

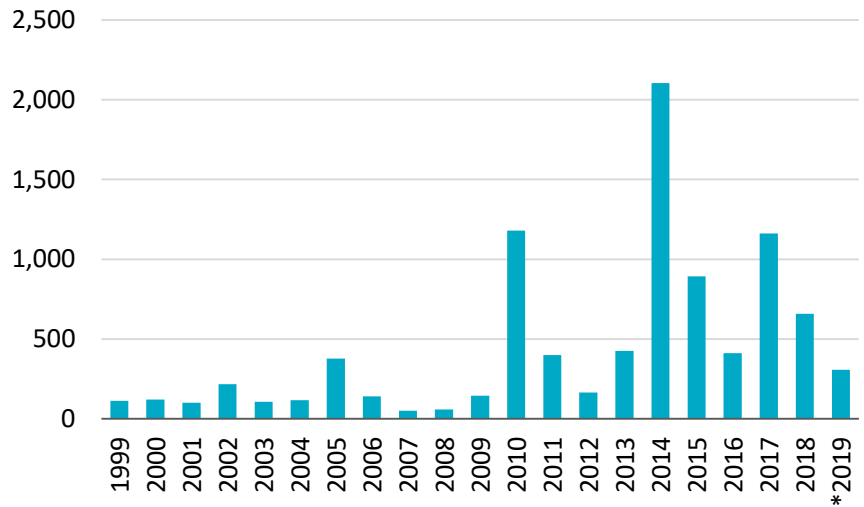
PERTUSSIS

Pertussis, also known as whooping cough, is an acute, highly contagious respiratory infection caused by the bacteria *Bordetella pertussis*. The pertussis bacteria are spread through contact with airborne droplets of respiratory secretions, and illness is characterized by several weeks of increasingly violent coughing fits that produce mucous, vomiting, and a high-pitched inspiratory “whoop” sound after coughing ceases. Infants less than six months of age are at greatest risk for illness and complications, including encephalopathy, pneumonia, seizures, hospitalization, and death. Though illness is usually milder in otherwise healthy older children and adults, these groups can transmit bacteria to those at risk for complications.

There are two vaccines in the United States (U.S.) to help prevent whooping cough. DTaP protects children under seven years old while older children, teens, and adults get Tdap. Both vaccines also include protection against tetanus and diphtheria. [To protect newborns, pregnant women should receive Tdap vaccine in the third trimester of each pregnancy.](#) Infants can start the DTaP vaccine series as early as six weeks of age. Even one dose of DTaP may offer some protection against fatal whooping cough disease in infants. Vaccination is most protective within the first two years of receiving it, but can begin to wane after the first year post vaccination. Recommended [vaccination schedules](#) can be found on the Centers for Disease Control and Prevention (CDC) website.

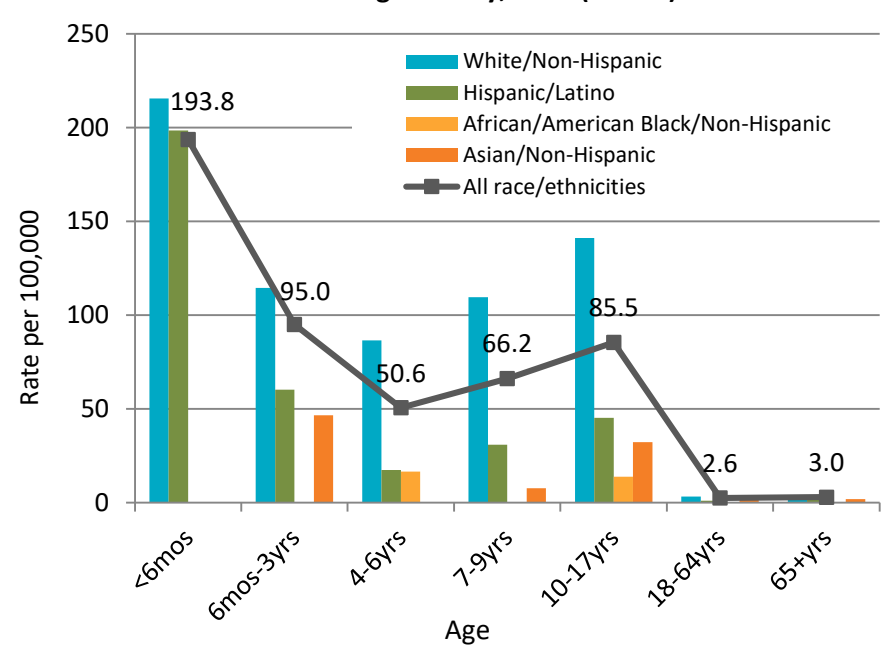
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Figure 1. Pertussis Cases, San Diego County, 1999-2019*



* 2019 data are year to date; current as of 7/15/19. Cases are grouped by episode date into CDC disease years. Prior to 2007, only confirmed cases were included. Data for 2008-2019 includes Confirmed, Probable, and Suspect cases, per California Department of Public Health (CDPH) case criteria.

Figure 2. Pertussis Rates by Age Group and Race/Ethnicity, San Diego County, 2018 (N=658)



Data are provisional and subject to change as additional information becomes available. Rates are per 100,000 population and are calculated using SANDAG 2016 population data.

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) and click on the subscribe link.

PERTUSSIS, continued

Pertussis incidence tends to peak every three to five years. The 48,277 cases [reported](#) in the U.S. in 2012 were a recent national peak. In subsequent years, the case counts have been lower, yet still higher than in most years since the introduction of the vaccine in the 1940s. Since the transition to acellular pertussis vaccines in the 1990s, an increasing burden of disease among fully-vaccinated children and adolescents has been seen; the vaccine is effective, but immunity wanes sooner than expected. The Tdap booster is now recommended to bridge waning immunity, preventing illnesses and outbreaks.

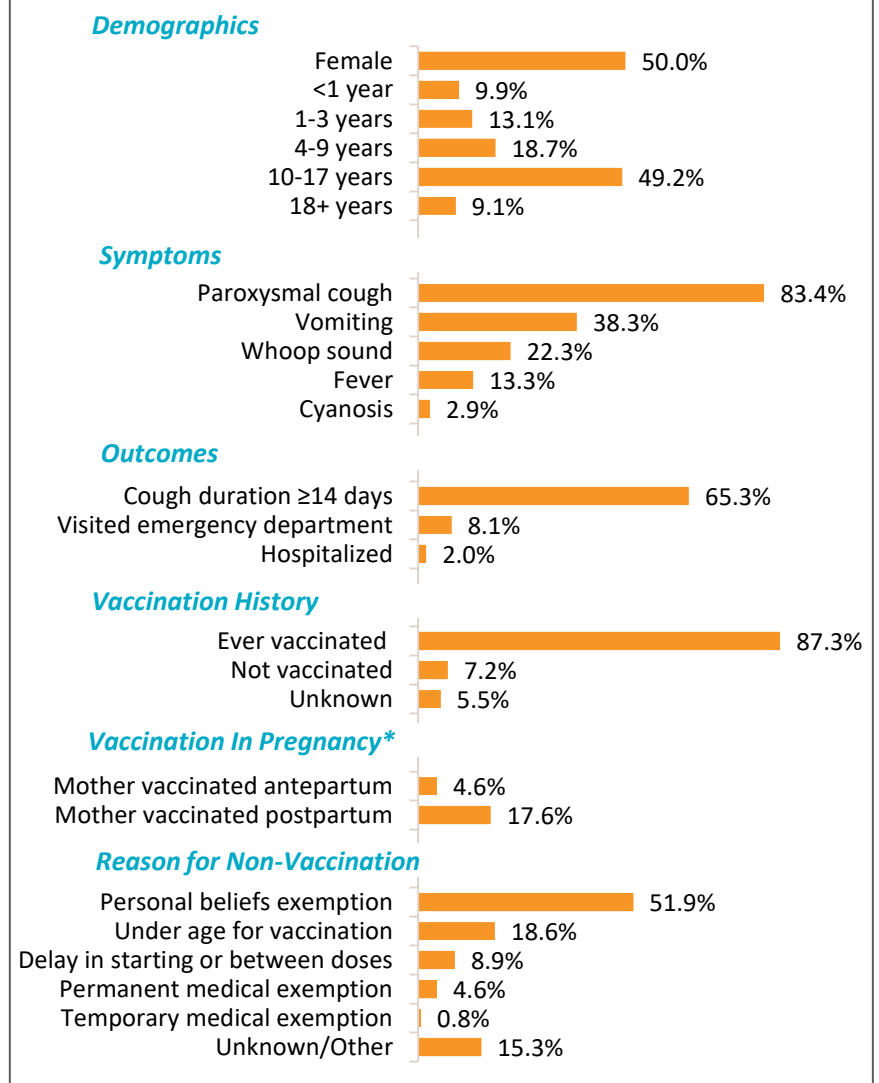
In 2018, San Diego County incidence rates were highest among infants less than six months of age at 193.8 per 100,000 population. White (215.5 per 100,000 population) and Hispanic (198.5 per 100,000 population) infants less than 6 months of age had the highest rates of pertussis compared to other groups. At the same time, adolescents 10 to 17 years of age accounted for the highest proportion of all cases.

From 2014 to 2018, 5,227 pertussis cases were reported among San Diego County residents. There was one death, a five week old infant, in 2016. The low percentage (4.6%) of mothers of infants with pertussis who received Tdap before delivery is a major missed opportunity for prevention.

Most cases reported receiving at least one dose of pertussis vaccine (87.3%). Personal belief exemptions were the main reason for non-vaccination (51.9%) among reported pertussis cases in San Diego County between 2014 and 2018. In 2016, California law [SB277](#) eliminated the personal belief exemption for childhood vaccinations required for school admission.

The preferred methods for the laboratory diagnosis of pertussis are culture and polymerase chain reaction (PCR). Prompt antibiotic treatment is recommended when clinical history is suggestive, especially in young infants who may experience rapid progression of disease.

Figure 3. Select Characteristics of Pertussis Cases, San Diego County, 2014-2018 (N=5,227)



* For infants <12 months of age (n= 242)
Grouped by CDC disease years. Includes Confirmed, Probable, and Suspect cases per CDPH case criteria.

Resources

- [San Diego County Immunization Program website](#)
- [California Department of Public Health pertussis website](#)
- [CDC Pertussis website](#)
- [Epidemiology and Prevention of Vaccine-Preventable Diseases \(the Pink Book\) – Pertussis](#)

MONTHLY COMMUNICABLE DISEASE REPORT

JUNE 2019

Volume 3, Issue 6: July 15, 2019

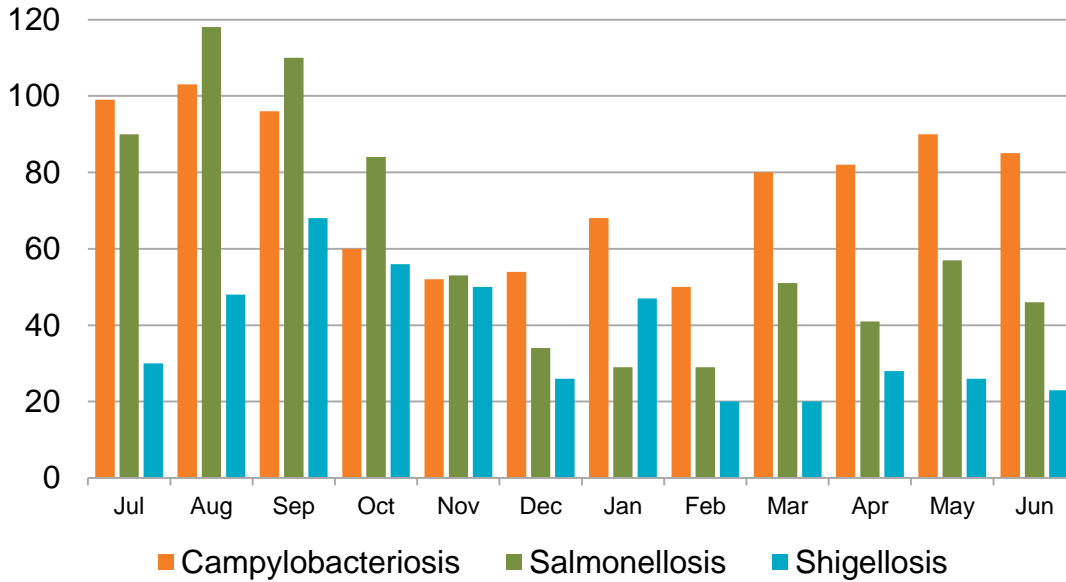


Table 1. Select Reportable Diseases		2019			Prior Years		
		Current Month	Prior Month	Year-to-Date (YTD)	2018 YTD	Avg YTD, Prior 3 Years	2018 Total
Disease and Case Inclusion Criteria (C,P,S)							
Amebiasis	C	0	0	6	6	4.3	10
Botulism (Foodborne, Infant, Wound, Other)	C,P	0	0	0	10	5.7	11
Brucellosis	C,P	0	0	1	2	2.3	2
Campylobacteriosis	C,P	85	90	455	366	398.3	828
Chickenpox, Hospitalization or Death	C,P	1	0	1	0	0.7	4
Chikungunya	C,P	0	0	0	3	1.7	5
Coccidioidomycosis	C	12	19	145	144	103.0	276
Cryptosporidiosis	C,P	6	3	24	30	19.7	90
Dengue Virus Infection	C,P	0	2	4	2	5.3	9
Encephalitis, All	C	2	1	15	25	28.0	66
Giardiasis	C,P	15	14	106	130	155.0	229
Hepatitis A, Acute	C	0	2	10	23	92.7	35
Hepatitis B, Acute	C	0	0	2	6	6.0	9
Hepatitis B, Chronic	C,P	32	36	411	430	437.7	867
Hepatitis C, Acute	C,P	3	1	19	1	1.7	2
Hepatitis C, Chronic	C,P	348	330	1,957	2,205	1,668.0	4,167
Legionellosis	C	3	7	27	25	27.3	54
Listeriosis	C	2	0	4	5	7.3	14
Lyme Disease	C,P	1	0	2	6	5.7	14
Malaria	C	0	0	2	5	4.0	8
Measles (Rubeola)	C	0	0	0	0	0.7	0
Meningitis, Aseptic/Viral	C,P,S	15	11	62	50	56.3	140
Meningitis, Bacterial	C,P,S	1	0	12	26	22.7	37
Meningitis, Other/Unknown	C	3	0	8	9	14.7	17
Meningococcal Disease	C,P	0	0	6	5	1.7	11
Mumps	C,P	8	3	19	5	8.7	9
Pertussis	C,P,S	38	57	301	415	385.3	656
Rabies, Animal	C	3	0	3	4	5.3	7
Rocky Mountain Spotted Fever	C,P	0	0	0	0	0.3	1
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	46	57	253	302	236.3	787
Shiga toxin-Producing <i>E. coli</i> (including O157)	C,P	36	28	113	64	33.7	174
Shigellosis	C,P	23	26	164	115	100.3	391
Typhoid Fever	C,P	0	0	6	0	1.3	4
Vibriosis	C,P	6	2	19	14	14.3	58
West Nile Virus Infection	C,P	0	0	0	0	0.0	2
Yersiniosis	C,P	3	7	27	12	15.7	26
Zika Virus	C,P	0	0	3	3	10.3	7

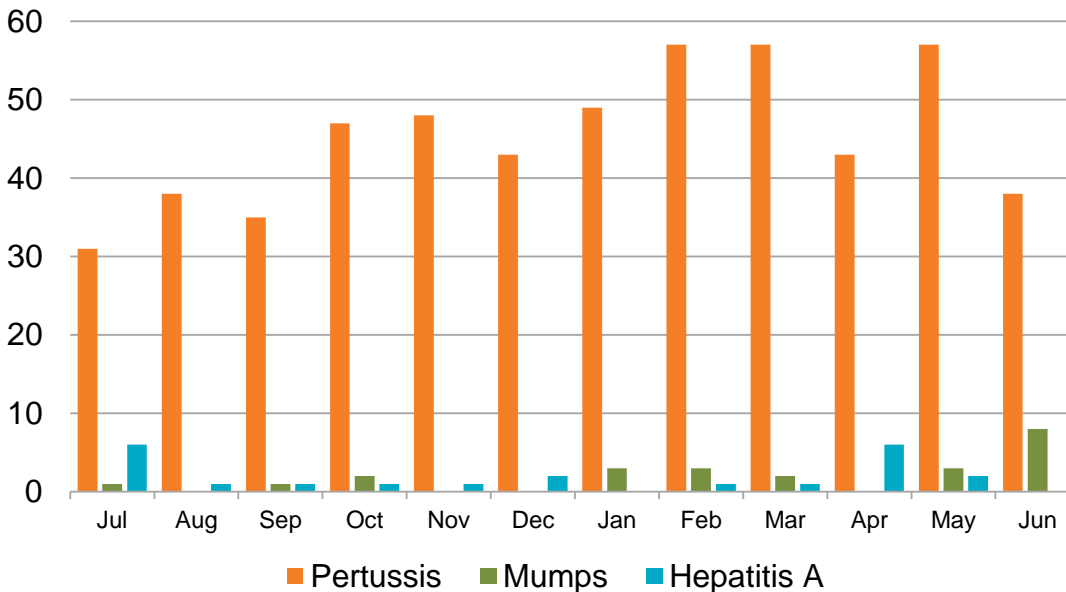
Case counts are provisional and subject to change as additional information becomes available. Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from previously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

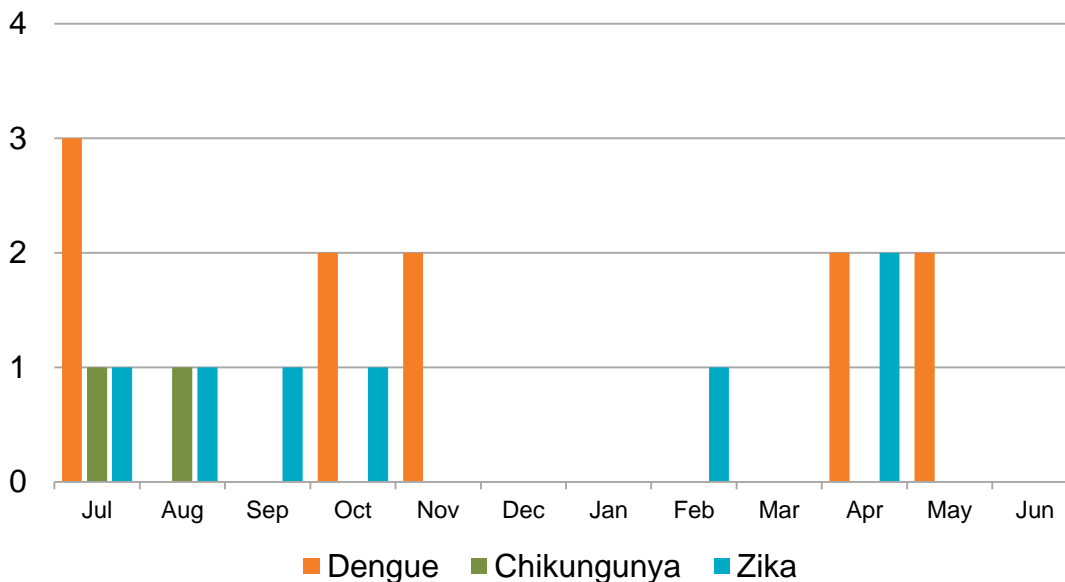


**Figure 5. Select Vaccine-Preventable Infections by Month
July 2018 – June 2019**



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 6. Select Vector-Borne Infections by Month
July 2018 – June 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.

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>.