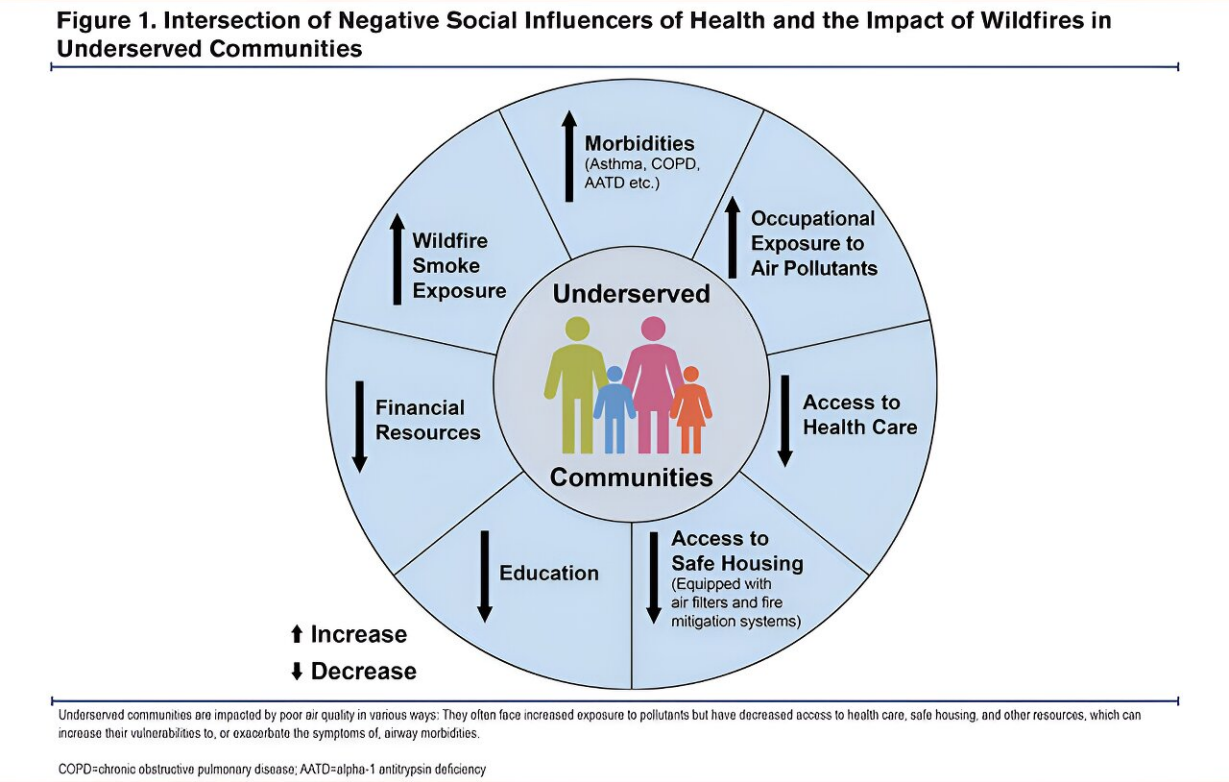
Medical Xpress

People with COPD, asthma found to have higher risk of health problems from increased wildfire activity, smoke

August 14 2024



Credit: COPD Foundation

Communities impacted by increased wildfire activity and smoke can use a population health-based action plan to help alleviate health risks,

particularly for those with chronic obstructive pulmonary disease (COPD) and asthma, according to a new perspective article. The article is published in the July 2024 issue of *Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation*.

COPD is an inflammatory lung disease, comprising several conditions, including chronic bronchitis and emphysema, and can be caused by genetics and irritants like smoke and pollution. The disease affects more than 30 million Americans and is the third leading cause of death worldwide, yet awareness of the disease's symptoms, methods to reduce risk, and disease management remains poor. Symptoms include breathlessness, fatigue and chronic cough.

This new perspective article examined the five-part Population Health Approach enacted by the University of California, Davis Health (UCDH). UCDH is located at the epicenter of one of California's largest wildfires, and the state's fire season currently lasts up to 6 months of the year.

"Air pollutants from wildfires negatively affect everyone and are particularly dangerous for those with respiratory diseases like COPD and asthma as the pollutants increase lung inflammation," said Reshma Gupta, M.D., MSHPM, Chief of Population Health and Accountable Care at UCDH and co-author of the study.

"As the regional academic center for Northern California, our team routinely sees the negative health outcomes of wildfire smoke. This approach uses new technologies and population health methods to identify those at risk of wildfire smoke-induced health complications and to put interventions in place to mitigate the negative impact of poor air quality on the community."

The five-part approach includes:

1. Identify clinically at-risk and underserved patient populations using well-validated, condition-targeted registries;
2. Assemble multidisciplinary care teams to understand the needs of these communities and patients;
3. Create custom analytics leveraging public health data to stratify wildfire risk;
4. Develop care pathways by disease, risk of exposure, and health care access; and
5. Identify outcome measures tailored to interventions with a commitment to continuous, iterative improvement efforts.

"Over many years, we watched the increasingly frequent and significant impact of wildfires on the patients in our COPD clinic including exacerbations and impaired access to medications. We wanted to do more than provide treatment after the fact," said Brooks Kuhn, M.D., Co-director of UCDH's Comprehensive COPD Clinic, Medical Director of UCDH's Department of Respiratory Care, and co-author of the study.

"Through collaboration with our Population Health team, we built resources—and systems to deliver them at the right time—to support and educate high-risk patients, such as those with COPD and asthma, before and during wildfires, not after."

"This population health-based approach not only helps us lessen the negative impact of wildfire smoke on those with COPD or asthma, but also increases our ability to identify those at high risk of developing these respiratory diseases," Dr. Gupta added.

"Much of the data we use in our approach comes from detailed air quality and wildfire maps throughout the United States, so other health care teams across the county could adopt a similar strategy. Leveraging this data will allow us to help reduce the impact of poor air quality and improve the health of those in our community."

More information: Brooks T. Kuhn et al, Improving Wildfire Readiness Among Patients With Chronic Obstructive Pulmonary Disease and Asthma: Applying a Population Health Approach to Climate Change, *Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation* (2024). DOI: 10.15326/jcopdf.2024.0509

Provided by COPD Foundation