

CASE STUDY

Wildfire Smoke and Emergency Department Visits in New York City

Climate Ready City

Healthy City



Climate Issue: Wildfires

- Wildfires have become more frequent and larger in recent years as a result of climate change.
- In the summer of 2023, wildfires in Canada worsened air quality both locally and at a distance.
- Despite being located hundreds of miles away, New York City (NYC) experienced increased air pollution from June 6 to 8, 2023.
- Potential health impacts in NYC challenge the prevailing focus on how wildfires affect nearby populations.
- Understanding these urban impacts can inform better emergency planning and services.

What is a Smoke Wave?

A wildfire smoke wave is a period of at least two consecutive days of unhealthy levels of fine air pollution from wildfires.

Wildfire smoke poses a serious health threat. It can cause long-term damage to the heart and lungs, harm mental health, and affect birth outcomes.



Smoke Wave Effects

- The June 2023 Canadian wildfires were associated with increased visits to NYC emergency rooms for asthma.
- During the smoke wave, average air pollution levels surged by over 1000%.
- Meanwhile, citywide visits to the emergency room for asthma increased by nearly 45%.
- The effects of the smoke wave were rapid and intense, affecting individuals of different ages across all boroughs.
- Understanding the far-reaching impacts of wildfires can help policymakers conduct effective outreach and allocate resources to protect vulnerable populations.

Timely communication about limiting wildfire smoke exposure is needed to protect vulnerable populations.

IN A NUTSHELL

- Canadian wildfires in June 2023 worsened air quality both locally and at a distance.
- Hundreds of miles away, wildfire smoke was associated with increased visits to NYC emergency rooms for asthma.
- As climate change leads to more frequent and intense wildfires, protecting vulnerable populations from smoke exposure is increasingly important.

WHAT CAN YOUR CITY DO?

PREPARE a city emergency response plan to protect people during natural disasters

FACILITATE real-time data sharing on wildfire impacts

IMPLEMENT public education campaigns about wildfire prevention and preparedness

ENSURE seamless coordination between city and state-level authorities to minimize the health impacts of wildfires.

To find out more information on this case study, contact **Kai Chen** at kai.chen@yale.edu. Case study based off Chen, K., Ma, Y., Bell, M. L., & Yang, W. (2023). Canadian wildfire smoke and asthma syndrome emergency department visits in New York City. JAMA, 330(14), 1385. <https://doi.org/10.1001/jama.2023.18768>