

## NOROVIRUS

Noroviruses are small non-enveloped RNA viruses in the family Caliciviridae that cause acute gastroenteritis. Named after an outbreak in a school in Norwalk, Connecticut in 1968, noroviruses are highly contagious and are thought to be the most common cause of acute gastroenteritis and gastroenteritis outbreaks worldwide. More than 25 genotypes in three genogroups (GI, GII, GIV) cause human illness.

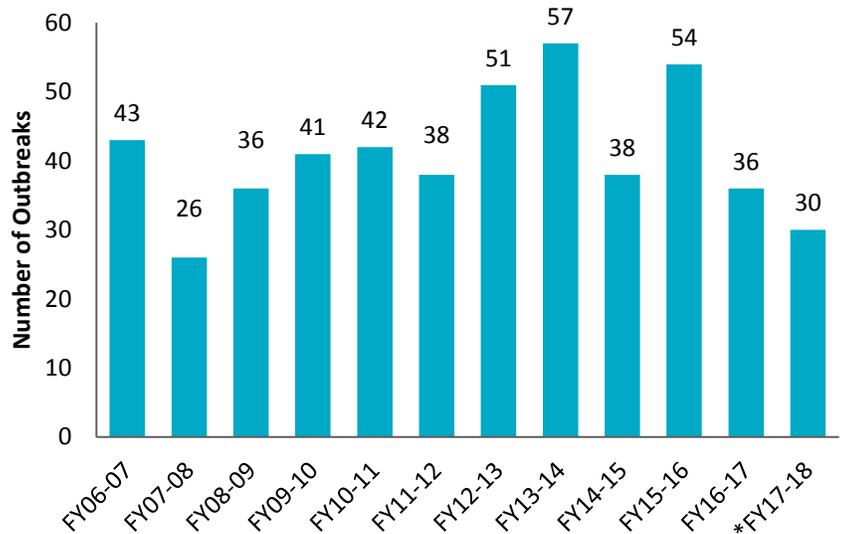
Norovirus infection is characterized by acute onset of vomiting and/or watery, non-bloody diarrhea. These symptoms may be accompanied by abdominal cramps, low-grade fever, headaches, and myalgia. Onset usually occurs 12-48 hours after exposure. The infection usually resolves on its own after 24-72 hours, causing no long-term sequelae. Severe dehydration is the most common complication and can be particularly hazardous for young children, older adults, and those with compromised immune systems, potentially leading to hospitalization and death.

Norovirus is shed in an infected person's stool and vomitus. One person can shed billions of norovirus particles. It only takes about 18 particles to infect another person. Because it is so contagious, spreading from person to person or via contaminated surfaces, outbreaks occur frequently in places where people live in close proximity, such as long-term care facilities, cruise ships, and institutions. Norovirus is also the most common cause of [foodborne illness](#) and outbreaks in the United States.

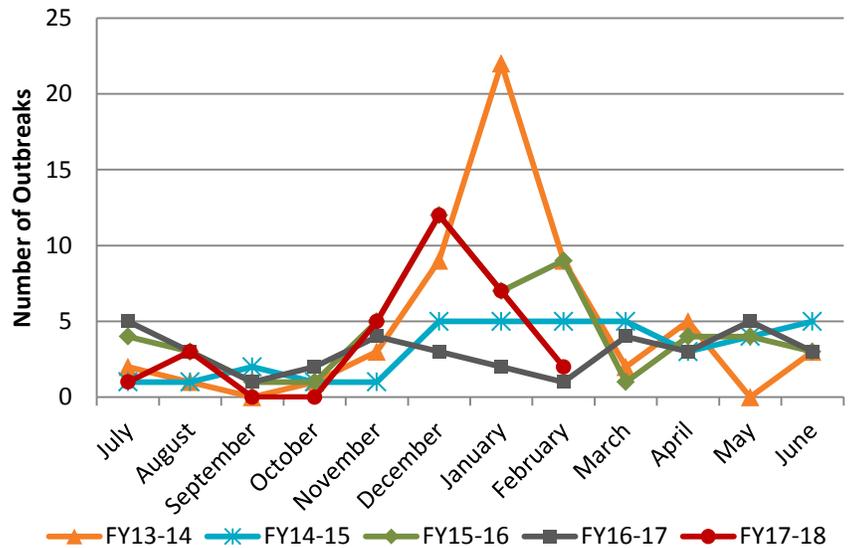
Norovirus infections occur year-round, but are more common during the winter months.

*Continued on next page*

**Figure 1. Reported Norovirus Outbreaks, San Diego County, Fiscal Years 2006-07 – 2017-18\***



**Figure 2. Norovirus Outbreaks by Month of Report, San Diego County, Fiscal Years 2013-12 – 2017-18\***



\*2017-18 data are year-to-date. Data are provisional and subject to change as additional information becomes available. Data are presented using fiscal years (the San Diego County fiscal year is July-June) due to the seasonal nature of norovirus outbreaks. Data current as of 2/15/2018.

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 works to identify, investigate, register, and evaluate 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, send an email to [EpiDiv.HHSA@sdcounty.ca.gov](mailto:EpiDiv.HHSA@sdcounty.ca.gov).

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Individual cases of norovirus are not reportable locally or nationally, and laboratory testing is often only done in the context of an outbreak. The Centers for Disease Control and Prevention (CDC) [estimates](#) that there are 19-21 million cases annually in the United States, leading to 56,000-71,000 hospitalizations and 570-800 deaths.

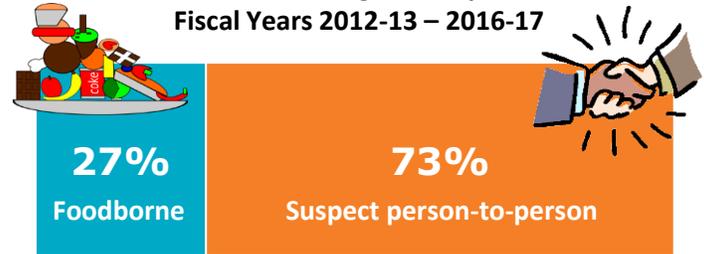
Outbreaks of any disease, including norovirus, are reportable. From 2009-2013, [CDC received reports](#) of 6,663 outbreaks of norovirus transmitted by person-to-person contact, environmental contamination, and unknown mode of transmission. These outbreaks were responsible for 249,848 illnesses, 3,398 hospitalizations, and 375 deaths. In 2015, 311 norovirus outbreaks attributed to foodborne transmission were reported to CDC.

The County of San Diego Health and Human Services Agency (HHS) reports norovirus outbreaks by fiscal year (July-June) due to the seasonal nature of the disease. During the most recent five full fiscal years (2012-13 – 2016-17), HHS investigated 236 norovirus outbreaks, with 5,726 outbreak-associated cases (median 17 cases per outbreak), 166 hospitalizations, and 7 deaths.

There were 173 (73%) norovirus outbreaks that were due to suspected person-to-person or environmental transmission, and 63 (27%) due to foodborne transmission. Over three quarters of the person-to-person outbreaks were in congregate living facilities.

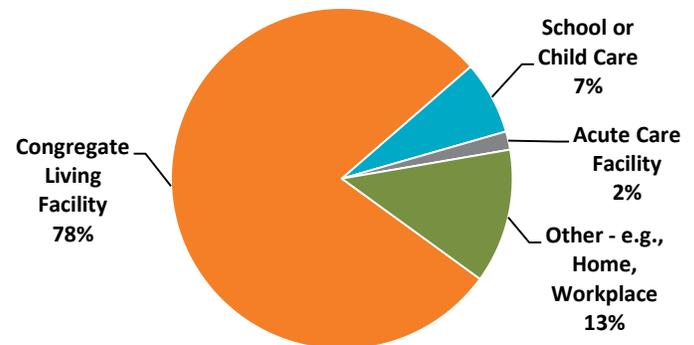
To date in 2017-18, HHS has investigated 30 norovirus outbreaks. Over the past ten years, local norovirus outbreak counts have ranged from 26-57. In years when a new strain of norovirus begins circulating, outbreaks frequently increase worldwide. Since 2002, most outbreaks have been caused by variants of GII genotype 4. Recent confirmed norovirus outbreaks in San Diego have been caused by GII genotype 2 and the Sydney variant of GII.4.

**Figure 3. Mode of Transmission, Norovirus Outbreaks, San Diego County (N=236), Fiscal Years 2012-13 – 2016-17**



Suspect person-to-person category also includes possible environmental contamination. Data are provisional and subject to change as additional information becomes available. Data current as of 2/15/2018.

**Figure 4. Location of Suspect Person-to-Person Norovirus Outbreaks, San Diego County (N=173), Fiscal Years 2012-13 – 2016-17**



Suspect person-to-person category also includes possible environmental contamination. Congregate Living Facilities include long-term care facilities, assisted living facilities, independent living facilities for seniors. Data are provisional and subject to change as additional information becomes available. Data current as of 2/15/2018.

### County of San Diego Resources

- [HHS Norovirus website](#)
- [Department of Environmental Health Norovirus website](#)

### State and National Resources

- [California Department of Public Health Norovirus website](#)
- [CDC Norovirus website](#)
- [CDC: Burden of Norovirus Illness and Outbreaks](#)
- [CDC: Reporting and Surveillance for Norovirus: CaliciNet](#)
- [CDC: Norovirus Guidelines for Healthcare Settings](#)
- [CDC: Norovirus Prevention Toolkit](#)

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# MONTHLY COMMUNICABLE DISEASE REPORT

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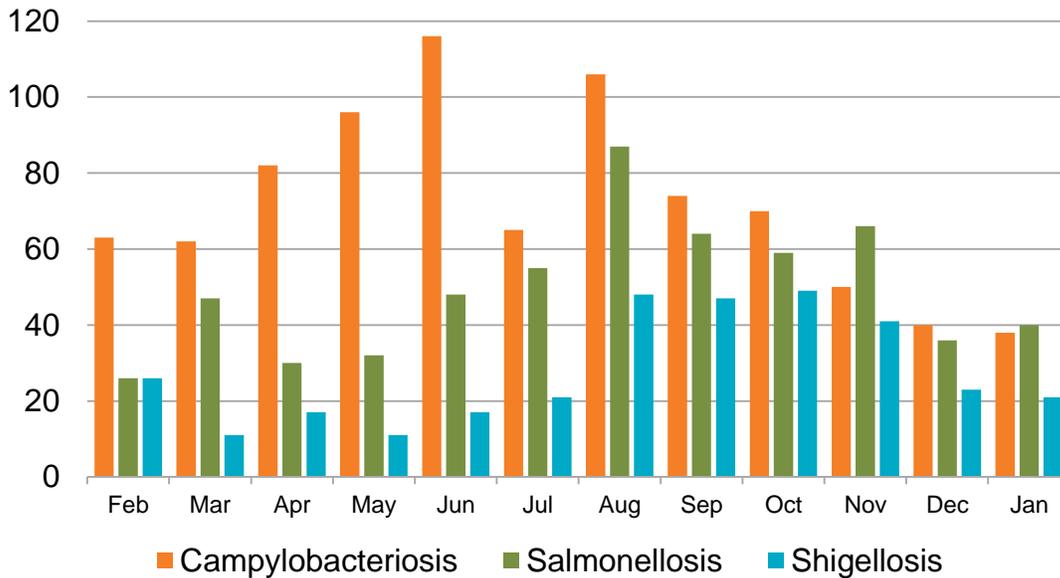


Table 1. Select Reportable Diseases		2018			Prior Years		
		Current Month	Prior Month	Year-to-Date (YTD)	2017 YTD	Avg YTD, Prior 3 Years	2017 Total
Disease and Case Inclusion Criteria (C,P,S)							
Amebiasis	C	1	0	1	0	1.7	10
Botulism (Foodborne, Infant, Wound, Other)	C	2	2	2	1	0.3	7
Brucellosis	C,P	0	0	0	0	0.0	4
Campylobacteriosis	C,P	38	40	38	62	51.0	885
Chickenpox, Hospitalization or Death	C,P	0	1	0	0	0.0	3
Chikungunya	C,P	0	0	0	1	0.3	2
Coccidioidomycosis	C	19	37	19	15	16.7	290
Cryptosporidiosis	C,P	3	3	3	1	2.0	54
Dengue Virus Infection	C,P	0	0	0	2	1.7	12
Encephalitis, All	C	3	2	3	5	5.0	40
Giardiasis	C,P	25	22	25	30	24.0	314
Hepatitis A, Acute	C	5	13	5	3	2.7	576
Hepatitis B, Acute	C	1	0	1	1	0.7	13
Hepatitis B, Chronic	C,P	83	73	83	63	66.0	885
Hepatitis C, Acute	C,P	0	1	0	0	0.0	5
Hepatitis C, Chronic	C,P	289	270	289	191	222.7	3,108
Legionellosis	C	6	3	6	8	4.3	65
Listeriosis	C	1	0	1	1	1.3	14
Lyme Disease	C,P	0	0	0	1	0.3	8
Malaria	C	0	0	0	0	0.0	7
Measles (Rubeola)	C	0	0	0	0	2.7	2
Meningitis, Aseptic/Viral	C,P,S	3	9	3	7	10.3	178
Meningitis, Bacterial	C,P,S	3	3	3	4	5.3	38
Meningitis, Other/Unknown	C	0	3	0	4	2.7	32
Meningococcal Infection	C,P	3	0	3	0	0.0	1
Mumps	C,P	3	0	3	1	0.3	15
Pertussis	C,P,S	76	107	76	57	81.0	1,154
Rabies, Animal	C	0	0	0	1	0.3	16
Rocky Mountain Spotted Fever	C,P	0	0	0	1	0.3	2
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	40	36	40	26	28.0	575
Shiga toxin-Positive Feces (without culture confirmation)	C,P	1	1	1	1	0.7	23
Shiga toxin-Producing E. coli (including O157)	C,P	1	5	1	0	1.3	246
Shigellosis	C,P	21	23	21	24	15.0	334
Typhoid Fever	C,P	0	0	0	1	0.3	2
Vibriosis	C,P	0	0	0	4	2.7	49
West Nile Virus Infection	C,P	0	0	0	0	0.0	2
Yersiniosis	C,P	2	5	2	1	1.0	61
Zika Virus	C,P	0	1	0	2	2.0	20

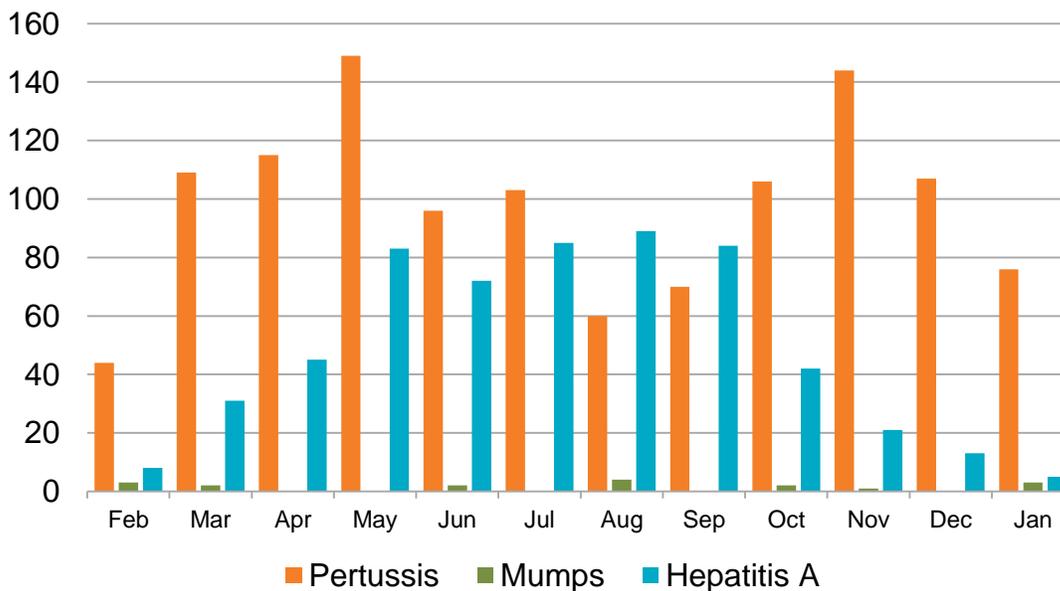
**Case counts are provisional and subject to change as additional information becomes available.** Cases are grouped into calendar months and calendar years on the basis of the earliest of the following dates: onset, lab specimen collection, diagnosis, death, and report received. Counts may differ from 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 5. Select Enteric Infections by Month  
February 2017 – January 2018**

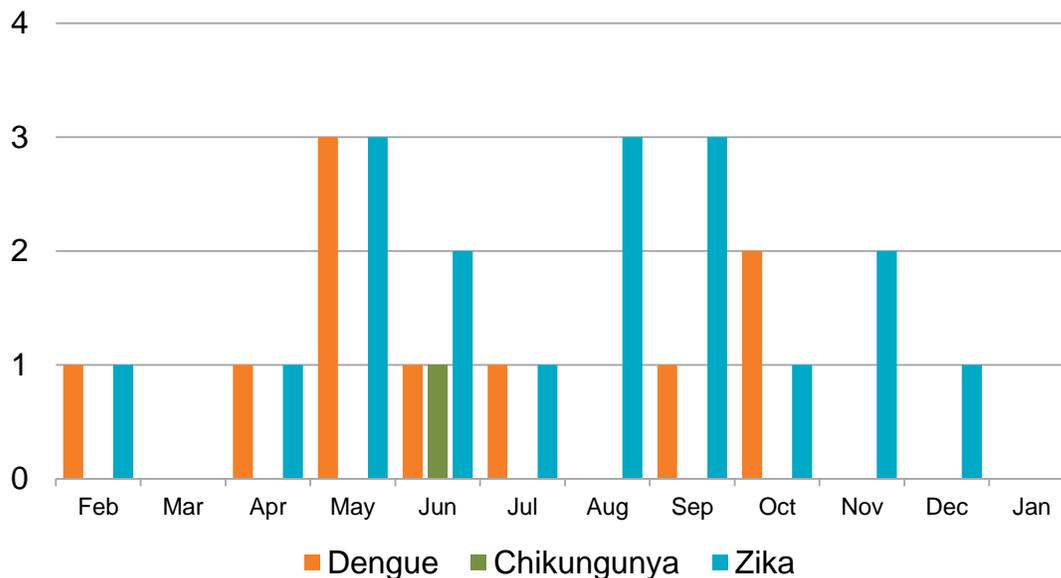


**Figure 6. Select Vaccine-Preventable Infections by Month  
February 2017 – January 2018**



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**Figure 7. Select Vector-Borne Infections by Month  
February 2017 – January 2018**



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

### Disease Reporting in San Diego County

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

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

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

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