Long-term global threat posed by Zika Virus remains unknown

GAINESVILLE, Fla. — The Zika virus could become endemic in parts of Central and South America, but the long-term global threat posed by the virus remains unclear without more research, according to the authors of a paper published online in today’s issue of the journal Science.

“One of the big questions about this outbreak is whether Zika virus will stick around or disappear after causing this sizeable outbreak across many countries in the region,” said Derek Cummings, a professor of biology at the Emerging Pathogens Institute and a co-author of the review. “Two major determinants of the ability of the virus to persist are the role of immunity and the breadth of host species that can contribute to the ongoing transmission of the virus.”

Genetic analysis of the Zika virus suggests that there are already permanent viral reservoirs in other regions.

Discovered in the Zika forest of Uganda in 1947, the virus soon split into African and Asian “clades” or viral strains. The African strain is maintained in an enzootic cycle of transmission, where transmission between non-human primates occurs regularly and the role of transmission among humans is unclear.

“The clear split of Asian and African Zika virus isolates into distinct clades provides some evidence of endemic transmission in these regions,” said Kyra Grantz, a research assistant working with Cummings. Grantz, a contributing author to the paper, conducted the phylogenetic analysis of Zika virus for the review.

Said Cummings: “Humans may be infected regularly in many settings in Africa, supporting long-term transmission, or they may be infected only occasionally, and non-human primates play the central role of maintaining the virus.”

(continued on page 3)
**Zika virus detected in Haiti**

A new mosquito-borne disease has been identified in Haiti, with faculty from the University of Florida’s Emerging Pathogens Institute (EPI) determining the global pattern of Zika virus. Because of this finding, which underscores the fact that there are additional viruses ‘waiting in the wings,’ researchers are watching for the future, and for which we need to be prepared.

The case was identified from a blood sample taken in January 2015 from an 8-year-old boy in the village of Gressier, Haiti, and was sent to EPI for additional testing. The plasma samples, which were examined using transcription polymerase chain reaction, indicated that the patient had a fever and joint pain but no rash or conjunctivitis.

The patient, in addition to a “new” virus that was subsequently identified as Mayaro, was also a feature of Mayaro fever, however, and muscle pain and rashes. Abdominal pain is also a feature of Mayaro fever, and after the 2014 chikungunya outbreak, this case signals the start of a new outbreak in the Caribbean region.

“The virus we detected is genetically similar to closely related flaviviruses could give rise to new epidemics that we don’t know yet if it is unique to Haiti or if it is a recombinant strain from different types of Zika viruses,” said Glenn Morris, M.D., M.P.H., director of the Centers for Disease Control and Prevention’s journal, Emerging Infectious Diseases. “Hopefully we will not see the same Zika threat.”

The role of genetically related pathogens in the spread of Zika virus once in their lives, reducing the probability that Zika virus can persisting after this initial outbreak, as non-human primates could also contribute to the transmission,” he added. “In the Americas, there is a plausible role for non-human primates in contributing to the maintenance of Zika virus transmission, there is a risk of microcephaly in newborn babies. The results of this study will help to understand the role of environmental and global health department in this disease.”

**Zika threat continued from page 1**

The findings were published online Aug. 26 in *Emerging Infectious Diseases*.

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EPI NEWSLETTER

Non-virus transmission for months – and in some countries, which have experienced local Zika already produced projections for other Miami-Dade County. UF researchers had first locally acquired cases of the Zika virus in the Department of Health identified the nation's

The projections come weeks after the Florida handouts expected to pop up from several other Southeastern states with outbreaks. The number of infected mosquitoes is expected to increase in the coming months, and the virus is projected to spread to additional areas of excellence at UF.

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Zika Virus and the Emerging Pathogens Institute

In early 2016, Brazil shocked the world with its finding that the Zika virus had caused a sharp rise in the number of babies born with birth defects such as microcephaly.

Many Floridians were infected with the Zika virus while traveling abroad, and in July, Florida Department of Health officials confirmed Florida mosquitoes are transmitting the virus, opening the possibility of contracting Zika without ever leaving the state.

The Emerging Pathogens Institute has assembled the best minds in virology, genetic sequencing, and public health to produce superior research and recommendations to keep Floridians safe.

“We knew the virus was present in Haiti in 2014,” said Glenn Morris, M.D., M.P.H., professor of medicine and director of the Emerging Pathogens Institute at the University of Florida.

“By using the sophisticated culturing and sequencing capabilities we have here at the Emerging Pathogens Institute, we were able to begin to fill in some of the unknown areas in the history of the Zika virus, leading us toward a better understanding of what caused this outbreak to suddenly occur at the magnitude it did in Brazil.”

While the institute has received funds to study Zika in the Caribbean, the federal government has not yet designated resources to support research on eradicating local Zika transmission in Florida.

We Need Your Help

Release of national and state funding for Zika research is critical. In the meantime – by donating to the Emerging Pathogens Institute, you can directly support the Institute’s efforts to combat the Zika virus within Florida.

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