

Seven Critical Gaps Related to the Public Health Impacts of Landscape Fire Smoke

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The Social-Ecological Consequences of Future Wildfire in the West

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BC Centre for Disease Control



National Collaborating Centre
for Environmental Health

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1) Fire and smoke always go together, but smoke is often not part of the fire conversation.



2) Consideration of smoke is often directly proportional to its air quality impacts.



Air Quality Health Index (AQHI)

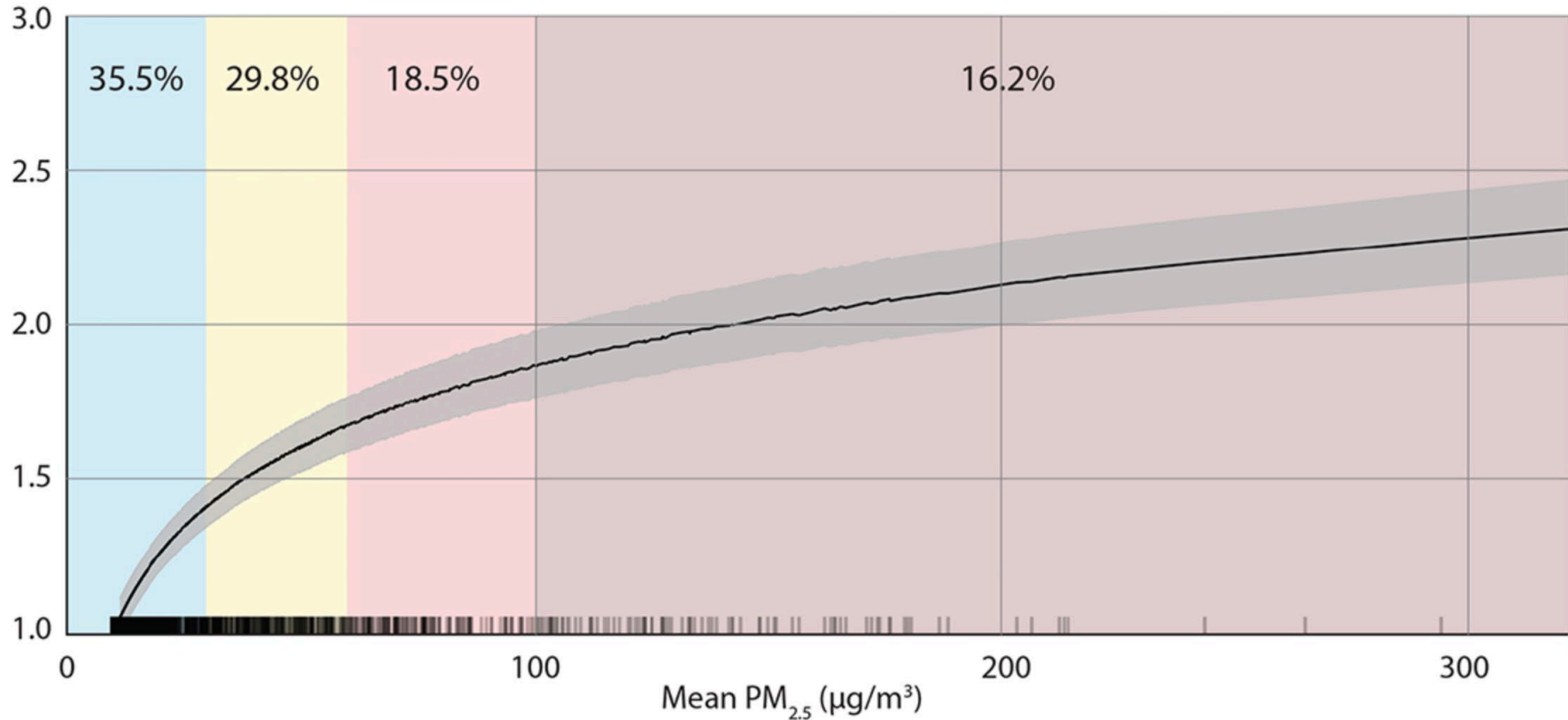
Low

Moderate

High

Very high

Relative rate of asthma-related physician visits



3) While there is good and bad landscape fire, there is only bad smoke.



4) We have very little evidence about the longer-lasting health effects.



Chronic effects so far...

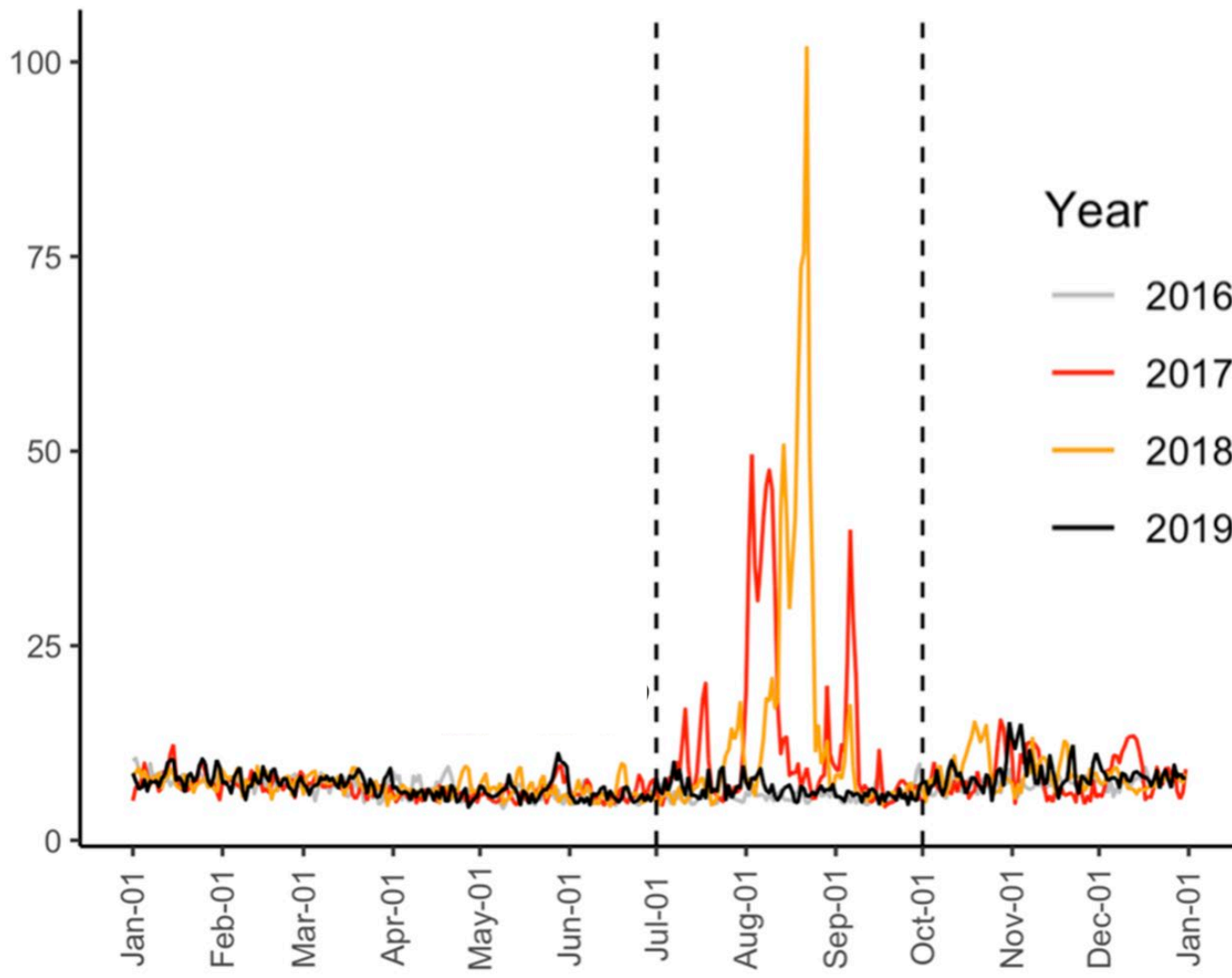
- Persistent reductions in lung function
- Increased cardiovascular disease (wildland firefighters)
- Higher healthcare use
- Subsequent severe acute events (e.g., MI)
- Lung, brain cancers

Without more specific evidence, there is **NO REASON** to believe that exposure to landscape fire smoke carries less risk than other types of air pollution, and some risks may be higher.

5) Exposures are more episodic, complex, and intense than any other type of air pollution.



Population-weighted PM_{2.5}



6) Understudied fetuses, infants, and children will likely bear the greatest burden.



Years

2016 & 2019

All

2017 & 2018

Hazard Ratio

1.5

1.0

0.5

Preterm birth
(32-37 weeks)

Very preterm birth
(28-32 weeks)

Extreme preterm birth
(<28 weeks)

Stillbirth

*Unpublished data

2016 & 2019

All

2017 & 2018

1.5

1.0

0.5

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7) Building population resilience requires personal behavioural change.

Thank you!

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