

### BRUCELLOSIS

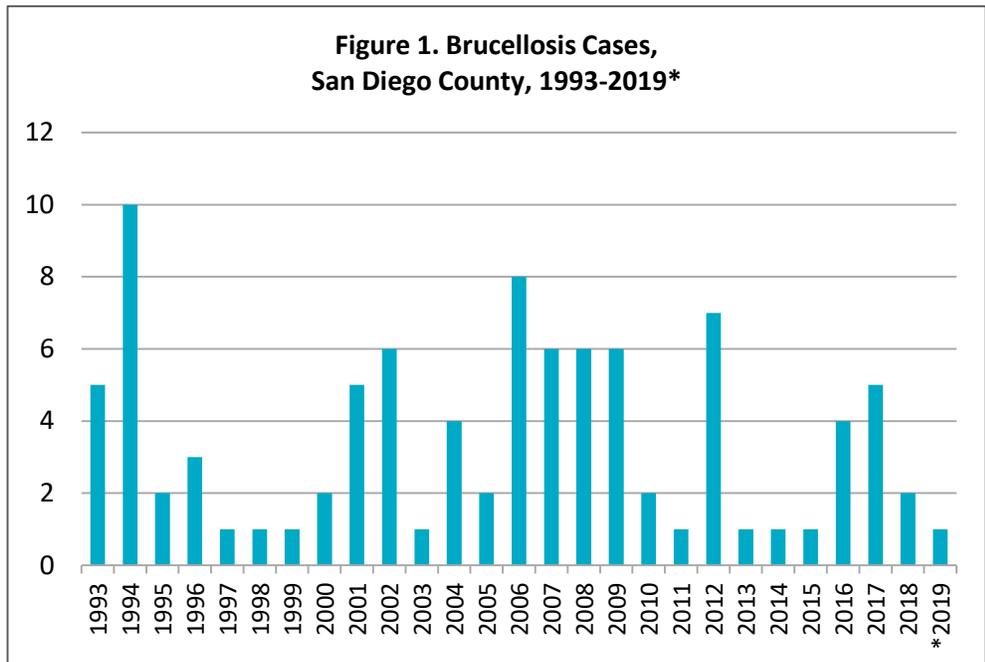
Brucellosis is a bacterial infection caused by *Brucella* species. It can be difficult to recognize because onset can be either acute or gradual, with symptoms that are frequently variable and non-specific. Fever is a common feature, but may be intermittent and of inconsistent duration. Other initial symptoms may include sweats, headache, fatigue, malaise, muscle or joint pain, and loss of appetite. Other clinical manifestations, such as arthritis, endocarditis, orchitis, epididymitis, splenomegaly, hepatomegaly, and chronic fatigue may persist or recur. Neurologic symptoms occur in up to five percent of cases. Symptoms may appear five days to five months after exposure. Without treatment, the disease may last for months or years.

Knowledge of potential exposures may aid in recognition. Most people are infected through consumption of unpasteurized milk or milk products or through mucous membrane or wound contact with animals or animal excretions, particularly birth products. Breathing in the bacteria can also lead to infection. Person-to-person transmission is rare, though transmission via sexual contact or breastfeeding is possible.

*Brucella* species have animal reservoirs. *B. melitensis*, the most pathogenic to humans, is primarily found in sheep and goats. The principal host for *B. abortus* is cattle.

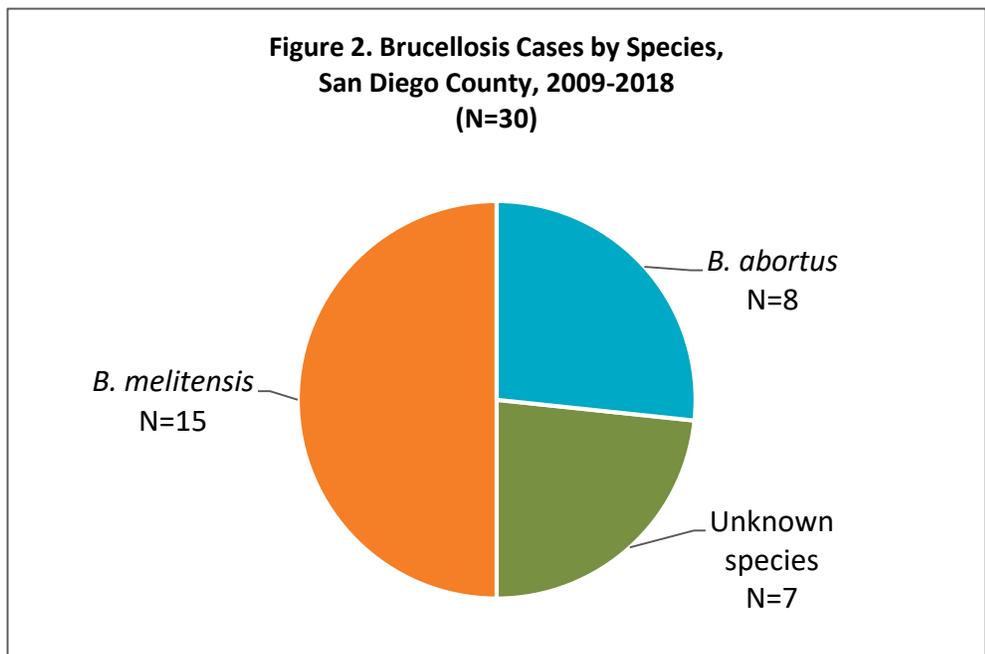
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**Figure 1. Brucellosis Cases, San Diego County, 1993-2019\***



\*2019 data are year-to-date; current as of 4/15/2019. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease years.

**Figure 2. Brucellosis Cases by Species, San Diego County, 2009-2018 (N=30)**



Species may be unknown if the only testing was for antibodies or if species could not be identified by culture or PCR; not all species are included in the standard speciation tests. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease years.

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 [Statistics and Reports](#) page on the Epidemiology Program website ([www.sdepi.org](http://www.sdepi.org)) and click on the subscribe link.



## BRUCELLOSIS, continued

Persons who work in slaughterhouses or meatpacking plants and veterinarians may be at increased risk. Since *B. suis* is commonly found in swine, wild hog [hunters](#) are at risk. The principal host for *B. canis* is dogs, leading to increased risk for those in close contact with dogs, such as breeders or veterinarians assisting in births; the risk for pet owners is low. More recently detected species, *B. ceti* and *B. pinnipediae*, are found in marine mammals and have been responsible for several cases of [neurobrucellosis](#). Because they can be aerosolized, *B. melitensis*, *B. abortus*, and *B. suis* have been classified as [select agents](#) (potential [bioterrorism agents](#)).

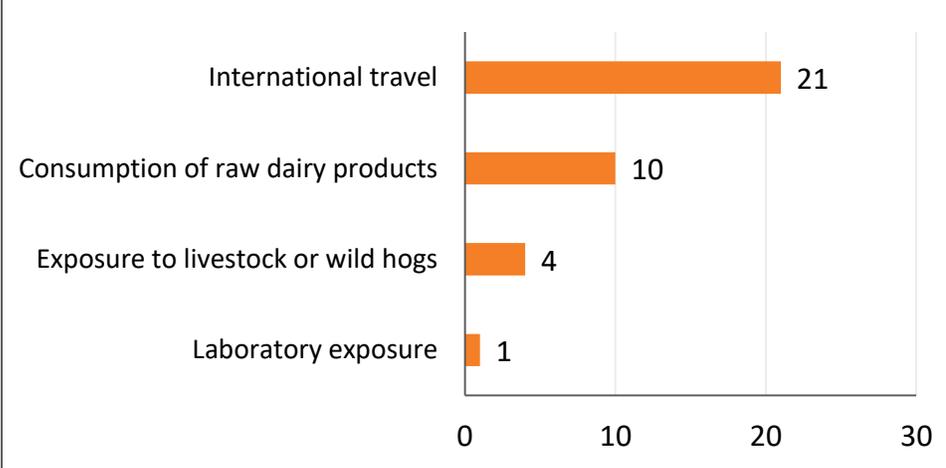
Brucellosis is endemic in many areas of the world, including Mexico, Central and South America, countries around the Mediterranean Sea, the Middle East, Eastern Europe, Asia, and Africa. A travel history to these areas, especially in conjunction with exposure to animals or consumption of raw dairy or undercooked meat, should be considered a risk factor for infection.

Brucellosis is also one of the most common [laboratory-acquired](#) bacterial infections. *Brucella* are easily aerosolized and certain laboratory practices, such as sniffing bacterial cultures, are associated with infection. Clinicians should indicate on laboratory submissions when brucellosis is suspected and laboratorians should always follow recommended practices for [laboratory safety](#). Laboratory personnel who are potentially exposed to *Brucella* bacteria must be assessed for [level of risk](#), and possibly offered post-exposure prophylaxis, serologic testing, and symptom monitoring. Between 2014 and 2018, the County of San Diego Epidemiology Program monitored 67 laboratorians after exposure to specimens related to five cases. One exposed person seroconverted.

Annual case counts for brucellosis are relatively low, in San Diego County and nationally. Preliminary numbers for 2018 indicate two cases in San Diego County, 25 cases in California, and 112 cases in the United States.

Among the 30 San Diego County cases reported between 2009 and 2018, half were caused by *B. melitensis* and eight by *B. abortus*. Twenty (67%) of the cases required hospitalization.

**Figure 3. Potential Exposures Reported by Brucellosis Case-Patients, San Diego County, 2009-2018 (N=30)**



Potential exposures are not mutually exclusive, nor are they confirmed source of infection. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease years.

### Resources

- [Centers for Disease Control and Prevention \(CDC\) Brucellosis website](#)
- [CDC Health Information for International Travel \(the Yellow Book\) – Brucellosis](#)
- [World Health Organization Brucellosis website](#)
- [United States Department of Agriculture National Brucellosis Eradication Program](#)

International travel was a common exposure, with travel reported to destinations such as Mexico, Iraq, Iran, Kuwait, Saudi Arabia, Turkey, India, Sri Lanka, and Kenya. There was one case in a hunter and three cases with exposure to livestock. Ten cases reported consuming raw milk products; unpasteurized milk, cheese, and yogurt were commonly reported items.

In the last few years, there have been several cases of drug-resistant brucellosis caused by *Brucella* strain RB51 (a live, weakened strain used in a vaccine for cattle) among persons consuming raw milk. Currently the Centers for Disease Control and Prevention is investigating potential [exposures to this strain](#) in 19 states, associated with raw milk from a farm in Pennsylvania. There have been no associated cases in San Diego County.

# MONTHLY COMMUNICABLE DISEASE REPORT

MARCH 2019

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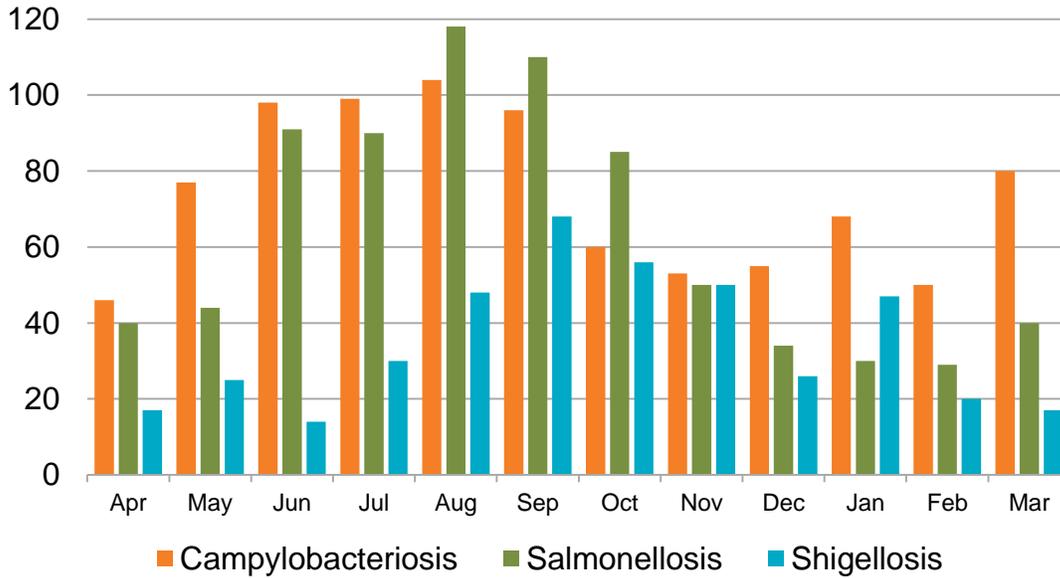


Table 1. Select Reportable Diseases		2019			Prior Years		
		Current Month	Prior Month	Year-to-Date (YTD)	2018 YTD	Avg YTD, Prior 3 Years	2018 Total
Disease and Case Inclusion Criteria (C,P,S)							
Amebiasis	C	3	0	5	3	2.3	10
Botulism (Foodborne, Infant, Wound, Other)	C,P	0	0	0	4	1.7	11
Brucellosis	C,P	0	1	1	0	1.3	1
Campylobacteriosis	C,P	80	50	198	145	156.7	827
Chickenpox, Hospitalization or Death	C,P	0	0	0	0	0.0	4
Chikungunya	C,P	0	0	0	0	0.3	5
Coccidioidomycosis	C	17	25	86	93	57.0	295
Cryptosporidiosis	C,P	1	2	8	13	8.7	90
Dengue Virus Infection	C,P	0	0	0	2	3.7	8
Encephalitis, All	C	2	2	5	14	14.0	60
Giardiasis	C,P	13	20	52	75	74.7	227
Hepatitis A, Acute	C	0	1	1	17	22.3	35
Hepatitis B, Acute	C	0	1	2	4	3.0	9
Hepatitis B, Chronic	C,P	17	155	246	216	218.7	874
Hepatitis C, Acute	C,P	2	1	5	1	0.3	1
Hepatitis C, Chronic	C,P	319	280	961	1,097	804.7	4,194
Legionellosis	C	3	7	13	14	14.3	53
Listeriosis	C	0	0	1	2	3.3	13
Lyme Disease	C,P	0	0	0	1	1.7	13
Malaria	C	2	0	2	1	1.0	7
Measles (Rubeola)	C	0	0	0	0	0.7	0
Meningitis, Aseptic/Viral	C,P,S	8	10	25	19	20.7	129
Meningitis, Bacterial	C,P,S	1	1	7	17	14.0	35
Meningitis, Other/Unknown	C	1	0	3	3	6.7	16
Meningococcal Disease	C,P	1	1	4	3	1.0	11
Mumps	C,P	2	3	8	3	7.0	9
Pertussis	C,P,S	36	52	136	236	176.7	648
Rabies, Animal	C	0	0	0	2	1.7	7
Rocky Mountain Spotted Fever	C,P	0	0	0	0	0.3	1
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	40	29	99	127	101.7	772
Shiga toxin-Producing <i>E. coli</i> (including O157)	C,P	16	5	29	21	12.3	171
Shigellosis	C,P	17	20	84	57	51.3	386
Typhoid Fever	C,P	0	1	5	0	0.7	4
Vibriosis	C,P	2	2	8	2	4.3	57
West Nile Virus Infection	C,P	0	0	0	0	0.0	3
Yersiniosis	C,P	3	4	8	6	6.0	26
Zika Virus	C,P	0	1	1	2	5.0	7

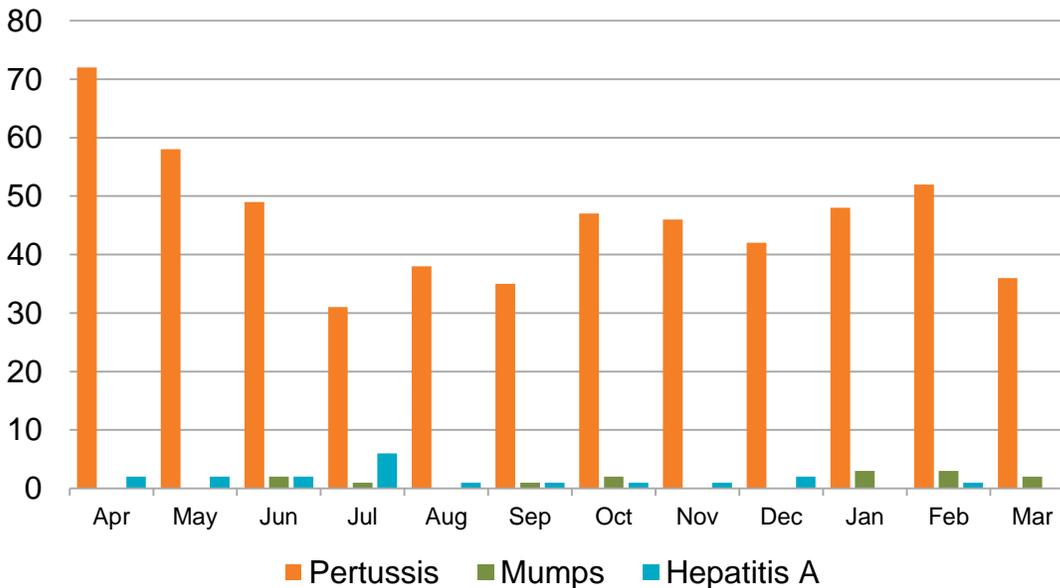
**Case counts are provisional and subject to change as additional information becomes available.** Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from 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 4. Select Enteric Infections by Month  
April 2018 – March 2019**

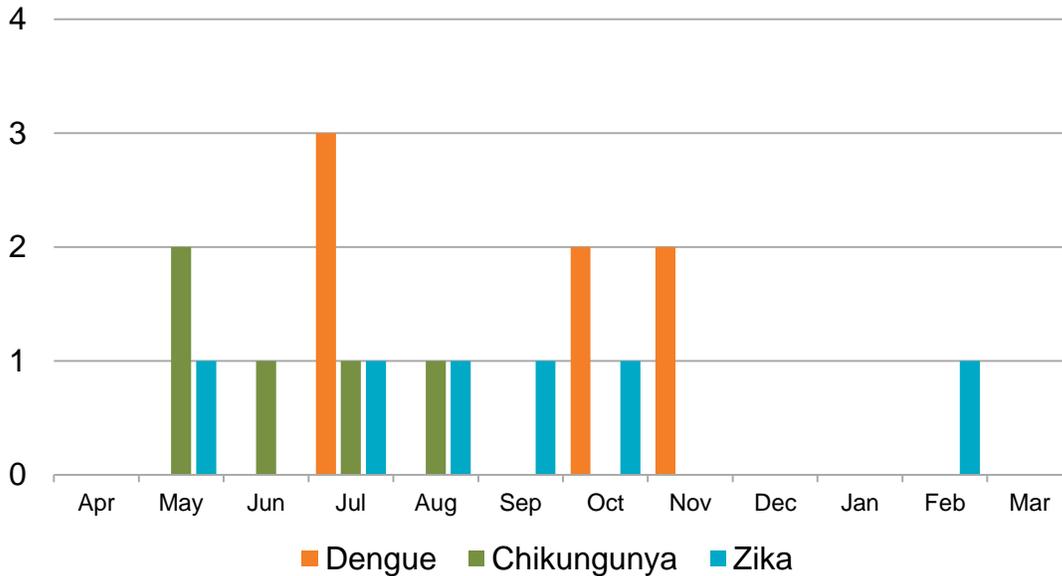


**Figure 5. Select Vaccine-Preventable Infections by Month  
April 2018 – March 2019**



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**Figure 6. Select Vector-Borne Infections by Month  
April 2018 – March 2019**



All of these dengue, chikungunya, and Zika virus cases are travel-associated. For additional information on Zika cases, see the [HHSa Zika 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](http://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>.