LAHAN
Los Angeles County Health Alert Network

LAC DPH Health Alert

First Locally Acquired Case of Dengue in California Detected in Pasadena

October 23, 2023

County of Los Angeles Public Health

This message is intended for emergency medicine, primary care, urgent care, internal medicine, and infectious disease providers.
Please distribute as appropriate.

Key Messages

- The first locally acquired case of dengue in California has been detected in a Pasadena resident.
- The risk of spread to other areas of the county is low. To date, the local vector control district has not identified dengue-infected mosquitoes in Pasadena.
- Providers should consider dengue in any patient with acute febrile illness and consistent symptoms, regardless of travel history.
- Providers should report suspected locally acquired dengue to Public Health immediately by phone.

Situation

The Pasadena Public Health Department (PPHD) has recently confirmed dengue infection in a Pasadena resident with no history of domestic or international travel. The resident developed symptoms in mid-September 2023 and is now recovering. Their household members are asymptomatic and report no history of travel.

PPHD is conducting neighborhood surveillance and targeted door-to-door education. The local vector control district is conducting enhanced mosquito trapping and testing with aggressive mosquito abatement to reduce risk of further spread.

Over the last five years, LAC DPH has documented an average of 30 travel-associated cases of dengue among residents each year. This is the first documented case of locally acquired dengue in LA County. Sporadic outbreaks and locally acquired cases of dengue have occurred in other states including in Arizona, Florida, Texas, and Hawaii, but have been relatively small and limited.

Risk of local transmission of dengue in other areas of LA County remains low. While the *Aedes* mosquito—the mosquito capable of transmitting dengue-- is found throughout LA County, no dengue-infected mosquitoes have been identified, including in the area around the case's residence. LAC DPH is working closely with PPHD and partners to minimize the possible risk of spread of dengue and other mosquito-borne diseases.

Actions Requested of Providers

- Obtain a travel history in all patients presenting with acute febrile illness.

- Consider dengue and other arbovirus infections (e.g., West Nile virus and chikungunya) in any patient with a typical clinical presentation, regardless of travel history (see Clinical Presentation below).
- Obtain diagnostic tests in suspect cases. The appropriate tests depend on time since illness onset (see Laboratory Testing below).
- Report any patient suspected to have locally acquired dengue infection to Public Health immediately (see Reporting below).

Reporting

Report any suspected locally acquired dengue to Public Health immediately by phone.

Los Angeles County DPH Acute Communicable Disease Control:
- Weekdays 8:30am–5pm: call 213-240-7941.
- After-hours: call 213-974-1234 and ask for the physician on call.

Long Beach Health and Human Services:
- Weekdays 8am-5pm: call 562-570-4302.
- After hours: call the duty officer at 562-500-5537.

Pasadena Public Health Department:
- Weekdays 8am-5pm: call 626-744-6089.
- After hours: call 626-744-6043.

Travel-associated dengue virus infection must be reported to Public Health by email, fax, phone, or mail within 1 working day from identification.

Dengue Overview

Background

Dengue is an infection with any of the 4 single-stranded RNA viruses of the genus Flavivirus, dengue virus, 1,2,3, or 4 (DENV1-4). Dengue is endemic in many tropical and subtropical regions worldwide.

Dengue is primarily transmitted to humans by the bite of an infected *Aedes* mosquito.

Clinical Presentation

Dengue can range from asymptomatic infection or mild illness to severe disease. The typical incubation period is 5-7 days.

Approximately one in four patients develop symptoms and most commonly have a mild to moderate, nonspecific, acute febrile illness. Typical presentation includes acute onset fever accompanied by a combination of the following: headache, retro-orbital pain, myalgia, bone pain, arthralgia, nausea and vomiting, rash, a positive tourniquet test, and leukopenia.

Approximately one in twenty patients develop life-threatening disease called severe dengue. People with a prior history of dengue infection are at increased risk of severe dengue as are infants, older adults, pregnant women, and those with chronic medical

conditions such as diabetes and chronic renal disease. Warning signs of severe dengue include abdominal pain or tenderness, persistent vomiting, mucosal bleeding, liver enlargement, clinical fluid accumulation, or laboratory results indicating an increase in hematocrit concurrent with a rapid decrease in platelets.

See CDC Clinical Presentation for more details.

Laboratory Testing

For patients presenting in the first seven days of illness, diagnostic testing should include both a nucleic acid amplification test (NAAT) such as real-time reverse transcription PCR (RT-PCR) *and* an IgM antibody test. Dengue virus antigen testing with nonstructural protein 1 (NS1 tests) can also be used to confirm infection.

For patients presenting more than seven days after illness onset, only IgM testing is recommended. If in doubt about the timing of symptom onset, both NAAT and IgM should be ordered. IgG is not useful for routine diagnosis because it remains detectable for life. A limitation of serological tests is that they can cross react with other arboviruses.

Both IgM antibody and RT-PCR tests are available at commercial laboratories in LAC. If access to commercial testing is not available, testing can be conducted at LAC DPH Public Health Laboratory after obtaining approval from LAC DPH.

For patients suspected of dengue, it is important to rule out infections with other arboviruses, such as West Nile virus and chikungunya virus.

See CDC Diagnosis for more details.

Treatment

No specific antiviral treatment for dengue is available.

Patients with mild symptoms should be advised to stay well hydrated and avoid aspirin (acetylsalicylic acid), aspirin-containing drugs, and other nonsteroidal anti-inflammatory drugs (such as ibuprofen) because of their anticoagulant properties. Fever should be controlled with acetaminophen and tepid sponge baths.

For at least one week, patients should avoid mosquitoes and use insect repellent to prevent additional spread.

Patients with severe disease require hospitalization. Intravenous fluid therapy is the mainstay of supportive care. Close observation and frequent monitoring in an intensive care unit may be required. Recognizing early signs of shock and promptly initiating intensive supportive therapy can reduce risk of death among patients with severe dengue to <0.5%. Prophylactic platelet transfusions and steroids are not recommended.

See CDC Treatment for more details.

Prevention

Preventing mosquito bites is the best way to prevent dengue and other mosquito-borne diseases. While there is a vaccine available, it is only approved for persons with a history of laboratory-confirmed dengue infection, see CDC Dengue Vaccine.

Aedes mosquitoes bite during the day and night and live indoors and outdoors. Information for the public, including print resources (in English and Spanish) are available on the CDC Prevent Mosquito Bites webpage.

Patients can be referred to their local vector control district to report problems with mosquitoes and request assistance. See flyer.

Additional Resources

LAC DPH
http://publichealth.lacounty.gov/acd/VectorDengue.htm

CDPH
https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Dengue.aspx

This Health Alert was sent by Dr. Sharon Balter, Director, Acute Communicable Disease Control Program, Los Angeles County Department of Public Health

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