Medical Xpress

Chikungunya virus may be coming to a city near you—learn the facts

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Credit: The University of Texas Medical Branch at Galveston

The mosquito-borne chikungunya virus has been the subject of increasing attention as it spreads throughout South America, Central America, the Caribbean and Mexico. This painful and potentially debilitating disease is predicted to soon spread to the U.S.

The University of Texas Medical Branch at Galveston's Scott Weaver, globally recognized for his expertise in mosquito-borne diseases, has been studying chikungunya for more than 15 years. Weaver and fellow infectious disease expert Marc Lecuit of the Institut Pasteur have summarized currently available information on this disease in the March 26 edition of the *New England Journal of Medicine*.

Since chikungunya was first identified in1952 in present-day Tanzania, the virus has been confirmed in other African countries, Asia, The South Pacific and Europe. In Dec. 2013, the first locally acquired case of chikungunya in the Americas was reported in the Caribbean.

Since then, chikungunya has been identified in 44 countries or territories throughout the Americas with more than 1.3 million suspected cases reported to the Pan American Health Organization from affected areas.

Symptoms appear about three days after being bitten by an infected mosquito. The most common symptoms and signs are fever and severe joint pain and may include headache, arthritis, muscle pain, weakness and rash. Some patients will feel better within a week but others develop longer-term joint pain that can last weeks to years. Death is rare but can occur. People at increased risk for severe disease include young children, older adults and people with medical conditions such as diabetes or heart disease.

Other than anti-inflammatory drugs to control symptoms and joint swelling, there are no specific therapies to treat infected persons and no licensed vaccines to prevent chikungunya fever.

"Chikungunya continues to be a major threat to public health around the world," said Weaver. "Until there is a treatment or vaccine, the control of chikungunya fever will rely on mosquito reduction and limiting the contact between humans and the two virus-carrying mosquitoes, *Aedes aegypti* and *Aedes albopictus*."

These efforts generally focus on reducing or treating standing water and water storage containers where eggs are laid and larvae develop as well as wearing protective clothing and/or insect repellent.

Current research is focused on better understanding how exactly the

virus enters and multiplies within the human and mosquito body. Researchers are also learning more about why some people develop long-term chronic joint pain after the initial chikungunya fever while others do not.

Several promising chikungunya vaccine candidates have reached late preclinical or phase one clinical testing, but final development will require major commercial investments. Another challenge to vaccine development lies in targeting locations where there will be many cases of chikungunya fever to set up and conduct clinical trials.

Weaver is the director of the UTMB Institute for Human Infections and Immunity, scientific director of the Galveston National Laboratory and leads the Global Virus Network's Chikungunya Task Force.

More information: *New England Journal of Medicine*, www.nejm.org/doi/full/10.1056/NEJMra1406035

Provided by University of Texas Medical Branch at Galveston