

First hospital-based rapid detection Zika test now available

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Collaboration between two Texas Medical Center institutions has resulted in today's release of the country's first hospital-based rapid tests for the Zika virus.

Pathologists and clinical laboratory scientists at Texas Children's Hospital and Houston Methodist Hospital developed the Zika direct [test](#) in a matter of weeks as part of the L.E. and Virginia Simmons Collaborative in Virus Detection and Surveillance. This sponsored program was designed to facilitate rapid development of tests for virus detection in a large metropolitan area. The tests are customized to each hospital's diagnostic laboratory and will provide results within several hours. They can be performed on blood, amniotic fluid, urine or spinal fluid, according to James Versalovic, M.D., Ph.D. pathologist-in-chief at Texas Children's and leader of the Texas Children's Zika test development team along with James Dunn, Ph.D., director of medical microbiology and virology at Texas Children's.

Zika virus, which is mostly transmitted through mosquitoes, is a flavivirus that contains RNA as its genetic material. The new diagnostic test identifies virus-specific RNA sequences to directly detect Zika virus.

"With travel-associated cases of the Zika virus becoming more prevalent in the United States, coupled with the looming increase in mosquito exposure during spring and summer months, we must be prepared for a surge of Zika testing demand," said Versalovic. "We must provide

answers for anxious moms-to-be and families who may experience signs and symptoms or may simply have travel history to endemic areas."

Before this test was developed, physicians faced the possibility of long delays of testing in local and state public health laboratories and the Centers for Disease Control.

"Hospital-based testing that is state-of-the-art enables our physicians and patients to get very rapid diagnostic answers. If tests need to be repeated or if our treating doctors need to talk with our pathologists, we have the resources near patient care settings," said James M. Musser, M.D., Ph.D., Chair of the Department of Pathology and Genomic Medicine at Houston Methodist Hospital and leader of the Houston Methodist test development team along with Randall J. Olsen, M.D., Ph.D., director of the molecular diagnostics laboratory.

Musser said the test was designed to detect the genetic material of the virus, its RNA, so that virus is directly detected in pregnant women and any other adult or child with this virus infection. This test is specific and can distinguish Zika virus infection from Dengue, West Nile or Chikungunya virus infections. Every viral particle contains genes in its RNA and these RNA sequences are directly detected during pregnancy in amniotic fluid or anytime in blood, spinal fluid or urine.

"This is a significant development as health authorities are recommending all pregnant women who have traveled to a place with a Zika virus outbreak get tested," Musser said.

At the current time, only registered patients at Texas Children's or Houston Methodist hospitals can receive the test but the labs will consider referral testing from other hospitals and clinics in the future.

The test will be initially offered to patients with a positive travel history

and symptoms consistent with acute Zika [virus infection](#) such as a rash, arthralgias or fever or asymptomatic pregnant women with a positive travel history to any of the affected countries. The World Health Organization is now advising [pregnant women](#) to consult their doctors before traveling to places with Zika virus outbreaks and consider delaying travel. The CDC issued similar guidelines to American women last month.

The collaboration between Texas Children's and Houston Methodist Hospital was made possible by philanthropists, Virginia "Ginny" and L.E. Simmons who created the program after the 2014 Ebola [virus](#) scare highlighted the need for more focus on these infectious diseases.

"It is so great to see the progress these teams have made in such a short time. The work they are doing has such an impact on so many lives," Simmons said. "I am so grateful to know that the funds we donated are being used to make these types of advances in the Texas Medical Center."

Provided by Houston Methodist

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