



Public Health
Communicable Disease

2018 Annual Morbidity Report



Cover: E. coli Bacteria

Colorized scanning electron micrograph of Escherichia coli, grown in culture and adhered to a cover slip.

Credit: NIAID

Introduction

Public Health promotes and protects the health of people and communities. While providers focus on the diagnosis and treatment of individuals, public health professionals focus on the prevention of illnesses among populations.

“In public health, we can’t do anything without surveillance. That is where public health begins.”

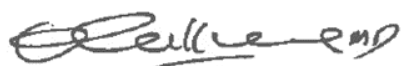
David Satcher, MD, PhD, U.S. Surgeon General, 1998 – 2002

Public health surveillance is the continuous, systematic collection, analysis, and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice.

San Bernardino County Department of Public Health Communicable Disease Section (CDS) is responsible for collecting, monitoring, and analyzing communicable disease data for disease control purposes. Each year, communicable diseases take a substantial toll on population health and healthcare resources. Our program strives to reduce the incidence and prevalence of these diseases throughout San Bernardino County.

The Annual Report includes 2018 trend data on communicable diseases and related services collected through case-based reporting as well as enhanced surveillance, prevalence monitoring, health care programs, and laboratory surveys. Analysis and interpretation of 2017 surveillance data helps to identify demographic groups at higher risk of illness, disease trends, and disease outbreaks. This report can shape the development of effective and sustainable public health interventions by identifying and monitoring risk factors among populations and geographic locations. This report can also be used to assist policy-makers, educators, community members and program planners in identifying priority issues and accurately measuring the health of San Bernardino County residents.

I am proud of the accomplishments that CDS has achieved this year and thank all of our staff for their continuous effort, dedication, and service. We also thank each and every health care agency and organization that we work with on a daily basis. Moving forward, CDS will continue to carry out our goal of improving the health of San Bernardino County residents.



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Public Health
Communicable Disease Section

Introduction

Why Reporting of Communicable Diseases is Important

San Bernardino County Department of Public Health is charged by California Code of Regulations (CCR) Title 17 with protecting the health of the County, its visitors and more than two million residents. To fulfill this responsibility, the Department carries out broad and comprehensive public health programs. These programs include public health services mandated by the State of California, a substantial range of personal health services, and priority matters determined by the San Bernardino County Board of Supervisors.

Physicians and other healthcare providers, laboratory personnel, schools, daycare centers and other residential facilities are obligated by law to report certain communicable diseases to the Local Health Jurisdiction (LHJ) in which the individual resides. Monitoring reports of communicable disease in a community allows Public Health to fulfill its mandate of protecting the health of its residents. With timely disease reporting, the Department of Public Health can evaluate the impact of a given disease and make appropriate recommendations to limit further transmission.

Delay or failure to report communicable diseases has contributed to serious outbreaks in the past. Failure to report can result in increased disease in the community, time lost from work or school, increased costs for diagnosis and treatment, hospitalization, and possibly death.

Reporting in a timely manner allows for the removal of people from sensitive occupations (e.g. food handlers) to prevent the spread of diseases such as salmonellosis and hepatitis A. It also allows for the early detection and appropriate treatment of sexually transmitted diseases (STDs) and other diseases, such as tuberculosis, that require urgent attention.

Purpose of the Communicable Disease Report

San Bernardino County Department of Public Health summary of communicable disease supports the Countywide Vision by characterizing the health and safety of the County's residents and visitors. For more information about the Countywide Vision, Job Statement and Paradigm, visit www.sbcounty.gov. The Annual Morbidity report describes the extent and prevalence of various reported illnesses for residents in the County. When the impact of a certain disease in a particular group of individuals appears high, this information can be used to redirect disease control efforts. The report helps evaluate the effectiveness of the County's disease prevention and control programs by comparing San Bernardino County rates with those of California and the U.S. It represents an evolving effort by several disease control programs in the County. As communicable disease concerns of residents change, the data collected and summarized in this report will also change.

Data Limitations

Title 17, Sections 2500, 2504 and 2505 of the California Code of Regulations mandates that all health care professionals report specific diseases and conditions to their local health department. The data summarized in this report were tabulated from disease incident reports received from laboratories, hospitals, physicians, schools and other healthcare providers throughout the County. The cases were reported through a passive surveillance system. For this reason, two major limitations must be acknowledged when interpreting the data.

The first limitation is the underrepresentation of the true burden of disease. It is clear that not every reportable disease or condition is actually identified by or reported to the Department of Public Health. Individuals may not be ill enough to require medical care or their healthcare provider may not request laboratory testing at the time of their office visit. Diseases and conditions reportable only by healthcare providers (see Appendix C) are significantly underreported. Illnesses that are fatal, require prophylaxis for prevention, or those that are reportable by both laboratories and physicians are more likely to be reported.

Introduction

The second limitation is the substantial amount of missing race/ethnicity data obtained from laboratory reports and Confidential Morbidity Reports (CMRs), limiting the interpretation of demographic information. The majority of case reports originate from laboratories, that do not routinely collect data on race/ethnicity. Further, some managed care organizations and other health care service providers do not routinely record race/ethnicity of patients. Although limited, the observed racial/ethnic disparities may still reflect true differences in infection rates, differential access to health care, and/or reporting practices of different types of providers that serve different populations.

Additionally, public health data may not reflect the County residents' true risk of exposure to a particular pathogen. Individuals identified as having a notifiable condition are reported by place of residence, not by place of exposure. Immigrants and other individuals who travel both domestically and abroad may acquire an illness or other condition at their travel destination. If the individual traveler's address of residence is within San Bernardino County at the time of illness, then the individual is counted in San Bernardino County morbidity data. Conversely, individuals traveling or visiting San Bernardino County who acquire an infection, will subsequently be reported by the health jurisdiction in which they reside.

Prior to June of 2011, disease morbidity was calculated based on the date the case investigation was closed and reported to the California Department of Public Health. Beginning June 2011, cases were counted by an "Episode Date." This date is calculated as the earliest of the following available dates: date received, date of diagnosis, date of onset, specimen collection date, or date created. This change in methodology may only affect comparison of data prior to 2011 in diseases where seasonality is relevant.

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Comments regarding the report are welcome and may be addressed to:

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The San Bernardino County Department of Public Health Annual Morbidity Report as well as other reports can be found at the following web site: <http://wp.sbcounty.gov/dph/programs/cds/data/>



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SECTION 1: SUMMARY OF REPORTED COMMUNICABLE DISEASES

Communicable Diseases by Age Group (in Years) San Bernardino County, 2018

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Disease Category	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-54	55-64	>65	Unk	Total
Hepatitis A	0	0	0	0	0	0	1	0	0	2	0	0	0	0	3
Hepatitis B, Acute	0	0	0	0	0	0	0	1	0	0	3	1	0	0	5
Hepatitis B, Chronic	1	0	0	1	5	12	31	72	80	56	102	78	66	0	504
Hepatitis C, Chronic	2	0	2	2	28	132	277	280	271	199	586	895	494	16	3184
Hepatitis E, Acute	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
HIV	0	0	0	0	14	44	57	36	28	22	44	15	7	0	267
Influenza - Death (0-64 years old)	0	0	2	0	1	0	1	1	1	0	1	7	1	0	15
Influenza - ICU Hospitalization (0-64 years old)	2	0	2	1	0	0	3	1	5	0	6	15	0	0	35
Influenza - Initial Report	53	121	137	79	56	56	50	52	35	32	77	116	347	11	1222
Legionellosis	0	0	0	0	0	0	0	0	1	0	9	10	13	0	33
Listeriosis	1	0	0	0	0	0	0	1	0	0	0	1	2	0	3
Lyme Disease	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Malaria	0	0	0	1	0	0	0	1	0	1	0	0	0	0	3
Measles (Rubeola)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Meningitis - Bacterial	3	0	0	2	1	1	0	1	1	2	0	4	3	0	18
Meningitis - Fungal	0	0	0	0	0	0	1	1	0	0	0	3	1	0	6
Meningitis - Not Otherwise Specified	1	0	0	0	0	0	0	2	1	0	1	0	2	0	7
Meningitis - Viral	4	1	2	2	1	1	4	3	3	2	3	8	3	0	37
Meningococcal Disease (Invasive)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Methicillin-resistant Staphylococcus aureus (MRSA)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Mumps	1	0	2	1	0	0	0	0	0	0	0	0	0	0	4
Pelvic Inflammatory Disease (PID)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Pertussis	8	6	6	5	5	0	0	0	1	0	0	0	0	0	31
Pneumococcal Disease, Invasive	3	0	1	0	1	0	1	0	3	0	4	6	23	0	42
Q Fever	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
Rabies (Animal)	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Respiratory syncytial virus - Death (<5 years old)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Respiratory Syncytial Virus - Initial Report	394	188	18	4	1	1	2	4	3	3	6	24	65	1	714
Rocky Mountain Spotted Fever	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1

[illegible]

Communicable Diseases by Race/Ethnicity San Bernardino County, 2018

Disease Category	American Indian/ Alaska Native	Asian/Pacific Islander	Black/African American	Hispanic or Latino	White	Other	Unknown	Total
AIDS	0	8	22	55	22	5	1	113
Amebiasis	0	0	0	0	1	1	0	2
Animal Bite/Exposure	0	1	0	1	10	0	2	14
Botulism, Infant	0	0	0	0	4	0	0	4
Botulism, Wound	0	0	0	3	1	0	0	4
Brucellosis	0	0	0	1	0	0	0	1
Campylobacteriosis	1	12	8	36	74	66	56	253
Carbapenem-resistant Enterobacteriaceae (CRE)	0	0	0	0	1	0	1	2
Chlamydia Infections	40	210	1576	3286	1483	1459	5532	13586
Coccidioidomycosis	0	6	12	1	47	4	34	104
Creutzfeldt-Jakob Disease	0	0	0	0	0	0	1	1
Cryptosporidiosis	0	0	2	7	4	0	2	15
Cyclosporiasis	0	0	0	0	0	0	0	0
Dengue Virus Infection	0	0	0	0	0	0	0	0
DMV Reportable	3	16	258	405	431	20	639	1772
E. Coli 0157 Infections	0	1	2	15	10	5	10	43
Ehrlichiosis	0	1	0	0	0	0	0	1
Encephalitis - Not Otherwise Specified	0	0	0	0	1	1	0	2
ESBL-producing Enterobacteriaceae	0	0	1	5	7	0	54	67
Encephalitis - Viral	0	1	0	0	1	0	0	2
Giardiasis	0	1	2	10	15	5	20	53
Gonorrhea (Gonococcal) Infections	10	34	628	852	616	403	1390	3933
Haemophilus influenzae (invasive), all serotypes	0	0	0	0	2	0	0	2
Hepatitis A	0	0	0	2	0	0	1	3
Hepatitis B, Acute	0	0	0	1	3	1	0	5
Hepatitis B, Chronic	0	198	21	38	24	24	199	504
Hepatitis C, Chronic	6	21	137	172	640	326	1882	3184
Hepatitis E, Acute	0	0	0	0	1	0	0	1
HIV	0	7	42	156	55	4	3	267

Disease Category	American Indian/ Alaska Native			Asian/Pacific Islander		Black/African American		Hispanic or Latino		White	Other	Unknown	Total
Influenza - Death (0-64 years old)	0		1	1		7	4	0	2	15			
Influenza - ICU Hospitalization (0-64 years old)	0		0	2	9	16	1	7	35				
Influenza - Initial Report	7		67	123	100	453	229	243	1222				
Legionellosis	0		0	6	9	11	4	3	33				
Listeriosis	0		0	0	2	1	2	0	5				
Lyme Disease	0		0	1	0	0	0	0	1				
Malaria	0		0	2	0	1	0	0	3				
Measles (Rubeola)	0		0	0	0	1	0	0	1				
Meningitis - Bacterial	0		1	2	11	2	2	0	18				
Meningitis - Fungal	0		0	2	0	2	2	0	6				
Meningitis - Not Otherwise Specified	0		0	0	3	2	0	2	7				
Meningitis - Viral	0		1	3	10	13	2	8	37				
Meningococcal Disease (Invasive)	0		1	0	0	0	0	0	1				
Methicillin-resistant Staphylococcus aureus (MRSA)	0		0	0	0	1	0	0	1				
Mumps	0		0	1	2	0	0	1	4				
Pelvic Inflammatory Disease (PID)	0		0	0	0	1	0	0	1				
Pertussis	0		2	0	15	8	0	6	31				
Pneumococcal Disease, Invasive	0		1	3	10	19	6	3	42				
Q Fever	0		0	0	0	2	0	0	2				
Rabies (Animal)	0		0	0	0	0	0	3	3				
Respiratory syncytial virus - Death (<5 years old)	0		0	0	1	0	0	0	1				
Respiratory Syncytial Virus - Initial Report	8		22	37	149	134	92	272	714				
Rocky Mountain Spotted Fever	0		0	0	0	0	1	0	1				
Rubella (German Measles)	0		0	0	0	0	0	0	0				
Salmonellosis (Other than Typhoid Fever)	2		8	16	103	89	35	57	310				
Shiga toxin positive feces with HUS	0		1	0	0	1	0	0	2				
Shiga toxin positive feces without HUS	0		0	2	15	9	5	10	41				
Shigellosis, Group B (Flexneri)	0		0	2	6	4	0	3	15				
Shigellosis, Group D (Sonnei)	0		2	5	12	7	4	1	31				

Disease Category	American Indian/ Alaska Native	Asian/Pacific Islander	Black/African American	Hispanic or Lati- no	White	Other	Unknown	Total
Shigellosis, Unspecified	0	3	4	23	7	18	2	57
Spotted Fever Rickettsioses	0	0	0	0	0	0	0	0
Streptococcal Infections	0	0	0	1	4	4	0	9
Syphilis (Congenital)	0	0	11	14	5	0	2	32
Syphilis (Early Latent)	3	3	28	132	45	11	24	246
Syphilis (Late Latent)	0	8	67	192	91	12	77	447
Syphilis (Late with Clinical Manifestations)	0	0	1	2	0	0	1	4
Syphilis (Latent, Unknown Duration)	2	1	28	89	36	6	16	178
Syphilis (Primary)	1	0	23	69	44	14	24	175
Syphilis (Secondary)	1	5	17	73	29	4	10	139
Syphilis Stage Unknown/Reactor	0	1	4	6	5	0	8	24
Syphilis: Initial Report	0	0	0	1	0	0	0	1
Tuberculosis (Clinically Active-TB3)	0	18	3	30	5	0	0	56
Typhoid Fever	0	0	1	0	0	0	1	2
Varicella (Chickenpox)	0	0	0	0	2	0	0	2
Varicella Hospitalization/Death	0	0	0	0	1	0	1	2
Vibrio Infections (Non-Cholera)	0	0	2	2	6	0	1	11
West Nile virus-Asymptomatic	0	0	0	0	1	0	0	1
West Nile virus-Neuroinvasive	0	0	0	4	2	0	1	7
West Nile virus-Non-neuroinvasive	0	0	0	0	0	1	0	1
Yersiniosis	0	1	1	4	1	0	2	9
Zika Virus Infection	0	0	0	0	0	0	0	0

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SECTION 2: STATISTICS FOR SELECTED COMMUNICABLE DISEASES

Vaccine Successes

Why are vaccines important?

Vaccinations, when properly administered, can prevent diseases for individuals of all ages. Many diseases that produced high morbidity and mortality rates nationally and globally, such as polio, smallpox, rubella, pertussis, and those highlighted in this section, are now under control due to vaccination. Vaccines contain weakened or inactive antigens that enter the body as “foreign invaders.” The immune system then produces antibodies that are designed to destroy and remember those antigens the next time they come into contact with the body. This process leads to immunity, which protects a person from developing a disease. Vaccines not only protect a single individual, but also a whole community. When the majority of individuals in a community are vaccinated against a certain disease, it will be difficult for that disease to spread. This concept, called herd immunity, is especially important for immunocompromised individuals who cannot get vaccinated and infants that are too young to receive certain vaccines before the age of one (1 years old). Overall, vaccines are an important source for preventing epidemics and are one of the main reasons why many serious and deadly diseases are eradicated or nearly eradicated today.

Vaccine-Preventable Diseases

Hepatitis B, *acute*

	San Bernardino County		California		US	
	Cases	Rate	Cases	Rate	Cases	Rate
2016	4	0.3	115	0.3	3218	1.0
2017	9	0.4	126	0.3	3409	1.0
2018	5	.2	105	0.3	--	--

San Bernardino County reported a total of five cases of acute hepatitis B in 2018, a decrease in 44% from cases in 2017. All cases occurred in individuals 33 to 57 years of age. Although the incidence of acute hepatitis B virus (HBV) infection has decreased since the introduction of hepatitis B vaccines, there has been a disproportionately higher incidence among those 30 to 59 years old, reflecting a persistently susceptible subset of the population. Acute HBV infections occur in association with exposures or behaviors known to have a high risk of transmission, such as having multiple sex partners, being a man who has sex with men, injection drug use, sexual contact with a person confirmed or suspected to have HBV infection, or household contact with confirmed or suspected HBV infection. An additional at-risk group identified by the Centers of Disease Control and Prevention (CDC) are institutionalized patients receiving assisted blood glucose monitoring for diabetes. The Advisory Committee on Immunization Practices (ACIP) recommends that all unvaccinated adults between 19 and 59 years of age with diabetes mellitus be vaccinated against hepatitis B, and all adults 60 years of age or older be assessed for their risk of acquiring hepatitis B. ACIP also recommends vaccination for adults in high-risk settings that include facilities testing for sexually transmitted disease or HIV, services for injection drug users, men who have sex with men, and correctional facilities. Additionally, ACIP recommends a three-dose series for all children at birth, 1-2 months, and 6-18 months.

Vaccine Successes

Measles

	San Bernardino County		California		US	
	Cases	Rate	Cases	Rate	Cases	Rate
2016	0	0.0	24	0.1	85	0.0
2017	0	0.0	15	0.1	120	0.0
2018	0	0	--	--	372	0.1

San Bernardino County reported zero cases of measles in 2018. Measles is caused by a highly contagious virus that is spread through respiratory droplets. Although once declared eliminated from the U.S. in 2000, in December 2014, an outbreak of measles affected at least 40 individuals who had visited a Southern California amusement park. Before being declared over on April 17, 2015, the outbreak had spread to at least half a dozen other states. Since December 2014, over 130 confirmed cases have been reported in California. Among these outbreak cases, 57 were unvaccinated and 25 had one or more doses of the MMR (Measles, Mumps, and Rubella) vaccine. A measles vaccine has been available to the public since 1963. ACIP's latest recommendation indicates: 1. vaccinating all eligible children with one dose of MMR vaccine at 12 months of age with a second dose at 4-6 years of age (the second dose may be given as early as 1 month after the first dose); and 2. vaccinating all adults born in 1957 or later with at least one dose of MMR vaccine unless acceptable evidence of immunity exists.

Meningococcal disease

	San Bernardino County		California		US	
	Cases	Rate	Cases	Rate	Cases	Rate
2016	1	0.0	80	0.2	375	0.1
2017	2	0.1	61	0.2	353	0.1
2018	1	0.1	--	--	--	--

San Bernardino County reported one case of invasive meningococcal disease (IMD) in 2018. IMD is caused by contact with respiratory droplets of an individual infected with *Neisseria meningitidis*. The 2018 San Bernardino County rate of 0.1 is well below the Healthy People 2020 goal of 0.3 cases per 100,000 persons. To best protect against the A, C, W, and Y strains of this severe bacterial infection, ACIP recommends vaccination with a two-dose series of either Menactra® or Menveo® quadrivalent vaccine, starting at 11-12 years of age, or at two months of age if HIV-infected. In November 2016, ACIP recommended that all HIV-infected individuals receive a two-dose series of the conjugate vaccine (Menactra® or Menveo®), if not previously vaccinated, followed by booster doses at the appropriate interval. Since 2015, there have been two major serogroup B meningococcal disease outbreaks on U.S. college campuses and a cluster of serogroup C cases associated with gay and bisexual men in Southern California. To best protect against the B strain, ACIP recommends vaccination with a two-dose series of either Bexsero® or Trumenba® vaccine to adolescents 16-23 years old. These two vaccines have been licensed by the Food and Drug Administration to provide short-term protection against most strains of serogroup B meningococcal disease.

Vaccine Successes

Mumps

	San Bernardino County		California		US	
	Cases	Rate	Cases	Rate	Cases	Rate
2016	1	0.0	93	0.2	6369	2.0
2017	2	0.1	189	0.5	6109	1.9
2018	2	0.1	--	--	--	--

San Bernardino County reported two confirmed case of mumps in 2018. In 2016 and 2017, a number of cases and outbreaks have been reported to the CDC, primarily associated with college settings and mostly affecting young adults. The Healthy People 2020 goal is to reduce the number of mumps cases acquired in the U.S. to a total of 500 cases annually. The vaccine to protect against mumps is a two-dose series of MMR. ACIP recommends the first dose to be administered at 12-15 months of age and the second dose at 4-6 years of age. For adults born in 1957 or later with no evidence of immunity, ACIP recommends one dose to be administered.

Varicella (Chickenpox) Hospitalizations and Deaths

	San Bernardino County		California		US	
	Cases	Rate	Cases	Rate	Cases	Rate
2016	4	0.1	48	0.1	8,953	3.5
2017	1	0.0	42	0.1	8,775	3.3
2018	2	0.1	--	--	--	--

San Bernardino County reported a total of two cases of Varicella-Zoster Virus (VZV) hospitalizations, an increase of 100% from cases in 2017. There were zero cases of VZV deaths in 2018. ACIP recommends routine vaccination with a two-dose series, the first dose administered at 12-15 months of age and the second dose administered at 4-6 years of age. Prior to introduction of the vaccine in 1995, 10,000-15,000 VZV-attributed hospitalizations and 100 VZV-attributed deaths occurred nationally each year. The hospitalization rate has dropped by more than 90% among infants and children since vaccination began. The vaccine is 70-90% effective at preventing varicella disease, including preventing complications such as pneumonia, bacterial infection of skin lesions, hospitalization and death.

Diphtheria & Tetanus

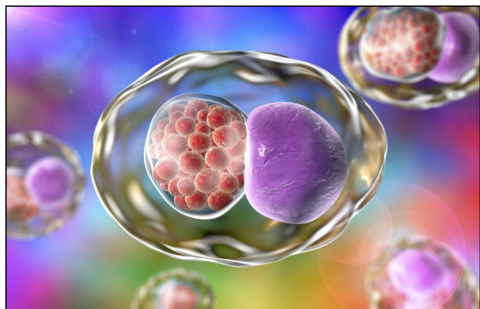
Diphtheria is caused by the *Corynebacterium diphtheriae* bacterium and spread from person to person through coughing or sneezing. When the bacteria attach to the lining of the respiratory system, they produce a poison that can destroy healthy tissues in the respiratory system. Before a vaccine was available to prevent this disease, it was one of the most common causes of illness and death among children. Today, it is considered one of the most well-controlled diseases in the U.S. Tetanus is caused by the *Clostridium tetani* bacterium, which can be found in soil, dust, and feces. The spores formed by the bacteria enter the body through broken skin. The most common symptoms includes: lockjaw, involuntary muscle tightening, painful muscle sniffness throughout the body, and difficulty swallowing. Tetanus is now considered uncommon in the U.S. as a result of vaccination, with an average of only 30 reported cases annually. The following are the four vaccines used to protect against both diseases: DT, DTaP, Td, and Tdap. Infants and children younger than 7 years old receive the DT or DTaP, while children 7 years and older receive the Td or Tdap.

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Chlamydia

What is Chlamydia?

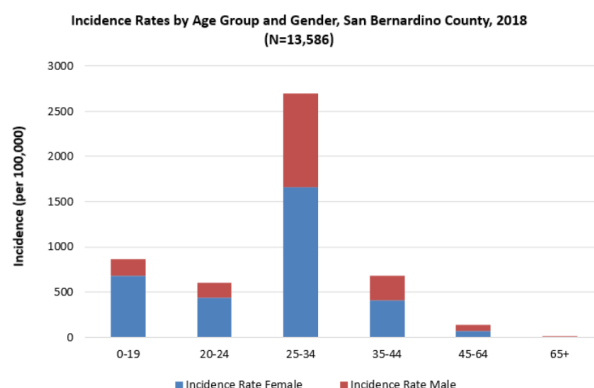
Chlamydia is a sexually transmitted disease (STD) caused by the *Chlamydia trachomatis* (CT) bacterium. It affects both men and women that have unprotected sex. It is transmitted through vaginal, anal or oral sex with an infected person, or from an infected and untreated mother to their infant. The incubation period is usually between 7-14 days.



Symptoms may include discharge (i.e., vaginal, penile or rectal), itching and burning during urination. It can cause swelling of one or both testicles in men. If a woman is left untreated it can lead to serious pelvic inflammatory disease (PID), ectopic pregnancy, preterm delivery and infertility. Infants born to infected mothers can develop pneumonia.

Young adults are at the greatest risk of infection.

Those with greatest risk of contracting chlamydia are sexually active young people that practice unprotected sex and/or have multiple partners, women of childbearing age, and men who have sex with men (MSM).

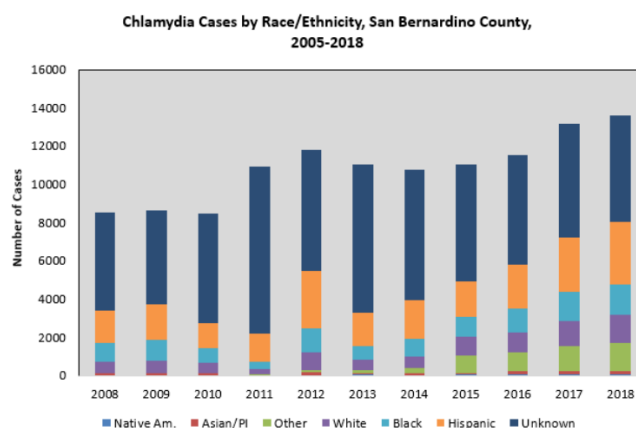


Intervention efforts typically target individual-level factors associated with STD risk. However, high-level factors (e.g., peer norms, media influences, etc.) may also influence behaviors, but are seldom addressed.

2018 in Review

- The number of reported chlamydia cases increased from 13,153 in 2017 to 13,586 in 2018, which is a 3.3% increase.
- Young adults aged 15-29 accounted for most (79.9%) of cases in the County in 2018. Young adults have higher rates of chlamydia because they may not use condoms consistently, have short term relationships, and barriers in accessing prevention services.
- In 2018, 68.8% of chlamydia cases were female. Females with untreated chlamydia may develop PID which can lead to ectopic pregnancy, scar tissue inside the fallopian tubes, infertility and long-term abdominal pain.
- Hispanic/Latino males and females accounted for 24.2% of chlamydia cases followed by Blacks/African Americans (11.6%) and Whites (10.9%).

Chlamydia can cause complications in pregnancy.



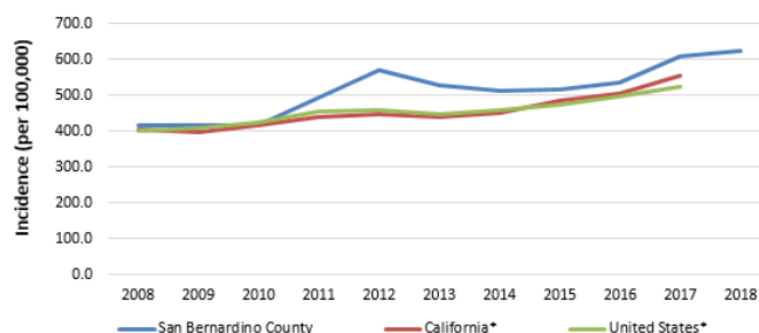
- In 2018, there were 257 pregnant cases at the time of diagnosis.
- Hispanic/Latina women made up 52.5% of pregnant cases followed by Black/African American women (12.8%), and White women (10.5%).
- In pregnant women, untreated chlamydia has been associated with pre-term delivery, conjunctivitis (18-44%) and pneumonia (3-16%) in infants.

Chlamydia

Prevention

- Use protection (i.e., latex condoms) during sexual intercourse and get tested routinely.
- Optimal specimens for CT testing are vaginal swabs (self-collected is acceptable) for women and first catch urine specimens for men.
- Men and women who have tested positive for CT should be retested after 3 months due to high rates of reinfection.
- Individuals with chlamydia should avoid having sex until 7 days after beginning their antibiotics.
- Any partners within the previous 60 days should also be tested and treated for CT.
- Patient-delivered partner therapy, where the patient delivers antibiotics to their partner, has been shown to decrease the risk of reinfection.

Incidence Rates for Chlamydia in San Bernardino County, California, and the United States, 2008-2018



*Data for CA and U.S. not available at time of publication

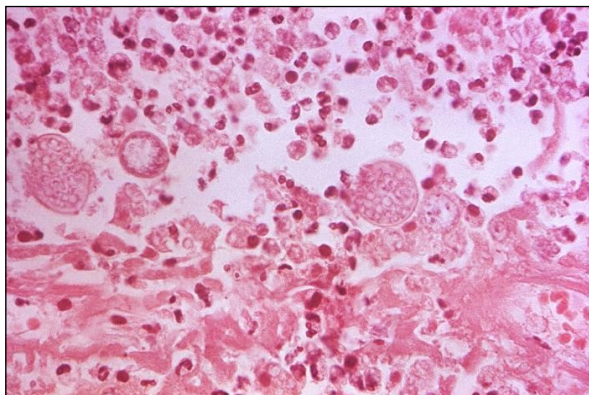
Chlamydia Cases by Race/Ethnicity San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	608	639	595	267	939	535	634	953	1027	1324	1483
Black	1016	1087	749	391	1241	719	928	1046	1269	1481	1576
Hispanic	1640	1842	1326	1486	2978	1764	1981	1858	2280	2860	3286
Asian/PI	92	116	74	25	122	75	86	103	174	208	210
Native Am.	8	15	15	6	32	33	32	37	39	37	40
Other	0	0	1	34	134	178	259	907	1011	1298	1459
Unknown	5184	4955	5726	8693	6341	7718	6835	6113	5707	5945	5532
Total	8548	8654	8486	10902	11787	11022	10755	11017	11507	13153	13586

San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	2	0	4	7	4	1	0	3	3	1	0
1 - 4	0	0	0	0	0	0	1	0	0	1	2
5 - 9	0	0	0	5	2	0	0	0	0	1	0
10 - 14	69	70	74	56	99	82	58	56	50	38	51
15 - 19	2809	2763	2532	2773	3215	2858	2445	2412	2492	2642	2723
20 - 24	3197	3309	3400	4663	4834	4503	4336	4362	4522	5175	5357
25 - 29	1341	1370	1391	1865	1984	1927	2082	2216	2307	2745	2761
30 - 34	572	583	547	746	828	801	883	968	1066	1248	1317
35 - 39	303	282	287	375	398	414	403	461	509	584	634
40 - 44	140	146	135	197	199	203	222	230	219	286	316
45 - 54	98	99	93	173	171	177	231	190	205	308	281
55 - 64	14	22	18	30	40	42	51	63	74	61	89
>65	3	10	5	9	12	10	15	11	11	17	12
Unknown	0	0	0	3	1	4	28	45	49	46	43
Total	8548	8654	8486	10902	11787	11022	10755	11017	11507	13153	13586

Coccidioidomycosis

What is Coccidioidomycosis?

Coccidioidomycosis, also known as Valley fever, is an infection caused by the *Coccidioides* fungus. The fungus lives in soil and can be found in southwestern United States and parts of Mexico, Central America and South America. Breathing in microscopic fungal spores from the air can lead to individuals contracting



coccidioidomycosis. However, most individuals who breathe in the spores do not get sick. Those who do get sick usually get better on their own within weeks or months.

Coccidioidomycosis is generally not contagious, but in extremely rare cases, a wound infection may be able to spread the fungus from one person to another. Pets, especially dogs, have a high risk of contracting the infection. If a dog develops symptoms (e.g., coughing, lack of energy, weight loss, etc.) seek veterinarian assistance immediately.

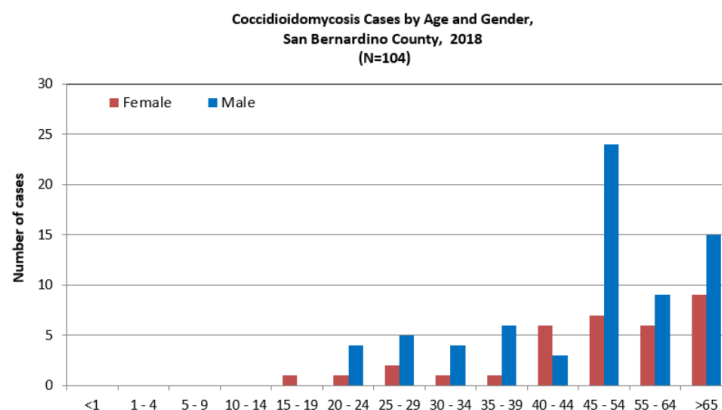
Residents of southwestern U.S., Mexico, Central America, and South America are at highest risk of infection.

Those who live in or travel to areas in southwestern U.S. (i.e., Arizona, California, Nevada, New Mexico, Texas, and Utah) as well as parts of Mexico, Central America, and South America are at higher risk of developing coccidioidomycosis than those who do not live or travel to these areas.

It is most common in adults aged 60 years and older, but it can affect individuals of any age. Those who have weakened immune systems, are pregnant, or have diabetes are also at higher risk. Additionally, persons who are of Black or Filipino descent are at higher risk compared to other racial/ethnic groups.

2018 in Review

- The number of reported cases increased 6.1% from 2017 (98) to 2018 (104).
- The highest proportion of cases occurred among adults 45-54 years (29.8%), those aged 65 years and older (23.1%), and adults aged 55-64 years (14.4%).
- Males comprised 67.3% of county cases in 2018, representing a 2-fold greater risk compared to females, which comprised 32.7% of cases. These finds are comparable to proportions observed in past years.



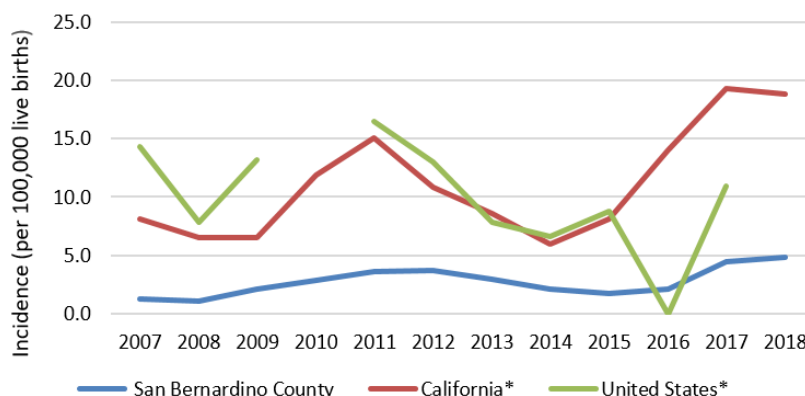
- Whites accounted for 45.2% of reported cases, followed by Blacks/African-Americans (11.5%), and Asian/Pacific Islanders (5.8%).
- Approximately 8.7% of cases may have been exposed to *Coccidioides* spores near their home, 1.0% from prison, 5.8% from their worksite or an outdoor event/facility, 1.0% from a long-term care center, and 1.0% from other settings.
- In 2018, there were 2 deaths among county coccidioidomycosis cases.
- Outbreaks of coccidioidomycosis were not responsible for county cases reported in 2018.

Coccidioidomycosis

Prevention

- Try to avoid spending time in dusty places as much as possible, especially where the *Coccidioides* fungus is most common.
- Avoid areas with a lot of dust (e.g., construction or excavation sites).
- Stay inside and close windows during dust storms.
- Avoid activities that involve close contact to dirt or dust.
- Use air filtration measures. Clean skin injuries thoroughly and cover the wounds to prevent exposure to dirt or dust.
- Take preventive antifungal medication as prescribed by a medical professional.

Incidence Rates for Coccidioidomycosis in San Bernardino County, California, and the United States, 2007-2018



*Data for CA and U.S. not available at time of publication

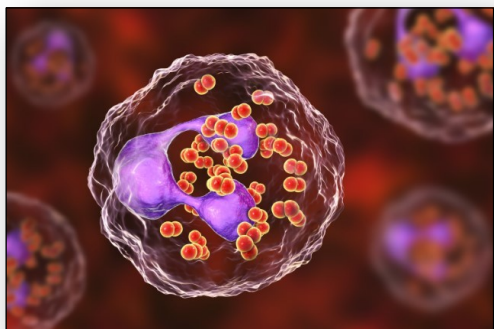
Coccidioidomycosis Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	9	10	9	14	18	17	15	8	9	9	33	47
Black	5	2	5	8	9	16	11	8	5	6	6	12
Hispanic	7	6	10	17	25	24	13	10	11	13	19	1
Asian/PI	1	2	1	2	0	3	4	3	1	9	1	6
Native Am.	0	0	0	0	0	0	1	0	0	1	1	0
Other	0	0	0	0	0	2	0	0	2	2	10	4
Unknown	4	2	17	19	23	14	19	16	8	5	28	34
Total	26	22	42	60	75	76	63	45	36	45	98	104

Coccidioidomycosis Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	1	0	1	0	0	0	0	0
5 - 9	0	0	1	0	0	0	0	1	0	1	1	0
10 - 14	0	0	3	0	0	0	0	0	1	1	2	0
15 - 19	0	1	1	0	3	1	0	1	1	1	1	1
20 - 24	0	1	2	2	5	2	3	1	1	3	7	5
25 - 29	3	2	1	4	2	6	5	4	1	4	4	7
30 - 34	3	1	3	5	7	4	3	3	1	2	7	5
35 - 39	3	2	1	8	5	8	1	7	4	5	7	7
40 - 44	0	1	5	6	6	6	6	7	4	3	7	9
45 - 54	10	7	9	14	27	25	18	11	11	5	18	31
55 - 64	5	5	9	15	6	11	13	4	9	9	21	15
>65	2	2	7	6	13	13	13	6	3	11	23	24
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	26	22	42	60	75	76	63	45	36	45	98	104

Gonorrhea

What is Gonorrhea?

Gonorrhea is a sexually transmitted infection (STI) caused by the *Neisseria gonorrhoeae* (GC) bacterium. It affects both men and women that have unprotected sex. It can infect the genitals, rectum and throat. In most cases men



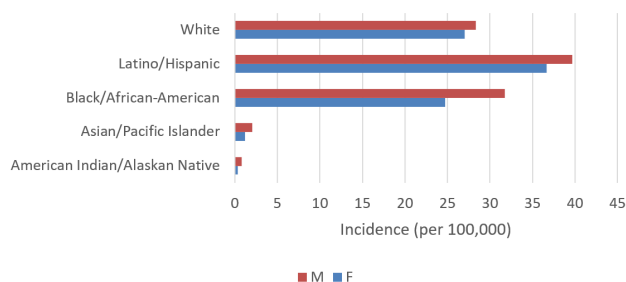
and women do not experience any symptoms. When symptoms occur, men often experience a burning sensation when urinating, produce white, yellow, or green penile discharge, or have painful or swollen testicles. Women also experience a burning sensation when urinating as well as increased vaginal discharge and vaginal bleeding between periods. If left untreated in women, it can lead to pelvic inflammatory disease (PID), ectopic pregnancy, infertility, and long-term pelvic/abdominal pain. Those who are pregnant can also spread the infection to their baby during childbirth.

Gonorrhea is very common among young adults.

Individuals who are sexually active, have unprotected sex (i.e., vaginal, anal, or oral), and have multiple partners are at high risk for gonorrhea. Men who have sex with men (MSM) are also at high risk.

Gonorrhea is very common among young adults between the ages of 15-24 years old. Black/African American males and females tend to have the highest incidence rates compared to other racial/ethnic groups.

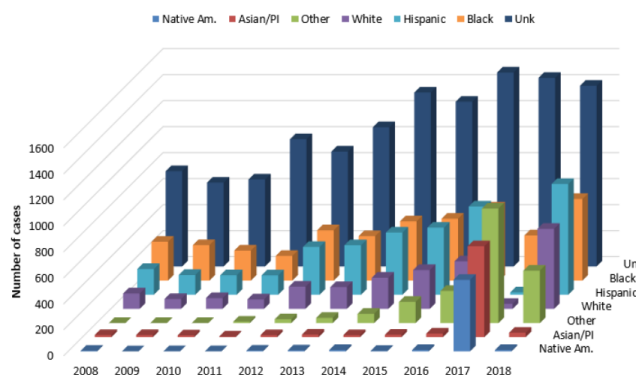
Incidence Rates by Race/Ethnicity and Gender, San Bernardino County, 2018 (N=3,910)



2018 in Review

- The number of reported gonorrhea cases has decreased from 3,987 in 2017 to 3,933 in 2018, which is a 1.4% decrease.
- Young adults aged 15-29 accounted for more than half (63.2%) of all gonorrhea cases in the County in 2018.
- In 2018, 45.4% of gonorrhea cases were female and 54.2% were males. Gonorrhea rates nationally have increased three times as fast among males compared to females, suggesting either increased transmission, increased extra-genital screening among MSM, or both.
- Re-infection rates are high; 12% of females with gonorrhea became re-infected within a few months, under scoring the need for partner treatment.
- Hispanic and Latino males and females accounted for 21.7% of gonorrhea cases followed by Black/African Americans (16.0%) and Whites (15.7%).

Gonorrhea Cases by Race/Ethnicity, San Bernardino County, 2008-2018



- Nationally, the number of isolates with some resistance to cefixime and ceftriaxone, the two antibiotics recommended for treatment, remained low (0.5%, 0.3%).

Gonorrhea can cause complications in pregnancy.

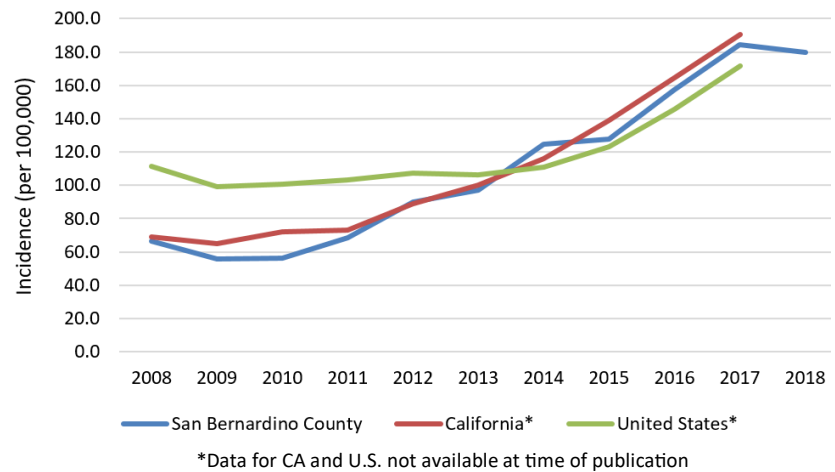
- In 2018, 52 female cases were pregnant at the time of diagnosis. Untreated gonorrhea during pregnancy can lead to miscarriages, premature birth, and chorioamnionitis. Infants can also become infected and develop eye problems.

Gonorrhea

Prevention

- Use latex condoms properly and consistently.
- Drugs and alcohol may increase risky behavior.
- It is recommended that sexually active individuals get screened annually and receive prompt effective treatment.
- Dual therapy with two antibiotics for treatment, ceftriaxone and azithromycin, is recommended to limit resistance in oral cephalosporins.
- Partners of an infected individual within the previous 60 days should be tested and treated.

Incidence Rates for Gonorrhea in San Bernardino County, California, and the United States, 2008-2018



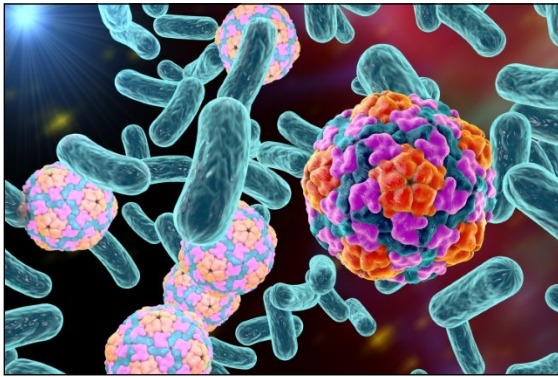
Gonorrhea Cases by Race/Ethnicity											
San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	119	76	83	73	171	168	240	299	366	550	605
Black	299	273	231	190	387	342	456	476	562	700	623
Hispanic	198	152	150	149	368	381	479	516	679	881	836
Asian/PI	17	17	14	5	16	20	16	19	28	39	35
Native Am.	4	0	1	1	5	7	10	3	10	18	10
Other	0	0	0	11	29	40	71	163	247	348	404
Unknown	733	645	669	979	884	1071	1338	1267	1492	1451	1397
Total	1370	1163	1148	1408	1860	2029	2610	2743	3384	3987	3910

Gonorrhea Cases by Age											
San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	3	2	0	0	0	0	0	2	0
1 - 4	0	0	0	0	0	0	1	0	0	2	2
5 - 9	0	0	0	0	0	0	0	1	0	0	0
10 - 14	10	9	8	8	13	8	17	10	12	8	21
15 - 19	459	349	267	310	396	398	499	469	521	496	534
20 - 24	429	387	429	505	666	677	871	885	1047	1066	1040
25 - 29	215	204	195	268	334	385	585	618	793	949	908
30 - 34	118	86	102	146	198	226	273	307	421	605	549
35 - 39	61	47	55	66	114	130	140	175	256	362	357
40 - 44	41	32	44	58	58	93	80	113	139	180	196
45 - 54	33	40	41	37	59	91	108	101	139	205	227
55 - 64	3	9	2	6	14	18	26	48	49	89	59
>65	1	0	2	2	8	2	5	11	6	10	13
Unknown	0	0	0	0	0	1	5	5	1	13	4
Total	1370	1163	1148	1408	1860	2029	2610	2743	3384	3987	3910

Hepatitis A (Hep A)

What is Hepatitis A?

Hepatitis A (hep A) is a highly contagious liver infection caused by the hepatitis A virus (HAV). The mode of transmission for HAV is through fecal-oral route and can be easily spread when consuming food, drinking water, or by contact with the mouth after touching contaminated objects. Hep A does not usually cause long-term liver damage. However, in rare cases it can lead to a sudden loss of liver function.



Symptoms of hep A include fatigue, nausea and vomiting, abdominal pain or discomfort, clay-colored bowel movements, loss of appetite, dark urine, joint pain, yellowing of the skin and sclera (jaundice) and intense itching. They generally do not appear until an individual has had the infection for a few weeks. While hep A is highly contagious, it is easily preventable with the hep A vaccine.

Unvaccinated individuals are at highest risk.

Individuals who are unvaccinated against hep A, those who travel to or live in countries where hep A is common, men who have sex with men (MSM), injection or non-injection drug users, household members or caregivers of a person with hep A, and those with clotting factor disorders, chronic liver disease or experiencing homelessness are at highest risk of hep A.

Hepatitis A Outbreak

On March 18, 2017, the California Department of Public Health (CDPH) officially announced an outbreak of hep A originating in the homeless population in San Diego County. Seven months later, Governor Jerry Brown declared a state of emergency.

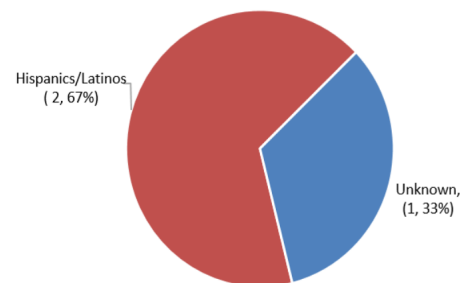
The outbreak began in San Diego County in November 2016 and spread to Santa Cruz, Los Angeles and Monterey counties. As a result of the outbreak, 705 people throughout California were infected, 461 were hospitalized and 21 died, making it the largest hep A outbreak in the U.S. in the past 20 years. In San Diego County, those infected were primarily homeless, illicit drug users and/or MSM.

Homelessness is on the rise in San Bernardino County. According to the 2018 Point-In-Time Count, the annual survey showed 2,118 individuals without a permanent home, a 13.5% increase from the previous year. Declaring a state of emergency led to a large increase in hepatitis A vaccinations and prevention outreach. Homelessness (the underlying cause) is likely to continue to have disastrous effects on health.

2018 in Review

- The number of reported cases decreased by 75% from 2017 (12) to 2018 (3).
- Female cases comprised 66.7% of county cases in 2018 and male cases comprised 33.3% of cases.
- Adults aged 40-44 years old accounted for 66.7% of cases.
- The greatest proportion of cases occurred among Hispanics/Latinos (67%).

Proportions of Hepatitis A Cases by Race/Ethnicity, San Bernardino County, 2018



- All cases experienced symptoms of hep A with 100% experiencing abdominal pain, 66.7% experiencing jaundice, 66.7% diarrhea and anorexia, 33.3% dark urine and 33.3% clay stools.

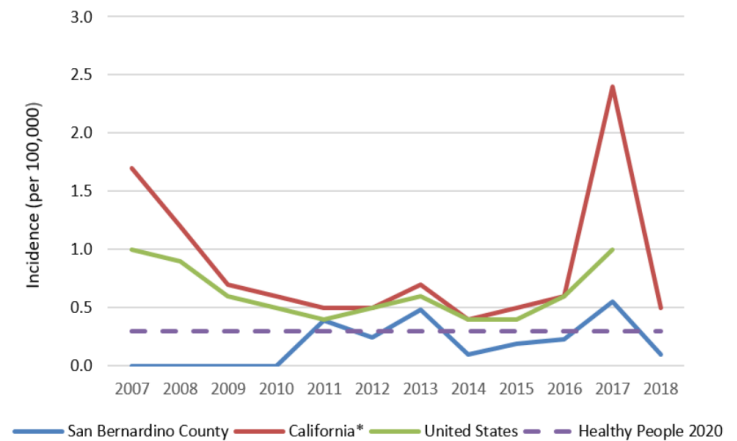
Hepatitis A (Hep A)

Prevention

- The best way to prevent hepatitis A is to receive a two dose series of the hepatitis A vaccine with a six month interval in between doses.
- Practice good hand hygiene by washing hands thoroughly with soap and water after using the restroom or changing diapers and before preparing or eating food.



Incidence Rates for Hepatitis A in San Bernardino County, California, and the United States, 2007-2018



*Data for U.S. not available at time of publication

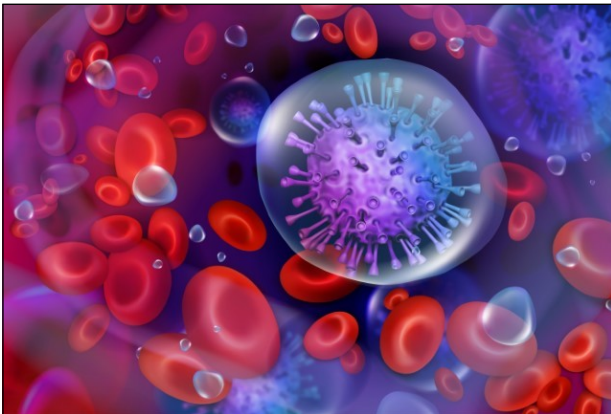
Hepatitis A Cases by Race/Ethnicity San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	0	0	0	0	6	3	5	0	2	3	7	0
Black	0	0	0	0	0	0	0	0	0	0	1	0
Hispanic	0	0	0	0	1	2	4	2	1	1	2	2
Asian/PI	0	0	0	0	0	0	1	0	1	0	1	0
Native Am.	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	1	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	8	5	10	2	4	5	12	3

Hepatitis A Cases by Age San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	0	1	1	0	0	0	0	0
5 - 9	0	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0	0	0	0	0	0	0
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	1	0	1	0	0	1	0
25 - 29	0	0	0	0	0	0	1	0	0	0	1	1
30 - 34	0	0	0	0	0	1	3	0	0	1	1	0
35 - 39	0	0	0	0	2	0	0	0	1	1	1	0
40 - 44	0	0	0	0	0	0	1	0	0	1	0	2
45 - 54	0	0	0	0	5	1	1	0	2	1	3	0
55 - 64	0	0	0	0	1	1	2	1	0	0	3	0
>65	0	0	0	0	0	0	1	0	1	1	2	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	8	5	10	2	4	5	12	3

HIV/AIDS

What is HIV/AIDS?

HIV (*human immunodeficiency virus*) is a sexually transmitted infection (STI) that can lead to AIDS (*acquired immunodeficiency syndrome*). There is no effective cure for HIV/AIDS. The treatment available (antiretroviral therapy or ART) prevents the infection from becoming a disease. HIV weakens the body by attacking its immune system. It reduces the number of CD4 cells that fight off infections in the body.



If left untreated, CD4 cells continue to be destroyed and the immune system can no longer fight off opportunistic infections or cancers that can take advantage of the body's weak immune system. Only certain body fluids, including blood, semen, pre-seminal fluid, vaginal fluid, rectal fluid, or breast milk, can transmit HIV. These can be spread through vaginal, anal, and oral sex or by sharing contaminated needles during intravenous (IV) drug use.

Certain groups are at higher risk than others, including men who have sex with men (MSM) and IV drug users.

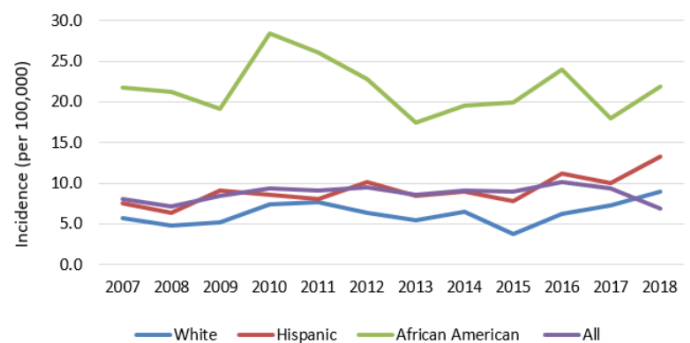
Certain groups are at higher risk of contracting HIV, due to the status of their sex partners and their risk behaviors. Those who are MSM as well as transgendered women who have sex with men continue to be the most affected groups in the U.S.

Blacks/African Americans and Hispanics/Latinos are disproportionately affected by HIV. Those who practice anal or vaginal sex without a condom and/or share needles or syringes remain at significant risk.

2018 in Review

- Reports of new diagnoses of HIV infections and AIDS increased by 5.1% and 22.8%, respectively from 2017 to 2018.
- The number of persons living with HIV/AIDS in the County increased by 37.6% from 2015 to 2018.
- Individuals aged 25-44 accounted for more than half (55.4%) of new HIV cases in 2018.
- Males comprised 86.5% of new HIV diagnoses in 2018 while females comprised 13.5%. From 2016 to 2018, new male cases have consistently outnumbered new female cases.
- Hispanics/Latinos (58.4%) made up more than half of new HIV cases in the County in 2018, followed by Whites (20.6%), and Blacks/African-Americans (15.7%). Hispanics/Latinos also accounted for the largest proportion of HIV/AIDS cases (55.5%) in the County in 2018 compared to other racial/ethnic groups.

HIV Incidence Rates by Race/Ethnicity, San Bernardino County, 2007-2018



MSM individuals account for most HIV/AIDS cases in the County.

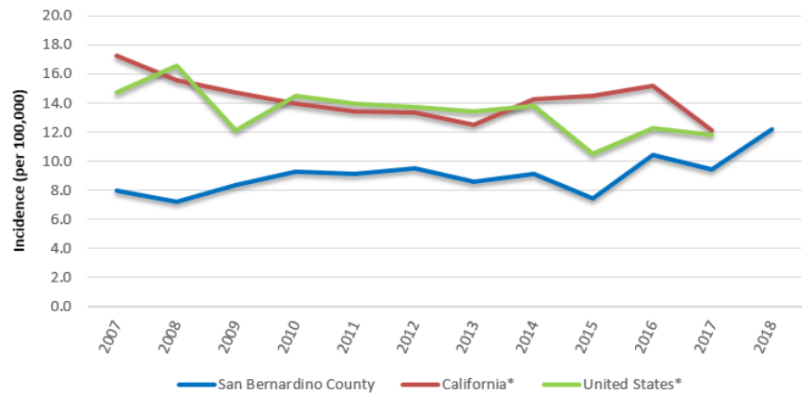
- Gay and Bisexual males continue to account for most HIV/AIDS cases in the County. In 2018, more than half of all new HIV cases (54.2%), were MSM.
- Of the 699 new HIV cases reported from 2016 to 2018, 4.8% were IV drug users.
- Each year 2-3% of new county HIV diagnoses are classified as acute infections where the individual was infected a month or so before their diagnosis.

HIV/AIDS

Prevention

- Use condoms correctly and consistently during sexual intercourse (i.e., vaginal, anal, or oral).
- All partners of HIV positive individuals within the last 12 months or more, depending on the degree of the exposure, should be notified of their exposure and tested.
- HIV negative individuals at ongoing risk of HIV infection, including those in discordant relationships or MSM with multiple partners, should consider HIV pre-exposure prophylaxis (PrEP).
- New mothers who are HIV-positive should not breastfeed their newborns.
- All individuals aged 13-64 should be tested at least once, then annually if at high risk.
- Those who are MSM should be screened every 3-6 months depending on risk.
- All pregnant women should be screened at their first pre-natal visit.

Incidence Rates for HIV in San Bernardino County, California, and the United States, 2007-2018



*Data for CA and U.S. not available at time of publication

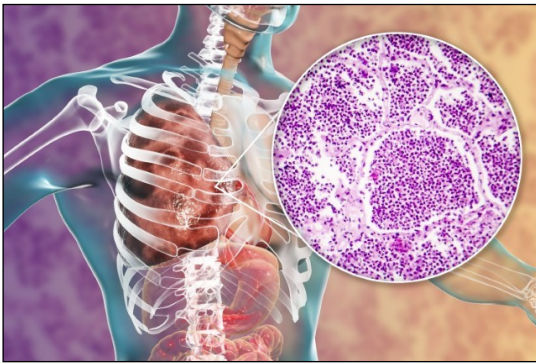
HIV Cases by Race/Ethnicity													
San Bernardino County, 2007 - 2018													
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	79	63	49	41	49	51	38	44	46	32	47	45	55
Black	63	60	53	44	50	45	43	37	37	46	40	34	42
Hispanic	95	99	101	97	95	84	106	94	112	97	110	114	156
Asian/PI	6	6	9	5	3	4	5	9	9	8	7	5	7
Native Am.	0	0	1	0	0	0	1	0	4	4	0	3	0
Other	1	7	3	8	1	6	4	1	9	3	3	2	4
Unknown	0	0	0	0	0	0	0	0	0	0	6	1	3
Total	244	235	216	195	198	190	197	185	217	190	213	204	267

HIV Cases by Age													
San Bernardino County, 2007 - 2018													
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	1	0	0	0	0	0	1	0	0	0	0
1 - 4	1	0	0	0	0	0	1	0	0	0	0	0	0
5 - 9	0	0	1	0	0	0	0	0	0	0	0	0	0
10 - 14	0	1	0	0	0	0	0	0	0	0	0	0	0
15 - 19	12	7	8	4	7	9	6	6	10	11	5	7	14
20 - 24	21	36	34	33	37	42	40	38	41	41	42	42	44
25 - 29	35	30	34	32	47	23	38	39	44	31	52	34	57
30 - 34	31	42	22	32	15	30	27	23	37	22	28	42	36
35 - 39	37	33	21	23	16	14	18	21	20	21	18	15	28
40 - 44	37	30	34	27	22	21	15	16	20	15	19	16	22
45 - 54	55	38	38	32	33	38	35	32	27	33	33	29	44
55 - 64	9	13	20	10	16	9	10	8	14	14	11	18	15
>65	6	5	3	2	5	4	7	2	3	2	5	1	7
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	244	235	216	195	198	190	197	185	217	190	213	204	267

Legionellosis

What is Legionellosis?

Exposure to the *Legionella* bacteria can lead to Legionellosis, which presents as two types of illnesses: Legionnaires' Disease and Pontiac fever. Legionnaires' Disease is a very serious type of pneumonia. The symptoms include cough, shortness of breath, muscle aches, fever, and headaches, which are similar to other types of pneumonia. It is also associated with symptoms such as diarrhea, nausea and confusion. Symptoms will usually occur 2-10 days after initial exposure. Pontiac fever is a milder infection with milder symptoms, such as fever and muscle aches, that last less than a week and that do not affect the lungs.



Legionnaires' Disease requires antibiotic treatment. Pontiac fever does not require treatment and will resolve on its own. Transmission for Legionellosis occurs through the inhalation of small water droplets in the air that contain the bacteria. Although less common, it is also possible for transmission to occur through the aspiration of drinking water containing the bacteria. This can happen to those with swallowing difficulties. The *Legionella* bacteria tend to grow best in large, complex water systems that are not maintained adequately, including showerheads and faucets, cooling towers, hot tubs that are not drained after each use, decorative fountains and water features, hot water tanks and heaters, and large plumbing systems.

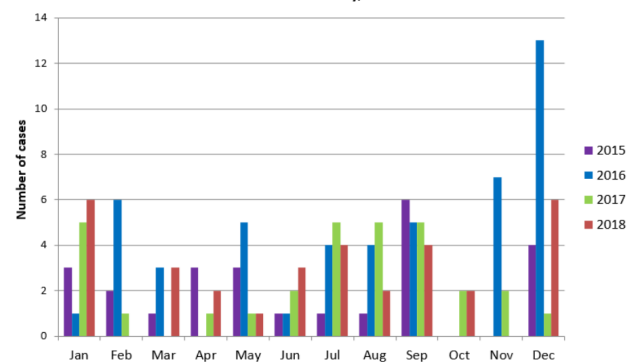
Most healthy individuals will not develop Legionellosis.

Those at increased risk for Legionellosis include individuals that are 50 years of age or older, are current or former smokers, have chronic lung disease, cancer, and/or underlying illnesses, and have weak immune systems. Most healthy individuals will not develop Legionellosis even after being exposed to *Legionella*.

2018 in Review

- The number of reported cases increased 10% from 2017 (30) to 2018 (33).
- Adults aged 45 years and older accounted for 97.1% of county cases, with older adults 65 years and older accounting for most cases in that age range (40.6%).
- Males comprised 66.7% of county cases in 2018 and females comprised 33.3% of cases.
- Whites (33.3%) and Hispanics (27.3%) comprised the largest proportion of cases.
- In 2018, there were 5 county deaths attributed to Legionnaire's disease.
- Infection can cause death in 5-30% of high risk individuals. High risk individuals in San Bernardino County were adults aged 53 years and older.
- Nationally, most illness occurs in the summer and early fall.

Seasonality: Legionellosis Cases by Month of Onset, San Bernardino County, 2015-2018



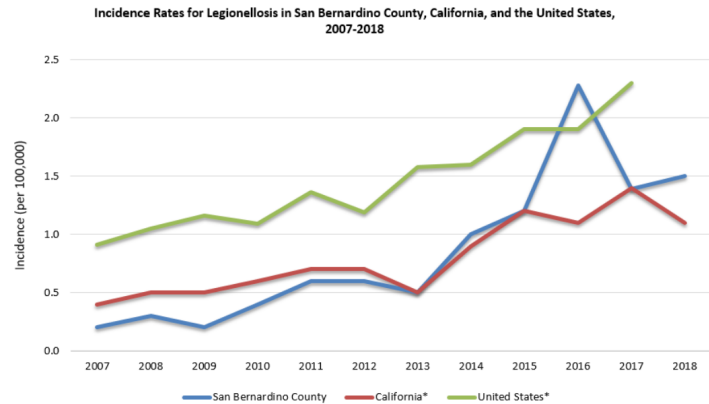
- In water, the *Legionella* bacteria multiplies within amoebae and ciliated protozoa, obtaining nutrients and shelter from adverse environmental changes including chlorine.



Legionellosis

Prevention

- Water systems must always be maintained.
- Do not to use tap water for respiratory therapy devices.
- Cooling water towers should be drained when not in use.
- Water treatment chemicals should be used at appropriate levels and intervals to prevent *Legionella* growth in pools and spas.
- Pool test strips should be used to check hot tub water for PH levels and chlorine/bromine.
- Hot tub maintenance should include biofilm removal, replacement of water filter, and replacement of hot water according to manufacturer recommendations.



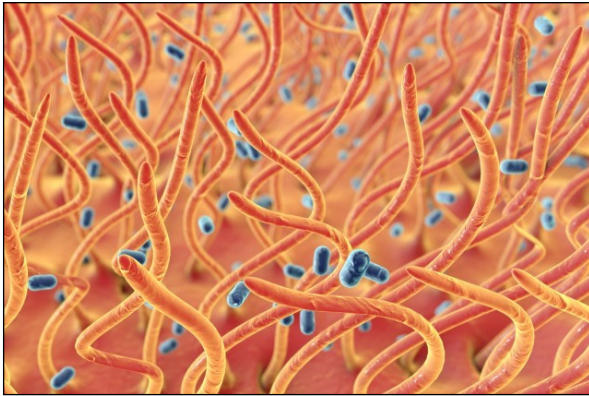
Legionellosis Cases by Race/Ethnicity San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	2	5	1	0	9	6	4	10	8	27	14	11
Black	0	0	2	0	4	0	1	1	6	10	1	6
Hispanic	2	1	0	4	1	1	3	8	8	9	5	9
Asian/PI	0	0	0	0	0	0	0	1	0	2	1	0
Native Am.	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	1	0	1	1	1	4	4
Unknown	0	1	1	4	0	4	2	0	2	0	5	3
Total	4	7	4	8	14	12	10	21	25	49	30	33

Legionellosis Cases by Age San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	0	1	0	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0	0	0	0	0	0	0
15 - 19	0	0	0	0	0	0	0	0	1	1	0	0
20 - 24	0	0	0	0	1	0	0	0	0	0	0	0
25 - 29	0	0	1	0	0	0	0	0	0	0	1	0
30 - 34	0	0	0	1	0	0	0	0	0	0	1	0
35 - 39	0	0	0	0	1	1	2	1	0	1	1	1
40 - 44	0	0	0	1	0	0	2	1	2	0	0	0
45 - 54	2	1	2	1	3	5	1	4	3	10	4	9
55 - 64	1	2	1	1	6	0	3	4	2	12	5	10
>65	1	4	0	4	2	6	2	11	17	25	18	13
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	7	4	8	14	12	10	21	25	49	30	33

Pertussis (Whooping Cough)

What is Pertussis?

Pertussis, commonly known as whooping cough, is a highly contagious disease caused by the bacterium *Bordetella pertussis*. It is most contagious up to two weeks after the cough begins. When an infected individual coughs or sneezes, tiny germ-laden droplets are sprayed into the air and can be inhaled by anyone. Once infected with pertussis, it takes about 7-10 days for symptoms to appear.



Symptoms of pertussis are similar to those of a common cold: runny nose, nasal congestion, red/watery eyes, fever, and cough. After a week or two, the symptoms worsen leading to the accumulation of thick mucus inside the airways causing uncontrollable coughing and vomiting, extreme fatigue, and sometimes ending with a high-pitched “whoop” sound during the next breath of air. Many people do not develop the characteristic whoop and infants may not cough at all. Instead, they may struggle to breathe or even temporarily stop breathing.

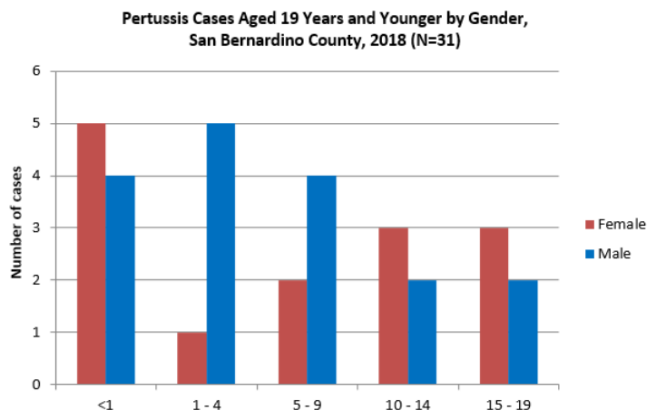
Infants who are not vaccinated against pertussis have the greatest risk of being infected.

Those who are not vaccinated against pertussis will likely become ill if they are exposed to the bacteria. The disease is contagious from the very beginning (when a person exhibits cold-like symptoms) and up to two weeks after the cough has started.

Symptoms can be mild for some, which can lead to infants becoming exposed to individuals who may not know they have the disease.

2018 in Review

- Nationally, the number of cases decreased from 29.2% from 2017 (18,975) to 2018 (13,439).
- The number of county cases decreased 29.5% from 2017 (44) to 2018 (31)
- More males (55%) than females (45%) were reported in the County in 2018.
- All (100%) of the cases were children and teens 19 years and younger. Infants younger than 1 year accounted for 29% of cases. Young children and infants are more likely to have severe symptoms.

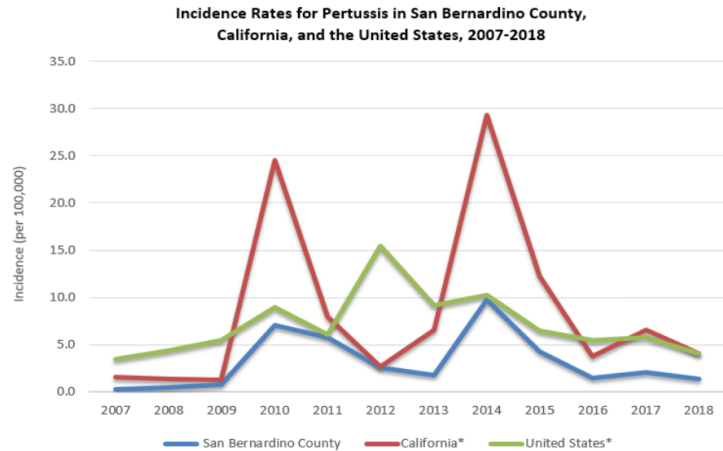


- With treatment, individuals are infectious from onset of cold symptoms until five days after treatment. Without treatment, ill individuals are infectious 21 days after cough onset or, in the case of infants, six weeks. It is characterized by a catarrhal stage of cold-like symptoms with minimal fever followed by a paroxysmal stage involving severe cough and post-tussive vomiting.
- White and Hispanic/Latino populations (74.2%) comprised the greatest proportion of county cases, as seen in previous years.
- In 2018, ten deaths occurred nationally with four of those in infants under one year of age. One death occurred in a San Bernardino County resident in 2018. The case was an infant under one year of age.

Pertussis (Whooping Cough)

Prevention

- For children six years of age and younger, it is recommended to get the DTaP vaccine series.
- For those aged seven years and older, including pregnant women, it is recommended to get the Tdap vaccine.
- For optimal protection of infants, pregnant women should get vaccinated between 27-36 weeks of pregnancy.
- Immunity from the pertussis vaccine tends to wane with time. It is important to speak with a physician regarding various booster shots.



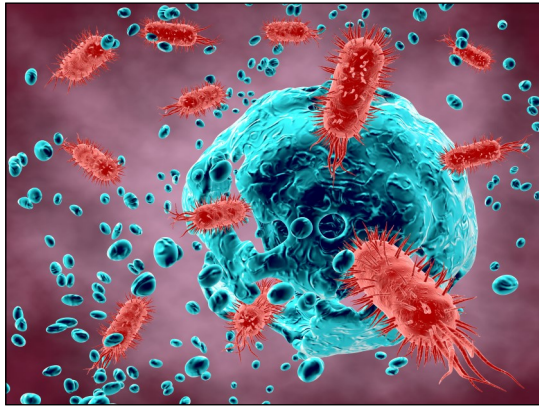
Pertussis Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	5	4	6	43	40	13	11	58	33	7	16	8
Black	0	0	0	6	4	4	0	5	0	2	2	0
Hispanic	1	4	4	80	69	30	20	108	37	18	16	15
Asian/PI	0	0	0	2	2	4	0	2	4	1	2	2
Native Am.	0	0	0	0	0	0	0	0	1	0	0	0
Other	0	0	0	1	0	0	0	6	5	2	1	0
Unknown	1	2	7	23	14	3	6	26	11	2	7	6
Total	7	10	17	155	129	54	37	205	91	32	44	31

Pertussis Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	6	6	12	51	34	20	10	41	16	7	11	8
1 - 4	0	1	2	23	23	13	4	37	12	8	5	6
5 - 9	0	1	1	14	16	9	2	18	11	4	4	6
10 - 14	1	2	1	32	27	4	9	50	27	7	11	5
15 - 19	0	0	1	10	8	1	7	33	14	6	6	5
20 - 24	0	0	0	5	2	0	0	1	3	0	0	0
25 - 29	0	0	0	1	4	2	0	3	0	0	0	0
30 - 34	0	0	0	2	4	1	0	3	1	0	0	0
35 - 39	0	0	0	2	2	2	1	3	0	0	2	1
40 - 44	0	0	0	7	3	0	1	2	1	0	0	0
45 - 54	0	0	0	4	1	1	2	7	4	0	1	0
55 - 64	0	0	0	0	3	0	1	3	1	0	2	0
>65	0	0	0	3	1	1	0	2	1	0	2	0
Unknown	0	0	0	1	1	0	0	2	0	0	0	0
Total	7	10	17	155	129	54	37	205	91	32	44	31

Rabies

What is Rabies?

Rabies is a preventable disease caused by the rabies virus that can affect both animals and humans. Domesticated pets are infected when they are bitten or scratched by a rabid animal. The most common source of rabies in humans is from the bite of an infected bat. Exposure to other wild animals (e.g., foxes, raccoons, skunks, etc.) have also been reported to be sources of rabies cases in humans.



Approximately 120,000 animals are tested for rabies each year in the U.S., and approximately 6% are found to be rabid. The early symptoms of rabies in humans include fever, headache, weakness or discomfort.

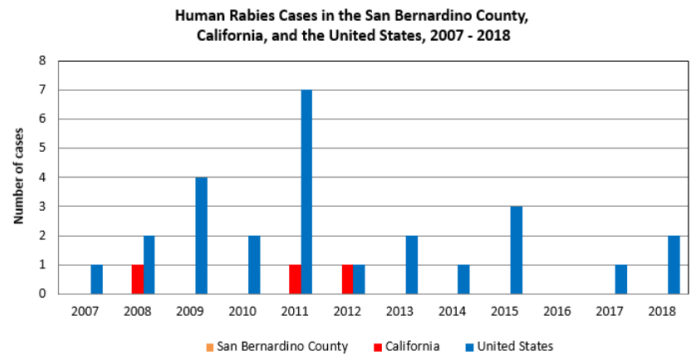
Delayed symptoms include insomnia, anxiety, confusion, slight or partial paralysis, excitation, hallucinations, agitation, hypersalivation, hydrophobia, and difficulty swallowing. Death is likely to follow after the onset of these symptoms. Many tests are necessary to diagnose rabies in humans as no single test is sufficient.

Pets that have not received the rabies vaccine are the most likely to contract the virus and pass it on to their owners.

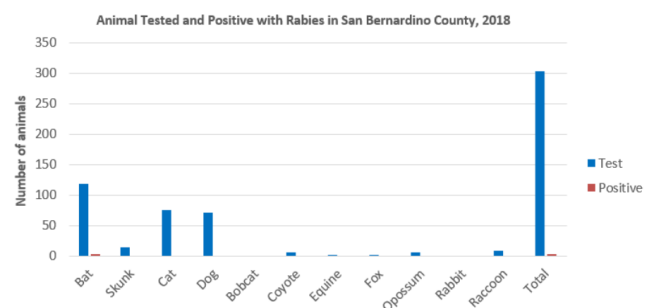
Animals and humans are both at risk for contracting the rabies virus. Pets that have not received the rabies vaccine and/or stay outside for the majority of the day without direct supervision are more likely to get attacked, bitten, and/or scratched by a rabid animal. Stray animals are also at higher risk. Anyone can be at risk of contracting the rabies virus. However, those with pets have a higher risk of contracting the rabies virus than those without pets. Individuals who reside in areas where there are a lot of wild animals and/or stray animals are also at higher risk.

2018 in Review

- In 2018, Communicable Disease Staff investigated 197 animal bites and exposures. Rabies was not diagnosed in any San Bernardino County resident.



- Of the 303 animal species tested for rabies, 3 were positive.
- All positive specimens were obtained from bats. Most of the negative specimens were obtained from dogs, cats, and skunks.
- Most rabid bats were found in late spring through early fall (April to September), consistent with the time when many young bats leave the roost.
- In the County, the last rabid dog was detected in 1948, and the last rabid cat was identified in 1993. In 2013, the first skunk was identified.
- There were 2,675 domestic animals (dogs, cats, horses, cattle, goats, sheep, camels) tested in California for rabies in 2018. No domestic animals tested positive for Rabies in 2018.
- Domestic animals accounted for 48.2% of all animals submitted for rabies testing in 2018. Of these, none tested positive.

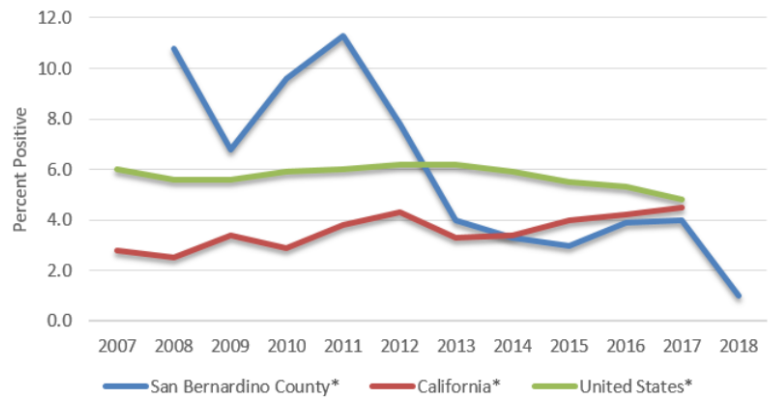


Rabies

Prevention

- Owners should keep their pets up-to-date with the recommended rabies vaccinations.
- When pets are outside, they should be supervised to prevent from being attacked, bitten, and/or scratched by rabid animals, wild animals, and/or strays that likely have not been vaccinated.
- Spaying or neutering pets also helps prevent the rabies virus from spreading because it decreases the number of stray or ill animals.
- Most animal bites are provoked.
- It is important to teach children how to interact safely with familiar dogs and to avoid contact with dogs unknown to them.
- Young children should never be left alone with a dog, even one known to them.
- If bitten, seek prompt medical care.
- Individuals at higher risk for rabies because of occupation or travel should consider pre-exposure vaccination.

Animal Rabies by Percent of Rabies Positive in San Bernardino County, California, and the United States, 2007-2018



*Data for CA and U.S. not available at time of publication

**Data for SB County not available prior to 2008



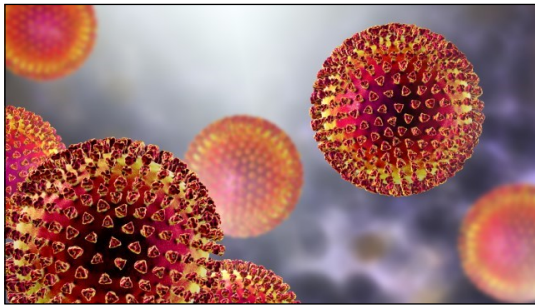
Animal Rabies Cases by Species												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fox	0	0	0	0	0	0	0	0	0	0	0	0
Coyote	0	0	0	0	0	0	0	0	0	0	0	0
Cat	0	0	0	0	0	0	0	0	0	0	0	0
Dog	0	0	0	0	0	0	0	0	0	0	0	0
Skunk	0	0	0	0	0	0	1	0	0	0	0	0
Bat	9	12	5	7	12	10	14	11	8	9	11	3
Total	9	12	5	7	12	10	15	11	8	9	11	3

Human Rabies Cases in San Bernardino County, California, and United States, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
San Bernardino County	0	0	0	0	0	0	0	0	0	0	0	0
California	0	1	0	0	1	1	0	0	0	0	0	0
United States	1	2	4	2	7	1	2	1	3	0	1	2

Respiratory Syncytial Virus (RSV)

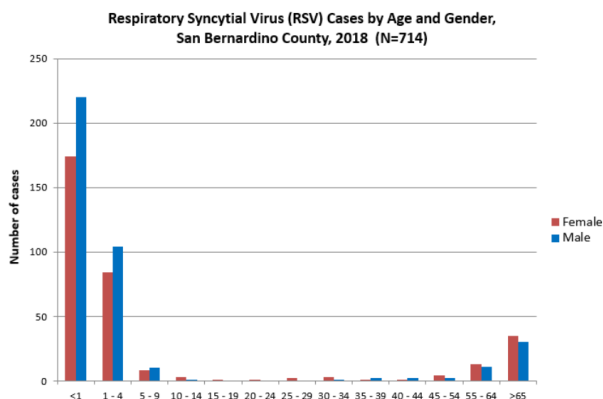
What is Respiratory Syncytial Virus?

Respiratory Syncytial Virus (RSV) is a common respiratory virus that causes mild colds. On average, most people infected with RSV recover within a week or two. However, RSV can be dangerous for infants and seniors. RSV is the most common cause of bronchiolitis (inflammation of the small airways in the lungs) and pneumonia (lung infection) in infants in the U.S. The mode of transmission is through airborne respiratory droplets spread by the cough or sneeze of an infected person.



Individuals can also become infected through direct contact with the virus. RSV can survive for many hours on hard surfaces and can live on soft surfaces for a shorter amount of time. The incubation period for RSV is 4-6 days. Symptoms of RSV include runny nose, cough, sneeze, decrease in appetite, and fever.

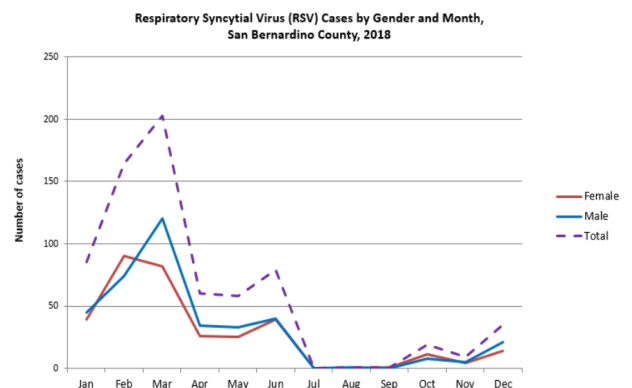
Immunocompromised children and adults have the greatest risk of being infected.



Those at higher risk include premature infants, young children with congenital diseases, immunocompromised adults, and older adults with underlying diseases.

2018 in Review

- The number of reported cases increased by 7.0% from 2017 (667) to 2018 (714).
- Males comprised 53.4% of county cases in 2018 and females comprised 46.5% of cases.
- Infants younger than one year of age accounted for more than half (55.2%) of county cases in 2018, followed by children aged 1-4 years old (26.3%).
- The greatest proportion of cases occurred among Hispanics/Latinos (20.9%) and Whites (18.8%) where race/ethnicity was identified.
- Infected infants most commonly manifest with cold-like symptoms. However, 25-40% will show signs of pneumonia or bronchiolitis.
- Most children hospitalized are under 6 months of age.
- Infected individuals are contagious for 3-8 days.



- Increases of reported cases occur in the winter. In 2018, 68.2% of cases fell in the winter months, 16.5% in spring, 11.2% in summer, and 4.1% in fall.
- In 2018, no deaths from RSV were reported in the County.

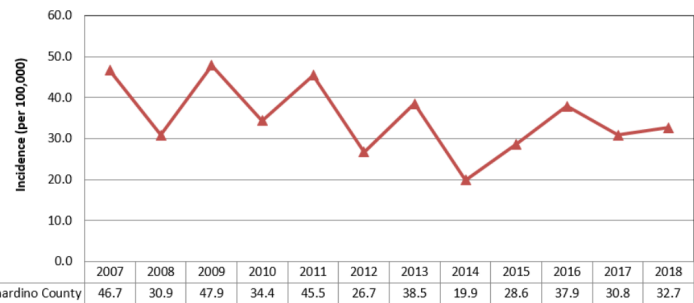


Respiratory Syncytial Virus (RSV)

Prevention

- Cover your nose or mouth when coughing or sneezing.
- Wash hands thoroughly with soap and water after coughing or sneezing.
- Avoid sharing drinks or eating utensils that may be contaminated with saliva.
- Limit or avoid contact with individuals infected with RSV.
- Individuals who exhibit symptoms of RSV should not have close contact with children.
- For children at high risk, limit the time spent in childcare centers or other potentially contagious settings, especially during the fall, winter and spring seasons.
- Disinfect surfaces that have a large amount of hand contact.

Incidence Rates for Respiratory Syncytial Virus (RSV) in San Bernardino County, 2006-2018



*RSV became reportable in County of San Bernardino in 2002.

RSV is only reportable in death among patients less than 5 years of age in California and is not nationally-notifiable.

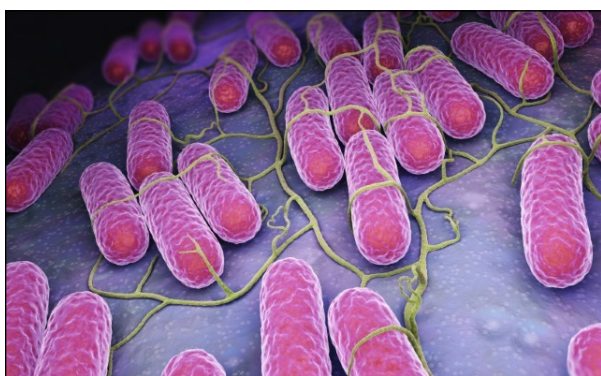
RSV Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	243	124	144	166	259	152	201	68	116	177	190	134
Black	60	44	60	65	97	67	58	22	43	42	50	37
Hispanic	404	290	359	321	438	243	326	120	247	191	170	149
Asian/PI	7	12	13	10	18	7	10	5	11	14	20	22
Native Am.	0	0	0	1	4	0	1	1	0	2	1	8
Other	0	0	0	2	2	20	35	14	15	23	30	92
Unknown	228	165	426	185	191	63	172	188	173	366	206	272
Total	942	635	1002	750	1009	552	803	418	605	815	667	714

RSV Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	730	499	678	452	126	372	544	278	281	460	398	394
1 - 4	205	127	301	276	852	164	210	100	243	257	173	188
5 - 9	3	6	14	15	20	11	20	11	19	23	14	18
10 - 14	1	2	5	1	4	2	7	4	4	6	3	4
15 - 19	2	0	1	3	1	2	1	1	3	3	5	1
20 - 24	0	0	1	0	1	1	1	0	0	2	1	1
25 - 29	0	0	0	0	0	0	0	0	2	1	1	2
30 - 34	0	0	0	0	0	0	0	0	1	0	0	4
35 - 39	0	0	0	0	0	0	0	1	2	1	0	3
40 - 44	0	0	1	0	0	0	2	1	1	1	1	3
45 - 54	0	0	0	1	0	0	1	0	3	9	4	6
55 - 64	0	0	0	1	2	0	1	3	9	9	10	24
>65	1	1	1	1	3	0	11	14	31	33	51	65
Unknown	0	0	0	0	0	0	5	5	6	10	6	0
Total	942	635	1002	750	1009	552	803	418	605	815	667	714

Salmonellosis

What is Salmonellosis?

Salmonellosis is an infectious disease caused by *Salmonella* bacteria. Most individuals infected with *Salmonella* develop diarrhea, fever, and abdominal cramps 6-72 hours after infection. The illness usually lasts 4-7 days and most persons recover without treatment. However, in some cases, the diarrhea may be so severe that the patient needs to be hospitalized. In these patients, the *Salmonella* infection may spread from the intestines to the blood stream, and to other body sites and can cause death unless the person is treated promptly with antibiotics.



There are many different kinds of *Salmonella* bacteria, with serotypes Typhimurium and Enteritidis being the most common in the United States. Salmonellosis is more common in the summer than winter.

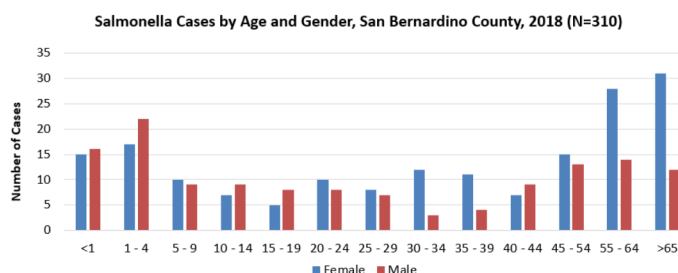
Children under the age of 5 are at the highest risk of infection.

Anyone can be at risk for Salmonellosis, but children under the age of five are at highest risk. Older adults and people with weakened immune systems are most likely to develop severe symptoms if exposed.

Food may become contaminated by food handlers who do not wash their hands with soap after using the bathroom. The *Salmonella* bacteria may also be found in some pet feces. Individuals may become infected if they do not wash their hands after holding pets or cleaning up feces. Reptiles (e.g., turtles, lizards, snakes, etc.) and young birds harbor the *Salmonella* bacteria and carry it in their feces.

2018 in Review

- The number of reported cases increased 32.5% from 2017 (234) to 2018 (310). The 2018 Incidence rate was 14.2 cases per 100,000.
- Females comprised 56.8% of county cases in 2018 and males comprised 43.2% of cases.
- Children 0-9 years old (28.7%) and older adults aged 45 years and older (36.5%) accounted for the majority of cases.
- Whites (33.2%) and Hispanics (27.3%) comprised the largest proportion of cases. Incidence rates per 100,000 people were highest among Whites (14.5), followed by Hispanics/Latinos (8.8), Blacks/African Americans (8.3), and Asians (5.4).
- The most commonly reported symptoms were diarrhea and bloody diarrhea (72.3%), abdominal cramps (40.6%), and fever (34.5%).
- Emergency room visits occurred for 35.5% of cases and hospitalizations occurred for 22.9% of cases. Those hospitalized stayed for an average of 3.7 days. Two deaths were reported.
- The number of cases increased from June to August which coincides with the increased number of barbecues, increased consumption of chicken and meat, and warmer temperatures.



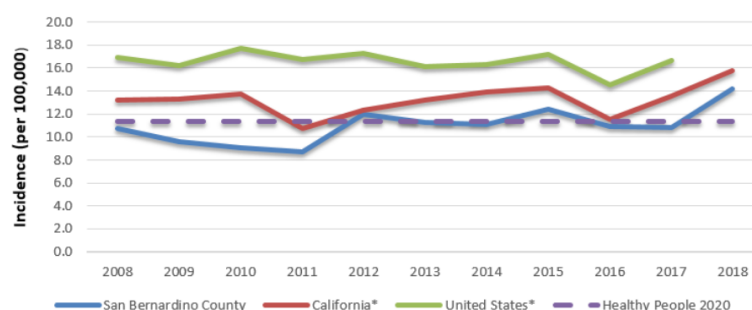
- The *Salmonella* bacteria has over 2,500 serotypes. Of the 80 county cases with identified serotypes, the most commonly reported serotypes in 2018 were *S. Newport*, *S. Enteritidis*, *S. Muenchen*, and *S. Montevideo*.
- California was part of two national *Salmonella* outbreaks in 2018 involving multiple serotypes (e.g., *S. Newport*, *S. Typhimurium*) from ground beef.

Salmonellosis

Prevention

- Proper food handling and hygiene practices can help prevent Salmonella infections.
- Cook all meat, poultry and eggs thoroughly.
- All meat should be cooked thoroughly (no longer pink) and any juices run clear.
- All poultry should be cooked to reach a minimum internal temperature of 165° F.
- Do not eat foods containing raw eggs.
- Wash hands thoroughly with soap before preparing food and after handling raw meats.
- To prevent cross-contamination in the kitchen, use separate cutting boards for meats and other foods.
- Adults should assure that children wash their hands after handling a reptile or bird, or after touching its environment.

Incidence Rates for Salmonellosis in San Bernardino County, California, and the United States, 2007-2018



*Data for U.S. not available at time of publication

Salmonellosis Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	66	86	49	63	72	102	82	76	99	84	71	89
Black	12	19	9	14	1	9	11	12	19	4	12	16
Hispanic	77	75	71	67	82	86	81	89	110	105	74	103
Asian/PI	8	5	2	10	4	10	11	14	8	11	12	8
Native Am.	0	0	0	2	1	0	0	1	2	1	2	2
Other	0	0	1	0	5	4	7	3	10	8	22	35
Unknown	16	34	69	42	27	37	43	38	14	21	41	57
Total	179	219	201	198	192	248	235	233	262	234	234	310

Salmonellosis Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	26	24	20	11	12	26	16	19	19	22	23	31
1 - 4	30	34	45	34	34	34	37	34	35	32	27	39
5 - 9	13	24	23	19	23	21	24	28	22	15	19	19
10 - 14	13	25	14	9	11	8	10	10	14	17	12	16
15 - 19	10	7	8	10	5	13	11	6	13	10	11	13
20 - 24	3	4	7	8	9	11	11	12	13	13	16	18
25 - 29	6	16	7	10	10	16	13	12	15	7	7	15
30 - 34	4	20	5	5	9	8	11	7	13	19	13	15
35 - 39	11	12	11	9	10	12	12	8	18	6	6	15
40 - 44	7	14	9	11	9	9	5	11	9	10	9	16
45 - 54	20	10	16	27	15	28	19	13	23	30	19	28
55 - 64	17	11	13	24	17	29	35	24	28	21	28	42
>65	19	18	23	21	28	30	31	47	40	32	43	43
Unknown	0	0	0	0	0	3	0	2	0	0	1	0
Total	179	219	201	198	192	248	235	233	262	234	234	310

Shiga Toxin-Producing E. coli (STEC), E.coli

What is Shiga Toxin-Producing E.coli?

Escherichia coli (*E. coli*) are bacteria found naturally in the environment, in food, and in the intestines of humans and animals. Most are harmless and beneficial to the body. However, strains like Shiga toxin-producing *E. coli* (STEC) are pathogenic and produce toxins that can cause stomach cramps, bloody diarrhea, and vomiting. In severe cases, the toxin can cause major organ damage like hemolytic uremic syndrome (HUS), a type of kidney failure, and other complications that can potentially be life threatening. In the U.S., the most commonly identified STEC is *E.coli* O157:H7. STEC infections are transmitted through the fecal-oral route.



They are usually spread by eating contaminated food or water with ruminant feces, or direct contact with animals and their environment. Antibiotics should not be used to treat STEC infections as there is no evidence showing its effectiveness. Antibiotic use may even increase the risk of HUS.

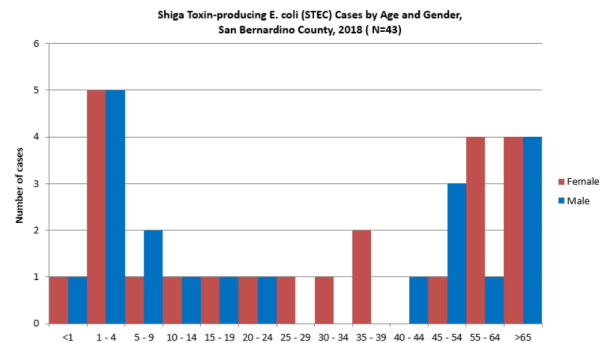
Those who are immunocompromised are at increased risk.

Anyone can become infected with STEC. Those at greater risk of contracting STEC include very young children, the elderly, and immunocompromised individuals.

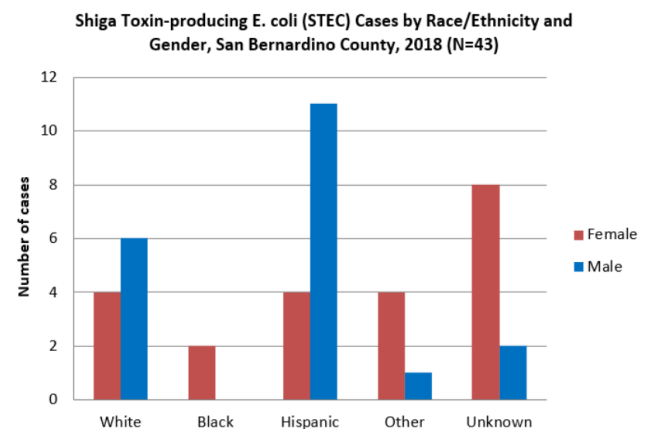
2018 in Review

- The number of reported cases in the increased 207.1% from 2017 (14) to 2018 (43).
- Two out of 43 Shiga toxin-producing *E. coli* (STEC) cases resulted in hemolytic uremic syndrome (HUS), a life-threatening complication of *E.coli* infection. The two *E.coli* cases resulting in HUS were 3 years of age and 73 years of age. HUS is the most common cause of acute renal failure in children and occurs in 15% of children with STEC O157 infections.

- Females comprised 53.4% of county cases in 2018 and males comprised 46.5% of cases.
- Young children 4 years of age and younger accounted for 27.9% of cases, and older adults 45 years of age and older accounted for 39.5% of cases.



- Hispanics/Latinos and Whites made up 58.1% of cases in 2018, but Whites (1.6) had higher incident rates than Hispanics/Latinos (1.3).

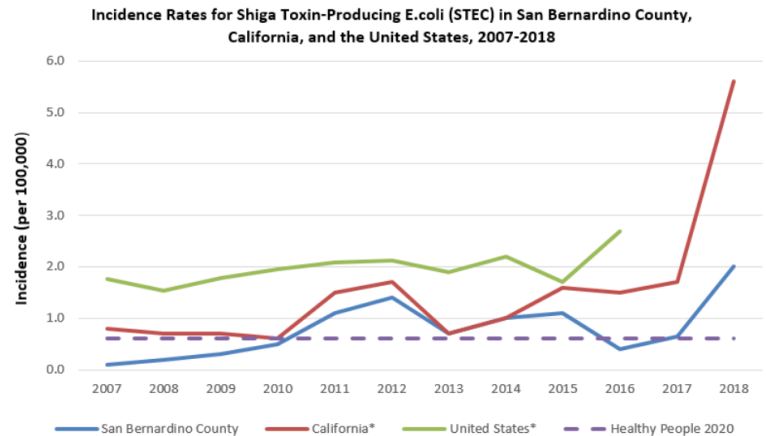


- Between 300 and 500 cases of STEC are reported in California each year.
- No multistate outbreaks of STEC O157:H7 infections occurred in 2018. In previous years, outbreaks were linked to consumption of leafy greens including romaine lettuce.
- Between 300 and 500 cases of STEC are reported in California each year.
- No multistate outbreaks of STEC O157:H7 infections occurred in 2018.

Shiga Toxin-Producing E. coli (STEC), E.coli

Prevention

- Wash hands thoroughly after using the bathroom, changing diapers and preparing or eating foods.
- Use alcohol-based hand sanitizer with at least 60% alcohol if soap is not available.
- When preparing food, cook meats thoroughly in order to kill harmful germs.
- Always use a thermometer to check the internal temperature of meats.
- Prevent cross-contamination in food preparation areas by thoroughly washing hands, counters, cutting boards, and utensils after they touch raw meats.
- Avoid consuming raw unpasteurized milk products and unpasteurized fruit juices like apple cider.
- If possible, avoid swallowing water when swimming in lakes, rivers, ponds, streams or swimming pools.



*Data for U.S. not available at time of publication

Shiga Toxin-producing E. coli (STEC) Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	0	1	2	3	10	12	5	8	5	1	5	10
Black	1	1	0	0	1	0	0	1	1	0	0	2
Hispanic	1	2	2	3	10	13	8	8	12	6	5	15
Asian/PI	0	0	0	0	1	0	0	1	0	0	1	1
Native Am.	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	1	0	2	0	0	5
Unknown	0	1	2	4	2	3	1	4	4	1	3	10
Total	2	5	6	10	24	28	15	22	24	8	14	43

Shiga Toxin-producing E. coli (STEC) Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	1	1	0	1	2	0	1	2
1 - 4	2	1	1	2	12	7	6	7	5	3	4	10
5 - 9	0	1	3	3	0	3	3	1	5	0	0	3
10 - 14	0	0	0	0	1	2	0	0	2	0	0	2
15 - 19	0	1	1	0	0	1	0	2	2	2	0	2
20 - 24	0	1	0	1	2	3	2	3	0	2	0	2
25 - 29	0	0	0	0	2	1	2	0	0	0	0	1
30 - 34	0	0	0	0	0	0	0	0	0	0	0	1
35 - 39	0	1	0	0	0	1	0	1	1	0	0	2
40 - 44	0	0	0	0	0	2	1	1	2	0	0	1
45 - 54	0	0	0	1	3	1	0	2	1	0	3	4
55 - 64	0	0	1	1	2	2	1	1	3	1	2	5
>65	0	0	0	2	1	4	0	3	1	0	4	8
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	5	6	10	24	28	15	22	24	8	14	43

Shigellosis

What is Shigellosis?

Shigellosis is an infectious disease caused by the *Shigella* bacteria group. The four different species of *Shigella* include *Shigella sonnei*, *Shigella flexneri*, *Shigella boydii*, and *Shigella dysenteriae*. The most common species in the U.S. is *S. sonnei*. *Shigella* is very contagious and only a small amount is needed to make someone sick. The germs are usually in the stool of someone who has diarrhea.



There are many ways for an individual to become infected, including touching their food without properly washing their hands after using the restroom, eating food prepared by someone with shigellosis, swallowing recreational water (e.g., lake water, river water, etc.) while swimming or drinking water that contains contaminated stool, and having exposure to contaminated stool during sexual contact. Symptoms of shigellosis, such as diarrhea, stomach pain, fever, and feeling the need to pass stool even when bowels are empty, usually last from 5 to 7 days. Some people do not experience any symptoms at all. It is common for those with shigellosis to get better in 5 to 7 days without antibiotic treatment. However, in more severe cases, certain antibiotics can be taken.

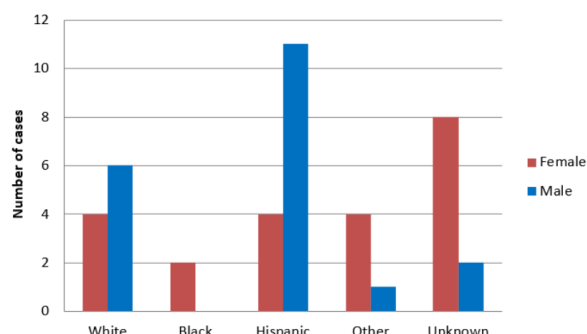
Young children and travelers are at higher risk.

Anyone can be at risk for shigellosis. However, those who are at higher risk include young children in school or childcare settings, travelers in developing countries who are exposed to contaminated food or water, men who have sex with men (MSM), and people with weakened immune systems due to illness or medical treatment. Certain social groups, such as traditionally observant Jewish communities, have had a higher risk in recent years. However, similar outbreaks are likely to occur among any race, ethnicity, or community social circle.

2018 in Review

- The number of reported cases in the County increased 43.1% from 2017 (72) to 2018 (103).
- Males comprised 56.3% of county cases in 2018 and females comprised 43.7% of cases.
- Older adults aged 45 years and older accounted for 34.0% of cases
- The largest proportion of cases occurred among Hispanics/Latinos (39.8%), followed by Whites (17.5%) and Blacks/African Americans (10.7%). However, the highest incidence rates were among Blacks/African Americans (5.7), followed by Hispanics/Latinos (3.5), and Asian/Pacific Islanders (3.4).

Shiga Toxin-producing *E. coli* (STEC) Cases by Race/Ethnicity and Gender, San Bernardino County, 2018 (N=43)



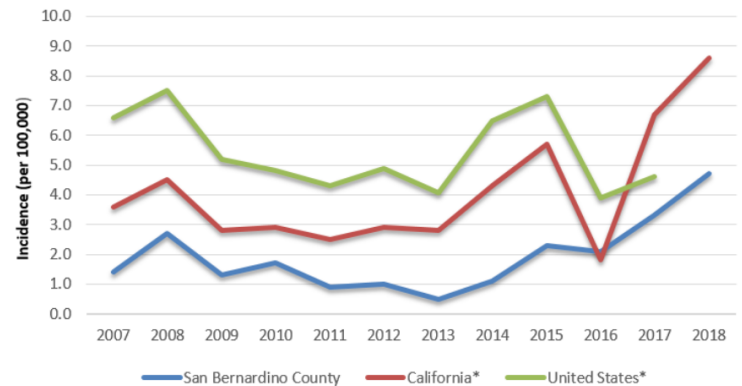
- *S. sonnei* (Group D) accounted for 31.1% of County cases where the group was identified. *S. flexneri* (Group B) accounted for 12.6% of cases. There were no cases of *S. dysenteriae* (Group A) and *S. boydii* (Group C) identified.
- Four percent of county cases reported being MSM. One of the cases was co-infected with HIV.
- MSM and HIV positive individuals have higher rates of shigella isolates with decreased susceptibility to azithromycin.
- Outbreaks in childcare centers are common nationally and are difficult to control given the small number of bacteria needed to cause infection.
- CDC estimates a total of approximately 500,000 Shigellosis cases annually in the U.S.

Shigellosis

Prevention

- It is important to wash hands with soap and water before preparing or eating food and after changing a baby's diaper or helping clean someone who has defecated.
- Avoid swallowing water from ponds, lakes, or untreated swimming pools.
- If traveling to a developing country, be cautious of eating and drinking habits, and wash hands frequently.
- Avoid sexual intercourse (i.e., vaginal, anal, or oral) with a partner who currently has diarrhea or has recently recovered from diarrhea.

Incidence Rates for Shigellosis in San Bernardino County, California, and the United States, 2007-2018



*Data for U.S. not available at time of publication

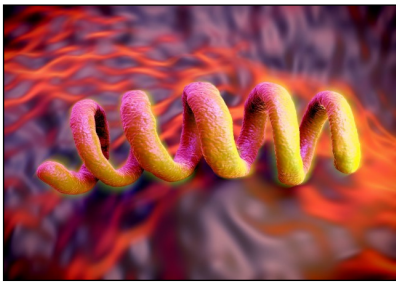
Shigellosis Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	5	15	7	8	3	3	2	4	13	9	19	18
Black	0	2	0	2	2	1	1	1	4	6	10	11
Hispanic	21	32	7	20	11	13	5	15	22	23	30	41
Asian/PI	1	0	2	2	0	1	0	1	1	1	2	5
Native Am.	0	0	0	0	0	0	0	0	0	0	1	0
Other	0	0	0	0	1	0	0	0	2	3	8	22
Unknown	2	6	12	4	3	2	3	3	6	3	2	6
Total	29	55	28	36	20	20	11	24	48	45	72	103

Shigellosis Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	2	0	2	0	0	0	0	0	0	1	0
1 - 4	10	17	9	14	7	6	3	0	9	5	7	6
5 - 9	3	6	3	9	1	3	1	7	8	5	10	9
10 - 14	5	4	3	0	0	2	1	0	1	4	5	2
15 - 19	0	0	1	0	0	1	1	1	1	2	3	8
20 - 24	0	2	3	0	1	0	1	4	3	5	3	6
25 - 29	2	6	1	3	1	1	2	2	2	3	7	15
30 - 34	1	2	1	3	3	1	0	1	3	3	7	11
35 - 39	2	3	0	1	0	0	0	4	2	4	5	5
40 - 44	0	3	0	1	3	2	0	0	2	2	4	6
45 - 54	2	5	4	1	2	1	0	3	7	6	8	17
55 - 64	3	2	2	0	1	2	2	0	2	2	8	11
>65	1	3	1	2	1	0	0	2	8	4	4	7
Unknown	0	0	0	0	0	1	0	0	0	0	0	0
Total	29	55	28	36	20	20	11	24	48	45	72	103

Syphilis, All Stages

What is Syphilis?

Syphilis is a sexually transmitted infection (STI) caused by the bacterium *Treponema pallidum*. It is divided into stages with different signs, symptoms, and treatment associated with each stage. An individual with primary syphilis will usually have a painless chancre or sore at the site of infection, which lasts an average of three weeks. Symptoms for secondary syphilis include general body rash, palmar/plantar rash, condylomata lata, and mucous patches in the mouth, throat, or cervix. These symptoms last for four weeks.



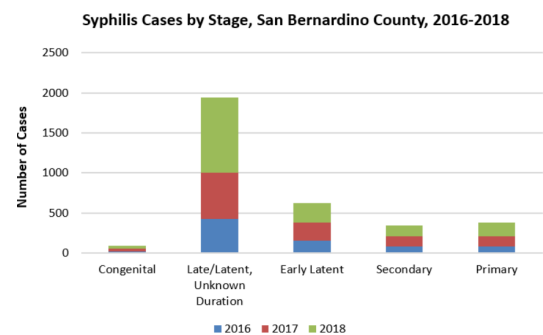
To treat primary and secondary syphilis, only one dose of Bicillin L-A is needed. No symptoms are shown for early latent and late latent syphilis. Specific criteria must be met in order to categorize an individual as an early latent case. If met, these criteria show that the individual has been infected for less than a year. Like primary and secondary syphilis, early latent syphilis only requires one treatment dose of Bicillin L-A. Late latent syphilis requires three treatment doses at weekly intervals. If left untreated, late latent syphilis can lead to severe medical problems that affect the heart, brain, and other organs in the body. The mode of transmission for syphilis includes sexual intercourse (vaginal, anal, or oral) with an individual who has primary or secondary syphilis. Syphilis can also be passed from mother to baby if the infected mother is left untreated.

Women of childbearing age can be at risk of giving birth to a baby with congenital syphilis.

A sexually active individual who engages in unprotected sexual intercourse (vaginal, anal, or oral) and has multiple partners can be at risk for syphilis. Men who have sex with men (MSM), HIV positive individuals, or those with an infected partner(s) are at highest risk for syphilis. Women of childbearing age who are sexually active should be cautious of becoming infected before or during pregnancy.

2018 in Review

- In 2017, there were 1,109 cases of all stages of syphilis. In 2018, the number of cases increased to 1,528 (including congenital syphilis cases). This was an increase of 37.8% from 2017 to 2018.
- Young adults aged 15-29 accounted for 47.3% of cases.
- Women of child-bearing age (15-44 years old) accounted for 87.0% of all female cases and 27.2% of all cases reported.
- Males comprised 66.5% of San Bernardino County cases in 2017. Females comprised 30.8% of San Bernardino County cases in 2018. Transgendered persons accounted for 0.5% of all cases.
- Hispanics/Latinos (46.8%) made up almost half of all of the reported syphilis cases in 2018, followed by Whites (19.6%), Blacks/African Americans (13.8%), and Asians/Pacific Islanders (1.4%).
- Of all the cases in 2018, 315 were staged as primary (176) or secondary (139), 247 were early latent, and 934 were late latent or latent (with clinical manifestations or unknown duration).



- The number of primary and secondary cases increased by 29.6% from 2017 to 2018. The number of early latent cases increased by 7.4% from 2017 to 2018. The number of late latent or latent (with clinical manifestations or unknown duration) cases increased by 60.5% from 2017 to 2018.

Pregnant women infected with syphilis must be treated appropriately to protect their baby from congenital syphilis.

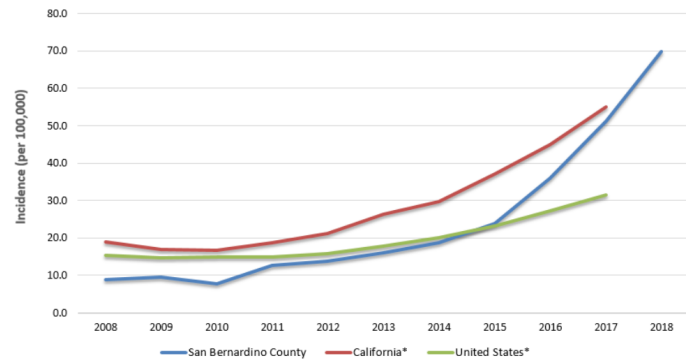
- Of the 471 female cases in 2018, 88 were pregnant resulting in 32 cases of congenital syphilis in 2018.

Syphilis, All Stages

Prevention

- Use condoms correctly and consistently during sexual intercourse (i.e., vaginal, anal, or oral).
- Pregnant women should be screened at their first prenatal visit, during their third trimester at 28-32 weeks, and at delivery.
- Congenital syphilis can be prevented if infected women are treated appropriately at least 30 days before giving birth.
- High risk individuals (e.g., MSM, HIV-infected, those with multiple sex partners, etc.) should be screened annually or as often as every 3-6 months.
- HIV testing is recommended for those who test positive for syphilis.
- Bicillin L-A is the most effective treatment for syphilis. However, alternative medications such as doxycycline can also be used to treat syphilis in men and non-pregnant women.

Incidence Rates for Syphilis (All Stages) in San Bernardino County, California, and the United States, 2008-2018



*Data for CA and U.S. not available at time of publication

Syphilis (All Stages) Cases by Race/Ethnicity											
San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	16	31	19	33	37	48	76	85	119	195	303
Black	21	26	23	29	40	60	61	85	143	152	216
Hispanic	85	87	75	126	117	141	196	277	356	571	714
Asian/PI	6	5	1	6	8	7	7	13	26	19	21
Native Am.	0	1	0	0	3	1	0	3	2	0	8
Other	0	0	0	5	2	3	11	8	25	34	62
Unknown	54	51	41	61	75	75	42	35	88	138	218
Total	182	201	159	260	282	335	393	506	759	1109	1542

Syphilis (All Stages) Cases by Age											
San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	3	1	0	0	1	4	4	4	20	34	31
1 - 4	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0	0	0	0	1	0
15 - 19	9	16	9	19	20	21	22	34	29	65	81
20 - 24	22	37	43	72	71	84	74	124	173	201	306
25 - 29	28	31	25	52	50	82	83	110	173	230	342
30 - 34	13	19	19	31	26	40	54	82	114	203	257
35 - 39	24	25	13	20	24	26	47	43	84	130	186
40 - 44	33	24	17	17	23	20	27	38	43	84	109
45 - 54	29	38	23	35	45	41	61	45	84	109	140
55 - 64	7	9	5	7	16	14	19	22	32	42	64
>65	14	1	5	7	6	3	2	4	7	10	26
Unknown	0	0	0	0	0	0	0	0	0	0	0
Total	182	201	159	260	282	335	393	506	759	1109	1542

Syphilis, Primary and Secondary

Primary and Secondary Syphilis

Syphilis is a sexually transmitted infection (STI) caused by the bacterium *Treponema pallidum*. It is divided into stages with different signs, symptoms, and treatment associated with each stage.



An individual with **primary** syphilis will usually have a painless chancre or sore at the site of infection, which lasts an average of three weeks. Symptoms for **secondary** syphilis include general body rash, palmar/plantar rash, condylomata lata, and mucous patches in the mouth, throat, or cervix. These symptoms last an average of four weeks. **Unlike the latent stages of syphilis, individuals with primary or secondary syphilis are the most contagious.** To treat primary and secondary syphilis, only one dose of Bicillin L-A is needed.

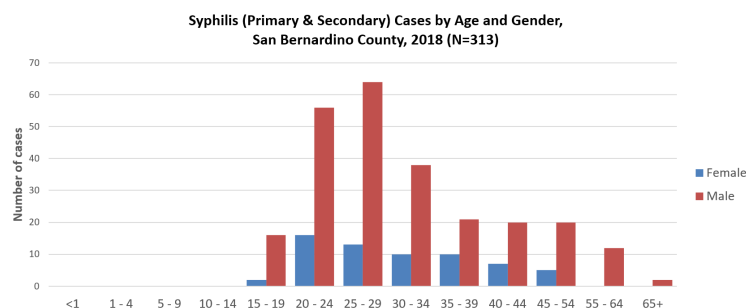
2018 in Review

- The number of primary and secondary syphilis cases increased by 28.8% from 2017 to 2018.
- Males comprised 79.6% of primary and secondary syphilis cases in 2018. Young adults aged 15-29 accounted for 53.7% of primary and secondary syphilis cases. Males aged 15-29 accounted for 43.5% of primary and secondary syphilis cases.
- Hispanics/Latinos (45.0%) made up almost half of primary and secondary syphilis cases, followed by Whites (23.3%), and Blacks/African Americans (12.8%). However, Blacks/African Americans had a rate of 1.8 times greater than that of Whites and Hispanics.
- Men who have sex with men (MSM) accounted for 34.8% of primary and secondary syphilis cases in the County.
- Among MSM, 15.6% were HIV-positive before being diagnosed with primary or secondary syphilis in 2018.

- Of all female cases, a total of 3% were pregnant at the time of diagnosis.

Prevention

- Use protection (i.e., latex condoms) correctly and consistently during sexual intercourse.
- Limit alcohol and drug intake before engaging in sexual intercourse to decrease risk of infection.
- Pregnant women should be screened at their first prenatal visit, during their third trimester at 28-32 weeks, and at delivery.
- Congenital syphilis can be prevented if infected women are treated appropriately at least 30 days before giving birth.
- High risk individuals (MSM, HIV-infected, those with multiple sex partners) should be screened annually or as often as every 3-6 months.
- HIV testing is recommended for those who test positive for syphilis. Bicillin L-A is the most effective treatment for syphilis. However, alternative medications such as doxycycline can also be used to treat syphilis in men and non-pregnant women.

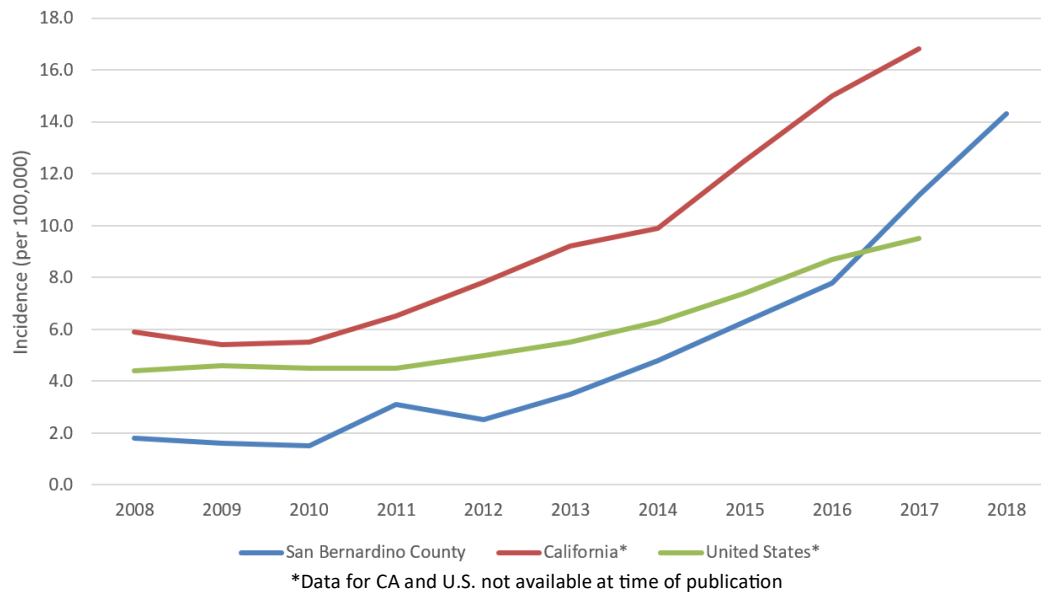


National Campaign to Combat Syphilis

In 2015, the Centers for Disease Control and Prevention (CDC) began a campaign called “Syphilis Strikes Back”. This campaign was created in response to the highest number and rate of reported primary and secondary syphilis cases in more than 20 years. According to the CDC, syphilis rates increased in every region, majority of age groups and across almost every race/ethnicity during 2014-2015 and continues to rise.

Syphilis, Primary and Secondary

Incidence Rates for Syphilis (Primary & Secondary) in San Bernardino County, California, and the United States, 2008-2018



Syphilis (Primary & Secondary) Cases by Race/Ethnicity

San Bernardino County, 2008-2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	10	8	5	11	10	13	31	28	35	55	73
Black	3	3	7	6	9	22	17	20	34	25	39
Hispanic	18	17	15	33	28	29	46	75	80	131	141
Asian/PI	0	3	0	1	0	3	2	6	4	3	5
Native Am.	0	0	0	0	2	0	0	2	3	0	2
Other	0	0	0	3	0	0	2	0	11	5	18
Unknown	7	3	4	10	2	6	2	2	0	24	35
Total	38	34	31	64	51	73	100	133	167	243	313

Syphilis (Primary & Secondary) Cases by Age

San Bernardino County, 2008-2018

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0	0	0	0	0	0
15 - 19	4	4	1	7	6	9	9	12	6	18	18
20 - 24	6	9	11	25	14	19	24	36	45	57	73
25 - 29	11	8	6	14	9	20	17	31	42	46	77
30 - 34	1	3	2	4	6	10	9	21	24	39	48
35 - 39	5	3	5	4	1	4	11	8	18	26	31
40 - 44	3	1	1	3	6	2	6	8	10	24	27
45 - 54	5	6	5	5	7	4	17	10	16	24	25
55 - 64	2	0	0	1	2	4	7	5	5	8	12
>65	1	0	0	1	0	1	0	2	1	1	2
Unknown	0	0	0	0	0	0	0	0	0	0	0
Total	38	34	31	64	51	73	100	133	167	243	313

Syphilis, Congenital

Congenital Syphilis

Congenital syphilis is a preventable disease that occurs when an untreated mother with syphilis passes the infection to her baby while pregnant. Congenital syphilis rates nationally and statewide have increased dramatically. It can result in a miscarriage, stillbirth, or premature birth. An infant with congenital syphilis can experience bone deformity, severe anemia, jaundice, brain and nerve problems, meningitis, or an enlarged liver or spleen. However, these symptoms may not show at the time of birth and may even develop years after birth.



Therefore, infants born to mothers who did not get proper treatment or did not get treatment at all for syphilis during pregnancy should be tested and treated. The treatment for congenital syphilis in infants depends on the results of their medical evaluation. They may need to receive antibiotics for up to ten days or only one injection of antibiotics may suffice.

Women who do not receive prenatal care, are homeless, and use recreational drugs are at highest risk of giving birth to a baby with congenital syphilis.

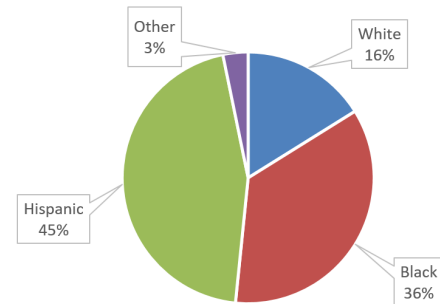
Women of childbearing age who are sexually active, engage in unprotected sexual intercourse (i.e., vaginal, anal, or oral) and have multiple sex partners are at risk for syphilis. These women are also at risk for giving birth to a baby with congenital syphilis.

Those with highest risk include women who are homeless and/or recreational drug users. Women who do not receive prenatal care during their pregnancy may not know they are infected until after they give birth, making it very likely that the infant has already been infected with congenital syphilis.

2018 Review

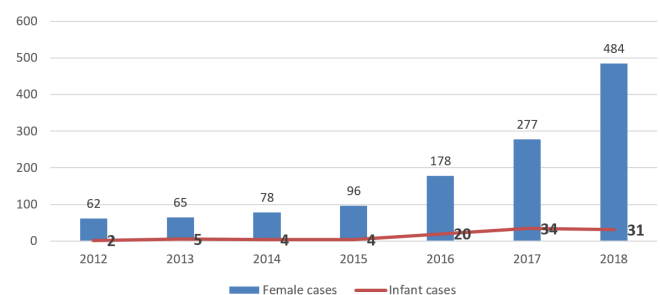
- The number of congenital syphilis cases in the County decreased by 6.1% from 2017 to 2018.
- The ages of pregnant women in the County who gave birth to infants with congenital syphilis range from 18-39 years old, with women aged 18-29 accounting for 61.3%.

Syphilis (Congenital) Cases by Race/Ethnicity, San Bernardino County, 2018 (N=31)



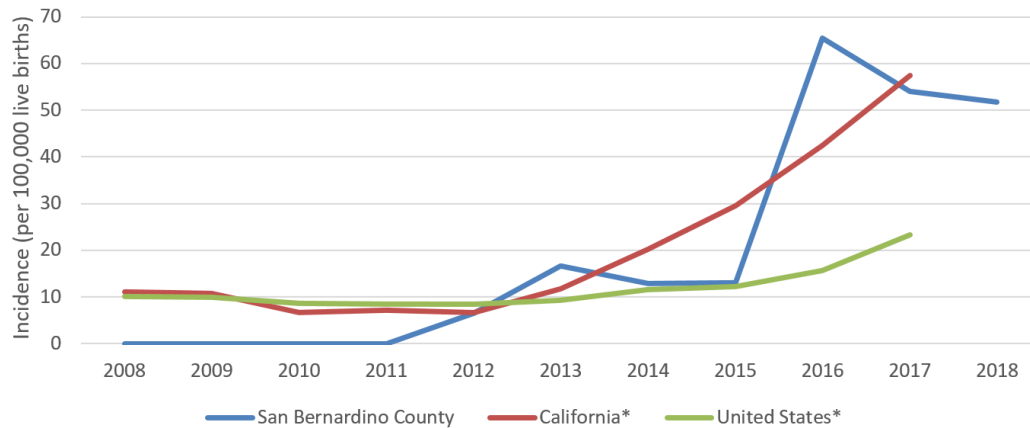
- Hispanic/Latina women made up 43.8% of all pregnant women in the County that gave birth to infants with congenital syphilis, followed by Black/African American women (34.5%), and White women (15.6%).
- 81.3% of infants did not show any classic signs and symptoms of congenital syphilis at birth.
- 34.7% of pregnant women in the County who gave birth to infants with congenital syphilis did not receive prenatal care.

San Bernardino County
Numbers of Cases of Women and Infants with Syphilis
2012-2018



Syphilis, Congenital

Incidence Rates for Congenital Syphilis in San Bernardino County, California, and the United States, 2008-2018



*Data for CA and U.S. not available at time of publication

Incidence Rate for Congenital Syphilis in San Bernardino, California, and the United States, 2008-2018											
Areas	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
San Bernardino County	0	0	0	0	6.5	16.6	12.8	13.1	65.5	54.0	51.7
California*	11	10.8	6.7	7.2	6.6	11.7	20.3	29.5	42.4	57.5	
United States*	10.1	10	8.7	8.5	8.4	9.2	11.6	12.3	15.7	23.3	

Congenital Syphilis Cases by Race/Ethnicity											
San Bernardino County, 2008-2018											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	0	0	0	0	0	1	3	1	5	3	5
Black	0	0	0	0	0	2	0	1	6	7	11
Hispanic	0	0	0	0	0	0	1	1	4	20	14
Asian/PI	0	0	0	0	0	0	0	1	3	0	0
Native Am.	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	1	1	1
Unknown	0	0	0	0	2	2	0	0	1	3	0
Total	0	0	0	0	2	5	4	4	20	34	31

Prevention

- Pregnant women should get tested at their first prenatal visit, during their third trimester at 28-32 weeks, and at the time of their delivery.
- If a pregnant woman tests positive, appropriate treatment medication(s) and dosage(s) should be received at least 30 days prior to giving birth.
- For pregnant women, Bicillin-LA is the only treatment recommended. If allergic to penicillin, pregnant women should be desensitized.
- If the partner of a pregnant woman tests positive, the partner should receive the appropriate treatment and delay sexual intercourse until after they have been treated.

Tuberculosis (TB)

What is Tuberculosis?

Tuberculosis (TB) is caused by the bacterium *Mycobacterium tuberculosis*. The mode of transmission for TB is the inhalation of respiratory droplets produced when an infected person coughs, sneezes, or speaks. TB typically affects the lungs but it can move to other parts of the body including the kidney, spine, and brain.



Symptoms of pulmonary TB include a cough that lasts for three weeks or longer, chest pain, bloody sputum, fever, fatigue, weight loss, and night sweats. Not everyone infected with the TB bacteria becomes ill. Those who do not develop symptoms have latent TB infection (LTBI). However, those with LTBI can develop TB disease if they are not treated.

Latent Tuberculosis Infection (LTBI)

Individuals with LTBI are not infectious and cannot spread TB infection to others. These individuals test positive for skin and blood tests, have a normal chest x-ray, test negative for sputum tests, have inactive TB bacteria in their body, and are asymptomatic. It is essential for individuals with LTBI to receive LTBI treatment in order to control TB disease from progressing. According to the CDC, 1 in 10 people with LTBI will develop TB disease in the future if they are not properly treated. The risk is higher for people with diseases that compromise the immune system such as HIV or diabetes.

Foreign-born individuals, children, older adults, those with comorbidities, and those who are exposed to TB are at highest risk.

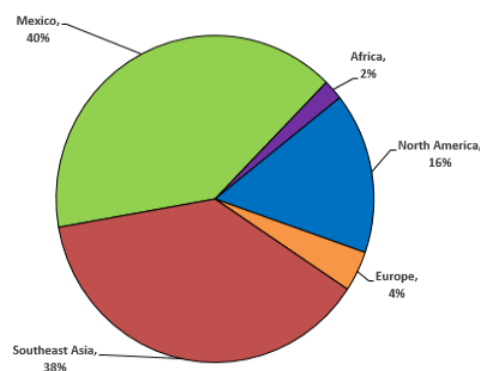
TB is spread through the air from one person to another. Therefore, it is likely that anyone exposed to a person with TB disease is at risk of being infected. Those at highest risk include foreign-born individuals from countries in Southeast Asia and Latin America (including Mexico), children five years of age and younger, older adults, and those with

medical conditions such as diabetes mellitus, end stage renal disease, and HIV that weaken the immune system.

2018 in Review

- The number of reported cases in San Bernardino County increased by 3.7% from 2017 (54) to 2018 (56).
- The 2018 incidence rate in the County (2.6 per 100,000) is lower than that of California (5.3 per 100,000) and the U.S. (2.8 per 100,000).
- Individuals aged 44 years and younger accounted for 33.0% of the cases. Individuals aged 45 years and older accounted for 67.0% of the cases.
- Males comprised 57.0% of cases in 2018 and females comprised 43.0% of cases.
- More than half of the cases were Hispanic (54.0%). Asian/Pacific Islanders made up 32.0% of the cases, Caucasians made up 9.0% of the cases, and of 5.0% of the cases were African-American.
- 77.0% of cases occurred among foreign-born residents.
- Most cases are from Mexico (40.0%), followed by Southeast Asia (38.0%), North America (16.0%), Europe (4.0%), and Africa (2.0%).

Tuberculosis Cases by Country/Region of Origin, San Bernardino County, 2018, (N=56)

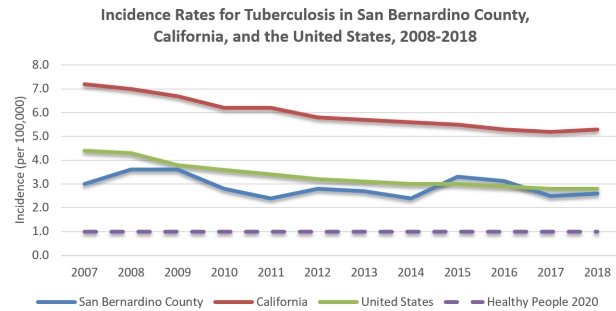


- Most cases were classified as pulmonary (82.1%).
- Comorbidities among county cases included diabetes (32.2%) and end stage renal disease (12.5%).
- Persons that were immunosuppressed for reasons other than HIV/AIDs comprised 3.6% of the cases.
- Three cases died as a result of TB in 2018.

Tuberculosis (TB)

Prevention

- Early diagnosis and treatment of active TB cases, particularly the most infectious smear-positive pulmonary cases, is the best method of preventing the spread of TB.
- Active case finding through contact investigation of pulmonary TB cases helps to reduce transmission.
- Individuals with LTBI are treated with isoniazid and rifampentine to prevent progression to active disease.
- Screen HIV-infected individuals for TB during their first clinical evaluation and vice versa.
- Provide directly observed therapy (DOT) for TB cases.
- Educate TB cases, their contacts, and the public about the means of transmission, control, and importance of adherence to treatment.



Tuberculosis Cases by Race/Ethnicity												
San Bernardino County, 2008-2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	13	8	8	6	4	2	6	3	2	9	2	5
Black	5	5	4	6	4	5	4	1	3	6	7	3
Hispanic	25	28	26	29	25	29	27	29	36	29	28	30
Asian/PI	11	23	29	21	19	21	20	18	28	21	16	18
Native Am.	0	1	1	0	0	1	0	0	0	1	0	0
Other	0	1	2	0	0	0	0	0	0	1	0	0
Unknown	6	9	9	0	0	0	0	0	0	0	1	0
Total	60	75	79	62	52	58	57	51	69	67	54	56

Tuberculosis Cases by Age												
San Bernardino County, 2008-2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	2	0	0	0	0	1	0	2	0	1
1 - 4	1	1	3	0	2	1	3	2	3	1	2	1
5 - 9	1	0	2	0	0	1	2	1	2	0	1	0
10 - 14	1	0	1	1	0	0	2	0	0	0	0	0
15 - 19	1	2	2	4	1	2	3	1	0	2	3	2
20 - 24	1	6	6	2	1	2	2	1	8	5	4	3
25 - 29	4	3	8	4	7	7	2	7	1	1	7	5
30 - 34	11	4	10	2	1	1	6	5	6	5	3	2
35 - 39	3	12	3	3	2	3	1	3	3	4	0	0
40 - 44	7	3	8	6	8	1	3	5	2	3	0	4
45 - 54	9	13	10	17	11	7	10	6	14	13	8	7
55 - 64	8	12	8	4	9	16	8	3	11	11	11	10
>65	13	19	16	19	10	17	15	16	19	20	15	21
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	60	75	79	62	52	58	57	51	69	67	54	56

West Nile Virus (WNV)

What is West Nile Virus?

West Nile Virus (WNV) is commonly spread to individuals by the bite of an infected mosquito. Mosquitoes become infected when they feed on infected birds. Most cases of WNV in the U.S. occur during mosquito season (from the fall through summer). WNV rates are subject to mosquito populations that fluctuate seasonally. Most individuals who



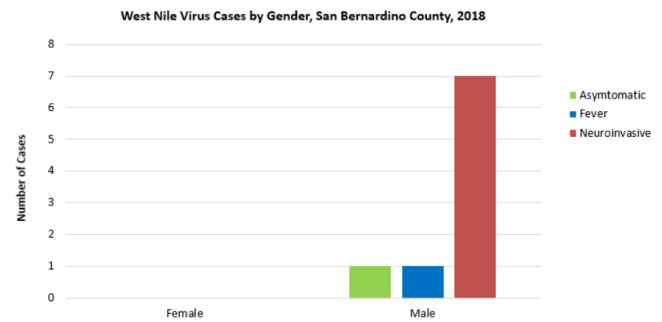
are infected with WNV do not develop symptoms. Some individuals may develop a high fever or experience headaches, tremors, muscle weakness, vision loss, and paralysis. A few individuals may develop severe illnesses that affect the central nervous system such as encephalitis or meningitis. There are no vaccines, medications, or specific antiviral treatments for WNV. Medications can only be used to treat symptoms.

Older populations and immunocompromised individuals have the greatest risk of infection.

WNV cases have been reported all over the United States. Those who are at highest risk for developing serious illnesses as a result of WNV are the older population and individuals with certain medical conditions such as cancer, diabetes, hypertension, and kidney disease.

2018 in Review

- The number of reported cases decreased dramatically (86.8%) in the County from 2017 (68) to 2018 (9).
- Males comprised 100% of the cases in 2018.



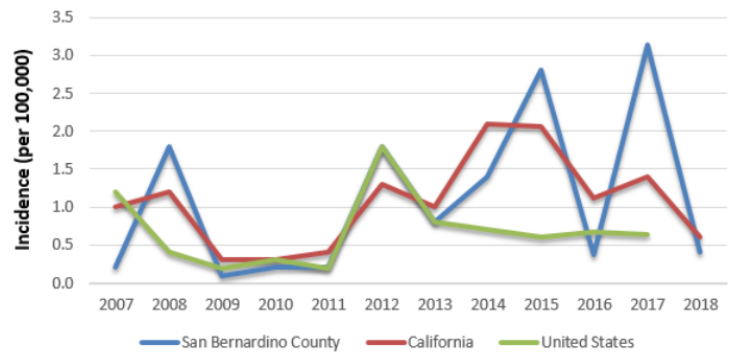
- West Nile virus cases were classified as neuroinvasive (44.4%), non-neuroinvasive (25%), and asymptomatic (25%).
- Hispanics/Latinos (44.4%) and Whites (33.3%) comprised the greatest proportion of cases.
- Up to 80% of individuals with infection will show no symptoms; 20% will have milder fever, and less than 1% (1 in 150) will have serious neurologic involvement. About 10% of the cases with neurologic WNV die.
- Individuals 45 years of age and older comprised 66.7% of cases.
- There were no deaths in 2018 among county WNV cases.
- Only one case reported mosquito bites during the four weeks prior to illness onset.
- In addition to mosquito bites, WNV can also be transmitted by blood transfusions, organ transplants, laboratory accidents and from mother to child during pregnancy, delivery and breast feeding.
- Characteristically, cases occurred mainly in the late summer and early fall, from July through October.
- Local vector control agencies collect and test mosquitoes, dead birds, and sentinel chicken flocks for evidence of WNV activity.
- In 2018, the County's Mosquito and Vector Control Program captured 13,012 mosquitoes where 1 mosquito tested positive for WNV.
- Additionally, 9 dead birds were tested for WNV, and none were positive. No chickens tested positive for WNV, and we did not use sentinel chickens in 2018 for surveillance.

West Nile Virus (WNV)

Prevention

- Preventing mosquito bites is the most effective way to protect against WNV infection.
- Use an EPA-registered insect repellent with active ingredients such as DEET, Picaridin, and IR3535 when outdoors.
- Wear long sleeved-shirts and long pants when outdoors.
- Control mosquitoes from laying eggs in or near the house by emptying containers that have standing water.
- To prevent mosquito bites when traveling to areas where mosquitoes are common, make sure to sleep under a bed net.

Incidence Rates for West Nile virus in San Bernardino County, California, and the United States, 2007-2018



*Data for U.S. not available at time of publication

West Nile Virus Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	4	12	0	2	1	16	6	7	27	3	23	3
Black	0	0	0	0	0	0	0	1	1	0	2	0
Hispanic	0	18	1	3	2	18	8	18	26	3	31	4
Asian/PI	0	0	0	0	0	1	1	0	0	0	1	0
Native Am.	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	2	1
Unknown	1	6	1	0	1	2	2	4	6	2	9	1
Total	5	36	2	5	4	37	17	30	60	8	68	9

West Nile Virus Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	1	0	0	0	0	0	0	0	0	2	0
10 - 14	0	0	0	0	0	0	0	0	0	0	0	0
15 - 19	0	2	0	0	0	5	1	5	0	0	1	0
20 - 24	0	1	0	0	0	3	1	0	0	0	0	3
25 - 29	0	1	0	0	0	1	0	4	2	0	2	0
30 - 34	0	4	0	0	0	3	0	0	3	0	4	0
35 - 39	0	2	0	0	0	0	1	1	1	0	1	0
40 - 44	0	5	0	0	0	1	0	0	2	0	4	0
45 - 54	1	8	1	0	0	11	3	8	12	1	9	0
55 - 64	1	6	0	3	1	5	2	8	17	1	15	3
>65	3	6	1	2	3	8	9	4	23	6	30	3
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	5	36	2	5	4	37	17	30	60	8	68	9

Zika Virus

What is Zika Virus?

Zika is spread by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. When an infected mosquito bites a human, it injects the virus into the individual's blood stream. The virus can also be transmitted through sexual intercourse, blood transfusions, and from a pregnant mother to her fetus. The incubation period for Zika is 3-14 days. Most Zika cases are asymptomatic or will only produce mild symptoms.



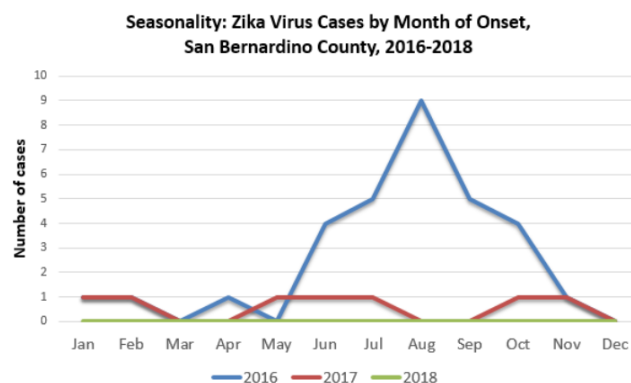
The most common symptoms include fever, rash, headaches, joint pain, muscle pain, and conjunctivitis. Symptoms can last several days to a week. If a pregnant mother passes the virus to her fetus, it can lead to microcephaly, a birth defect of the brain. It can also lead to miscarriages, stillbirth, and other serious birth defects.

Zika infection in pregnant women can lead to severe birth defects.

Women who are pregnant or are planning to become pregnant have a high risk of giving birth to babies with serious birth defects if they travel to an area where Zika is active. Areas where Zika is active include countries in Africa (e.g., Cameroon, Democratic Republic of the Congo, Ghana, Kenya, Nigeria, etc.), countries in Asia (e.g., Cambodia, India, Indonesia, Philippines, Thailand, etc.), Caribbean countries (e.g., Cuba, Haiti, Jamaica, Trinidad and Tobago, Turks and Caicos Islands, etc.), countries in Central and South America, The Pacific Islands, and Mexico. There have been seven cases of local mosquito-borne Zika virus transmission reported in the continental U.S. (e.g., Texas and Florida).

2018 in Review

- The first cases in California and the U.S. were reported in 2015 and all were associated with travel to areas where Zika is active. In 2016, the County received its' first cases of Zika. No Zika cases were reported in 2018, and in 2017 there were a total of seven Zika cases that were identified.
- Prior year cases occurred mainly in the summer, late fall, and winter months (June through February).



- While there are no reports of local transmission in 2018, regional vector control agencies collected and tested mosquitoes for any evidence of local Zika transmission.

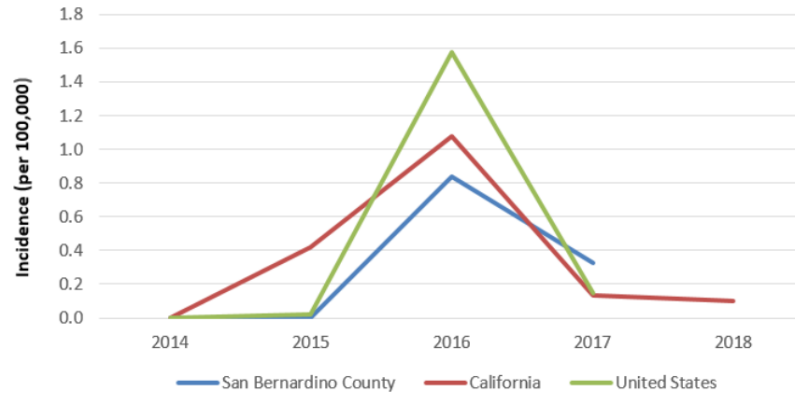
Prevention

- Women who are planning to become pregnant should not travel to areas with a CDC Zika travel notice.
- Any persons who travel to or reside in areas with local Zika transmission and who plan to conceive should use condoms or abstain from sex for at least 6 months to avoid sexual transmission. Pregnant women with partners who travelled to these areas should use condoms for the duration of the pregnancy or abstain from sex for at least 6 months to avoid sexual transmission.
- If travel cannot be avoided to Zika areas, apply insect repellent containing DEET. When using DEET, be sure to read and follow the label's instructions.
- Ensure the elimination of mosquito breeding sites that contain standing water to prevent any local transmission.

Zika Virus



Incidence Rates for Zika Virus in San Bernardino County, California, and the United States, 2007-2018



*Data for U.S. not available at time of publication

Zika Virus Cases by Race/Ethnicity												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
White	0	0	0	0	0	0	0	0	0	2	0	0
Black	0	0	0	0	0	0	0	0	0	1	0	0
Hispanic	0	0	0	0	0	0	0	0	0	11	4	0
Asian/PI	0	0	0	0	0	0	0	0	0	0	0	0
Native Am.	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	1	1	0
Unknown	0	0	0	0	0	0	0	0	0	3	2	0
Total	0	0	0	0	0	0	0	0	0	18	7	0

Zika Virus Cases by Age												
San Bernardino County, 2007 - 2018												
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 4	0	0	0	0	0	0	0	0	0	0	0	0
5 - 9	0	0	0	0	0	0	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0	0	0	0	1	0	0
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0	2	0
25 - 29	0	0	0	0	0	0	0	0	0	1	1	0
30 - 34	0	0	0	0	0	0	0	0	0	2	0	0
35 - 39	0	0	0	0	0	0	0	0	0	3	0	0
40 - 44	0	0	0	0	0	0	0	0	0	5	2	0
45 - 54	0	0	0	0	0	0	0	0	0	2	1	0
55 - 64	0	0	0	0	0	0	0	0	0	2	1	0
>65	0	0	0	0	0	0	0	0	0	2	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	18	7	0

Global Diseases with Local Impact

Chikungunya

San Bernardino County reported zero cases of chikungunya virus (CHIKV) infection in 2018. Local transmission of CHIKV occurs primarily in Africa, South and Southeast Asia, and South and Central America, through the bite of an infected *Aedes albopictus* (Asian Tiger mosquito) and *Aedes aegypti* (yellow fever mosquito). In December 2013, chikungunya illness was identified in the Americas and spread into an outbreak of over a million cases. CHIKV-transmitting mosquitoes were first reported in California in 2011. In 2017, 26 travel-associated cases were reported in California. Florida, American Samoa, Puerto Rico, and the US Virgin Islands had locally transmitted cases of chikungunya in 2014. The most common symptoms are fever and severe joint pain, often in the hands and feet. Illness may also include headache, muscle pain, joint swelling, fatigue, vomiting, diarrhea, abdominal pain or rash.

Dengue

In 2018, San Bernardino County reported no cases of dengue virus (DENV) infection. California reported 131 cases in 2017 which were all travel-associated. DENV is one of four related viruses transmitted mostly by *Aedes aegypti* and *Aedes albopictus* mosquitoes, particularly tropical and subtropical areas of the world. Some isolated DENV transmission occurred in Puerto Rico, southern Texas, southern Florida, and some regions of Hawaii. Worldwide, there are an estimated 50-100 million cases per year. The main symptoms of dengue are high fever, severe headache, pain behind the eyes, joint pain, muscle and bone pain, rash, bruising and sometimes mild bleeding from the nose or mouth. Individuals with severe DENV infections continue to bleed and have abdominal pain with respiratory distress and fluid accumulation in the abdomen and lungs. Severe dengue can result in death.

Ebola

There were zero cases of Ebola Virus Disease (EVD) in San Bernardino County, California, and the U.S. in 2018. An outbreak that occurred on May 11, 2017 in the Democratic Republic of the Congo, Bas Uélé District killed 4 people. The outbreak was quickly contained on July 2, 2017. During the 2014 epidemic in West Africa, the CDC set up a referral system where names of travelers returning from countries impacted by Ebola were provided to local public health departments. During this time, San Bernardino County Public Health staff monitored 42 travelers by making daily calls and inquiring about fevers and other symptoms. If a traveler developed symptoms, certain hospitals in the region were designated as evaluation hospitals and other more specialized hospitals as treatment facilities. All state and local first responder agencies, which might be called on to assist a symptomatic traveler, planned responses and conducted thorough trainings. Ebola virus is transmitted from person to person by contact with blood or body fluids of an infected individual. An estimated 28,652 cases worldwide, including 11,325 deaths, were reported between 2014 and April 2016 when the epidemic ended.

Malaria

In 2018, San Bernardino County reported three cases of malaria, all acquired during travel. Nigeria was the most common destination. Four of the six cases were infected with *Plasmodium falciparum*; one case was infected with *Plasmodium vivax*; one case was not typed. Two of the six cases had taken malarial chemoprophylaxis. All six experienced fever and survived. Malaria is caused by the bite of an *Anopheles* mosquito infected with one of five types of a small, one-celled parasite called *Plasmodium* which infects and destroys red blood cells. Malaria occurs in sub-Saharan Africa, Southeast Asia, the Middle East, and Central and South America. Malaria was transmitted in California and other parts of the U.S. until the 1950s. Between 1957 and 2016, there were 63 outbreaks of local transmission of malaria in the U.S. An estimated 216 million cases of malaria were reported worldwide in 2016, including 445,000 deaths.

Global Diseases with Local Impact

Middle East Respiratory Syndrome (MERS)

There were zero cases of Middle East Respiratory Syndrome (MERS) reported in San Bernardino County, California, and the U.S. in 2018. MERS is a severe acute respiratory illness caused by the coronavirus called MERS-CoV. MERS-CoV is thought to spread from person to person through respiratory secretions from coughing. Communicable Disease Section (CDS) staff assisted with the testing and determination of three county cases in 2015. Staff offered CDC infection control guidelines to protect hospital staff, collected symptoms and travel history and made arrangements for specimen testing in conjunction with the San Bernardino County Public Health Laboratory and the State laboratory. MERS was first identified in Jordan in 2012, and all subsequent cases have been linked by residence in or travel to countries in or near the Arabian Peninsula. Two cases have been reported in the United States, both in May 2014 and from Saudi Arabia. No further cases have been detected since May 2014.

Henipavirus (Nipah Virus)

There were zero cases of Nipah virus (NiV) infection reported in San Bernardino County, California, and the U.S. in 2018. Nipah virus, also known as Henipavirus, is a dangerous emerging infection derived from secretions of infected fruit bats and exposure to infected horses and pigs. Due to its high mortality rate, the spread of Nipah virus has become a major public health concern. It affects the neurological system and causes death to humans by one of the following means: contact with contaminated body fluids during slaughtering of infected horses or pigs, consumption of undercooked meat from infected horses or pigs, and coming into contact with infected humans without proper protective equipment. Epidemiologic findings and serologic results have shown that the incubation period of the virus is roughly 8 days. It has been found that 82% of those infected will develop acute encephalitis syndrome. Further efforts need to be made in studying Nipah virus and constant surveillance is recommended to develop interventions that would reduce morbidity and mortality.

Plague

San Bernardino County reported zero cases of human plague in 2018. Between 2000 and 2016, an average of seven human plague cases have been reported each year in the U.S. Plague infection is caused by the bacteria *Yersinia pestis* which is transmitted to humans and animals by flea bite. Plague has been present in California since the 1900s and exists in the life cycles of wild rodents and fleas. *Yersinia pestis* is also considered a category A agent (highest priority) and is used as a bioterrorism weapon. The vector control programs in many counties throughout California, including San Bernardino, trap rodents and carnivores and collect fleas for testing for evidence of *Yersinia pestis*.

Global Change and Vector-Borne Disease Vulnerability

The impact of climate change, climate variability, human population growth and urbanization, trade and travel, and chemical pollution can extend season and distribution patterns of vector-borne diseases. As common vectors including mosquitoes, ticks, and flies move into higher altitudes and migrate north due to rising global temperatures, humans may have greater exposure to malaria, dengue fever, infections by other arboviruses, and parasites such as *Schistosoma*, *Trypanosoma*, *Onchocerca*, *Leishmania*.

Human travel may bring disease to new regions and urban areas, spreading quickly in densely populated areas. These emerging pathogens may pose a serious threat to communities which require adaptive and responsive public health surveillance systems to manage.

Global Diseases with Local Impact

How travelers protect themselves

Visit CDC's Travelers' Health website at <http://wwwnc.cdc.gov/Travel> for destination-specific alerts and recommended vaccines. Many travel vaccines are provided by San Bernardino County's Clinic Operations. Call 1-800-722-4777 for availability and fee information. CDC also has many tips on avoiding mosquito bites and foodborne illness.

The California Department of Public Health recommends travelers to countries with Zika, chikungunya and/or dengue take appropriate precautions for avoiding mosquito bites during the day and at night. If a returning traveler from an affected region has fever with joint pain or rash within the first two weeks after return, the traveler should contact their medical provider. The provider will contact local public health who can assist with testing arrangements. Returning travelers with symptoms of a mosquito-borne illness should use mosquito repellent for three weeks following their return to avoid infecting local mosquitoes.

County Vector Control surveillance

San Bernardino County Division of Environmental Health Services (DEHS) works to prevent mosquito-borne illness in County residents by conducting active mosquito surveillance and control. DEHS traps and counts mosquitoes by species and sex in several areas of the County. DEHS also surveys and conducts abatement of mosquito breeding areas in abandoned pools, dumps, tires and other areas. DEHS participates in many community education opportunities to make County residents aware of available services and prevention steps they can take around their homes. In 2018, DEHS added 114 more trap sites in County-supported areas than they did in 2017. While much of the mosquito trapping (and testing) has focused on West Nile Virus in the last few years, DEHS is also actively watching for *Aedes aegypti* (yellow fever mosquito) and *Aedes albopictus* (Asian Tiger mosquito), the two mosquito vectors that can carry Zika, dengue, chikungunya and yellow fever. Both of these mosquito species have been found in this County and neighboring counties, although in small numbers locally.

Prevention of mosquito-transmitted infections involves preventing bites and removing standing water around your property. This includes draining or dumping water in birdbaths, green swimming pools, ponds, old tires, buckets, clogged gutters, and repairing leaky sprinklers. Avoid spending time outside when mosquitoes are most active. Wear shoes, socks, and long pants and long-sleeved shirts that are loose-fitting and light-colored. Apply DEET, Picaridin, IR3535 or oil of lemon eucalyptus according to manufacturer's directions. Make sure doors and windows have tight-fitting screens with no holes or tears. For more information on vector control in this County, please visit <http://wp.sbcounty.gov/dph/programs/ehs/mosquito-vector-control/>

SECTION 3: APPENDICES

Appendix A: Healthy People 2020 Progress Report

Comparison of Progress toward Healthy People 2020 Goals for Selected Diseases¹, San Bernardino County and California

Reportable Disease	San Bernardino County 2018 Reportable Disease Rate ² per 100,000 popula- tion	California 2018 Reportable Disease Rate ³ per 100,000 population	Healthy People 2020 Goal Per 100,000 population
AIDS in Adolescents and Adults	6.7	5.7	12.4
Campylobacteriosis	11.8*	23.4*	8.5
Shiga toxin-producing <i>E. coli</i> O157	2.0*	5.8*	0.6
Gonorrhea			
Females aged 15-44 years	374.7*	124.5	251.9
Males aged 15-44 years	405.4*	259.5*	194.8
Hepatitis A	0.1*	0.5*	0.3
Hepatitis B (Acute) in Adults	0.2	0.3	1.5
Hepatitis C (Acute)	0.1	0.3	0.25
HIV in Adolescents and Adults⁴	15.8*	12.1* (2017)	3.5
Listeriosis	0.2	0.2	0.2
Salmonellosis	14.1*	15.8*	11.4
Syphilis, Congenital⁵	53.4*	58.2* (2017)	9.6
Syphilis, (Primary & Secondary)			
Females	5.5*	4.4* (2017)	1.3
Males	22.1*	29.4* (2017)	6.7
Tuberculosis	2.6*	5.3*	1.0

* Denotes indicators that do not meet or exceed Healthy People 2020 goal.

¹ Selected diseases consist of those diseases for which Healthy People 2020 comparison can be made to local indicators produced from available data.

² County and State population data: State of California, Department of Finance, *Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060*. Sacramento, California, December 2017

³ Where California's 2017 data was not available, the most recent year is indicated in parentheses.

⁴ Persons aged 13 years and older

⁵ Rate is computed per 100,000 live births

Appendix B: California Department of Finance

San Bernardino County Population by Race / Ethnicity, Sex, and Age: 2018

Age	All Race / Ethnicity			White			Hispanic			Asian / Pacific Islander			Black			Native American			Multiple Race		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
<1	59,987	31,480	28,498	13,486	7,112	6,374	37,406	19,552	17,854	2,450	1,333	1,117	4,782	2,523	2,259	216	115	101	1,638	845	793
1-4	92,178	47,127	45,051	18,543	9,433	9,110	55,860	28,640	27,220	6,230	3,208	3,022	7,522	3,796	3,726	250	122	128	3,773	1,928	1,845
5 - 9	159,323	81,111	78,212	30,162	15,317	14,845	102,045	52,068	49,977	7,327	3,719	3,608	13,874	6,941	6,933	384	199	185	5,531	2,867	2,664
10 - 14	170,060	87,246	82,814	28,063	14,428	13,635	113,507	58,221	55,286	8,578	4,368	4,210	14,641	7,454	7,187	449	233	216	4,822	2,542	2,280
15 - 19	170,827	88,342	82,485	30,668	16,208	14,460	110,379	56,678	53,701	8,978	4,587	4,391	15,634	8,167	7,467	521	282	239	4,647	2,420	2,227
20 - 24	179,189	92,953	86,236	36,533	20,136	16,397	110,051	56,000	54,051	10,064	5,082	4,982	17,250	9,031	8,219	736	399	337	4,555	2,305	2,250
25 - 29	155,991	80,843	75,148	34,684	18,776	15,908	94,077	48,081	45,996	8,223	4,192	4,031	14,874	7,566	7,308	718	385	333	3,415	1,843	1,572
30 - 34	144,222	73,130	71,092	35,986	18,352	17,634	82,476	42,006	40,470	9,418	4,750	4,668	12,911	6,348	6,563	643	370	273	2,788	1,304	1,484
35 - 39	144,445	72,202	72,243	38,545	19,054	19,491	79,763	40,466	39,297	10,671	5,060	5,611	12,102	6,034	6,068	625	327	298	2,739	1,261	1,478
40 - 44	132,972	65,353	67,619	34,765	17,712	17,053	73,753	36,006	37,747	10,770	4,900	5,870	10,952	5,376	5,576	494	252	242	2,238	1,107	1,131
45 - 54	268,650	131,446	137,204	78,688	39,579	39,109	138,257	68,109	70,148	22,149	9,998	12,151	24,463	11,417	13,046	1,213	551	662	3,880	1,792	2,088
55 - 64	250,691	120,581	130,110	104,193	51,888	52,305	98,398	47,095	51,303	20,124	8,971	11,153	23,161	10,405	12,756	1,511	715	796	3,304	1,507	1,797
65 +	256,557	114,757	141,800	129,985	59,842	70,143	79,659	34,870	44,789	22,942	9,850	13,092	19,618	8,201	11,417	1,469	668	801	2,884	1,326	1,558
Total	2,185,083	1,086,571	1,098,512	614,301	307,837	306,464	1,175,631	587,792	587,839	147,924	70,018	77,906	191,784	93,259	98,525	9,229	4,618	4,611	46,214	23,047	23,167

State of California, Department of Finance, Report P-3: State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 2010-2060. Sacramento, California, November 2018.

Appendix C: Reportable Diseases and Conditions

Title 17, California Code of Regulations (CCR) §2500, §2593, §2641.5-2643.20, and §2800-2812 Reportable Diseases and Conditions*

§ 2500. REPORTING TO THE LOCAL HEALTH AUTHORITY.

- **§ 2500(b)** It shall be the duty of every health care provider, knowing of or in attendance on a case or suspected case of any of the diseases or condition listed below, to report to the local health officer for the jurisdiction where the patient resides. Where no health care provider is in attendance, any individual having knowledge of a person who is suspected to be suffering from one of the diseases or conditions listed below may make such a report to the local health officer for the jurisdiction where the patient resides.
- **§ 2500(c)** The administrator of each health facility, clinic, or other setting where more than one health care provider may know of a case, a suspected case or an outbreak of disease within the facility shall establish and be responsible for administrative procedures to assure that reports are made to the local officer.
- **§ 2500(a)(14)** "Health care provider" means a physician and surgeon, a veterinarian, a podiatrist, a nurse practitioner, a physician assistant, a registered nurse, a nurse midwife, a school nurse, an infection control practitioner, a medical examiner, a coroner, or a dentist.

URGENCY REPORTING REQUIREMENTS [17 CCR §2500(h)(i)]

- Ⓢ ! = Report immediately by telephone (designated by a Ⓢ in regulations).
- † = Report immediately by telephone when two or more cases or suspected cases of foodborne disease from separate households are suspected to have the same source of illness (designated by a † in regulations).
- Ⓢ = Report by telephone within one working day of identification (designated by a + in regulations).
- FAX Ⓢ ☒ = Report by electronic transmission (including FAX), telephone, or mail within one working day of identification (designated by a + in regulations).
- WEEK = All other diseases/conditions should be reported by electronic transmission (including FAX), telephone, or mail within seven calendar days of identification.

REPORTABLE COMMUNICABLE DISEASES §2500(i)(1)

Disease Name	Urgency	Disease Name	Urgency
Amebiasis	FAX Ⓢ ☒	Listeriosis	FAX Ⓢ ☒
Anaplasmosis	WEEK	Lyme Disease	WEEK
Anthrax, human or animal	Ⓢ !	Malaria	FAX Ⓢ ☒
Babesiosis	FAX Ⓢ ☒	Measles (Rubeola)	Ⓢ !
Botulism (Infant, Foodborne, wound, Other)	Ⓢ !	Meningitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic	FAX Ⓢ ☒
Brucellosis, animal (except infections due to <i>Brucella canis</i>)	WEEK	Meningococcal Infections	Ⓢ !
Brucellosis, human	Ⓢ !	Mumps	WEEK
Campylobacteriosis	FAX Ⓢ ☒	Novel Virus Infection with Pandemic Potential	Ⓢ !
Chancroid	WEEK	Paralytic Shellfish Poisoning	Ⓢ !
Chickenpox (Varicella) (outbreaks, hospitalizations and deaths)	FAX Ⓢ ☒	Pertussis (Whooping Cough)	FAX Ⓢ ☒
Chikungunya Virus Infection	FAX Ⓢ ☒	Plague, human or animal	Ⓢ !
<i>Chlamydia trachomatis</i> infections, including lymphogranuloma venereum (LGV)	WEEK	Poliovirus Infection	FAX Ⓢ ☒

Appendix C: Reportable Diseases and Conditions

Disease Name	Urgency	Disease Name	Urgency
Cholera	☎ !	Psittacosis	FAX ☎ ☑
Ciguatera Fish Poisoning	☎ !	Q Fever	FAX ☎ ☑
Coccidioidomycosis	WEEK	Rabies, human or animal	☎ !
Creutzfeldt-Jakob Disease (CJD) and other Transmissible Spongiform Encephalopathies (TSE)	WEEK	Relapsing Fever	FAX ☎ ☑
Cryptosporidiosis	FAX ☎ ☑	Respiratory Syncytial Virus (only report a death in a patient less than five years of age)	WEEK
Cyclosporiasis	WEEK	Rickettsial Diseases (non-Rocky Mountain Spotted Fever), including Typhus and Typhus-like illnesses	WEEK
Cysticercosis or taeniasis	WEEK	Rocky Mountain Spotted Fever	WEEK
Dengue Virus Infection	☎ !	Rubella (German Measles)	WEEK
Diphtheria	☎ !	Rubella Syndrome, Congenital	WEEK
Domoic Acid Poisoning (Amnesic Shellfish Poisoning)	☎ !	Salmonellosis (Other than Typhoid Fever)	FAX ☎ ☑
Ehrlichiosis	WEEK	Scombroid Fish Poisoning	☎ !
Encephalitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic	FAX ☎ ☑	Shiga toxin (detected in feces)	☎ !
<i>Escherichia coli</i> : shiga toxin producing (STEC) including <i>E. coli</i> O157	☎ !	Shigellosis	FAX ☎ ☑
Flavivirus infection of undetermined species	☎ !	Smallpox (Variola)	☎ !
Foodborne Disease	† FAX ☎ ☑	Streptococcal Infections (Outbreaks of Any Type and Individual Cases in Food Handlers and Dairy Workers Only)	FAX ☎ ☑
Giardiasis	WEEK	Syphilis	FAX ☎ ☑
Gonococcal Infections	WEEK	Tetanus	WEEK
<i>Haemophilus influenzae</i> , invasive disease, all serotypes (report an incident less than 5 years of age)	FAX ☎ ☑	Trichinosis	FAX ☎ ☑
Hantavirus Infections	FAX ☎ ☑	Tuberculosis	FAX ☎ ☑
Hemolytic Uremic Syndrome	☎ !	Tularemia, animal	WEEK
Hepatitis A, acute infection	FAX ☎ ☑	Tularemia, human	☎ !
Hepatitis B (specify acute case or chronic)	WEEK	Typhoid Fever, Cases and Carriers	FAX ☎ ☑
Hepatitis C (specify acute case or chronic)	WEEK	<i>Vibrio</i> Infections	FAX ☎ ☑
Hepatitis D (Delta) (specify acute case or chronic)	WEEK	Viral Hemorrhagic Fevers, human or animal (e.g., Crimean-Congo, Ebola, Lassa, and Marburg viruses)	☎ !
Hepatitis E, acute infection	WEEK	West Nile Virus (WNV) Infection	FAX ☎ ☑
Human Immunodeficiency Virus (HIV) infection, stage 3 (AIDS)	WEEK	Yellow Fever	☎ !
Human Immunodeficiency Virus (HIV), acute infection	☎	Yersiniosis	FAX ☎ ☑

Appendix C: Reportable Diseases and Conditions

Disease Name	Urgency	Disease Name	Urgency
Influenza, deaths in laboratory-confirmed cases for age 0-64 years	WEEK	Zika Virus Infection	⓪ !
Influenza, novel strains (human)	⓪ !	OCCURRENCE of ANY UNUSUAL DISEASE	⓪ !
Legionellosis	WEEK	OUTBREAKS of ANY DISEASE (Including diseases not listed in §2500). Specify if institutional and/or open community.	⓪ !
Leprosy (Hansen Disease)	WEEK		
Leptospirosis	WEEK		

HIV REPORTING BY HEALTH CARE PROVIDERS §2641.30-2643.20

Human Immunodeficiency Virus (HIV) infection at all stages is reportable by traceable mail, person-to-person transfer, or electronically within seven calendar days. For complete HIV-specific reporting requirements, see [Title 17, CCR, §2641.30-2643.20](#) and the [California Department of Public Health's HIV Surveillance and Case Reporting Resource page](#) (https://www.cdph.ca.gov/Programs/CID/DOA/Pages/OA_case_surveillance_resources.aspx)

REPORTABLE NONCOMMUNICABLE DISEASES AND CONDITIONS §2800–2812 and §2593(b)

Disorders Characterized by Lapses of Consciousness

(§2800-2812) Pesticide-related illness or injury (known or suspected cases)**

Cancer, including benign and borderline brain tumors (except (1) basal and squamous skin cancer unless occurring on genitalia, and (2) carcinoma in-situ and CIN III of the Cervix) (§2593)***

LOCALLY REPORTABLE DISEASES (If Applicable):

* This form is designed for health care providers to report those diseases mandated by Title 17, California Code of Regulations (CCR). Failure to report is a misdemeanor (Health & Safety Code §120295) and is a citable offense under the Medical Board of California Citation and Fine Program (Title 16, CCR, §1364.10 and 1364.11).

** Failure to report is a citable offense and subject to civil penalty (\$250) (Health and Safety Code §105200).

*** The Confidential Physician Cancer Reporting Form may also be used. See Physician Reporting Requirements for Cancer Reporting in CA at: www.ccrca.org

Appendix C: Reportable Diseases and Conditions

Title 17, California Code of Regulations (CCR), Section 2505

REPORTABLE CONDITIONS: NOTIFICATION BY LABORATORIES

(January 2018)

California Code of Regulations, Title 17, Section 2505 requires laboratories to report laboratory testing results, including molecular and pathologic results, suggestive of the following diseases of public health importance to the local health department:

Subsection (e)(1) List

- **Anthrax**, animal (*B. anthracis*)
- **Anthrax**, human (*B. anthracis*)
- **Botulism**
- **Brucellosis**, human (all *Brucella* spp.) *Burkholderia pseudomallei* and *B. mallei* (detection or isolation from a clinical specimen)
- **Influenza**, novel strains (human)
- **Plague**, animal
- **Plague**, human
- **Smallpox** (*Variola*)
- **Tularemia**, human (*F. tularensis*)
- **Viral hemorrhagic Fever** agents, animal (VHF), (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)
- **Viral Hemorrhagic Fever** agents, human (VHF), (e.g., Crimean-Congo, Ebola, Lassa and Marburg viruses)

Subsection (e)(2) List

- **Acid-fast bacillus** (AFB)
- **Anaplasmosis**
- **Babesiosis**
- **Bordetella pertussis** acute infection, by culture molecular identification
- **Borrelia burgdorferi** infection
- **Brucellosis**, animal (*Brucella* spp. except *Brucella canis*)
- **Campylobacteriosis** (*Campylobacter* spp.) (detection or isolation from a clinical specimen)
- **Chancroid** (*Haemophilus ducreyi*)
- **Chikungunya Virus** Infection
- **Chlamydia trachomatis** infections, including lymphogranuloma venereum
- **Coccidioidomycosis**
- **Cryptosporidiosis**
- **Cyclosporiasis** (*Cyclospora cayetanensis*)
- **Dengue virus** infection
- **Diphtheria**
- **Ehrlichiosis**
- **Encephalitis**, arboviral
- **Entamoeba histolytica** (Not *E. dispar*)
- **Escherichia coli**: shiga toxin producing (STEC) including *E. coli* O157
- **Flavivirus** infection of undetermined species
- **Giardiasis** (*Giardia lamblia*, *intestinalis*, or *duodenalis*)
- **Gonorrhea**
- **Haemophilus influenzae**, all types (detection or isolation from a sterile site in a person less than five years of age)

Appendix C: Reportable Diseases and Conditions

- **Hantavirus Infections**
- **Hepatitis A**, acute infection
- **Hepatitis B**, acute or chronic infection (specify gender)
- **Hepatitis C**, acute or chronic infection
- **Hepatitis D** (Delta), acute or chronic infection
- **Hepatitis E**, acute infection (detection of hepatitis E virus RNA from a clinical specimen or positive serology)
- **Human Immunodeficiency Virus** (HIV), acute infection
- **Legionellosis** (*Legionella* spp.) (antigen or culture)
- **Leprosy** (Hansen Disease) (*Mycobacterium leprae*)
- **Leptospirosis** (*Leptospira* spp.)
- **Listeriosis** (*Listeria*)
- **Malaria**
- **Measles** (Rubeola), acute infection
- **Mumps** (mumps virus), acute infection
- **Mycobacterium tuberculosis**
- **Neisseria meningitidis** (sterile site isolate)
- **Plague** (*Yersinia pestis*), human or animal
- **Poliovirus**
- **Psittacosis** (*Chlamydophila psittaci*)
- **Q Fever** (*Coxiella burnetii*)
- **Rabies**, animal or human
- **Relapsing Fever** (*Borrelia* spp.) (identification of *Borrelia* spp. spirochetes on peripheral blood smear)
- **Rickettsia**, any species, acute infection (detection from a clinical specimen or positive serology)
- **Rocky Mountain Spotted Fever** (*Rickettsia rickettsii*)
- **Rubella**, acute infection
- **Salmonellosis** (*Salmonella* spp.)
- **Shiga toxin** (detected in feces)
- **Shigellosis** (*Shigella* spp.)
- **Syphilis**
- **Trichinosis** (*Trichinella*)
- **Tuberculosis**
- **Tularemia**, animal (*F. tularensis*)
- **Typhoid**
- **Vibrio species** infections
- **West Nile virus** infection
- **Yellow Fever** (yellow fever virus)
- **Yersiniosis** (*Yersinia* spp., non-pestis) (isolation from a clinical specimen)
- **Zika virus** infection

Reportable laboratory findings for these diseases are those specified in 17 CCR Section 2505 or that satisfy the most recent [communicable disease surveillance case definitions](https://www.cdc.gov/nndss/conditions/search/) published by the Centers for Disease Control and Prevention (<https://www.cdc.gov/nndss/conditions/search/>). **All laboratory notifications are acquired in confidence. The confidentiality of patient information is always protected.**

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