

Vibriosis, Orange County

2016 – 2020



Background

Vibriosis is caused by several different species of the *Vibrio* or related bacteria; these illnesses are distinct from cholera which is caused by *Vibrio cholera* O1 and O139. *Vibrio* bacteria are naturally occurring in coastal marine ecosystems and are found primarily in saltwater or brackish water (where saltwater and freshwater meet). People are exposed to *Vibrio* through either consumption of raw or contaminated food from these environments or when they are physically exposed to this kind of water and have either a break in the skin or an infection of a mucosal membrane.

Vibriosis causes multiple clinical syndromes. People exposed to contaminated food have intestinal illness consisting of profuse watery diarrhea and abdominal cramping. People with environmental exposures tend to have soft tissue infections on the skin, wound or ear infections. Both people exposed via food or the environment are at risk of developing septicemia. Persons with pre-existing conditions such as liver disease or are immune compromised are at an increased risk of more severe outcomes, including death.

<http://www.cdc.gov/vibrio/>.

Orange County, California

Table 1. Orange County Vibriosis Case Counts and Rate per 100,000 Population with Gender, Race/Ethnicity and Age Group Detail, 2011 – 2020

	Case Counts					Rate* per 100,000 Population				
	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Total Cases	12	19	31	24	15	0.4	0.6	1.0	0.8	0.5
Gender										
Male	7	15	18	10	8	0.4	0.9	1.1	0.6	0.5
Female	5	4	13	14	7	0.3	--	0.8	0.9	0.4
Race / Ethnicity										
White	7	10	14	12	5	0.5	0.7	1.0	0.9	0.4
Hispanic	3	4	6	5	1	--	--	0.5	0.4	--
Asian	0	2	6	2	4	--	--	1.0	--	--
Other/Unknown	2	3	5	5	5	--	--	--	--	--
Age Group										
0-4 years	0	0	0	0	1	--	--	--	--	--
5-14 years	0	2	1	0	3	--	--	--	--	--
15-24 years	2	3	2	2	1	--	--	--	--	--
25-44 years	1	3	10	8	3	--	--	1.2	0.9	--
45-64 years	6	6	11	6	3	0.7	0.7	1.3	0.7	--
65 years & over	3	5	7	8	4	--	1.1	1.4	1.6	--

*rates for cells with less than five cases and for the Other/Unknown category

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Key Points:

- More cases of vibriosis are reported among men than women; among persons self reporting as White than other races or ethnicities, and among persons who are in the older age groups (**Table 1**).
- Orange County tends to have a rate of vibriosis similar to that of the United States or California, and the rate in Orange County in 2018 was higher than both the United States and California though rates have increased in recent years, similar to the rest of the state (**Table 2** and **Figure 1**).
- Cases of vibriosis are more likely to occur in summer months (**Figure 2**).
- Case were more likely to be *V. alginolyticus* (34%), followed by *V. parahaemolyticus* (30%). Many *Vibrio* isolates were not able to be speciated, due to either the isolate not being sent for speciation or the isolate being sent too late for an accurate result (**Figure 3**).
- 97% of the cases of *V. parahaemolyticus* were identified from stool. 46% of *V. alginolyticus*, were from the ear and 37% were from wound infections. All specimens for cases of *Vibrio* where the species was not identified were stool.
- 24% of vibriosis cases reported being hospitalized; three deaths were reported, one case each of *V. cholerae* non-O1, non-O139, *V. fluvalis*, and *V. vulnificas*
- High risk exposures vary by species. No *V. alginolyticus* cases reported eating raw oysters while 77% of cases of *V. parahaemolyticus* reported this. 54% of cases of *V. alginolyticus* reported contact with natural sources of water and 27% of cases of *V. parahaemolyticus* reported this

Table 2. Vibriosis Incidence Rates per 100,000 population in United States, California, and Orange County, 2016 – 2020

	2016	2017	2018	2019	2020
United States ¹	0.4	0.7	0.9	0.9	--
California ²	0.3	0.7	0.8	0.7	--
Orange County	0.4	0.6	1.0	0.8	0.5

¹ National Notifiable Diseases Surveillance System, 2016 - 2019 Annual Tables of Infectious Disease Data. Atlanta, GA. <https://www.cdc.gov/nndss/infectious-tables.html>.

² CDPH INFECTIOUS DISEASES BRANCH (IDB) YEARLY SUMMARIES OF SELECTED COMMUNICABLE DISEASES IN CALIFORNIA, 2011-2019, Center for Infectious Diseases - Division of Communicable Disease Control - Infectious Diseases Branch - Surveillance and Statistics Section, July 2020

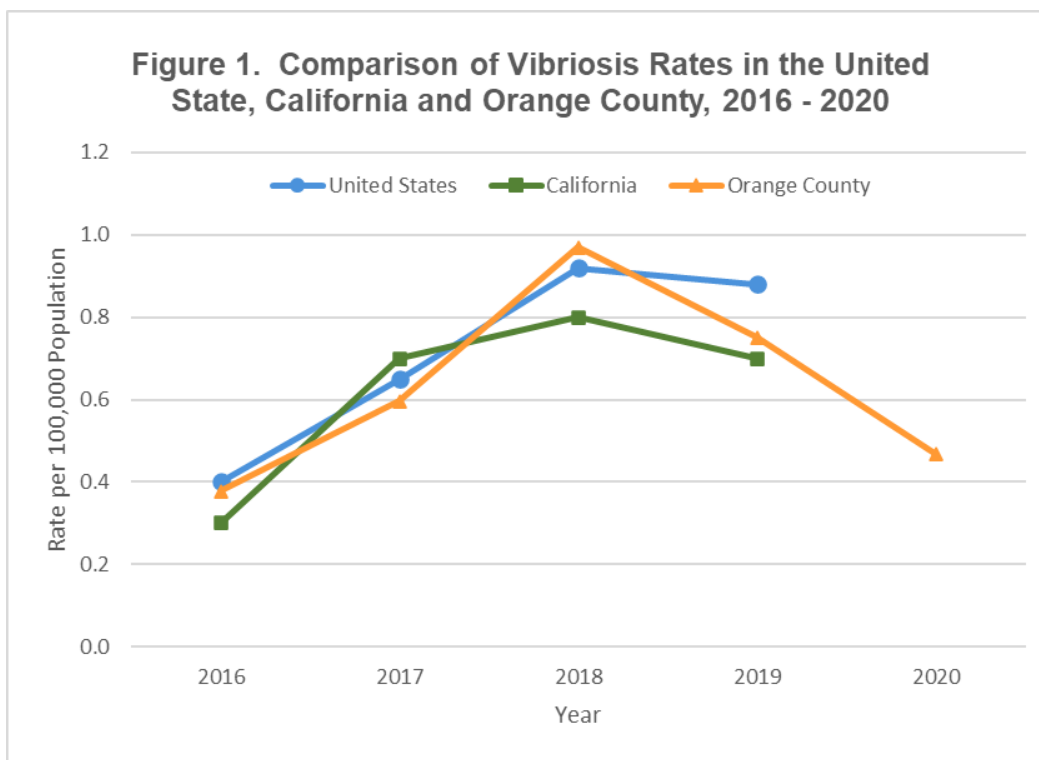


Figure 2. Number of Vibriosis Cases by Month, Orange County, 2016 - 2020

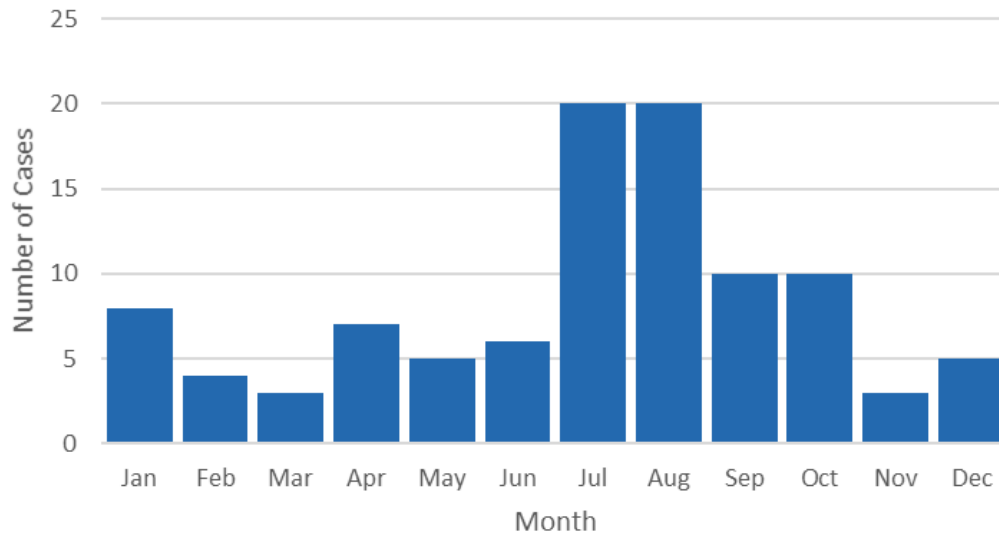
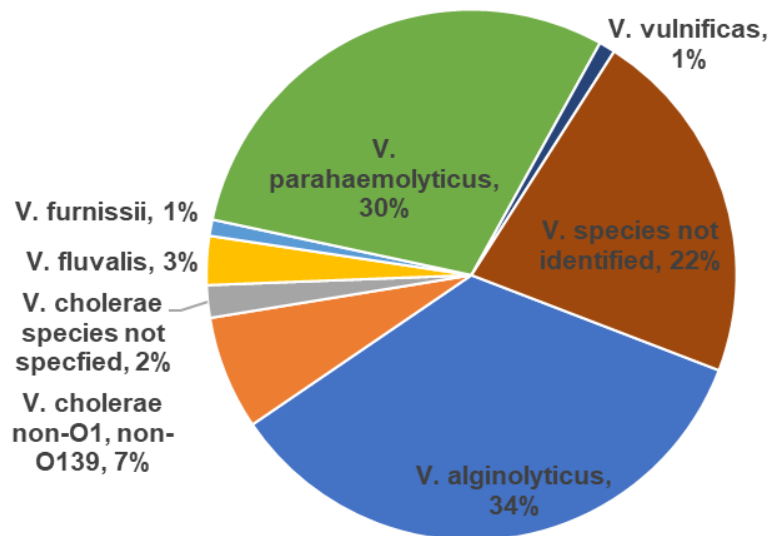


Figure 3. Percent of Vibrio Cases by Species, Orange County, 2016 - 2020



Federal Resources:

[Centers for Disease Control and Prevention \(CDC\) *Vibrio* Species Causing Vibriosis webpage](#)

[CDC *Vibrio* and Oysters](#)

[CDC Cholera Infection](#)

California Resources:

[California Department of Public Health \(CDPH\) Vibriosis \(non-Cholera\) webpage](#)

[CDPH Food and Drug Branch Seafood and Shellfish Safety webpage](#)