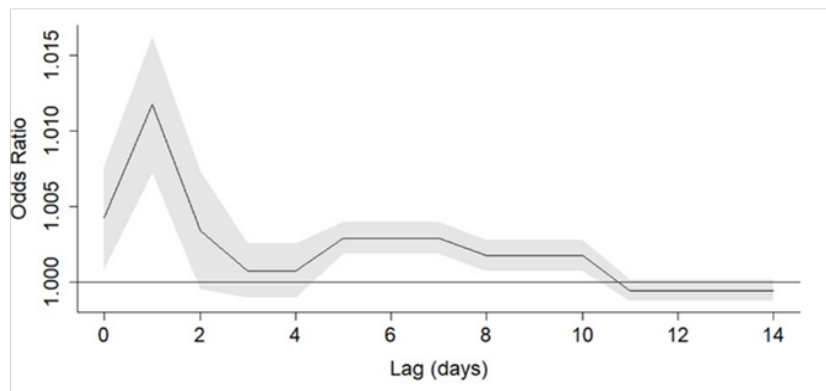


# Increased medical and emergency department claims for asthma after wildfire smoke exposure in Washington, 2014-2018

Health impacts from wildfire smoke are a growing public health concern in Washington. We examined the use of medical services for asthma up to 14 days after people were exposed to wildfire smoke. To do this, we used 2014–2018 medical claims data from the Washington All-Payer Claims Database (WA-APCD), and wildfire smoke data from the Washington State Department of Ecology. The study population consisted of 332,335 people with least one medical claim for asthma from 2014-2018.

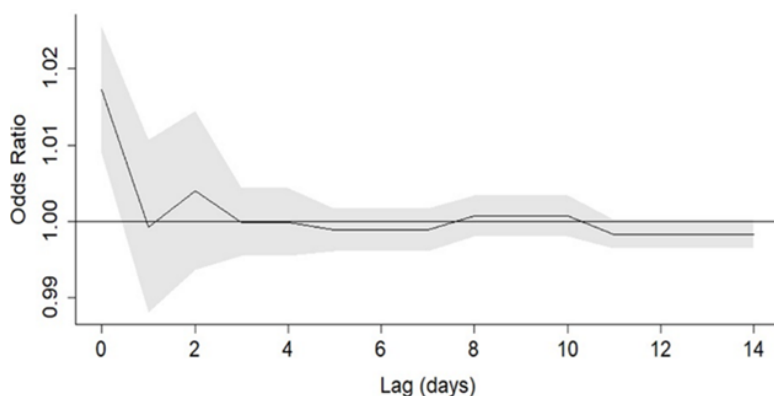
## Asthma medical claims increased for 10 days after a smoke event.

Medical claims for asthma



Wildfire smoke was associated with an increase in medical claims for asthma for 10 days after exposure, and an increase in emergency department (ED) claims on the day of exposure.

Emergency department claims for asthma



Health Care Research Center  
Forecasting and Research  
Office of Financial Management  
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Contact: Dennis McDermot,  
[dennis.mcdermot@ofm.wa.gov](mailto:dennis.mcdermot@ofm.wa.gov)

## Health care use for asthma was higher after more severe smoke events.

Table 1. Smoke exposure in the study population, June-September 2014-2018 , counted in person-days. A “person-day” means one person’s experience for one day – Risk of a medical service for asthma within 10 days of exposure – Risk of emergency department (ED) claims for asthma on the day of exposure

Smoke air quality	Person-days	Percent of person-days	Increase in medical service	Increase in ED visits
Good	47,840,697	90%	--	--
Moderate	3,173,135	6%	9%	4%
Unhealthy for sensitive groups	1,132,398	2%	16%	8%
Unhealthy	879,464	2%	24%	12%

After a moderate smoke day, the rate of people using medical service for asthma within 10 days of their exposure was 9% higher than on a day with no smoke. The rate of ED visits was 4% higher than usual on the day of exposure. After an unhealthy exposure day, use of medical service for asthma increased 24%, and ED visits increased 12%. During the summer months from 2014-2018, about one in 10 person-days had wildfire smoke exposure with air quality moderate or worse.



7,262 excess medical visits



609 excess emergency department visits



\$4.5 million

Over five fire seasons from 2014 through 2018, an increased use of healthcare for asthma associated with the immediate effect of wildfire smoke accounted for 7,262 excess service days beyond what would be expected had there been no fires. This includes 609 excess ED visits. The total cost – insurance paid plus out-of-pocket – was \$4.5 million.

### ***These totals underestimate the full burden in Washington.***

This analysis considers only the immediate health care increase within two weeks of a smoke event. The yearly fire season also compounds the long-term impact of chronic conditions, which would lead to still higher morbidity and cost. For more detail, read [Increased medical and emergency department claims for asthma following wildfire smoke exposure in Washington state, 2014-2018](#), available on the Office of Financial Management’s health care page, at [ofm.wa.gov/health-care](http://ofm.wa.gov/health-care).