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Responses to Wildfire and Prescribed Fire Smoke: A Survey of a Medically Vulnerable Adult Population in the Wildland-Urban Interface, Mariposa County, California

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Abstract

California plans to substantially increase the use of prescribed fire to reduce risk of catastrophic wildfires. Although for a beneficial purpose, prescribed fire smoke may still pose a health concern, especially among sensitive populations. We sought to understand community health experience, adaptive capacity, and attitudes regarding wildland and prescribed fire smoke to inform public health guidance. We conducted a cross-sectional survey of medically vulnerable persons in a rural, high fire risk county (N = 106, 76% > 65 years) regarding wildfire and prescribed smoke health effects; health protective actions; information needs; and support for fire management policies. Qualitative comments were reviewed for context and emerging themes. More than half (58%) of participants reported health impacts from wildfire smoke; 26% experienced impacts from prescribed fire smoke. Participants expressed strong support for prescribed fire, although also concerns about safety and smoke. Respondents reported taking actions to reduce smoke exposure (average 5 actions taken per person), but many (47%) lacked confidence that they could successfully protect their health. Persons who were satisfied with the information received tended to be more confident in their ability to protect their health compared to those who were not satisfied (61% vs. 35%). More information was desired on many topics, including notifications about prescribed fire, health protection and exposure reduction. As California expands use of prescribed fire, the need for effective health protective communication regarding smoke is increasingly vital. We recommend seeking solutions that strengthen community resilience and address equity for vulnerable populations.

Keywords: adaptive capacity; managed fire; prescribed burns; prescribed fire; smoke; vulnerable populations; wildfire; wildland fire; wildland-urban-interface.

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