

SHIGELLOSIS

Shigellosis is an acute diarrheal disease caused by four species of *Shigella* bacteria: *S. sonnei*, *S. flexneri*, *S. boydii*, *S. dysenteriae*. Infections with *S. boydii* and *S. dysenteriae* are uncommon in the United States (U.S.), but remain an important cause of diarrhea in the developing world. Of *Shigella* infections reported in San Diego County, since 1995, 53% have been caused by *S. sonnei* and 26% by *S. flexneri*.

In 2018, the incidence of shigellosis in San Diego County (11.7 per 100,000 population) was higher than in California (8.6 per 100,000 population) and the U.S. (4.4 per 100,000 population). There were 426 reported cases of shigellosis in San Diego County in 2019, the highest count since 1995. The number of cases per year began increasing in 2017, when the surveillance [case definition](#) changed to include cases diagnosed via culture-independent diagnostic testing (CIDT) as probable cases. There was also a corresponding increase in the number of cases with unknown or missing species information.

Shigellosis is highly contagious (as few as 10 to 100 organisms can cause infection), and transmission occurs via contaminated food and water or direct person-to-person contact. Groups at higher risk of *Shigella* infection include

Select Clinical Characteristics, San Diego County Cases, 2016-2019

TREATED WITH ANTIBIOTICS

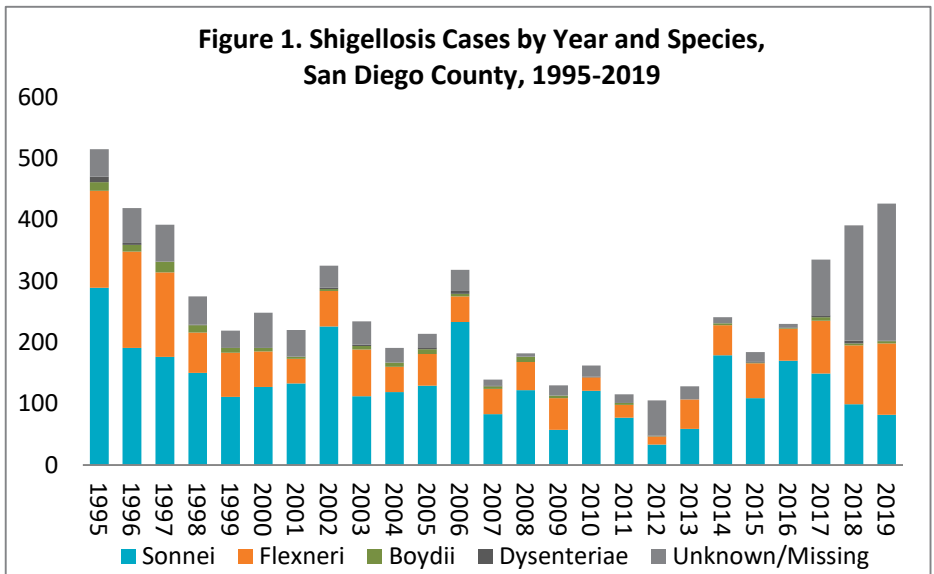
93%



HOSPITALIZED

28%

Data are provisional and subject to change as additional information becomes available. Denominators are cases with available information for each variable.



Includes confirmed and probable cases following CDC/CSTE case criteria. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease year.

young children, men who have sex with men (MSM), travelers to developing countries, and those who are immunocompromised. Risk factors for acquiring shigellosis can include eating food prepared by a sick person, swallowing contaminated recreational water, changing the diaper of a sick child, or exposure to stool during sexual contact with someone sick or recently recovered from shigellosis.

Symptoms can include diarrhea (which may be bloody), fever, and stomach pain, starting an average of one to three days after infection. Thirty-six percent of San Diego County cases, since 2016, experienced bloody diarrhea.

Shigellosis is usually self-limited in immunocompetent hosts, with most people recovering within five to seven days. Despite this, treatment with antibiotics is common: 93% of San Diego County cases since 2016 have received antibiotics. Antibiotic-

Continued on next page

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

SHIGELLOSIS, continued

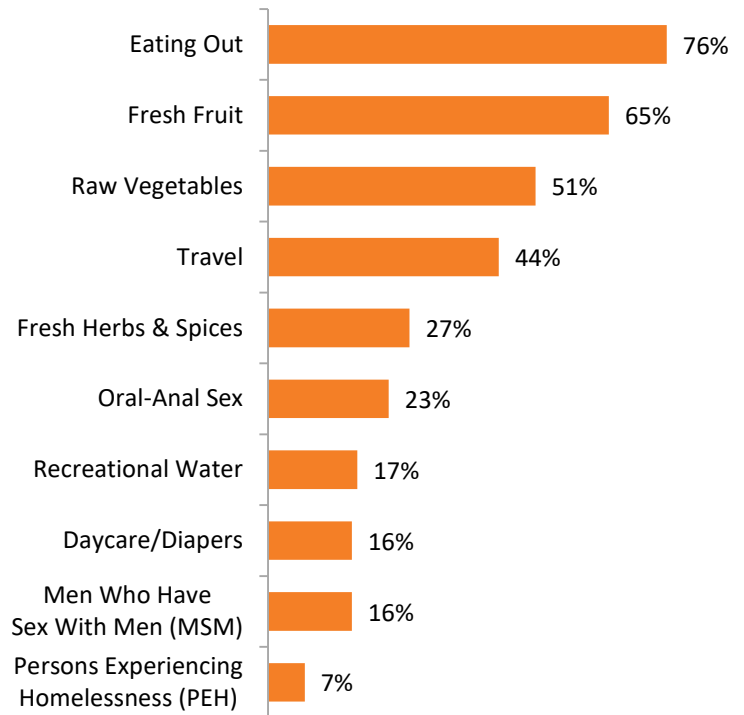
resistant *Shigella* is increasingly becoming a problem in the U.S. Because many *Shigella* strains are resistant to traditional first-line antibiotic choices for treatment, clinicians have turned to other options, such as azithromycin and ciprofloxacin. However, *Shigella* strains have emerged that are resistant to these antibiotics, as well, and multidrug resistant strains are a concern. There are an estimated [27,000 antibiotic-resistant *Shigella* infections in the U.S. every year](#). Inappropriate treatment can contribute to increasing drug resistance. The Centers for Disease Control and Prevention (CDC) released [guidance](#) in June 2018 on the management and reporting of *Shigella* cases with reduced antibiotic susceptibility.

Although anyone can acquire an antibiotic-resistant strain, MSM are more likely to be infected with these strains. Several clusters in this population have been identified in recent years. Clusters are often detected via molecular testing. In 2019, there was a shift from pulsed-field gel electrophoresis (PFGE) to testing using whole genome sequencing (WGS). WGS allows for more refined case matching. This shift in testing has increased cluster detections locally and has the potential to impact case matching to national clusters, as well. Currently, San Diego County has cases belonging to several national *S. sonnei* and *S. flexneri* clusters. No sources have been identified to date. Additionally, there is a national cluster of multidrug resistant *S. sonnei* involving MSM. San Diego County has thirteen cases in this national cluster with onset dates of local cases ranging from April to December 2019.

Resources

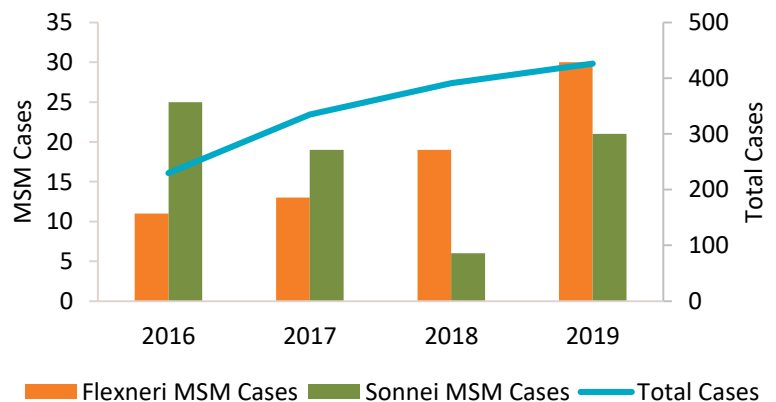
- [CDC Shigellosis website](#)
- [California Department of Public Health Shigellosis website](#)
- [CDC Antibiotic / Antimicrobial Resistance website](#)
- [CDC Recommendations for Managing and Reporting Shigella Infections with Possible Reduced Susceptibility to Ciprofloxacin \(HAN 411\)](#)
- [CAHAN San Diego Health Alert – Shigellosis: Updated National Recommendations and Local Case Information](#)

Figure 2. Select Risk Factors of San Diego County Shigellosis Cases, 2016-2019 (N=1,382)



Data are provisional and subject to change as additional information becomes available. Denominators are cases with available information for each variable, with the exception of MSM and PEH. MSM and PEH are those known to have those risk factors as a percentage of all cases.

Figure 3. *Shigella sonnei* and *Shigella flexneri* Cases in MSM and Total Shigellosis Cases by Year, San Diego County, 2016-2019 (N=218)



Includes confirmed and probable cases following CDC/CSTE case criteria. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease year.

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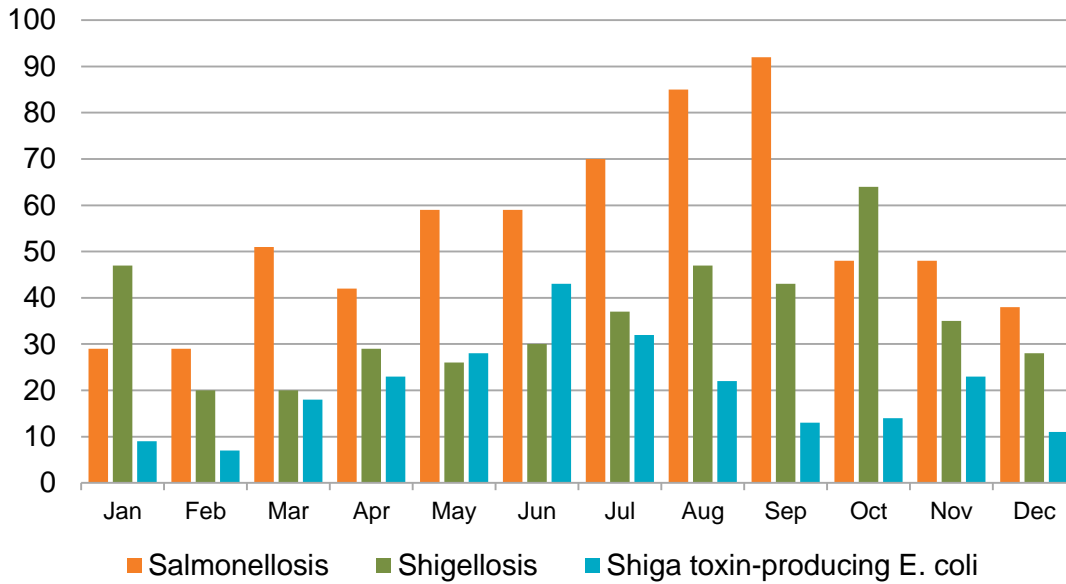


Table 1. Select Reportable Diseases		2019			Prior Years	
		Current Month	Prior Month	2019 Total	Average Prior 3 Years	2018 Total
Disease and Case Inclusion Criteria (C,P,S)						
Amebiasis	C	0	0	7	8.3	10
Botulism (Foodborne, Infant, Wound, Other)	C,P	1	0	2	8.0	11
Brucellosis	C,P	0	0	1	3.7	2
Campylobacteriosis	C,P	51	61	988	834.7	828
Chickenpox, Hospitalization or Death	C,P	0	0	2	3.0	4
Chikungunya	C,P	0	0	3	4.3	5
Coccidioidomycosis	C	23	26	364	251.3	277
Cryptosporidiosis	C,P	2	10	97	59.7	90
Dengue Virus Infection	C,P	1	3	29	14.7	9
Encephalitis, All	C	0	1	39	61.7	67
Giardiasis	C,P	7	15	212	316.7	230
Hepatitis A, Acute	C	2	1	15	212.3	35
Hepatitis B, Acute	C	1	0	7	8.3	9
Hepatitis B, Chronic	C,P	56	63	908	864.0	864
Hepatitis C, Acute	C,P	0	1	56	2.3	2
Hepatitis C, Chronic	C,P	313	341	4,099	3,392.0	4,199
Legionellosis	C	3	7	57	58.0	54
Listeriosis	C	0	1	9	17.0	14
Lyme Disease	C,P	5	0	13	15.7	14
Malaria	C	0	1	7	9.3	8
Measles (Rubeola)	C	0	0	2	0.7	0
Meningitis, Aseptic/Viral	C,P,S	10	12	184	155.3	140
Meningitis, Bacterial	C,P,S	3	3	33	42.3	37
Meningitis, Other/Unknown	C	1	1	24	26.7	17
Meningococcal Disease	C,P	1	1	8	4.7	11
Mumps	C,P	5	9	66	15.7	9
Pertussis	C,P,S	77	90	793	744.3	658
Rabies, Animal	C	0	0	7	10.0	7
Rocky Mountain Spotted Fever	C,P	0	0	1	2.0	1
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	38	48	650	635.3	789
Shiga toxin-Producing <i>E. coli</i> (including O157)	C,P	11	23	243	174.7	176
Shigellosis	C,P	28	35	426	319.0	390
Typhoid Fever	C,P	1	0	8	4.0	4
Vibriosis	C,P	4	3	57	46.7	59
West Nile Virus Infection	C,P	0	0	3	8.7	2
Yersiniosis	C,P	5	3	52	31.7	26
Zika Virus	C,P	0	1	7	37.0	7

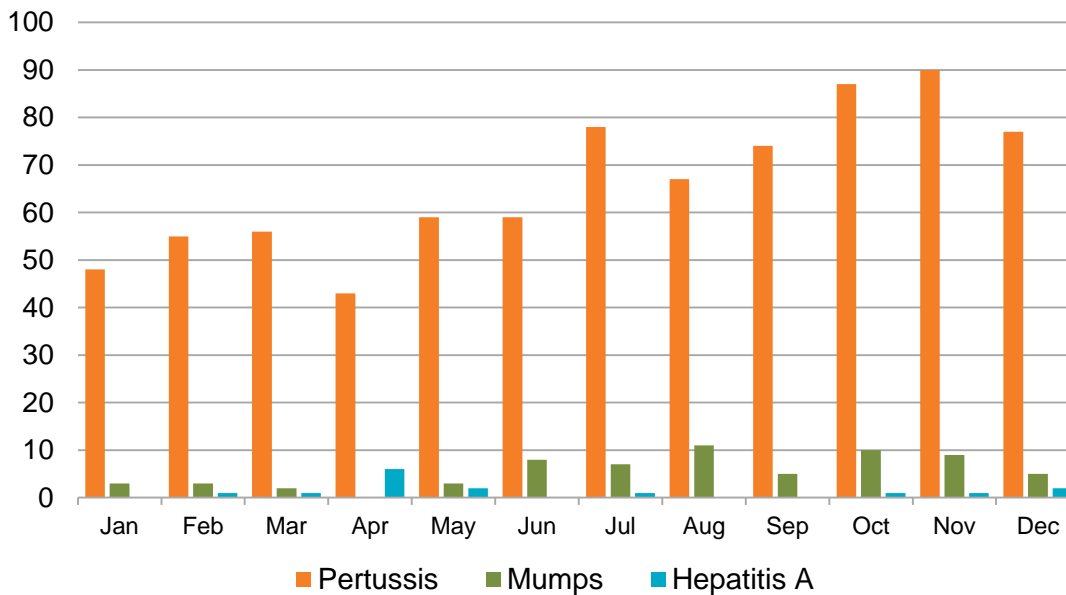
Case counts are provisional and subject to change as additional information becomes available. Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from previously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



**Figure 4. Select Enteric Infections by Month
January 2019 – December 2019**

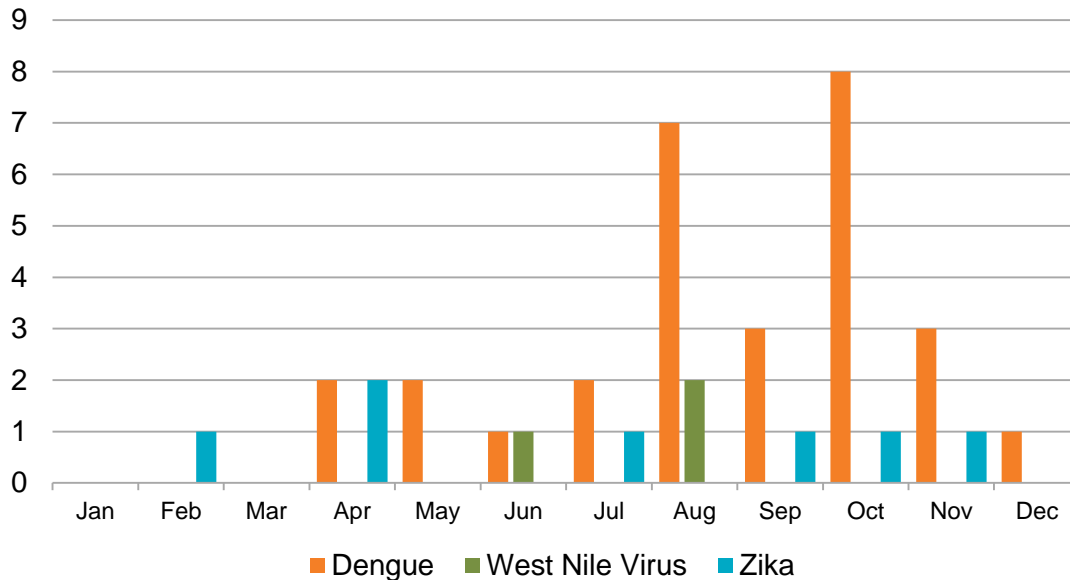


**Figure 5. Select Vaccine-Preventable Infections by Month
January 2019 – December 2019**



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**Figure 6. Select Vector-Borne Infections by Month
January 2019 – December 2019**



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

Disease Reporting in San Diego County

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

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

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

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