EPIDEMIOLOGY AND IMMUNIZATION SERVICES BRANCH

MONTHLY COMMUNICABLE DISEASE REPORT

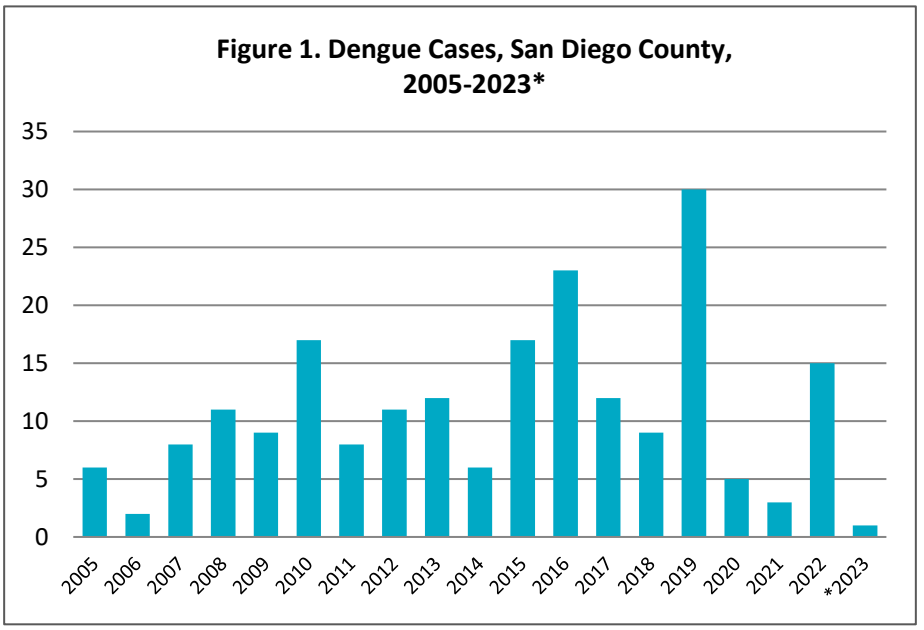
MAY 2023

Volume 7, Issue 5: June 15, 2023

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.



*2023 data are year-to-date; current as of 6/15/2023. 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 been documented in the continental U.S. (primarily in Florida and south Texas), 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 South America in 2023, specifically Peru.

Sustained transmission is 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, the main vectors for these infections, are becoming increasingly widespread in the U.S. so there is potential for local transmission. 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. *Aedes notoscriptus* mosquitoes were detected locally in 2018.

Local Cases

In San Diego County, 2019 was a peak year for dengue virus infections, with 30 reported cases, none locally transmitted. Local and national case counts plummeted in 2020 and 2021, likely due to interruptions in international travel due to the COVID-19 pandemic, but began to rebound in 2022, when San Diego County reported 15 cases. Because local transmission is possible if an *Aedes* mosquito bites a case-patient who is viremic (usually during the first few days after symptoms begin) while in San Diego County, the County's Vector Control Program is informed of potentially viremic cases so they can assess *Aedes* activity and take preventive actions.

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.

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DENGUE VIRUS INFECTION, continued

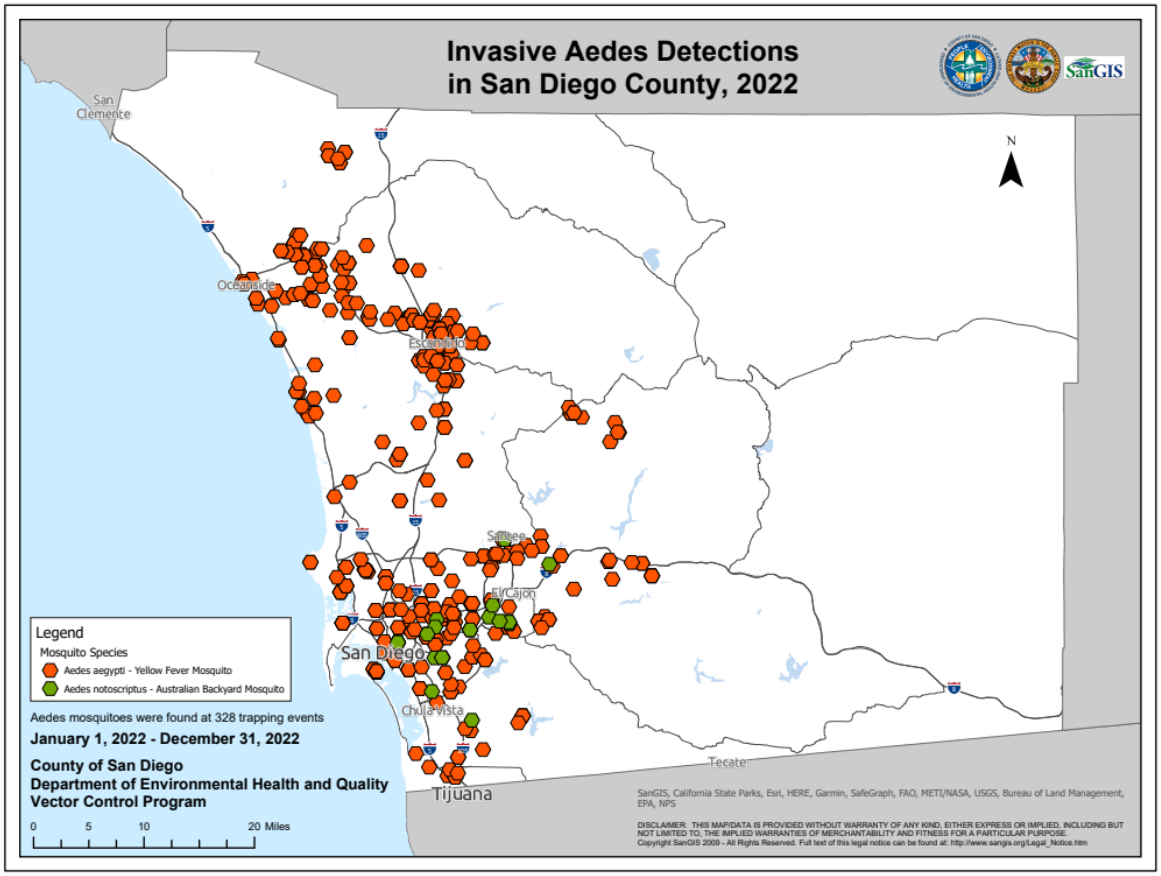
Presentation

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 viruses and infection with one induces lifelong immunity to that virus. However, persons may still be infected with the other viruses, and a second infection brings a greater risk of severe dengue, which can be fatal and requires immediate medical attention. Warning signs include persistent vomiting, fluid accumulation, mucosal bleeding and difficulty breathing. There is no specific treatment and care is supportive.

Prevention

A new 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. Taking actions to avoid mosquito bites remains the best form of prevention.

Figure 2. Aedes Detections in Mosquitos by County of San Diego Vector Control Program, 2022



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		2023			Prior Years		
Disease and Case Inclusion Criteria (C,P,S)		May	April	January – May (YTD)	2022 YTD	Avg YTD, 2020-2022	2022 Total
Botulism (Foodborne, Infant, Wound, Other)	C,P	0	0	0	0	0.7	5
Brucellosis	C,P	0	0	0	2	1.3	5
Campylobacteriosis	C,P	92	74	385	331	297.7	955
Chickenpox, Hospitalization or Death	C,P	0	0	1	0	1.0	1
Chikungunya	C,P	1	0	1	1	0.3	2
Coccidioidomycosis	C	23	46	177	182	190.3	426
Cryptosporidiosis	C,P	7	12	40	23	18.7	93
Dengue Virus Infection	C,P	0	0	1	2	1.3	14
Encephalitis, All	C	2	1	7	11	16.3	27
Giardiasis	C,P	14	18	76	82	70.0	191
Hepatitis A, Acute	C	5	9	30	12	10.0	30
Hepatitis B, Acute	C	1	0	4	8	7.3	12
Hepatitis B, Chronic	C,P	68	77	330	388	320.0	904
Hepatitis C, Acute	C,P	0	0	18	45	38.0	88
Hepatitis C, Chronic	C,P	141	128	828	1,353	1,507.3	2,943
Legionellosis	C	6	12	47	27	23.0	84
Listeriosis	C	1	1	5	5	2.7	18
Lyme Disease	C,P	0	0	0	2	2.3	7
Malaria	C	2	1	3	5	4.7	11
Measles (Rubeola)	C	0	0	0	0	0.0	0
Meningitis, Aseptic/Viral	C,P,S	3	4	19	29	28.7	75
Meningitis, Bacterial	C,P,S	4	0	13	15	12.7	33
Meningitis, Other/Unknown	C	0	2	7	9	10.7	23
Meningococcal Disease	C,P	2	0	3	0	1.7	2
Mumps	C,P	0	0	0	2	6.0	3
Pertussis	C,P	5	3	41	31	84.0	102
Rabies, Animal	C	2	0	2	1	1.3	3
Rocky Mountain Spotted Fever	C,P	0	0	0	0	0.7	3
Salmonellosis (Non-Typhoid/Non-Paratyphoid)	C,P	44	30	196	191	164.0	680
Shiga toxin-Producing *E. coli* (including O157)	C,P	20	19	64	74	56.3	208
Shigellosis	C,P	38	35	167	138	98.3	527
Typhoid Fever	C,P	0	1	2	10	6.0	13
Vibriosis	C,P	1	2	6	4	6.0	38
West Nile Virus Infection	C,P	0	0	0	0	0.0	3
Yersiniosis	C,P	2	6	20	10	11.0	46
Zika Virus	C,P	0	0	0	0	0.0	1

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 3. Select Enteric Infections by Month
June 2022 – May 2023

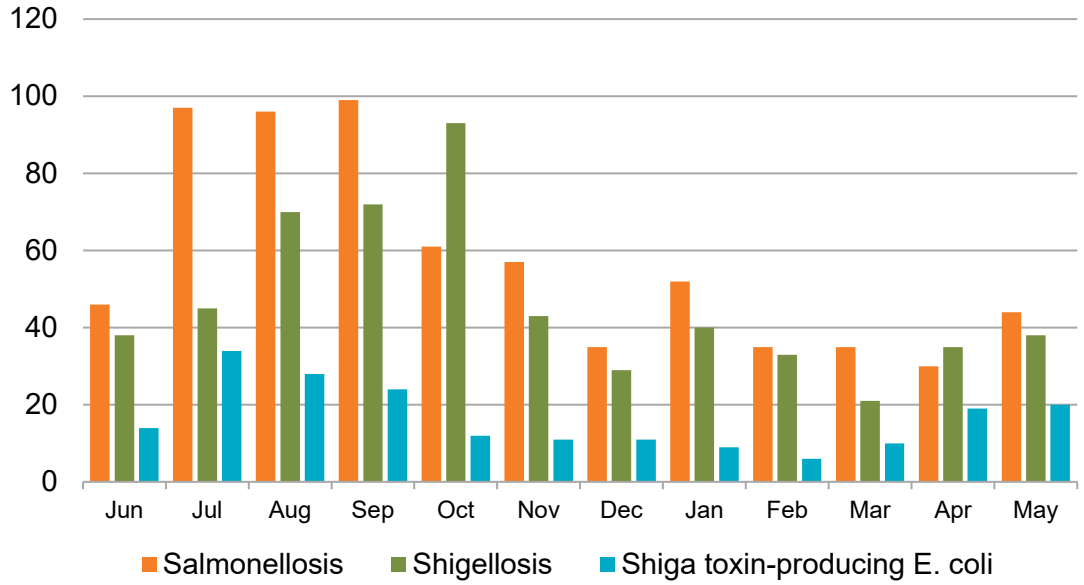

Figure 4. Select Vaccine-Preventable Infections by Month
June 2022 – May 2023

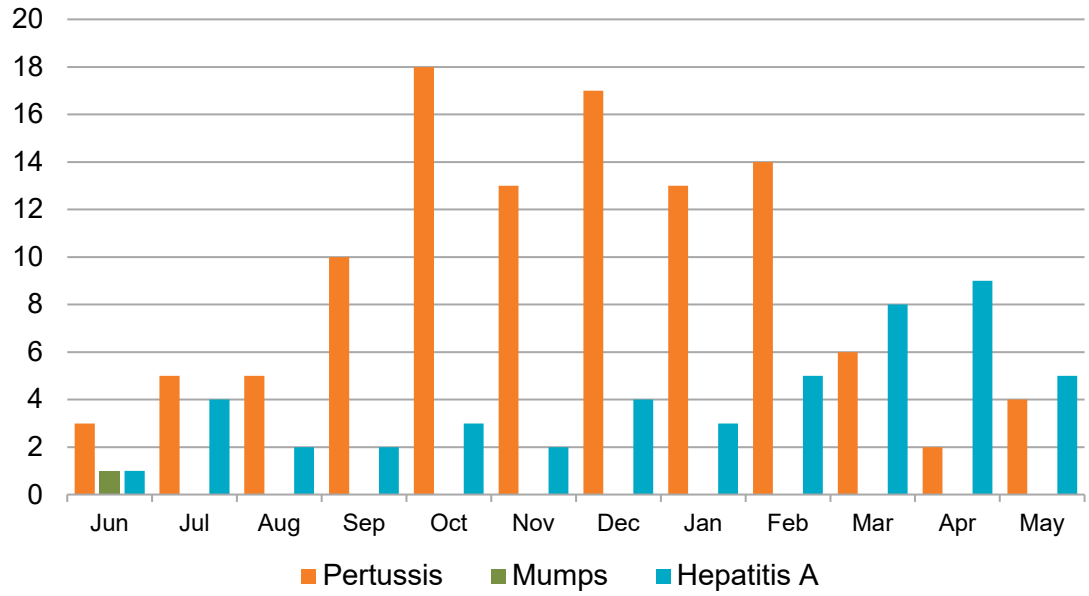

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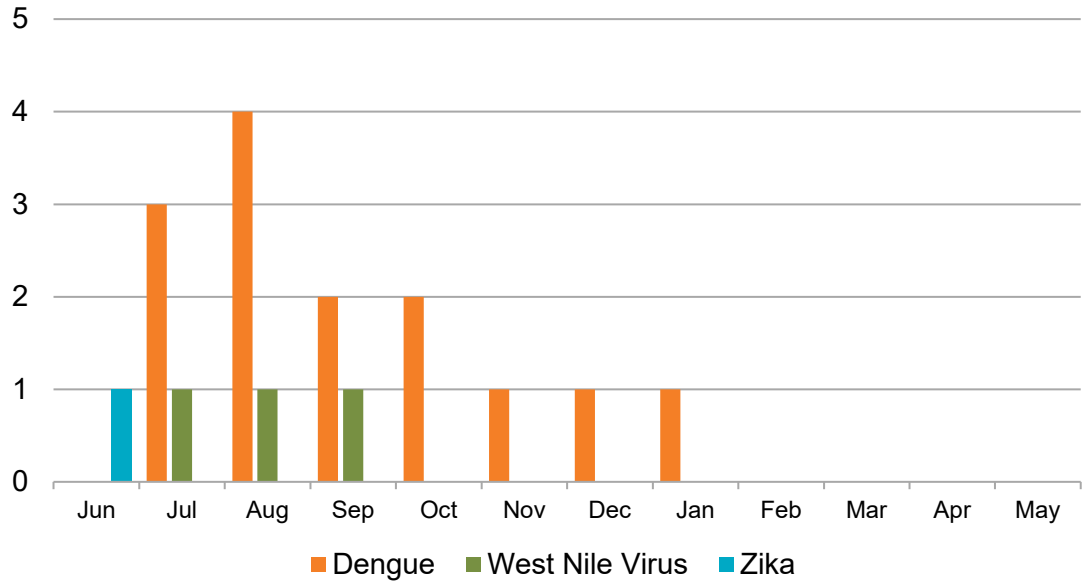
Figure 5. Select Vector-Borne Infections by Month
June 2022 – May 2023



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.