EPIDEMIOLOGY AND IMMUNIZATION SERVICES BRANCH

MONTHLY COMMUNICABLE DISEASE REPORT

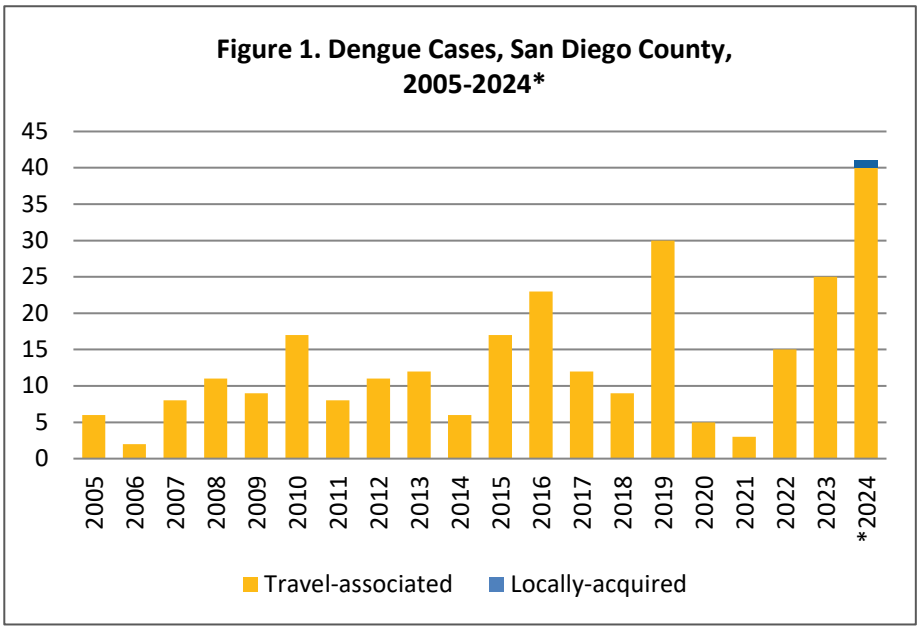
SEPTEMBER 2024

Volume 8, Issue 9: October 15, 2024

DENGUE VIRUS INFECTION

Background

Dengue virus infection has been recognized since the 1950s as a worldwide problem and is a leading cause of morbidity and mortality in the tropics and subtropics, causing approximately 100 million illnesses and 40,000 deaths annually. While infection was initially more prevalent in Asia, since 1981, cases have increased dramatically in Latin America and the Caribbean. Dengue virus is now endemic in more than 100 countries, including northern Mexico along the United States (U.S.) border.



*2024 data are year-to-date; current as of 10/15/2024. Data are provisional and subject to change as additional information becomes available. Grouped by CDC disease years.

Transmission

Dengue viruses are transmitted through the bite of infected *Aedes aegypti* or *Aedes albopictus* mosquitoes. Although local transmission of dengue virus has has been documented in the continental U.S., most cases of dengue among U.S. residents (outside of U.S. territories in the tropics such as Puerto Rico and Guam) are among immigrants and travelers returning from endemic areas. Although specific transmission patterns may vary from year to year, dengue is a risk in large parts of Central and South America, Africa, Asia, the Middle East, and the Pacific Islands. Dengue outbreaks have significantly increased in the Americas and the Caribbean, with over 11 million cases reported to date in 2024.

Sustained transmission remains uncommon in the U.S. because people are less exposed to *Aedes* mosquitoes, largely due to use of window screens and air conditioning. However, *Aedes aegypti* and *Aedes albopictus* mosquitoes are becoming increasingly widespread in the U.S. so there is potential for local transmission, particularly when there are increased travel-associated cases due to global outbreaks. These invasive, aggressive, day-biting mosquitoes were detected for the first time in San Diego County in 2014 and 2015, respectively. *Aedes aegypti* mosquitoes are now common.

Local Cases

In San Diego County, the first locally-acquired dengue virus infection was reported in early October 2024. This follows the first locally-acquired cases in California in Long Beach and Pasadena in 2023, and five recent cases identified in Los Angeles County, and comes in the setting of a record number of travel-associated cases in San Diego County this year. The County's Vector Control Program (VCP) response to this case included mosquito abatement to reduce the risk of additional cases in the area. The County responds similarly to travel-associated cases to prevent local transmission. VCP assesses for *Aedes* activity and takes preventive action as needed near cases who are determined to be viremic in the county based on an investigation by the Epidemiology Program.

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.

DENGUE VIRUS INFECTION, continued

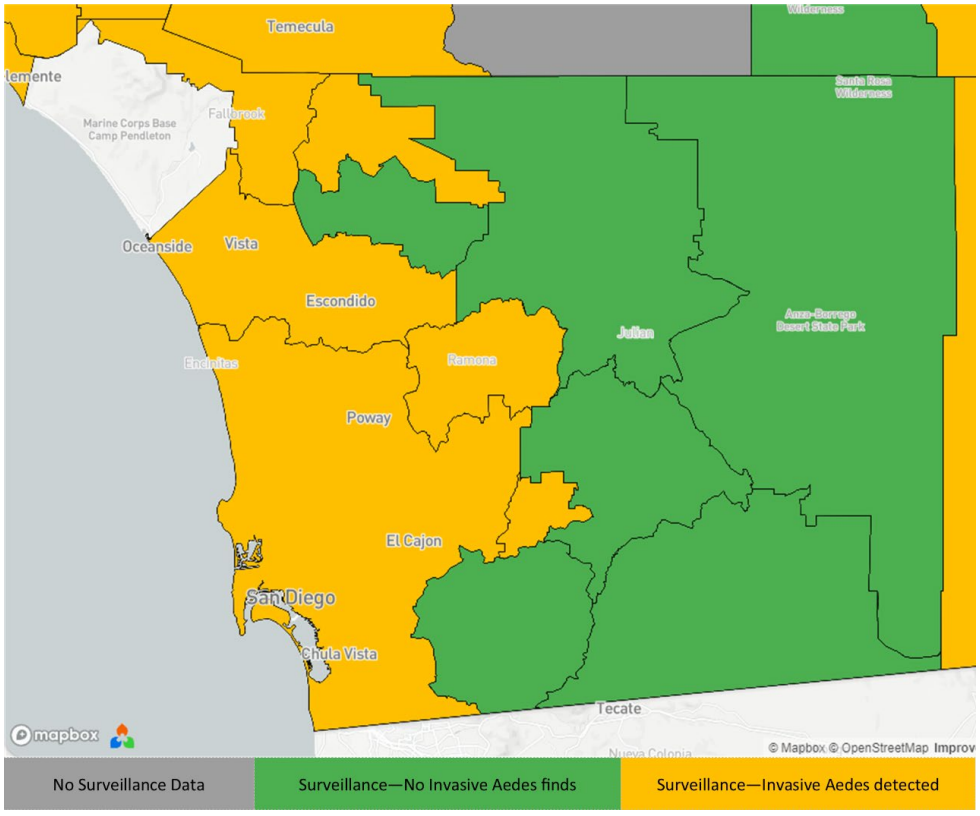
Presentation

Dengue virus infection ranges from no symptoms to mild or severe symptoms (only about one in four infections are symptomatic). Typical symptoms, which usually start within 5-7 days of exposure and last 2-7 days, include fever, headache, joint or muscle pain, and rash. There are four dengue serotypes and infection with one induces lifelong immunity to that serotype. However, persons may still be infected with the remaining serotypes, and a second infection brings a greater risk of severe dengue, which can be fatal and requires immediate medical attention. Cross placental transfer of maternal antibodies also places infants at risk for more severe dengue. Warning signs include persistent vomiting, fluid accumulation, mucosal bleeding, and difficulty breathing. There is no specific treatment and care is supportive.

Prevention

A dengue vaccine, Dengvaxia, became available for the first time in 2022. It is recommended for children and adolescents 9-16 years old who have laboratory-confirmed previous dengue virus infection and live in a dengue-endemic area. The vaccine is not approved for U.S. travelers to endemic areas. Unfortunately, the vaccine will be discontinued due to lack of demand. Taking actions to avoid mosquito bites remains the best form of prevention.

Figure 2. Recent Aedes Mosquitos Detections by County of San Diego Vector Control Program



Source:
County of San Diego Department of Environmental Health and Quality Vector Control Program
https://www.sandiegocounty.gov/content/sdc/deh/pests/aedes.html

Resources

- Centers for Disease Control and Prevention (CDC) Dengue website
- California Department of Public Health (CDPH) Dengue website
- CDPH Aedes Aegypti and Aedes Albopictus Mosquitoes website
- COSD Department of Environmental Health Invasive Aedes Mosquitoes website
- Pan American Health Organization (PAHO) Dengue website

Suggested citation:
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Table 1. Select Reportable Diseases

Disease and Case Inclusion Criteria (C,P,S)		2024 Sept.	2024 August	2024 January-Sept. (YTD)	Prior Years 2023 YTD	Prior Years Avg YTD, 2021-2023	Prior Years 2023 Total
Botulism (Foodborne, Infant, Wound, Other)	C,P	0	0	3	0	2.3	1
Brucellosis	C,P	0	0	1	3	3.0	3
Campylobacteriosis	C,P	89	106	883	878	755.3	1,122
Candida auris	C	19	18	106	71	36.3	95
Chickenpox, Hospitalization or Death	C,P	0	0	3	7	3.7	8
Chikungunya	C,P	1	2	3	0	0.7	0
Coccidioidomycosis	C	2	56	366	360	340.3	481
Cryptosporidiosis	C,P	8	17	103	101	70.7	131
Dengue Virus Infection	C,P	8	8	41	17	9.7	25
Encephalitis, All	C	3	4	23	23	24.0	34
Giardiasis	C,P	17	14	177	176	149.7	239
Hepatitis A, Acute	C	2	0	9	35	22.0	45
Hepatitis B, Acute	C	0	1	9	11	12.7	13
Hepatitis B, Chronic	C,P	27	39	453	562	595.7	741
Hepatitis C, Acute	C,P	0	2	76	87	72.3	112
Hepatitis C, Chronic	C,P	250	233	1,544	1,746	2,293.3	2,176
Legionellosis	C	4	5	48	68	57.3	94
Listeriosis	C	0	1	7	11	11.3	11
Lyme Disease	C,P	0	0	3	10	9.3	12
Malaria	C	3	3	13	9	7.3	16
Measles (Rubeola)	C	0	1	4	0	0.0	0
Meningitis, Aseptic/Viral	C,P,S	6	8	74	46	45.3	63
Meningitis, Bacterial	C,P,S	2	1	28	30	24.3	42
Meningitis, Other/Unknown	C	1	2	20	17	18.7	25
Meningococcal Disease	C,P	0	0	4	4	2.0	4
Mumps	C,P	0	0	1	0	1.3	0
Pertussis	C,P	34	41	483	78	59.0	329
Rabies, Animal	C	3	1	6	7	4.7	8
Rocky Mountain Spotted Fever	C,P	0	0	4	3	2.0	4
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	82	97	569	468	473.7	685
Shiga toxin-Producing *E. coli* (including O157)	C,P	24	18	202	167	155.3	265
Shigellosis	C,P	51	48	369	351	314.0	523
Typhoid Fever	C,P	0	0	3	5	8.7	7
Vibriosis	C,P	9	12	44	34	37.0	45
West Nile Virus Infection	C,P	1	0	1	0	2.0	0
Yersiniosis	C,P	10	6	105	65	38.7	86
Zika Virus	C,P	0	1	1	0	0.3	0

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. Includes San Diego County resident cases only.

San Diego County Sexually Transmitted Infection Data | San Diego County Tuberculosis Data

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Figure 4. Select Enteric Infections by Month
October 2023 – September 2024

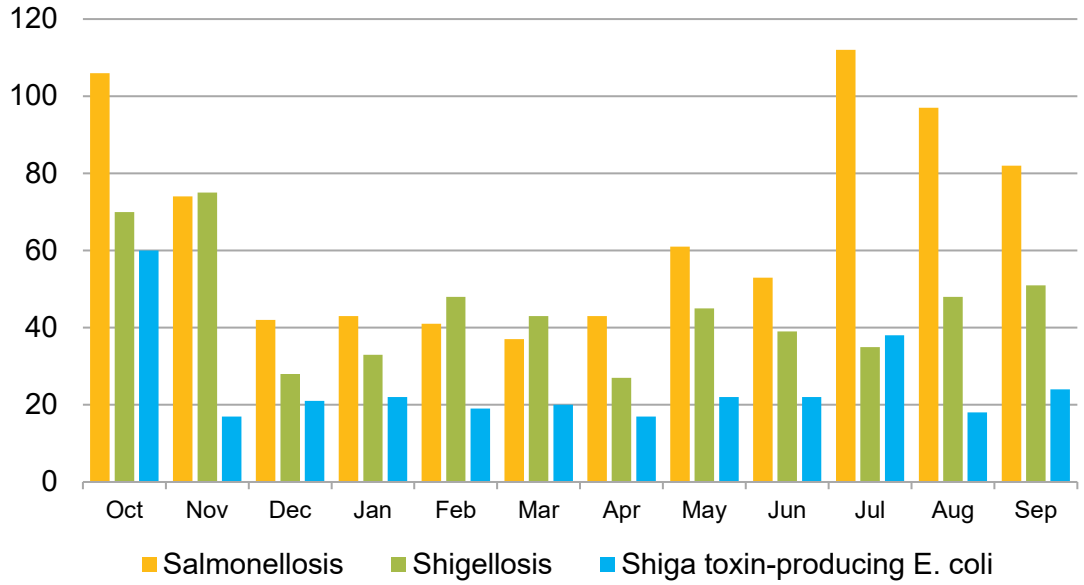

Figure 5. Select Vaccine-Preventable Infections by Month
October 2023 – September 2024

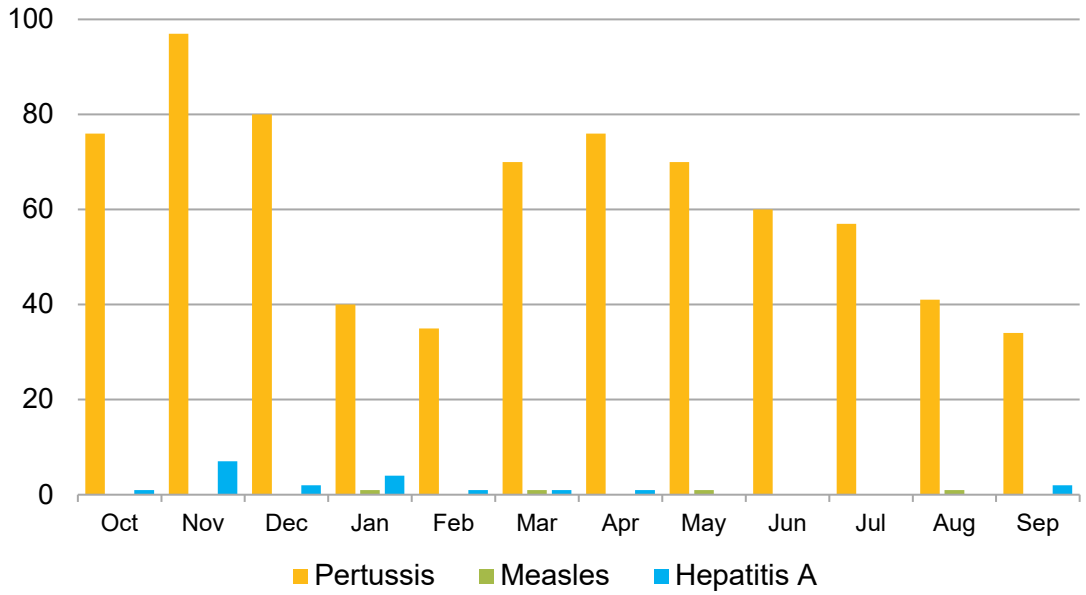

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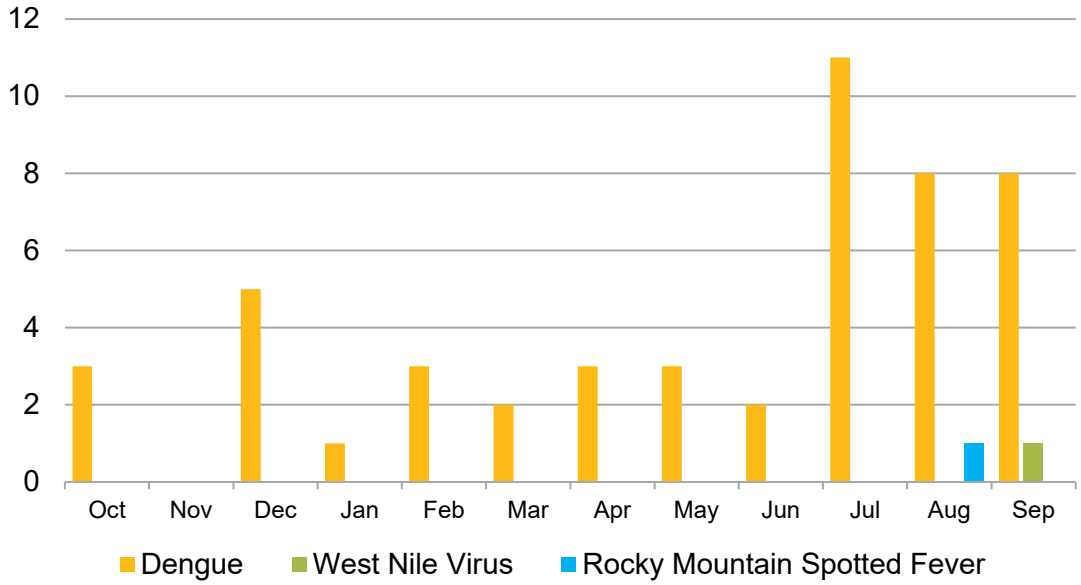
Figure 6. Select Vector-Borne Infections by Month
October 2023 – September 2024



All of the dengue cases are travel-associated. For more information on West Nile virus, see the County West Nile virus webpage.
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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.