



To: CAHAN San Diego Participants
Date: November 7, 2014

***Aedes aegypti* Mosquitoes and Dengue**

This health advisory informs local healthcare personnel of recent detections of the *Aedes aegypti* mosquito in San Diego County and cases of dengue in the border region of Mexico. References are provided for three diseases that may be transmitted by *Aedes aegypti*: dengue, chikungunya, and yellow fever.

***Aedes aegypti* Detections**

On October 28, 2014, San Diego County Department of Environmental Health (DEH) officials announced the [first detection in the county of *Aedes aegypti*](#), an invasive mosquito species that is the vector for dengue, chikungunya, yellow fever, and other diseases. Four mosquitoes were found in offices at the 32nd Street Naval Base. Two days later, DEH vector control officials [confirmed the discovery](#) of two *Aedes aegypti* mosquitoes at a home in Chula Vista. DEH is currently conducting surveillance in the southern part of San Diego County to determine the possible extent of *Aedes aegypti* infestation in the region.

The *Aedes aegypti* mosquito was [detected in Los Angeles County](#) in early October in the cities of Commerce and Pico Rivera. The discovery of *Aedes aegypti* in San Diego and Los Angeles counties increases the number of California counties with identified detections since 2013 to seven (Madera, Fresno, and San Mateo in 2013; Tulare, Kern, San Diego, and Los Angeles in 2014). Of note, *Aedes aegypti* has also been recently detected in [southern Arizona](#) and in the northern regions of the Mexican states of Baja California and Sonora. Information about the range of this mosquito and the diseases associated with it may be found at the [University of Florida entomology website](#) and the [CDC dengue webpage](#).

Dengue in Mexico and California

As of October 14, 2014, Mexico has reported 72,445 suspected cases of dengue this year to the Pan American Health Organization. This includes 16,092 lab confirmed cases. A map for locations of recent cases throughout Mexico and the world may be found at: <http://www.healthmap.org/dengue/en/>.

Along the border region, dengue transmission has been reported in Sonora and Baja California, Mexico. As of this date, the border region of Sonora has reported 178 dengue cases (of which 18 were locally acquired) and 7 dengue hemorrhagic fever cases. In Baja California, there have been 14 confirmed dengue cases (7 in Mexicali, 4 in Tijuana, and 3 in Ensenada). Two of the Mexicali cases were confirmed as locally acquired. This represents a larger than normal number of cases in northern Mexico, and locally acquired cases in Baja California have not been previously documented.

The California Department of Public Health (CDPH) has stated that there have been no confirmed or suspect locally-acquired cases of dengue in California. To date in 2014, San Diego has had one confirmed case of dengue in a 51-year-old male with travel to Angola and one probable case of dengue in a 57-year-old female with travel to Culiacan, Mexico. In California, 64 (11 confirmed and 53 probable) imported dengue cases have been reported this year.

Background on Dengue

Dengue continues to be a public health problem both worldwide and in the Americas. It is considered to be a dynamic systemic infectious disease that can be asymptomatic or manifest with a broad clinical spectrum. As many as 400 million people are infected yearly by the disease.

Symptoms of dengue include fever, joint pain, headache, retro-orbital pain, rash, myalgia, arthralgia, general weakness, and extreme fatigue. Sometimes hemorrhagic symptoms manifest including blood in vomit, urine, and stool or from the gums. Severe cases may result in shock, fluid accumulation and respiratory distress.

Early recognition of a patient's clinical phase is important in order to distinguish between classic dengue fever and dengue hemorrhagic fever and to tailor clinical management. Dengue hemorrhagic fever is characterized by three predictable pathophysiological phases:

- Febrile phase - viremia-driven high fevers;
- Critical/plasma leak phase - sudden onset of varying degrees of pleural effusion and ascites; and
- Convalescence or reabsorption phase - sudden arrest of plasma leak with concomitant reabsorption of extravasated plasma and fluids.

Dengue is typically [diagnosed using serology](#), but to avoid false negative results, serum specimens should be collected at least five days after onset of symptoms. Ideally, both acute and convalescent phase specimens are needed to make a diagnosis of dengue infection. If a patient with suspected dengue infection submits a late acute phase specimen that is negative (e.g., by RT-PCR or MAC-ELISA) and a convalescent specimen is not submitted, then the case is classified as laboratory-indeterminate.

For more information on dengue fever, and for clinical and laboratory guidance, please reference CDC and CDPH websites: <http://www.cdc.gov/Dengue/> and <http://www.cdph.ca.gov/HealthInfo/discond/Pages/Aedes-albopictus-and-Aedes-aegypti-Mosquitoes.aspx>. A comprehensive dengue resource is available from the World Health Organization here: http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf?ua=1

Recommendations for Providers and Hospitals

Providers play the key roles in the public health surveillance for dengue. In 2009, an astute clinician in New York identified the first case of domestically-acquired dengue in a patient with classic dengue fever and a history of recent travel to Key West, an area where the vector was established. Clinicians in San Diego County are requested to:

- **Review** the presenting signs and symptoms of illnesses transmitted by *Aedes aegypti*, including dengue and dengue hemorrhagic fever. CDC resources for clinical and diagnostic guidance include:
 - Chikungunya: <http://www.cdc.gov/chikungunya/>
 - Dengue: <http://www.cdc.gov/dengue/>
 - Yellow fever: <http://www.cdc.gov/yellowfever/>.
- **Consider** dengue (or chikungunya) in the differential diagnosis of febrile patients with other signs and symptoms consistent with dengue and recent international travel to dengue-endemic areas or recent presence in domestic locations where *Aedes aegypti* or *Aedes albopictus* have been detected.
- **Counsel** international travelers to check their destination countries on the [CDC travel website](#) to take steps to appropriately protect themselves against vector-borne and other endemic illnesses. Recent travel notices for illnesses transmitted by *Aedes aegypti* include [dengue in China](#) and [Japan](#), and [chikungunya in South America](#), [Central America](#), [the Caribbean](#), and [French Polynesia](#).
- **Inform** patients to protect themselves against mosquitoes in San Diego and refer them to the DEH vector control "[Fight the Bite](#)" website to learn about the "prevent, protect, report" strategy to minimize their risk for illness. Clinicians should be aware that West Nile virus (WNV) activity is persisting in the region beyond the typical April-to-October season. Updates on WNV activity in San Diego may be found at the [DEH WNV website](#).
- Immediately **report** cases of suspected dengue to the HSA Epidemiology Program via [Confidential Morbidity Report \(CMR\)](#) by FAX to 858-715-6458 or by calling at 619-692-8499. Do not wait for the results of dengue serologies because this could take several days. Questions about dengue diagnosis and reporting may also be directed to the [Epidemiology Program](#).

Thank you for your continued participation.

CAHAN San Diego

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