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March 1, 2019 (Amends version dated Sep 15, 2017)

To: North Carolina Clinicians

From: Zack Moore, MD, MPH, State Epidemiologist  
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Subject: **Zika virus surveillance and reporting**

This memo provides updated guidance on Zika virus testing and provides notice that the North Carolina State Laboratory of Public Health will no longer perform testing of asymptomatic pregnant women with recent possible Zika virus exposure but without ongoing possible exposure.

### **Transmission and background**

Zika virus is transmitted most commonly by the Yellow Fever mosquito (*Aedes aegypti*). Intensive survey efforts have not identified this mosquito in North Carolina in recent years and local transmission of Zika virus has not been identified.<sup>1</sup> While a relatively large number of travel associated Zika virus cases were reported in NC in 2016 (101 cases) case counts in subsequent years have decreased significantly (4 in 2018).

### **Clinical comparison of dengue, chikungunya and Zika virus infections**

Zika virus circulates concurrently throughout Latin America with dengue and chikungunya viruses, and present with similar manifestations and overlapping symptoms. Criteria to differentiate infections based on dichotomous symptomatology and continuous laboratory parameters have been developed.<sup>2,3,4</sup> Due to specific concerns regarding Zika virus congenital infections the Centers for Disease Control and Prevention (CDC) has produced comprehensive guidance for testing and management of persons potentially infected with Zika virus.

### **CDC recommends Zika virus testing for the following:**<sup>5,6</sup>

- Anyone symptomatic for Zika virus with recent possible Zika virus exposure
- Symptomatic pregnant women with recent possible Zika virus exposure
- Asymptomatic pregnant women who live in or have daily or weekly travel to an area currently affected by Zika
- Pregnant women with recent possible Zika virus exposure who have a fetus with prenatal ultrasound findings consistent with congenital Zika virus infection
- Exposure is defined as: Travel to, or residence in an area with risk for mosquito-borne Zika virus transmission or sex with a partner who has traveled to or resides in an area with risk for mosquito-borne Zika virus transmission

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**Zika virus testing is not recommended for the following:**<sup>5,6</sup>

- Non-pregnant asymptomatic individuals
- Preconception screening

**Testing of Asymptomatic Pregnant women**

The North Carolina State Laboratory of Public Health will no longer perform testing of asymptomatic pregnant women with recent possible Zika virus exposure (i.e. through travel or sexual exposure) but without ongoing possible exposure. However, patients and providers seeking testing of asymptomatic pregnant women with recent possible Zika virus exposure but without ongoing possible exposure should contact commercial clinical laboratories to ascertain availability of this service. NCSLPH will no longer be accepting specimens from asymptomatic pregnant women for Zika testing after March 31, 2019.

The initial public health decision to test those patients was made in 2017 in effort to increase case ascertainment. In 2018 over 80% of 1052 Zika virus tests at the SLPH were for asymptomatic pregnant women with recent possible Zika virus exposure, but without ongoing possible exposure. None of the tests performed at the SLPH for asymptomatic pregnant women with recent possible Zika virus exposure but without ongoing possible exposure revealed active or recent infection. Additionally Zika virus transmission in the western hemisphere has abated and the Pan American Health Organization considers the region of the Americas to be in a post-epidemic period.

Table 1. Updated Zika Virus Testing Recommendations

<b>Symptomology and Exposure</b>	<b>When to test</b>	<b>Which Test(s)?</b>
Symptomatic with possible ZIKV exposure	<14 days post-symptom onset	Concurrent serum, urine, and whole blood nucleic acid testing (NAT) and ZIKV IgM serology, if NAT negative
	≥14 days post-symptom onset	ZIKV and DENV IgM serology
Symptomatic pregnant women with possible ZIKV exposure	Up to 12 weeks post-symptom onset	Concurrent serum, urine, and whole blood NAT and serum IgM
	>12 weeks post-symptom onset	ZIKV and DENV IgM serology
Asymptomatic pregnant women with <b>ongoing</b> possible ZIKV exposure	Three times during pregnancy	Concurrent serum, urine, and whole blood NAT

**Caring for Pregnant Women with Possible Zika Virus Exposure**<sup>6</sup>

CDC continues to recommend that pregnant women not travel to areas with risk for Zika virus transmission. Clinicians should ask all pregnant women about their risk for possible Zika virus exposure *before* and *during* pregnancy. This includes questions regarding presence of Zika virus-related symptoms, place and duration of travel, frequency of travel, and any control measures. Testing of placental tissue will be evaluated on a case-by-case basis. Please contact the Communicable Disease Branch for additional guidance.

**Evaluation and Care of Infants with Possible Congenital Zika Virus Exposure**

Pediatric healthcare providers should ask about possible maternal and congenital Zika virus exposure for every newborn. Routine pediatric care, including measurement of head circumference and newborn hearing screening, should be given to infants born to mothers who had possible exposure to Zika virus but were not tested. Head ultrasound and ophthalmologic assessment should also be considered based on the level of

possible exposure such as length and type of exposure, use of prevention measures, and intensity of Zika virus transmission at travel location.<sup>6</sup>

### **Reporting**

Per 10A NCAC 41A.0101, suspected or confirmed Zika, chikungunya and dengue virus infection is declared to be dangerous to public health in North Carolina and is reportable. Please contact the Communicable Disease Branch at (919) 733-3419 if you have any questions.

### **References:**

1. A Statewide Survey of Container Aedes Mosquitoes (Diptera: Culicidae) in North Carolina, 2016: A Multiagency Surveillance Response to Zika Using Ovitrap. <https://www.ncbi.nlm.nih.gov/pubmed/30380070>.
2. Clinical and differential diagnosis: Dengue, chikungunya and Zika. <https://www.sciencedirect.com/science/article/pii/S0185106316301135#bib0335>
3. Distinguishing Zika and Dengue Viruses through Simple Clinical Assessment, Singapore. [https://wwwnc.cdc.gov/eid/article/24/8/17-1883\\_article](https://wwwnc.cdc.gov/eid/article/24/8/17-1883_article)
4. Is it Chikungunya or Dengue? [https://www.cdc.gov/chikungunya/pdfs/poster\\_chikv\\_denv\\_comparison\\_healthcare\\_providers.pdf](https://www.cdc.gov/chikungunya/pdfs/poster_chikv_denv_comparison_healthcare_providers.pdf)
5. Zika testing guidance. <https://www.cdc.gov/zika/hc-providers/testing-guidance.html>
6. MMWR July 28, 2017 / 66(29);781-793. [https://www.cdc.gov/mmwr/volumes/66/wr/mm6629e1.htm?s\\_cid=mm6629e1\\_w](https://www.cdc.gov/mmwr/volumes/66/wr/mm6629e1.htm?s_cid=mm6629e1_w)