

Where There's Fire, There's Smoke

Climate Change, Impacts and Preparedness
In North Central Washington

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- East
- South Central
- North Central
- Northwest
- Southwest
- West
- North
- Puget Sound



North Central WA Wildfire Smoke Impacts - 2012

- Okanogan, Kittitas, Grant, Chelan-Douglas Health Districts Collaboration with DOH
- Analysis revealed increased cardiovascular or respiratory diagnoses compared to 2y prior
 - All ages
 - Ages 0-18yo most impacted

6b. During: September 9–October 12

Diagnosis group ¹	Age group	2010 and 2011 combined (68 days)		2012 (34 days)	Comparisons of 2012 to 2011 and 2010 combined		
		Number	Average daily	Average daily	Excess ²	O/E ³	95% CI ⁴
		Visits					
Total	All	36812	541	618	77	1.14	1.05-1.24
	0–18	4738	70	91	21	1.30	1.05-1.60
	19–64	12645	186	211	25	1.14	0.99-1.30
	65+	19429	286	316	30	1.11	0.99-1.23
CVD	All	22382	329	362	32	1.10	0.99-1.22
	19–64	6551	96	105	8	1.09	0.89-1.31
	65+	15763	232	256	25	1.11	0.97-1.25
Respiratory	All	14430	212	257	44	1.21	1.07-1.37
	0–18	4670	69	90	22	1.31	1.06-1.61
	19–64	6094	90	107	17	1.19	0.98-1.44
	65+	3666	54	59	6	1.10	0.82-1.42

¹ Cardiovascular (ICD-9-CM 390-459) or respiratory (ICD-9-CM 460-519 and 786) disease listed as first diagnosis. About half of ICD-9-CM 786 (included here with respiratory disease) is CVD symptoms. Numbers might not add or subtract due to rounding and omission of children in CVD category due to small numbers.

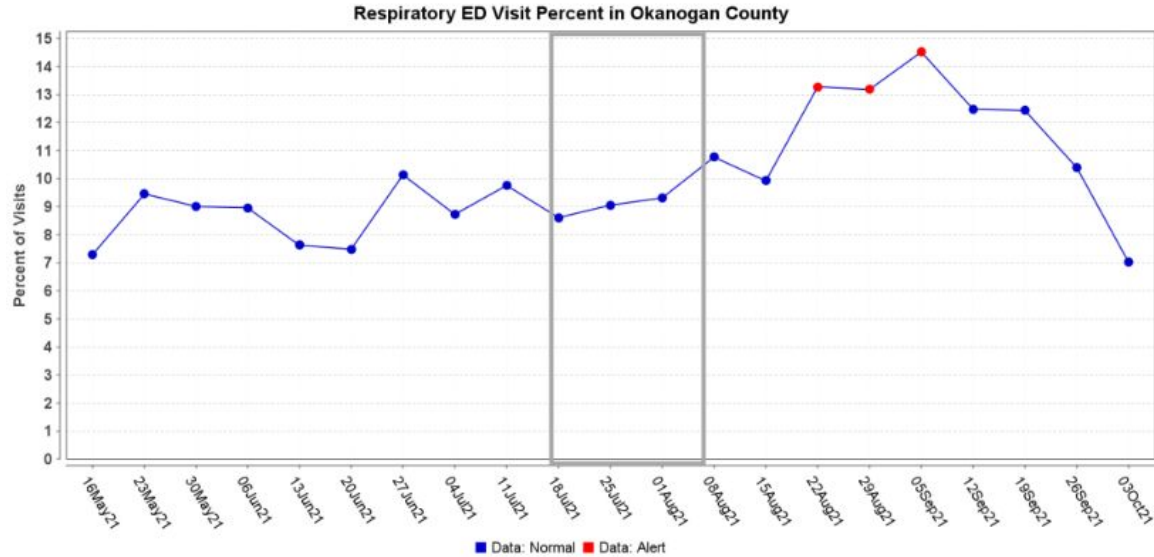
² Excess represents the excess number of average daily visits calculated by subtracting the average number of daily visits in 2010-2011 from the average number of daily visits in 2012.

³ O/E: ratio of observed number of average daily visits to the expected number based on average daily visits before the wildfires; bolding indicates the O/E is statistically significant at $p < 0.05$ (i.e. the O/E is outside the range we might expect through random variation or chance).

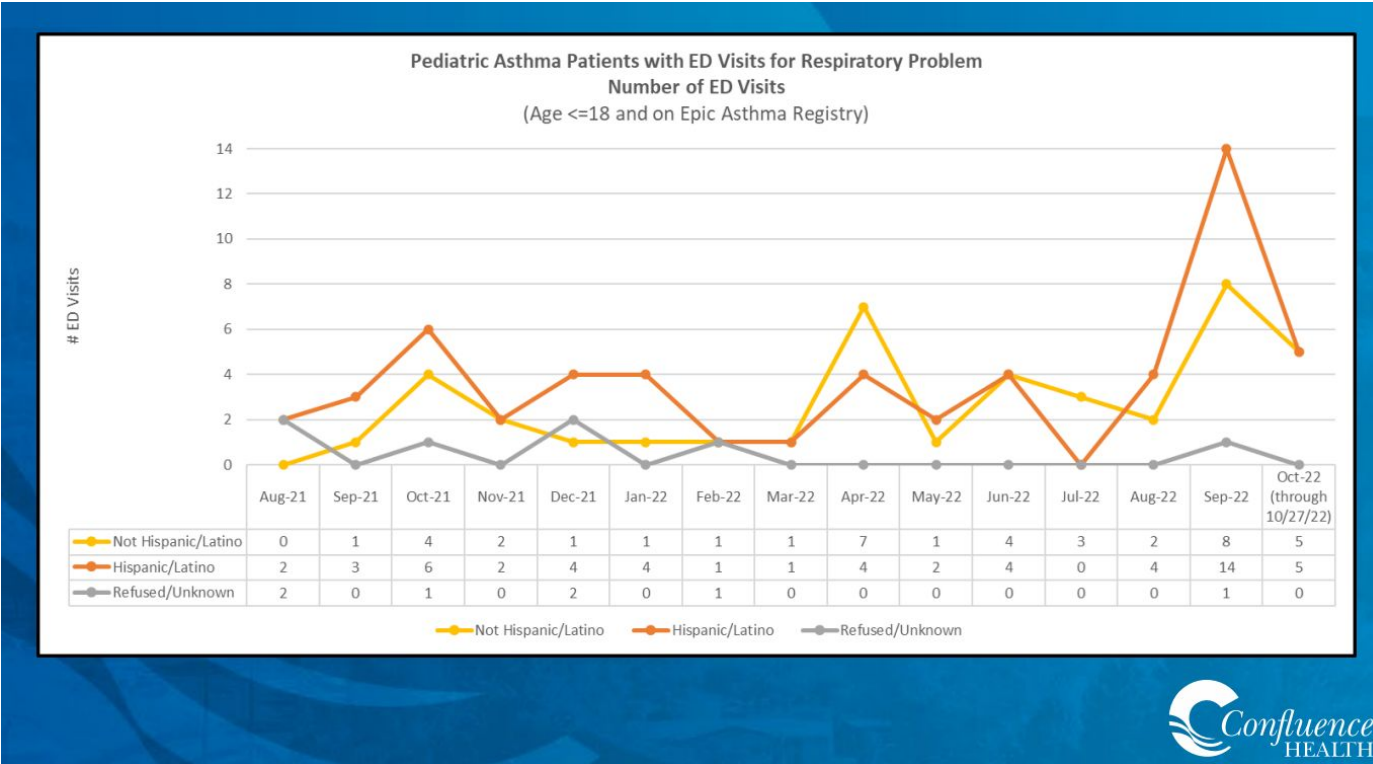
⁴ 95% CI: 95% confidence interval around O/E. If the CI includes one, the O/E is not outside the range we expect by chance alone. Due to rounding a Page 0 26 / 49 greater or less than, e.g., 1.004 or 0.9998.

WA DOH Surveillance Data - 2021

- RHINO captures ED visits following Wildfire Smoke Events
- ED visits for Respiratory conditions increased 2wk following smoke event
- Smoke-related discharge diagnoses were elevated during 4wk period for ages 18-64yo



Central WA Hospital ED Utilization



Washington Air Quality Guide for Schools & Childcare

- 2022 guidance provided clarity for activity closure or precaution based on AQI
- Increased LHV-School District collaboration/communication
- Schools reported greater confidence in actions to prevent exposure among vulnerable student groups

Washington Air Quality Guide for School & Child Care Activities

Vehicle exhaust, woodstove emissions, industrial emissions, wildfire smoke, windblown dust, and other sources contain fine particle pollution (PM2.5) that can seriously affect children's health. The following public health recommendations to protect children from PM2.5 are designed for school activities and can be applied to child care, before/after school programs, camp, and sports programs for children (18 years and younger) by considering the duration of outdoor activities.

Outside Air Quality Index: PM2.5					
Check current and forecast air quality at enviwa.ecology.wa.gov					
	Good (0-50)	Moderate (51-100)	Unhealthy for Sensitive Groups (101-150)	Unhealthy (151-200)	Very Unhealthy/ Hazardous (>200)
Recess (15 minutes)	No restrictions.	Allow children with health conditions (see below*) to stay indoors.	Keep children with health conditions indoors. Keep activity levels light for these children unless indoor PM2.5 levels are below 35.5 µg/m ³ (see following page).	Keep all children indoors. Keep activity levels light unless indoor PM2.5 levels are below 35.5 µg/m ³ .	Keep all children indoors. Keep activity levels light unless indoor air is filtered, and indoor PM2.5 levels are below 35.5 µg/m ³ .
P.E. (1 hour)	No restrictions.	Allow children with health conditions to stay indoors and monitor symptoms for those who participate. Increase rest periods for these children as needed.	Keep children with health conditions indoors. Keep activities light for these children unless indoor PM2.5 levels are below 35.5 µg/m ³ . For others, limit to light outdoor activities. Allow any children to stay indoors if they do not want to go	Keep all children indoors. Keep activity levels light unless indoor PM2.5 levels are below 35.5 µg/m ³ .	Keep all children indoors. Keep activity levels light unless indoor air is filtered, and indoor PM2.5 levels are below 35.5 µg/m ³ .
Athletic Events and Practices (Vigorous activity 2-3 hours)	No restrictions.	Allow children with health conditions to opt out and monitor symptoms for those who join. Increase rest periods for these children.	Cancel children's outdoor athletic events and practices or move them to an area with safer air quality, either indoors or to a different location.	Cancel children's outdoor athletic events and practices or move them to an area with safer air quality, either indoors or to a different location. Consider time spent in poor air quality during transit before relocating.	Cancel children's outdoor athletic events and practices or move them to an area with safer air quality, either indoors with filtered air or to a different location. Consider time spent in poor air quality during transit before relocating.

*Health conditions include asthma and other lung disease, respiratory infection, heart disease, and diabetes. See the following page for more details about children's health, improving indoor air quality, and steps to reduce exposure.

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Community Health Outreach with Agricultural Workers



North Central WA Smoke Season 2022 Recap → 2023 Planning

- Emergency Preparedness & Response Plans
- Local Health Jurisdiction & DOH Epidemiology Collaboration
- Healthcare Partner Collaboration
- School District Communication & Capacity Building
- Community Partner Engagement
 - North Central WA Regional Libraries
 - CAFE - The Community for Advancement of Family Education
 - Okanogan Airshed Alliance
 - Clean Air Methow
 - Family Health Centers Outreach Teams