

Preventive Health and Health Services Block Grant

SUCCESS STORY 2019

Preventive Medicine Residency Program

Vaping Injuries – Investigating the Outbreak

Public Health Issue: In September 2019, the California Department of Public Health's (CDPH) Preventive Medicine Residency Program (PMRP) and California Epidemiologic Investigation Service Fellowship Program (Cal-EIS) received an urgent call for clinicians and epidemiologists to assist in an outbreak investigation. CDPH identified 60 potential cases of E-cigarette, or Vaping, product use Associated Lung Injury (EVALI). By November 2019, CDPH reported 170 cases with four deaths in California. In the same month, CDC reported 2,290 cases from 49 states with a total of 47 deaths. With a growing number of EVALI cases, it is crucial to identify the risk factors and the source of the lung disease associated injury. The investment in the training of preventive medicine residents is critical as physicians trained with the knowledge of population health and clinical skills are needed to meet public health challenges like the EVALI crisis. The need for trained research scientists is also essential in collecting data, testing vaping products, and organizing and establishing procedures to assist with the investigation.

Intervention: The Preventive Health and Health Services Block Grant, helps CDPH run the two professional training programs, PMRP and Cal-EIS. PMRP is a two-year residency program for physicians to gain knowledge, skill and experience in preventive medicine and public health. Cal-EIS Fellows are recent MPH graduates and receive 1-2 years of training in applied epidemiology under the mentorship of trained epidemiologists/research scientists. Two PMRP Residents participated in the EVALI outbreak. They received training on how to perform the chart reviews and to identify information such as initial presentation, initial vitals and labs, as well as progression of the disease, need for oxygen supplementation, intubation, and use of steroids. The two residents completed a total of 17 chart reviews, identifying that the majority of the cases indicated a history of vaping exposure, particularly to tetrahydrocannabinol (THC). One Cal-EIS Fellow that was placed at CDPH's Environmental Investigations Branch (EHIB) also participated in the investigation and assisted with the overall data organization and management. As of 11/6/19, the following data were collected:

- 34 patients were linked to vaping products
- Lab testing was conducted on products from 15 out of the 34 patients linked to products

- 175 products were collected that contained liquid (i.e. THC and nicotine cartridges) that are currently being tested for different chemicals
- The patients with EVALI resided in over 10 different counties in California

Impact: PMRP trains 2-5 residents per year; Cal-EIS trains approximately 12 Fellows per year. The programs serve as the foundation of a win-win formula that provides public health trainees with real-world experience and hands-on learning opportunities while providing CDPH with research scientists and skilled clinicians in public health practice. Trainees develop competencies and complete the programs to then join the professional public health workforce. The contribution of the physicians to the medical chart review and abstraction and Fellow's collection of data has provided CDPH with crucial information needed to continue the investigation of EVALI. This data is collected and then reported to CDC to help track cases, identify the sources of EVALI, determine and provide information on patient care, and to continue their national investigation of the outbreak.

Footnotes:

1. CDC. Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products [website]. Updated Nov 20, 2019. Available at https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
2. CDPH Center for Healthy Communities. EVALI Weekly Public Report [website]. Updated Nov 26, 2019. Available at <https://www.cdph.ca.gov/Programs/CCDPHP/Pages/EVALI-Weekly-Public-Report.aspx>