the filter. Higher MERV (higher efficiency) filters are especially effective at capturing very small particles that can most affect health.



##### Central Air System Filter

The filter used in the central heating/cooling system of the home can effectively reduce indoor particle concentrations when the system is operating or when only the fan is turned on. Most home systems use a low MERV (1-4) fiberglass filter that is 1" thick. Replacing this filter with a medium efficiency filter (MERV 5-8) can significantly improve the air

# Goal 5: Ready to use templates for communication mediums

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- Developing templates for communication mediums with these messages where LHJ's can plug in logo and info
  - News Releases for general public (local agencies will add contact and local resources)
  - Letters or emails to audiences (e.g. schools, healthcare providers, long-term care facilities)
  - Social Media Messaging
  - Others
    - Flier created for healthcare provider offices/nurse offices

# News Release Template for During Season

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Insert Logo Here

Several templates  
for pre-season,  
during season,  
and extreme heat

## NEWS RELEASE

Date: **Month, Day, Year**  
Contact: **Name, Title, Phone Number**

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### **Poor Air Quality Conditions in [County Name]**

[County name] is currently under a [air quality status] air quality advisory, which has been issued by the Washington State Department of Ecology. Smoke as a result of [name of incident] is affecting the air quality in [County name].

[Public Health Department Name] wants residents to be aware of current air quality conditions in order to take necessary steps to avoid negative health effects. Air quality information can be accessed at any time via the Washington Air Quality Advisory (WAQA) online <https://fortress.wa.gov/ecy/enviwa/>. Additional resources include the following:

# Pre-Season Letter to K-12 Administrators



Insert Logo Here

Date: Month, Day, Year

Insert Greeting School K-12 Administrators:

Wildfire season is fast approaching! Smoke from wildfires impacts local air quality and can cause health effects to students and faculty. Children's lungs and airways are still developing, and they breathe more air per pound of body weight than adults, making them especially sensitive to smoke pollution.

Use the following resources to prepare ahead of time to minimize student and faculty exposure to wildfire smoke:

#### Know how and where to access air quality and health information

- [Department of Ecology's information on air quality:](#)
  - [Washington Air Quality Monitoring Network](#)
- [Department of Health's information on health impacts:](#) Comprehensive webpages with frequently asked questions and a toolkit. You should be able to find the answer to most questions and links to other resources.

#### Know when to alter outdoor activities

- [Here is the school activity guide](#) that provides recommendations for recess, P.E., and athletic events and practices during smoky conditions.

#### Know when poor air quality becomes hazardous for students

- [\(Here is the closure guidance document\)](#) that provides recommendations for closure of schools and cancellation of events when air quality reach hazardous levels

#### Learn the steps you can take to improve indoor air quality

- Recommendations for Schools and Buildings with Mechanical Ventilation: [Improving Ventilation and Indoor Air Quality during Wildfire Smoke Events \(PDF\)](#)
- [Here is a fact sheet about improving indoor air quality \(link later\)](#)

Know your local outdoor air authority and public health contacts BEFORE wildfire season!

Local Health Jurisdiction Name Address Website/phone #	Local Air Authority or ECY Region Address Website/phone #
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# Poster for health care offices

## Effects of Common Air Pollutants

### RESPIRATORY EFFECTS



**Symptoms:**

- Cough
- Phlegm or sputum
- Chest tightness
- Wheezing
- Shortness of breath

**Increased sickness and premature death from:**

- Asthma
- Chronic bronchitis (acute or chronic)
- Emphysema
- Pneumonia

**Development of new disease:**

- Chronic bronchitis
- Premature aging of the lungs

### CARDIO VASCULAR EFFECTS

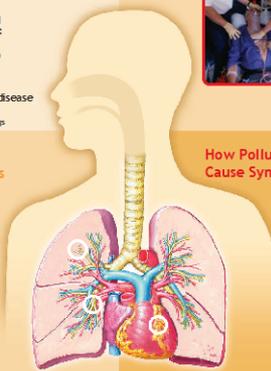


**Symptoms:**

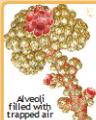
- Chest tightness
- Chest pain (angina)
- Fatigability
- Shortness of breath
- Unusual fatigue

**Increased sickness and premature death from:**

- Coronary artery disease
- Abnormal heart rhythms
- Congestive heart failure
- Stroke



### How Pollutants Cause Symptoms



**Effects on Lung Function**

- Narrowing of airways (bronchoconstriction)
- Decreased air flow

**Alveoli filled with trapped air**

**Airway Inflammation**

- Influx of white blood cells
- Abnormal mucus production
- Fluid accumulation and swelling (edema)
- Death and shedding of cells that line airways



**Increased Susceptibility to Respiratory Infection**



Normal



Lung with respiratory infection

### How Pollutants Cause Symptoms

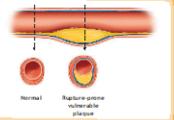


**Effects on Cardiovascular Function**

- Low oxygenation of red blood cells
- Abnormal heart rhythms
- Altered autonomic nervous system control of the heart

**Vascular Inflammation**

- Increased risk of blood clot formation
- Narrowing of veins (atherosclerosis)
- Increased risk of atherosclerotic plaque rupture



Reduce your risk by using the Washington Air Quality Advisory (WAQA) to plan outdoor activities—<https://fortress.wa.gov/ecy/emi/wa/>

WAQA Categories of Health Concern	WAQA Concentration (µm <sup>3</sup> )	What action should people take
Good	0 to 12.0	Air pollution is so low so there is little health risk. It's a great day for everyone to enjoy the outdoors!
Moderate	12.1 to 20.4	People with health conditions should limit spending any time outdoors & avoid strenuous outdoor activities. They may begin to have worsened symptoms.
Unhealthy for Sensitive Groups	20.5 to 35.4	All of the above & All sensitive groups should limit spending any time outdoors. People with health conditions may have worsened symptoms. Healthy people may start to have symptoms.
Unhealthy for Everyone	35.5 to 80.5	Everyone, especially sensitive groups, should limit time spent outdoors, avoid strenuous activities outdoors, & choose light indoor activities.
Very Unhealthy for Everyone	80.5 to 150.4	Everyone should stay indoors, avoid all strenuous activity, close windows & doors if it's not too hot, set your AC to recirculate, & use a HEPA air filter if possible.
Hazardous for Everyone	>150.4	All of the above & People with heart or lung disease, or those who have had a stroke, should consult their healthcare provider about leaving the area & wearing a properly fitted respiratory mask* if they must go outdoors. Follow burn bans and evacuation orders.

# Where are we currently?

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- Goal 1: Messaging for identified audiences: **Completed**
- Goal 2: Messaging for pre-, during and post-wildfire season: **Completed**
- Goal 3: Summary of available key communication resources: **Completed**
- Goal 4: Identification of key resources to support messages: **Completed**
  - New resources to identify gaps: **In review**
- Goal 5: Ready to use templates for communication mediums: **In progress**

# Opportunities to Present the toolkit

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- WSEHA AEC May 2019
- 2019 EPA Smoke Management in Northwest Meeting
- WSALPHO June 2019
- Environmental Health Directors Statewide Meetings

# How will the toolkit be distributed?

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- List Servs serving state and local health members, and liaisons to WIAA, SNOW, OSPI, ESD, and other interested parties will receive copies
- Communication through all workgroup/advisory group members' related associations
- Provided as a zip file downloaded to jump drives
- Housed on DOH website

# Looking Forward

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- Communication resources made available by May 2019
- The general goal is to accomplish as much as we can for this year's wildfire season
- Expect to assess and measure performance of toolkit, build and improve moving forward

Or Suggestions?

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