

Tracking Health Effects of Wildfires: The Oregon ESSENCE Wildfire Pilot Project

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Objective

To build capacity to conduct syndromic surveillance at the local level by leveraging a health surveillance need.

Introduction

Wildfires occur annually in Oregon, and the health risks of wildfire smoke are well documented¹. Before implementing syndromic surveillance through Oregon ESSENCE, assessing the health effects of wildfires in real time was very challenging. Summer 2015 marked the first wildfire season with 60 of 60 eligible Oregon emergency departments (EDs) reporting to ESSENCE. The Oregon ESSENCE team developed a wildfire surveillance pilot project with two local public health authorities (LPHAs) to determine their surveillance needs and practices and developed a training program to increase capacity to conduct surveillance at the local level. Following the training, one of the LPHAs integrated syndromic surveillance into its routine surveillance practices. Oregon ESSENCE also integrated the evaluation findings into the summer 2016 statewide wildfire surveillance plan.

Methods

Oregon ESSENCE staff recruited two LPHA preparedness coordinators whose jurisdictions are regularly affected by wildfire smoke to participate in the pilot project. A state public health emergency preparedness liaison served as facilitator in order to increase syndromic surveillance capacity among state preparedness staff.

A pre-season interview assessed data and surveillance needs, risk communication practices, and typical response activities during wildfires. Initial project calls focused on determining specific queries that would meet local needs. Participants wanted total ED visit numbers and health outcomes including asthma, chest pain or heart problems. Both LPHAs were interested in using the data to assess health effects on vulnerable populations, including elderly, children, and migrant workers. Oregon ESSENCE staff also recommended queries that would be used if large numbers of people were displaced (e.g., medication refills, dialysis).

Before the onset of wildfire season, Oregon ESSENCE epidemiologists created queries and a MyESSENCE page for each participant. LPHA staff practiced running the queries, modifying them, and discussed interpretation and data-sharing best practices. During wildfire season, brief weekly webinars enabled participants to ask questions and learn additional techniques including displaying time series as proportions and adjusting geographic parameters to focus on areas with poor air quality.

Results

2015 was a severe wildfire season in Oregon, with over 685,000 acres burned². For the first time, local and state public health were able to monitor and share near real-time health information on interagency smoke calls. In the post project evaluation, participants reported increased knowledge of syndromic surveillance, interpretation, and risk communications. There were no marked increases in total emergency department visits, or visits for asthma, heart palpitations, or other heart complaints. The public may have adhered to warnings

and effectively protected themselves against exposure to wildfire smoke, or health effects may have been less severe and not reflected in emergency department data. Over the next several years, Oregon ESSENCE will integrate select urgent care data, which may better capture morbidity due to wildfire smoke.

Conclusions

Framing syndromic surveillance training around a health surveillance need was effective because participants were engaged around a high-priority health hazard. In summer 2016, Oregon ESSENCE integrated wildfire health surveillance into a biweekly ESSENCE seasonal hazard surveillance report and invited wildfire response partners to subscribe. Local ESSENCE users can use or modify the queries. In 2017, Oregon ESSENCE will incorporate air quality data from the Environmental Protection Agency so partners can monitor air quality and health effects simultaneously.

Keywords

wildfire; ESSENCE; capacity building; training

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