

Q FEVER

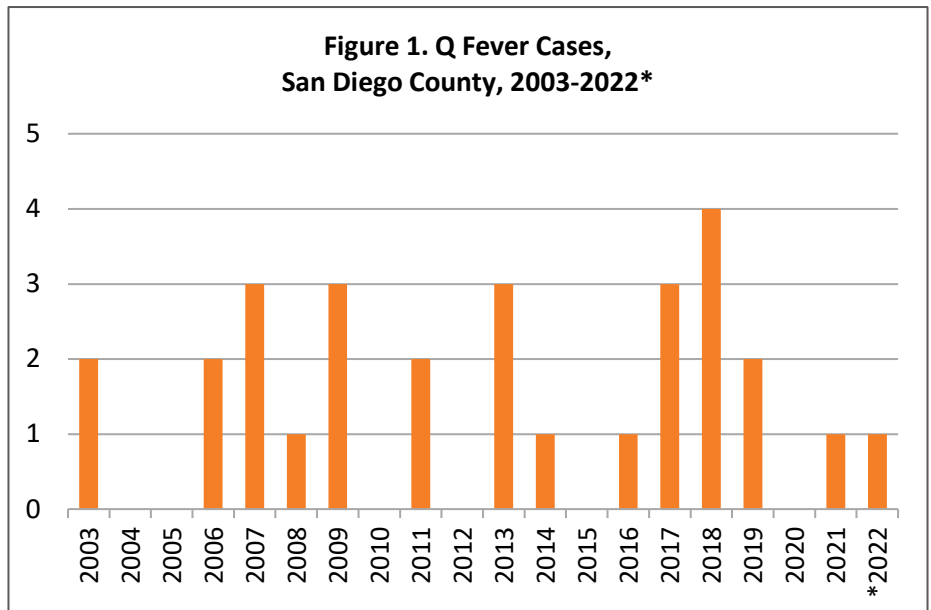
Q fever is a worldwide zoonotic disease caused by the intracellular bacterium *Coxiella burnetii*. First described, in 1935, in an outbreak of febrile illness in slaughterhouse workers in Queensland, Australia, Q fever remains underreported and underrecognized largely due to its nonspecific symptoms. Both acute and chronic, or persistent focalized infection, forms of the disease occur and can cause a wide range of symptoms. Due to its ability to be used as a bioterrorism agent, Q fever became a reportable disease in the United States in 1999.

Humans are primarily infected via inhalation of contaminated aerosols from milk, urine, feces, and placenta of animal reservoirs, namely cattle, sheep, and goats. However, there are additional, extensive wildlife reservoirs known to harbor the bacteria including dogs, cats, pigeons, rabbits, and ticks. The organism can survive for long periods of time in the environment, so human exposure does not have to be via direct animal contact. Infection can also occur by ingestion of unpasteurized dairy products. Those at highest risk of exposure are veterinarians, ranchers, dairy farmers, and those who work in or near livestock facilities.

The largest known Q fever outbreak occurred in the Netherlands in 2007-2010, with over 4,000 reported cases, which were attributed to high density goat farming in close proximity to urbanized, populated areas, with presumed windborne spread of the organism. From 2000-2012, there were 1,366 cases of Q fever [reported in the United States](#), with a male-to-female ratio of 3 to 1. In 2008, the CDC began reporting cases by acute and chronic status, with a slight uptick in cases in recent years, potentially due to an increase in reporting. In California, there have been [276 cases reported](#) from 2013-2019 (rate of <1 case per 100,000 people), with higher incidence among males (0.16 per 100,000) than females (0.04 per 100,000), and the highest percentage of cases amongst those who reported Hispanic/Latino race/ethnicity (45.8%). In San Diego County, 29 cases were reported from 2003-2022. Seventy-nine percent (29) of these cases were male, and 52% (15) were in persons ages 45-64 years. Thirteen of 27 case-patients (48%) were non-Hispanic White, and 7 (26%) were Hispanic/Latino. Among 14 of 16 cases reported since 2013 for which complete information is available, 9 (64%) were acute cases and none were linked to an outbreak. Eleven of the 14 were hospitalized for at least 1 day (range 1-34 days).

Symptoms of acute Q fever usually occur within 2-3 weeks of exposure, but up to half of people may be asymptomatic. The most common symptoms include high fever, fatigue, malaise, myalgia, severe headache, pneumonia, and hepatitis, with rarer presentations including meningoencephalitis and pericarditis/myocarditis. Pregnant women may be asymptomatic, but infections during pregnancy can result in adverse fetal outcomes

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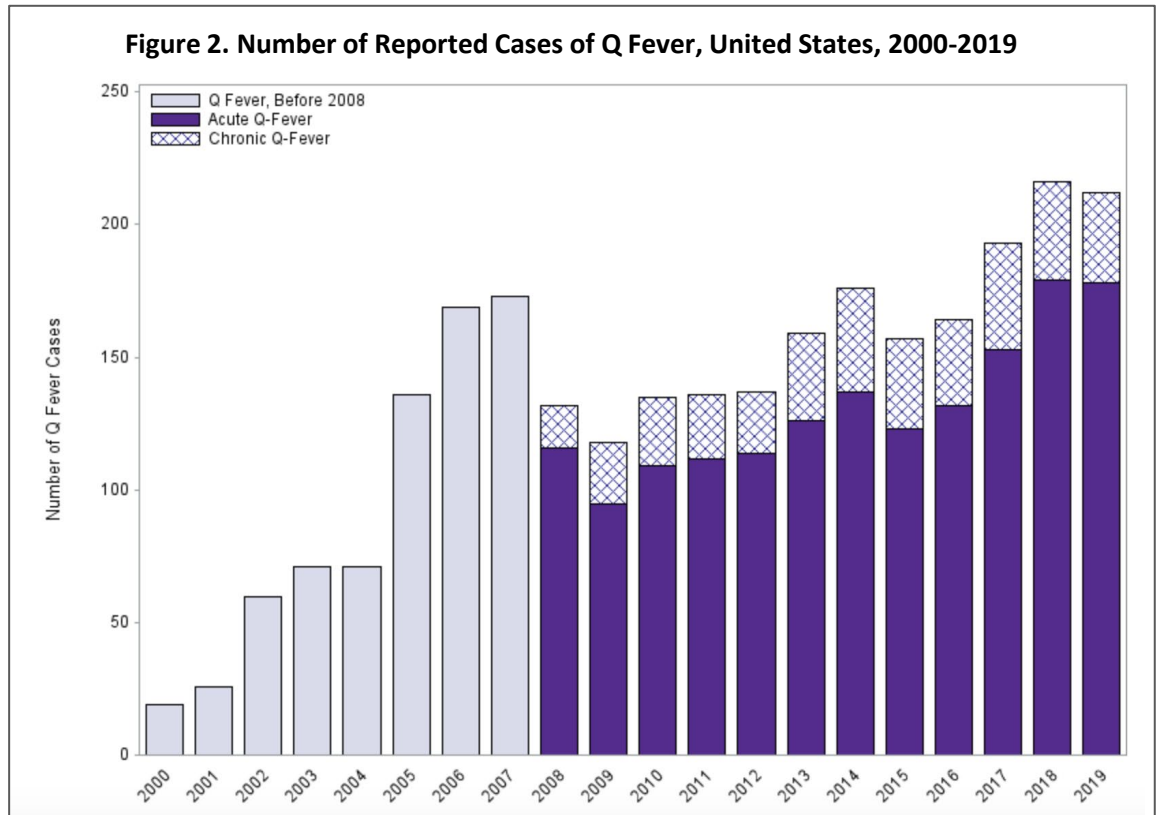
*Data for 2022 is year to date; current as of 8/15/2022. Data are provisional and subject to change. Grouped by CDC disease year.

The Monthly Communicable Disease Surveillance Report is a publication of the County of San Diego Public Health Services Epidemiology and Immunization Services Branch (EISB). EISB identifies, investigates, registers, and evaluates communicable, reportable, and emerging diseases and conditions to protect the health of the community. The purpose of this report is to present trends in communicable disease in San Diego County. To subscribe to this report, visit the [Data and Reports](#) page on the Epidemiology Program website (www.sdepi.org) and click on the subscribe link.

Q FEVER, continued

including miscarriage, stillbirth, premature birth, or intrauterine growth retardation. Chronic infection occurs in <5% of cases with acute infections and occur weeks to years later, with clinical manifestations including endocarditis (most common), endovascular infection, osteomyelitis, and joint infection. Diagnosis is confirmed with serology or PCR, with particular antibody type and titer cutoffs for both the acute and chronic forms of the disease. Acute disease is treated with a 14-day course of doxycycline; however, if endocarditis or endovascular infection is confirmed, treatment consists of at least 18 to 24 months of doxycycline plus hydroxychloroquine with serial monitoring of antibody titers to document treatment response. It is particularly important to monitor immunocompromised patients, pregnant women, and patients with known cardiac valvulopathies after acute infection as they remain at higher risk of developing persistent focalized infection. Specifically, endocarditis is invariably fatal if untreated and has a 10-year mortality rate of 19% in treated patients due to its association with frequent relapses.

Prevention of Q fever is focused on exposure risk reduction in addition to vaccination of high-risk individuals; however, the sole licensed vaccine only exists in Australia. Due to *Coxiella burnetii*'s stability under a variety of environmental conditions and its ability to be aerosolized and cause acute disabling disease, it is considered a category B biological terrorist agent. Post-exposure chemoprophylaxis would likely be offered to exposed individuals in this setting.



Source: CDC Q Fever website: <https://www.cdc.gov/qfever/stats/index.html>

Resources

- [Centers for Disease Control and Prevention \(CDC\) Q Fever website](#)
- [CDC Diagnosis and Management of Q Fever – United States, 2013](#)
- [California Department of Public Health \(CDPH\) Q Fever website](#)
- [Prevention and Control of *Coxiella burnetii* Infection among Humans and Animals: Guidance for a Coordinated Public Health and Animal Health Response, 2013 \(National Association of State Public Health Veterinarians and National Assembly of State Animal Health Officials\)](#)

Suggested citation: Kaplan S. Q Fever. County of San Diego Monthly Communicable Disease Report 2022; 6(7):1-2.



MONTHLY COMMUNICABLE DISEASE REPORT

JULY 2022

Volume 6, Issue 7: August 15, 2022

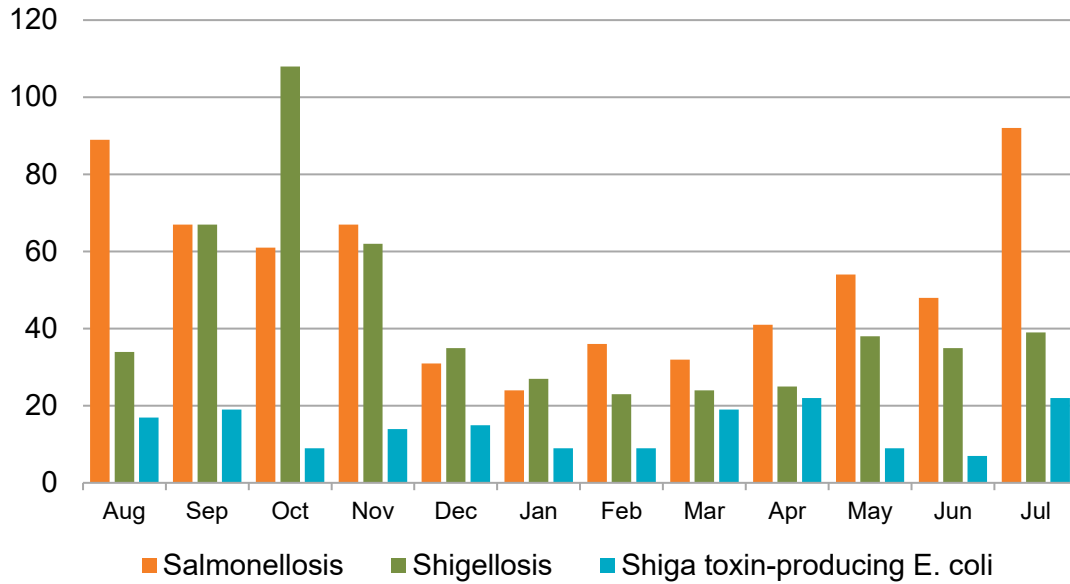


Table 1. Select Reportable Diseases		2022			Prior Years		
		Current Month	Prior Month	Year-to-Date (YTD)	2021 YTD	Avg YTD, 2019-2021	2021 Total
Disease and Case Inclusion Criteria (C,P,S)							
Botulism (Foodborne, Infant, Wound, Other)	C,P	0	0	0	2	0.7	3
Brucellosis	C,P	0	0	2	2	1.0	3
Campylobacteriosis	C,P	76	95	497	514	504.0	904
Chickenpox, Hospitalization or Death	C,P	0	0	0	3	1.7	3
Chikungunya	C,P	0	0	1	0	0.3	2
Coccidioidomycosis	C	23	34	237	296	274.3	510
Cryptosporidiosis	C,P	8	11	40	24	30.3	53
Dengue Virus Infection	C,P	2	0	4	1	3.3	2
Encephalitis, All	C	0	1	9	23	23.7	36
Giardiasis	C,P	15	13	106	81	102.3	167
Hepatitis A, Acute	C	2	2	17	8	10.7	10
Hepatitis B, Acute	C	0	0	8	11	6.7	16
Hepatitis B, Chronic	C,P	58	94	542	430	452.0	810
Hepatitis C, Acute	C,P	0	2	46	52	39.7	74
Hepatitis C, Chronic	C,P	222	256	1,859	2,246	2,342.0	3,581
Legionellosis	C	5	8	38	34	31.7	63
Listeriosis	C	1	4	9	3	6.3	8
Lyme Disease	C,P	0	3	4	10	5.7	14
Malaria	C	1	1	7	5	4.7	8
Measles (Rubeola)	C	0	0	0	0	0.3	0
Meningitis, Aseptic/Viral	C,P,S	2	3	31	33	57.3	48
Meningitis, Bacterial	C,P,S	3	3	20	14	17.3	22
Meningitis, Other/Unknown	C	0	3	8	18	20.0	34
Meningococcal Disease	C,P	0	1	1	1	3.7	1
Mumps	C,P	0	1	3	1	14.3	2
Pertussis	C,P,S	1	3	35	31	213.0	69
Rabies, Animal	C	1	0	2	3	4.0	4
Rocky Mountain Spotted Fever	C,P	1	0	1	2	1.3	2
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	92	48	327	269	288.3	583
Shiga toxin-Producing <i>E. coli</i> (including O157)	C,P	22	7	97	73	99.3	138
Shigellosis	C,P	39	35	211	125	146.7	432
Typhoid Fever	C,P	1	1	12	8	5.3	10
Vibriosis	C,P	3	2	9	26	23.3	51
West Nile Virus Infection	C,P	1	0	1	0	0.7	3
Yersiniosis	C,P	7	5	28	14	20.3	22
Zika Virus	C,P	0	0	0	0	1.3	0

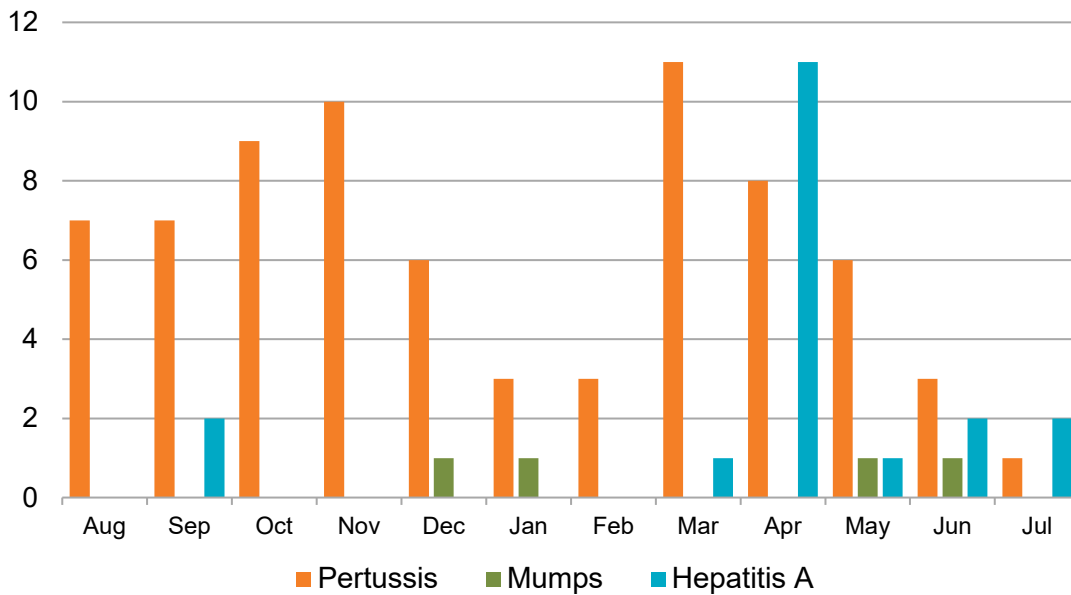
Case counts are provisional and subject to change as additional information becomes available. Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from previously or subsequently reported counts due to differences in inclusion or grouping criteria, late reporting, or updated case information. Inclusion criteria (C,P,S = Confirmed, Probable, Suspect) based on Council of State and Territorial Epidemiologists/Centers for Disease Control and Prevention (CSTE/CDC) surveillance case criteria.



**Figure 3. Select Enteric Infections by Month
August 2021 – July 2022**

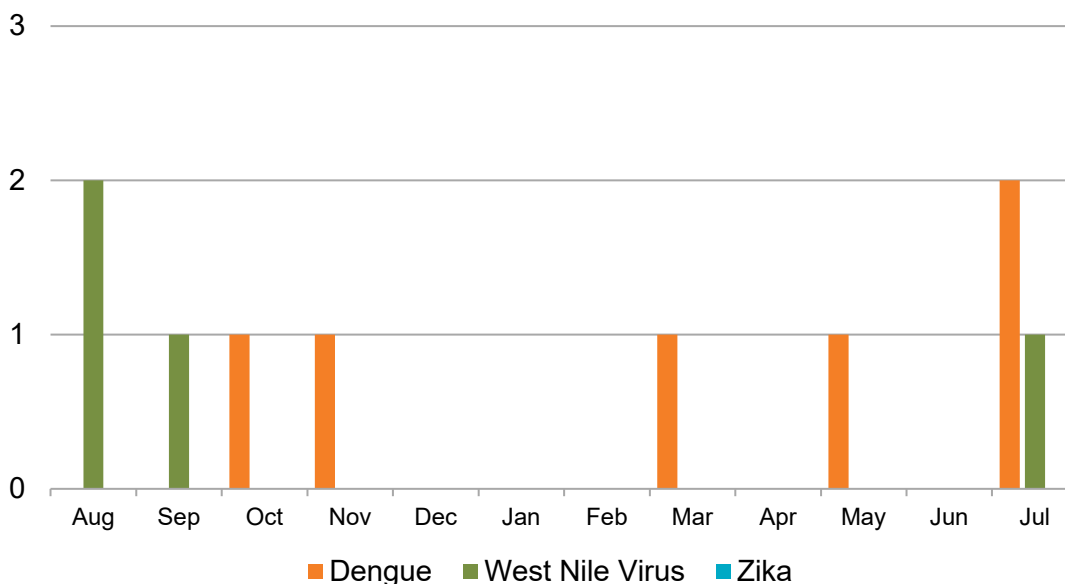


**Figure 4. Select Vaccine-Preventable Infections by Month
August 2021 – July 2022**



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**Figure 5. Select Vector-Borne Infections by Month
August 2021 – July 2022**



All of the dengue and Zika virus cases are travel-associated. For additional information on Zika cases, see the [HHSA Zika Virus webpage](#). For more information on West Nile virus, see the [County West Nile virus webpage](#). **Case counts are provisional and subject to change as additional information becomes available.** Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from previously or subsequently reported counts due to differences in inclusion or grouping criteria, late reporting, or updated case information. Inclusion criteria (C,P,S = Confirmed, Probable, Suspect) based on Council of State and Territorial Epidemiologists/Centers for Disease Control and Prevention (CSTE/CDC) surveillance case criteria.

Disease Reporting in San Diego County

San Diego County communicable disease surveillance is a collaborative effort among Public Health Services, hospitals, medical providers, laboratories, and the [San Diego Health Connect](#) Health Information Exchange (HIE). The data presented in this report are the result of this effort.

Reporting is crucial for disease surveillance and detection of disease outbreaks. Under the California Code of Regulations, Title 17 (Sections [2500](#), [2505](#), and [2508](#)), public health professionals, medical providers, laboratories, schools, and others are mandated to report more than 80 diseases or conditions to San Diego County Health and Human Services Agency.

To report a communicable disease, contact the Epidemiology Program by phone at (619) 692-8499 or download and print a Confidential Morbidity Report form and fax it to (858) 715-6458. For urgent matters on evenings, weekends or holidays, dial (858) 565-5255 and ask for the Epidemiology Program duty officer. For more information, including a complete list of reportable diseases and conditions in California, visit the Epidemiology Program website, www.sdepi.org.

Tuberculosis, sexually transmitted infections, and HIV disease are covered by other programs within Public Health Services. For information about reporting and data related to these conditions, search for the relevant program on the Public Health Services website, <http://www.sandiegocounty.gov/content/sdc/hhsa/programs/phs.html>.