

1-7-2015

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Recommended Citation

Navarro, Carlos. "Outbreak of Mosquito-Borne Chikungunya Disease in Chiapas Puts Mexican Health Authorities on Alert." (2015). <https://digitalrepository.unm.edu/sourcemex/6130>

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Outbreak of Mosquito-Borne Chikungunya Disease in Chiapas Puts Mexican Health Authorities on Alert

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Category/Department: Mexico

Published: 2015-01-07

A mosquito-borne viral disease that has created major health concerns in Central America, the Caribbean, and parts of South America has appeared in Mexico, particularly in the southern state of Chiapas. A report from the Secretaría de Salud (SSA) said 131 cases of chikungunya were detected in Mexico between Nov. 14 and Dec. 20, 2014, with the majority of the infections detected in rural areas of Chiapas near Guatemala. Isolated cases have also been reported in Sonora and Sinaloa states in northwestern Mexico.

Chikungunya is not generally fatal but can cause extreme discomfort in infected individuals. The disease, similar to dengue fever, is found primarily in tropical areas and is transmitted by the bite of infected mosquitoes. The disease can cause high fever, joint and muscle pain, and headaches. "Chikungunya does not often result in death, but the joint pain may last for months or years and may become a cause of chronic pain and disability," said the Pan American Health Organization (PAHO), which has launched a prevention campaign in Latin America and the Caribbean. "There is no specific treatment for chikungunya infection, nor any vaccine to prevent it. Pending the development of a new vaccine, the only effective means of prevention is to protect individuals against mosquito bites."

PAHO said the disease could be fatal to infected persons who were already suffering from other diseases. "Cases of death from chikungunya are very rare and almost always related to other existing health problems," said the organization. "Older adults and people with chronic illnesses such as diabetes, hypertension, chronic kidney failure, tuberculosis, and HIV should see a physician for better evaluation and monitoring of the disease."

The disease is relatively new to Latin American and the Caribbean region, with the first confirmed case reported in December 2013. The first record of the disease outside the region dates back to 1952 in Tanzania, but major outbreaks occurred in 2004 on the African continent, in South Asia, the Pacific region, and Southeast Asia, said PAHO. An outbreak was also reported in the Emilia-Romagna region of Italy in 2007.

The number of infections has grown significantly in the Americas since December 2013, with nearly 22,800 confirmed cases recorded in the region through Dec. 29, 2014, said a recent PAHO report. A large share of these cases has been reported in the Caribbean, including more than 9,000 in the Dominican Republic and Puerto Rico, and another 4,000 in what the PAHO termed the "non-Latin Caribbean."

A large number of cases has also been confirmed in the past year in South America, with more than 2,300 reported in Venezuela, 1,300 in Brazil, and 416 in Colombia. In Central America, Nicaragua reported the largest number of infections with more than 1,900 cases. Guatemala and El Salvador each had more than 100 confirmed cases.

The rapid spread of the disease in the Americas has created some concerns among countries in the region, particularly those in tropical areas capable of breeding the carriers of the disease, the *Aedes aegypti* and *Aedes albopictus* mosquitoes. PAHO says the speed by which chikungunya spread in the region is attributed to its relatively recent arrival. "Since it is a new virus, defenses have not been built against it and the entire populations susceptible to chikungunya," said PAHO.

Mexico concerned about further spread of disease

The appearance of the disease in Chiapas in mid-November 2014 has put Mexican authorities on alert. The infection was diagnosed in an 8-year-old girl in the community of Arriaga, Chiapas, near the border with Oaxaca state. A prior case was reported in the state of Jalisco, but the infected individual contracted the disease while participating an athletic event on the Caribbean island of Barbuda.

Officials at the Secretaría de Salud (SSA) have recorded 131 cases of chikungunya between that first detection on Nov. 14 and Dec. 20 of last year. Almost all of the cases were reported in Chiapas state, although there were single cases recorded in the Pacific states of Sonora and Sinaloa.

The SSA is working on the premise that chikungunya is here to stay, and health authorities have taken appropriate measures to educate Mexicans about detection, prevention, and treatment. "There is no vaccine or medication to prevent infections of the chikungunya virus, so basic cleanliness and personal protection are the best prevention practices," the SSA said in a special section created on the health ministry's Web site.

Cuitláhuac Ruiz Matus, an epidemiology specialist at the SSA, said the experience of health authorities with treating dengue fever, also transmitted by the *Aedes aegypti* mosquito, is useful in creating a plan to deal with chikungunya. While the two diseases have similarities, there are some marked differences. "Muscle and joint pain is more intense with chikungunya fever, which affects the hands, feet, knees, and back, and is capable of disabling people from performing such simple tasks as fetching a bottle of water," said the SSA.

The one symptom of dengue fever that does not occur with chikungunya is the presence of hemorrhages—patches of blood under the skin.

Even though the disease was initially limited to Chiapas, its spread to Sonora and Sinaloa are indications that most of Mexico is vulnerable. Ruiz Matus said almost every region of the country is vulnerable because of Mexico's generally warm climate. The exceptions are high-altitude zones, including the Valle de México (Mexico City and surrounding areas).

In addition to attempting to control the spread of the disease in Mexico, the SSA is working with counterparts in Guatemala to encourage prevention among communities that share the Mexico-Guatemala border. According to the PAHO statistics, 198 cases of chikungunya were confirmed in Guatemala in 2014.

Francisco Javier Paniagua Morga, an SSA representative in Chiapas, said Mexico has allocated about 30 million pesos (US\$2 million) to create an education and prevention campaign. The project, launched in December 2014 in the area near Talismán, Chiapas, and El Carmen, Guatemala, will employ 700 people and will be extended through the entire border area. [Peso-dollar conversions in this article are based on the Interbank rate in effect on Jan. 7, 2015, reported at 14.78 pesos per US \$1.00.]

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