

## **Infectious Disease Clinician Update #4 - Zika Virus Outbreak**

### **Recommendations for Zika virus testing and submission of samples to the Tennessee State Laboratory**

#### **Summary:**

- Zika virus testing (both rRT-PCR and serology) is available at the Tennessee State Laboratory and CDC
    - Submission of samples to the Tennessee State Laboratory for Zika virus testing requires a phone consult with a Regional Health Officer. Contact your Local/Regional Health Department using the information provided here: <http://tn.gov/health/topic/localdepartments>
    - Both urine and serum are requested on all patients approved for testing at the Tennessee State Laboratory.
  - Commercial laboratory testing for Zika virus is available, but only by rRT-PCR, and only for serum samples taken within 7 days of symptom onset.
- 

On Monday, May 13, 2016, CDC issued a **Health Advisory** providing information on the use of urine for diagnostic testing of suspected Zika virus infection: <http://www.cdc.gov/mmwr/volumes/65/wr/mm6518e1.htm>).

CDC recommends that Zika virus real-time reverse transcription–polymerase chain reaction (rRT-PCR) testing of urine collected less than 14 days after symptom onset, along with testing of patient-matched serum samples, for the diagnosis of suspected Zika virus infection. Further investigation is needed in order to determine the sensitivity and utility of Zika virus rRT-PCR on urine specimens collected  $\geq$  14 days after onset of symptoms. Given the likelihood that the virus may last in urine longer than 14 days post-onset, **the Tennessee State Lab will test all urine samples submitted along with serum regardless of the timing of sample acquisition for patients approved for testing by a Regional Health Officer.**

On Tuesday, May 31, 2016, CDC published an **MMWR** regarding the interpretation of Zika virus antibody test results ([http://www.cdc.gov/mmwr/volumes/65/wr/mm6521e1.htm?s\\_cid=mm6521e1\\_e](http://www.cdc.gov/mmwr/volumes/65/wr/mm6521e1.htm?s_cid=mm6521e1_e)).

CDC indicates that:

- For persons with suspected Zika virus disease, a positive rRT-PCR result confirms Zika virus infection, but a negative result does not exclude infection.
- In these cases, antibody testing can identify additional recent Zika virus infections. If immunoglobulin (Ig) M test results are positive, equivocal, or inconclusive, performing a plaque reduction neutralization test (PRNT) is needed to confirm the diagnosis.
- Recent evidence suggests that a 4-fold higher titer by PRNT might not discriminate between anti-Zika virus antibodies and cross-reacting antibodies in all persons who have been previously infected with or vaccinated against a related flavivirus.
- Thus, a more conservative approach to interpreting PRNT results is now recommended to reduce the possibility of missing the diagnosis of either Zika or dengue virus infection.
- Pregnant women with laboratory evidence of a recent Zika virus infection or flavivirus infection should be evaluated and managed for possible adverse pregnancy outcomes and reported to the appropriate Zika virus pregnancy registry.
- Health care providers should consult with state or local public health authorities for assistance in interpreting test results.

**Commercial lab testing:** Currently commercial labs can only test serum samples by rRT-PCR. **TDH reminds physicians that this test is only recommended for samples taken within 7 days of symptom onset.** As indicated above, negative rRT-PCR results do not exclude the possibility of infection and **serum and urine** samples may be sent to the state laboratory for further testing.

**Sample submission to the state laboratory:** Guidance for submitting samples to the state laboratory can be found at the TDH Zika Virus Disease Web site under Testing: <https://apps.health.tn.gov/ReportableDiseases>

If, for whatever reason, you are unable to send specimens directly from your practice to the Tennessee State Laboratory, please discuss alternative options with the Regional Health Officer at the time testing is approved. The Tennessee Department of Health is monitoring for other potentially mosquito-borne diseases as well and will update you as needed regarding: Chikungunya, Dengue, and Yellow-fever.