

Typhus, Orange County 2011 – 2018



Background

Flea-borne typhus is a disease caused by the bacteria *Rickettsia typhi*, and possibly *Rickettsia felis*. The bacteria live in the feces of infected fleas which can be found on cats, dogs, raccoons, skunks, and opossums. After a flea bite, bacteria may remain on the skin's surface. A human becomes exposed to the bacteria by scratching the site of a flea bite, which allows bacteria from the skin's surface to enter the bloodstream.

People infected with typhus may experience fever, headache, chills, and muscle aches 6 - 14 days after a *Rickettsia*-infected flea bite. Some people also develop a rash. The disease is treated with antibiotics. Most people recover within several days, though hospitalization with serious illness does occur.

To protect yourself from flea-borne typhus, take precautions to discourage opossums, rodents, and feral cats from living around your home. Remove pet food and other outside food sources, cover garbage containers, and trim vegetation around buildings. Use flea control products on pet dogs or cats, and keep cats indoors. If you see live or dead opossums, feral cats, or other animals on your property, contact your local Animal Control agency.

**COMMUNICABLE
DISEASE
CONTROL**

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Orange County, California

Table 1. Count of Orange County Typhus Cases by Sex, Race/Ethnicity, and Age Group, 2011 – 2018.

	2011	2012	2013	2014	2015	2016	2017	2018
Total Cases¹	11	28	33	16	15	17	11	18
Hospitalized	11	26	30	16	14	11	9	18
Sex								
Male	4	15	25	10	13	10	5	12
Female	7	13	8	6	2	7	6	6
Race/Ethnicity								
White	7	14	21	5	9	7	7	11
Black	0	0	1	1	0	0	0	0
Asian	1	2	2	1	0	2	0	1
NHOPI ²	0	0	0	0	0	0	0	0
Hispanic	3	5	4	3	6	6	2	6
Other/Unknown	0	7	5	6	0	2	2	0
Age Group (years)								
<18	1	4	2	1	0	3	1	7
18 - 49	7	17	16	9	10	11	5	7
50 - 64	2	5	12	2	4	0	2	3
≥ 65	1	2	3	4	1	3	3	1

¹ Case counts are subject to change as additional information becomes available. Cases are grouped into calendar years based on the earliest of the following dates: onset, specimen collection, diagnosis, report received, or death. Confirmed and probable cases are included in this analysis.

² NHOPI = Native Hawaiian and Other Pacific Islanders

Flea-borne typhus is considered endemic in areas of Orange County. The number of annual reported cases ranged from 11 to 33 during the eight-year period from 2011 to 2018, with a median of 16.5 cases (**Table 1**). Cases were 63% male, 54% non-Hispanic white, and 55% in the age range 18-49.

Key Points:

- 2013 had the highest overall incidence rate with 1.06 typhus cases per 100,000 Orange County residents. 2017 saw the lowest overall rate, with 0.34 cases per 100,000 residents (**Table 2**).
- There is generally a higher incidence of typhus among males than females (**Table 2** and **Figure 1**).
- Across all years, non-Hispanic white residents had the highest case counts and incidence rates (**Table 2**).
- Across all years, Orange County had higher incidence rates than California as a whole (**Table 3**).
- Case counts are highest in the summer months, though illness is seen year-round (**Figure 2**).

Table 2. Orange County Typhus Incidence Rates by Sex, Race/Ethnicity, and Age Group, per 100,000 people, 2011 – 2018.

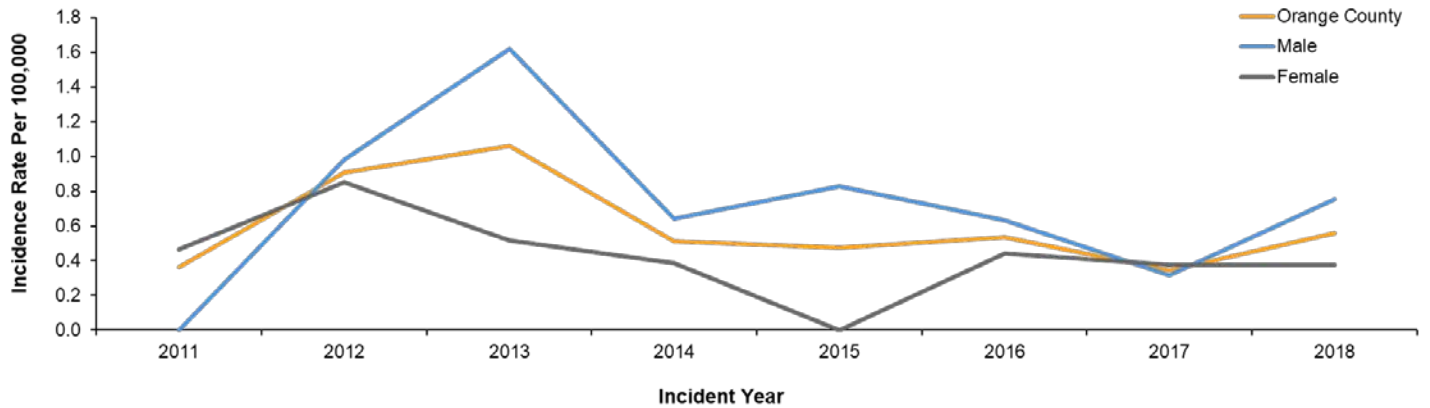
	2011	2012	2013	2014	2015	2016	2017	2018
Total Rate	0.36	0.91	1.06	0.51	0.47	0.53	0.34	0.56
Sex								
Male	-	0.98	1.62	0.64	0.83	0.63	0.31	0.75
Female	0.46	0.85	0.52	0.39	-	0.44	0.38	0.38
Race/Ethnicity								
White	0.52	1.04	1.56	0.37	0.67	0.52	0.52	0.82
Black	-	-	-	-	-	-	-	-
Asian	-	-	-	-	-	-	-	-
NHOPI	-	-	-	-	-	-	-	-
Hispanic	-	0.37	-	-	0.44	0.44	-	0.45
Age Group (years)								
<18	-	-	-	-	-	-	-	0.97
18 - 49	0.50	1.22	1.15	0.65	0.72	0.80	0.36	0.51
50 - 64	-	0.88	2.06	-	-	-	-	-
≥ 65	-	-	-	-	-	-	-	-

Table 3. Typhus Incidence Rates per 100,000 people in United States, California, and Orange County, 2011-2018.

	2011	2012	2013	2014	2015	2016	2017	2018
California	0.14	0.25	0.33	0.20	0.23	0.26	0.26	0.44
Orange County	0.36	0.91	1.06	0.51	0.47	0.53	0.34	0.56

Note: Incidence rates are only calculated for categories in which there are 5 or more cases (Table 2 and Table 3). Darker orange indicates a higher incidence rate.

Figure 1. Comparison of Typhus Incidence Rates: General County, Male, and Female Populations. Orange County, 2011 - 2018.



Typhus cases generally increase during the summer months. **Figure 2** shows the total case counts by CDC disease week for the time period 2011-2018 (the month labels are only approximate). Three months tied for the highest case count with 25 cases each: June, July, and August. March had the lowest case count, with only 3 cases during the 2011-2018 time period.

Figure 2. Total Typhus Cases by Disease Week, Orange County 2011-2018.

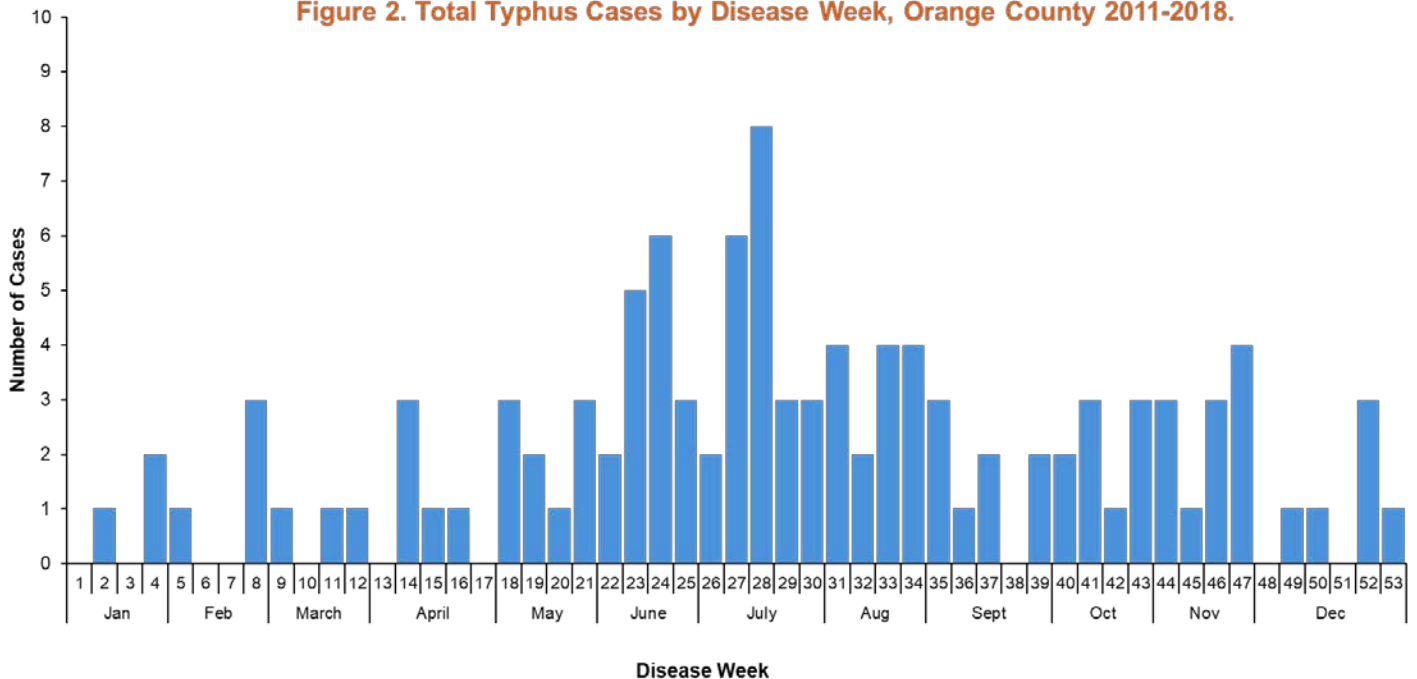
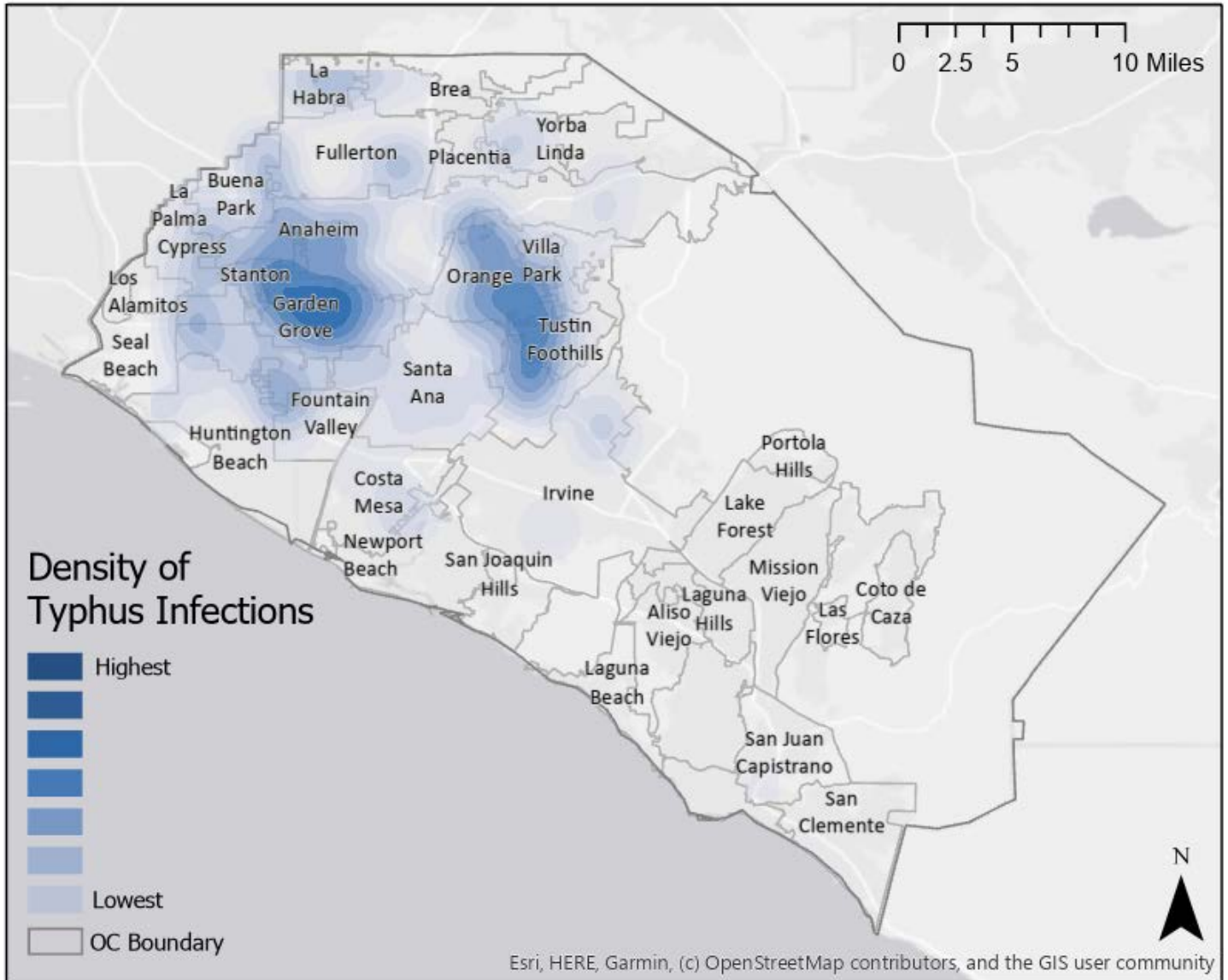


Figure 3. Location of Typhus Infections in Orange County, California 2011 – 2018.



As shown in **Figure 2** above, the geographic areas with the highest density of typhus infections are in northern Orange County. The most cases are seen in the areas surrounding Orange, Garden Grove, Westminister, and Anaheim.

For more information, please visit the [California Department of Public Health webpage on flea-borne typhus](#).