

Partnering with an MPH student to document and describe a large multi-regional outbreak of a rare antimicrobial pathogen



CONTRIBUTOR: Sam Horwich-Scholefield, California Department of Public Health

CATEGORY: Epidemiology and Laboratory Capacity (ELC)

The California Department of Public Health hired a student intern to assist the Healthcare Associated Infections Program during an outbreak of a rare and highly drug resistant pathogen. The intern provided high quality assistance throughout the response and presented results of the effort through a manuscript and conference presentation.



The “What”

In response to ongoing difficulty in recruiting and training early career epidemiologists, the California Department of Public Health (CDPH) Healthcare Associated Infections (HAI) Program, funded through the Epidemiology and Laboratory Capacity for the Prevention and Control of Emerging Infectious Diseases (ELC) cooperative agreement sought to engage student interns. The first intern recruited onto the Antimicrobial Resistance (AR) team helped document and describe a major outbreak of a rare and highly drug resistant pathogen known as NDM-producing carbapenem-resistant *Acinetobacter baumannii*. Neither the busy HAI Program investigators nor the AR surveillance team had the time and resources to understand how the disease was spreading and possible risk factors.

The intern was more than up to the challenge. They worked closely with multiple members of the CDPH Program, meeting with infection preventionists who visited facilities many times to the AR investigations team who issued recommendations and coordinated laboratory testing. Throughout the process, the CDPH Program staff provided guidance and training, helping the intern collect and manage data, as well as perform a descriptive analysis of an outbreak that ultimately included 229 cases identified in 37 facilities across 13 counties.



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The intern's contributions did not end at the termination of her fellowship. CDPH was able to hire the intern as an AR disease investigator after her graduation where she continues to bring expertise and analytical acumen to the team.

The "So What"

The intern was able to draft a manuscript to submit to a major public health publication, Emerging Infectious Diseases. They also submitted an abstract to the Society for Healthcare Epidemiology of America (SHEA) Spring 2023 Conference in Seattle, Washington. The abstract was accepted as a top oral abstract, where they presented a summary of the outbreak to over 100 professionals in the field of healthcare epidemiology.

In addition to conducting a descriptive analysis, they assisted in routine reporting to the Centers for Disease Control and Prevention, developing reports of AR pathogens for local health departments, and analyzing patient transfer patterns between facilities across California.

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The "Now What"

As one of the first interns in the HAI Program, they satisfied requirements for their MPH program while providing a major benefit to our program. This large outbreak would likely not have made it to the manuscript stage without their contributions. Sharing and summarizing our experience in written form, as well as in a presentation at a major national conference showed how invaluable the partnership between MPH students and the CDPH HAI Program can be.

The CDPH HAI program is now annually applying for a UC Berkeley MPH student to intern with our program. The newest intern has helped advance data visualization projects that the program has not been able to address due to conflicting priorities, but that are an essential part of sharing data and insights with our local health department partners. Our program has also begun to work more with university students at other schools on other teams like communication or outbreak investigations, and we now consider the internships with public health students to be an essential part of workforce development.

Key contributors to this project include Lian Hsiao, first student intern, California Department of Public Health/University of California Berkeley