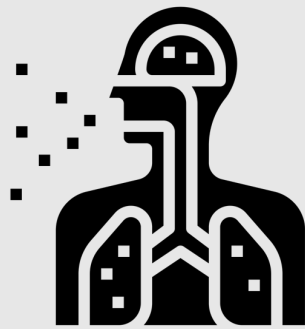


HEALTH EFFECTS OF WILDFIRE SMOKE

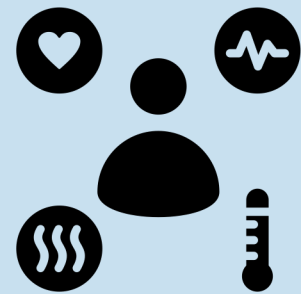
SCOPE OF THE PROBLEM

- Particulate matter (PM_{2.5})
- Organic, inorganic compounds
- Vapors
- All of these can be rapidly, systemically absorbed through the lungs
- Increased impact in recent years



ACUTE PRESENTATION

- Approximately 3 days between exposure and presentation
- 10%-30% increase in all-cause respiratory presentation to ED and outpatient offices
- Other presentations: corneal abrasions, burns, sinonasal symptoms
- Respiratory symptoms of cough, dyspnea, chest discomfort
- Patients without a preexisting pulmonary Dx are more likely



WILDFIRE SMOKE AND ASTHMA

- Modest increase in exacerbations and hospitalizations
- Significant increase in asthma healthcare utilization
- Focus on symptom management
- Review asthma action plan with patients who have a diagnosis of asthma
- Confirm new diagnosis of asthma with spirometry when acute symptoms resolve



POTENTIAL MECHANISMS OF INJURY

- Inflammation and oxidative stress
- Alterations in immune responses and host defense



POSSIBLE LONG-TERM EFFECTS

- Increased upper airway and sinonasal disease and overall respiratory morbidity
- Cardiovascular morbidity and mortality

TREATMENT STRATEGIES FOR PULMONOLOGISTS

- Evaluate patient's thermal injury if close to the fire and refer to ED for airway compromise.
- Consider carbon monoxide poisoning in patients exposed close to point of combustion.
- Consider acute asthma exacerbation in patients with underlying asthma history.
- De novo asthma-like symptoms require confirmation of the diagnosis with spirometry when acute symptoms resolve.
- Symptomatic relief should be directed at chemical irritation of the eyes, nose, throat, and respiratory tract.
- Advise patients with asthma or respiratory disease to stay indoors or relocate during wildfires.
- Advise patients to use N95 / KN95 masks outdoors.
- Medium to high exchange household air purifiers with HEPA filters and closed windows provide some benefit.

