

2019 CCDEH Excellence in Environmental Health Nominations
County of San Diego, Hepatitis A Outbreak Response
Executive Summary

OVERVIEW: The Hepatitis A (HAV) outbreak required the San Diego County, Department of Environmental Health (DEH) to work in partnership with various internal County departments, municipalities, other jurisdictions and industry stakeholder groups to tackle a public health emergency in an innovative way. DEH developed educational documents, practiced strong regional communication, and created a rapid response procedure to investigate food handler HAV cases. These efforts prevented HAV from becoming foodborne in one of the nation's largest HAV outbreaks. By ensuring food was not contaminated by an ill food handler, DEH was able to protect our local consumers from illness, avoided additional local economic burden of hospitalization and missed work, and maintained consumer confidence for the millions of San Diego County residents and visitors.

PROBLEM OR CHALLENGE: OUTBREAK INFORMATION

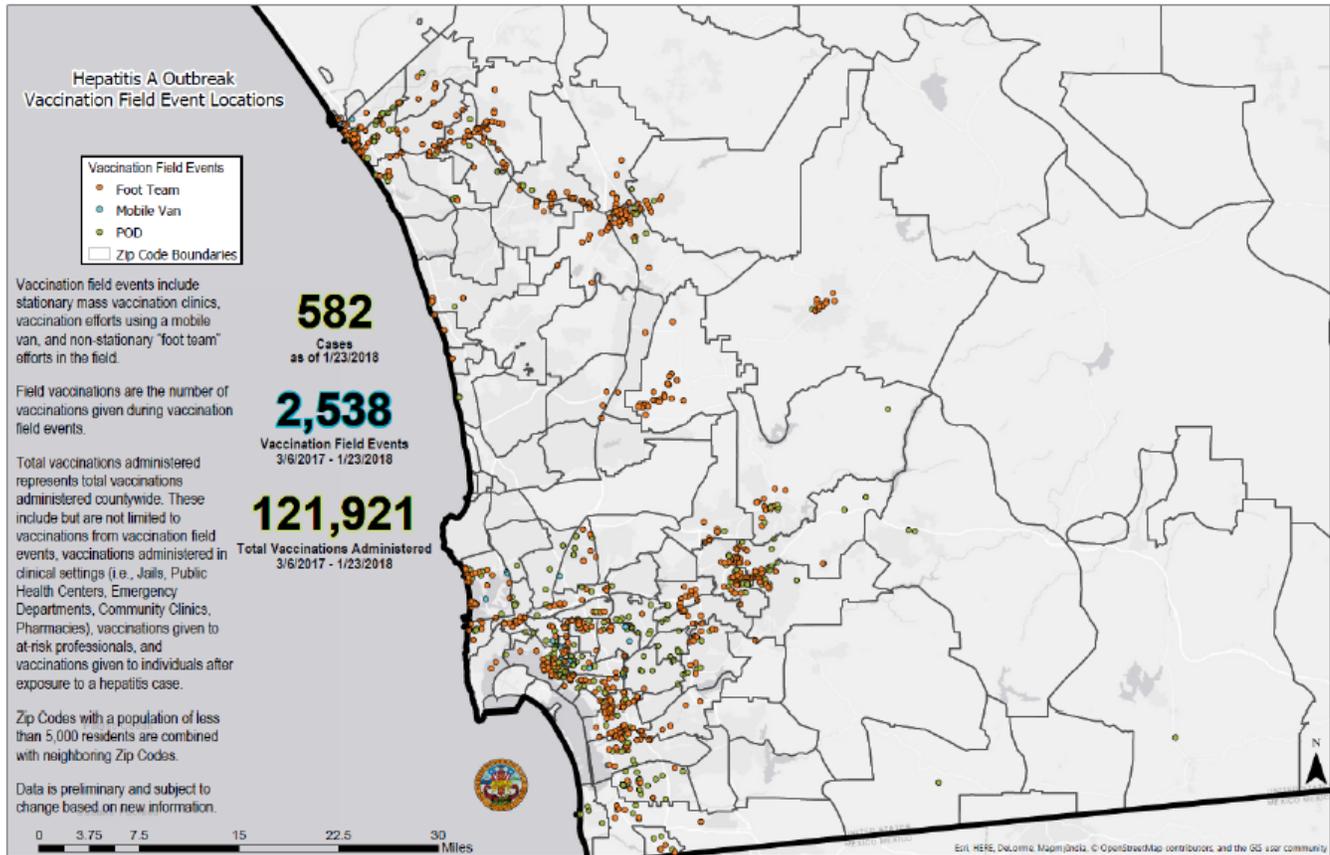
Detected in early March 2017, with cases traced back to November 2016, the hepatitis A virus (HAV) outbreak in San Diego County was exceptional in its scale and transmission characteristics. A public health emergency was declared on September 1, 2017 and the outbreak continued through January 23, 2018, with a total of 582 confirmed or probable outbreak related HAV cases reported, including 20 deaths. Contracting HAV is not usually life-threatening and the great majority of those infected with the virus fully recover. However, those affected in the San Diego HAV outbreak were largely homeless and drug users and so high rates of hospitalization and death due to age and the presence of underlying health conditions, particularly chronic liver disease, associated with drug use and homelessness.

To stop the outbreak the County of San Diego adopted a three-prong approach: vaccination, sanitation and education. This campaign help support local jurisdictions in their efforts to sanitize streets and sidewalks and to clean homeless encampments and increase public awareness about the outbreak, thereby increasing the chances that food handlers and those serving the homeless and drug users would receive vaccinations according to new local recommendations to prevent the outbreak from expanding. While cases did continue to spread primarily within the homeless and drug-using populations, the expanded sanitation and vaccination recommendations, as well as increased public awareness as to the most common methods of virus transmission, helped to reverse the trend.

Within this effort, DEH recognized there was a need to provide guidance information to food facility operators how to conduct proper sanitizing in a facility that was exposed to a HAV case, and was challenged by

the volume of epidemiology investigations and determining when a public notification was warranted to protect the spread of HAV from a food handler.

The map below depicts the distribution/number of HAV cases and vaccinations provided as of January 23, 2018



SOLUTION: VACCINATION, SANTIATION, AND EDUCATION

As part of the educational campaign, DEH's role was to provide sanitation guidance to food facilities, however DEH quickly determined that a guideline specific to food facilities did not already exist. DEH had to be innovative and develop our own guidelines based on a variety of scientific sources such as the CDC, EPA, and various published studies through the National Center of Biotechnology Information and the US National Library of Medicine National Institutes of Health regarding efficacy of disinfection for HAV. DEH had several iterations of our guidelines that were adapted based on stakeholder feedback and use. The disinfection guideline was created for facilities that had a significant exposure, such as a fecal incident or confirmed food handler case. Initially, a recommendation of 200 ppm chlorine with a contact time of 20 minutes was provided. However, this was modified based on stakeholder feedback that restaurant operations and use, to 5000 ppm chlorine for a 1-minute contact time. Food facility operators stated they could not close a dining area or public restroom for a

full 20 minutes, so DEH again researched and consulted with the CDC and EPA to recommend a more concentrated solution. Because of its high level of concentration, this sanitation procedure was only to be used in the instance of a food handler confirmed with HAV or for cleaning of a fecal or vomit incident inside the food facility. The guideline was also provided to office buildings and other organizations in areas impacted with a significant homeless presence, to be used if there was fecal incident or other form of contamination in their building or restrooms. Additionally, DEH assisted the County in developing guidance for sanitation in the public right-of way. This guidance was created utilizing a combination of information provided by the City of Los Angeles, CDC, and US Army.

Creating the documents was only the first step in educating the public and our permitted operators. DEH provided regular updates on sanitation and the outbreak through our email messaging system called GovDelivery and the DEH website, which reached over 8,000 food facilities each time a message was sent. DEH staff educated over 13,000 permitted food facilities during routine inspections and presentations were provided to the local chapter of the California Restaurant Association (CRA) Executive Committee who distributed information to more than 1,800 members of the CRA statewide. Additionally, the San Diego Food and Beverage Association emailed more than 10,000 permitted food handlers and members in the San Diego region. DEH conducted presentations at a variety of stakeholder meetings to educate our operators and stakeholder on HAV and preventative measures they could take to protect themselves. Communication with restaurants and industry groups was occurring daily to answer questions regarding sanitation and strategize on ways to ensure all restaurateurs were aware of the outbreak and measures to take to protect their customers. In addition to educating food handlers, the County also focused on educating the public and leveraged the media. Media events were held to disseminate information and to address growing concerns about how the outbreak could impact one of region's largest industries, tourism. Frequent threading with Health and Human Services, Public Health Services division, the Department of Public Works and other municipal agencies was done to streamline communication and educational efforts. These combined efforts were essential in maintaining consumer confidence in eating at local restaurants.

Measures were also taken to encourage HAV vaccination of food handlers. In August 2017, the County Public Health Officer added food handler to the local recommendation of persons who should be vaccinated and communicated in a letter to the restaurant industry that this vaccination was "strongly recommended" for all local food handlers. The California Restaurant Association and the San Diego Food and Beverage Association mobilized to communicate this information out to their associations, totaling nearly 12,000 members. Additionally, the County, the California Restaurant Association, the San Diego Food and Beverage Association, and the San Diego Hotel-Motel Association hosted multiple food handler vaccination events, targeting food

handlers in geographic areas where case numbers were high. The vaccination events were scheduled at times and locations that were convenient for a food handler, such as before a shift. Some restaurants also sent employees to vaccination events as part of their regular shift. This was truly an innovative partnership that leveraged industry to ensure that the HAV outbreak did not become foodborne.

The caption below shows the typical CDC vaccination recommendation for HAV vs. the San Diego County HAV outbreak vaccination recommendation

CDC Vaccination Recommendations	Local Vaccination Recommendations
<ul style="list-style-type: none"> • All children at age one year • Family and caregivers of adoptees from countries where HAV is common • Men who have sexual encounters with other men • Users of recreational drugs, whether injected or not • People with chronic or long-term liver disease, including hepatitis B or hepatitis C • People with clotting-factor disorders • People with direct contact with others who have HAV • Any person wishing to obtain immunity (protection) • Travelers to countries where HAV is common 	<p>CDC Vaccination Recommendations, plus:</p> <ul style="list-style-type: none"> • March 10, 2017: Homeless individuals • May 4, 2017: Homeless service providers and volunteers • May 4, 2017: Public safety workers who work with at-risk people • May 4, 2017: Behavioral health providers who work with the at-risk populations • May 31, 2017: Selected healthcare workers • July 13, 2017: Sanitation and janitorial workers • August 16, 2017: Food handlers

Due to the large volume of HAV cases, DEH had to adapt its typical epidemiology investigation practices to increase efficiencies, while remaining comprehensive and protective of public health. In a typical year, DEH conducts 1-2 investigations for confirmed HAV cases that are potentially associated with a food facility because a customer who ate there contracted HAV. However, from November 2016 to January 2018, DEH conducted 126 HAV investigations at food facilities related to customer cases. As HAV cases increased, DEH shifted from its model of investigating each restaurant potentially associated with a confirmed case of a customer, to conducting investigations if a food facility had more than three customer cases associated with it. It was identified that many cases also had a significant other or family member that had HAV and consumed food with them. Meaning, the potential for two related cases was high due to the person to person contact, not the food. As HAV cases became prevalent in a community and continued to not be not related to a food source, DEH adapted to focus our efforts on facilities with a higher risk, which was determined to be three or more customer cases. Food facilities that had three or more confirmed cases were investigated and inspected within one business day to identify any risk factors associated with the spread of HAV, such as proper handwashing, potentially ill food handlers, use of public restrooms, and contamination of common areas such as soda fountains and salad bars.

During the outbreak, in addition to the 126 investigations that were conducted based on customers with HAV who dined at restaurants, DEH also investigated 23 cases of food handlers confirmed with HAV. In the 23 cases, DEH developed a questionnaire to initiate the investigation immediately. The food facility where the food handler worked would be contacted and notified to exclude the food handler, followed by a recommendation to close and begin a deep disinfection of the entire facility and determination of a time and place where all food handlers who work there could receive a post exposure prophylaxis vaccine to prevent illness, if infected but not yet symptomatic. At the same time, DEH staff would be sent to investigate and learn more about the food handler's duties, the restroom utilized by staff or if it's shared by the public, the food handler work schedule before becoming symptomatic (can be asymptomatic for 14 days, while infectious), their work schedule while infectious, did they have a fecal or vomit incident while working, and how effective are the handwashing practices at the facility? After the investigation was complete, DEH would collaborate with the Public Health Officer, Director of DEH, and DEH's investigation staff to determine if a public notification was needed to prevent the spread of HAV by persons exposed in the restaurant. A public notification would only be issued if it could be made within a two-week time period of exposure, when the PEP vaccine would be effective in preventing HAV. One investigation met this notification criteria during the outbreak and a press release was issued (see press release linked below). In addition to providing the post exposure prophylaxis vaccine to the food handlers who worked at the facility, it was also offered to customers who dined at the restaurant during the exposure period. A vaccination clinic was established for the sole purpose of vaccinating these diners.

ORIGINALITY:

1. Creation of the following educational documents, some of which are now being used by other jurisdictions throughout the country. These documents can be accessed through the [County of San Diego Hepatitis A, After Action Report](#), or via the County of San Diego, [Department of Environmental Health website](#):
[Hepatitis A Guidance for Food Facilities](#)
[Hepatitis A Disinfection Guidelines](#) (also available in Spanish, Vietnamese, Arabic, and Tagalog)
[Hepatitis A Vaccinations for Food Handlers](#)
[Sanitation Procedure for Public Right-of-Ways](#)
2. Communication to food facility operators and the public via GovDelivery, website, media:
[Press release for HAV case at restaurant](#)
[County website with HAV updates](#)
3. Demonstrated flexibility in an unprecedented emergency by adapting to provide guidance on Public Right-of-Way sanitation, other disinfecting educational documents and creating an efficient process to meet the

demands of the number of HAV case investigations. In public health emergencies it is imperative that staff think outside the box and utilize their knowledge in a variety of ways to assist in the effort. This emergency showed DEH doing both with no members of the public getting sick from HAV contaminated food.

BUDGET/COST/SAVINGS:

Throughout the HAV outbreak, DEH tracked costs related to investigation, education and document development efforts, which totaled \$102,815.63. DEH is a full cost recovery department, whose programmatic work is funded through our permit fees. The HAV costs were reimbursed through the County's General Fund appropriations, to not impact our rate payers, the food facility operators.

RESULTS:

Through DEH's efforts and innovations to educate the public and food facility operators, create guidance documents, and proactively partner with industry, municipalities, public health services and the community, DEH was able to protect local consumers from illness, ensure the virus did not become foodborne, avoided additional local economic burden of hospitalization and missed work, and maintained consumer confidence for the millions of San Diego County residents and visitors. DEH prevented HAV from becoming foodborne and therefore prevented it from becoming a large-scale foodborne illness outbreak, a huge public health success! Another benefit DEH's efforts is that the information gained, and guidance documents created have been shared nationally and are benefiting other Environmental and Public Health departments who are currently experiencing a HAV outbreak. Since the outbreak ended, DEH has participated in conference calls and email exchanges to educate and assist our fellow colleges in preventing foodborne illness in their jurisdictions as well, increasing the public health impacts of our work.

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