## Zika Fever Sample Submission Guidance for County Health Departments:

**Notification if there is a suspected case of Zika fever:**

- County health departments should immediately inform their local mosquito control district of suspect imported and locally acquired Zika fever or other mosquito-borne disease cases who were in the county during the viremic stage of illness (first week of illness).
- **County health departments should immediately contact Dr. Andrea Bingham (850-245-4444 ext. 3425) or Dr. Danielle Stanek (850-245-4117) for any cases with possible fetal impacts or suspected Guillain-Barre Syndrome (GBS), or if a suspected locally acquired case is under investigation.**

**Requirements for Zika Fever testing:**

- Currently pregnant women who (while pregnant) experienced two or more of the following signs/symptoms: fever, maculopapular rash, arthralgia, or conjunctivitis **within two weeks of travel to an area reporting Zika virus activity** regardless of the length of time since the travel/illness occurred

OR

- Mothers of an infant or fetus with microcephaly or intracranial calcifications **and** with history of travel to an area with Zika virus activity during pregnancy

OR

- If not pregnant, persons with two or more of the following signs/symptoms: fever, maculopapular rash, arthralgia or conjunctivitis **and** a history of travel to an area reporting Zika virus activity in the two weeks prior to illness onset **or** is a suspect local case

- Suspect local cases: ask if household members report travel in past month, what testing has been done to rule out more common illnesses such as influenza, recent outside activities, other contacts with similar symptoms.

Share the CDC MMWR with clinicians evaluating pregnant women (as well as the other relevant Zika virus tools): Interim Guidelines for Pregnant Women During a Zika Virus Outbreak — United States, 2016. MMWR; January 19, 2016 / 65(2);1–4: http://www.cdc.gov/mmwr/volumes/65/wr/mm6502e1er.htm

**Laboratory samples:**
**PCR testing of serum or urine at Bureau of Public Health Laboratories (BPHL)-Tampa or BPHL-Jacksonville**

- Serum sample collected within the first 7 days of illness (**2 ml serum/red or tiger top tube)** AND/OR urine sample collected ≤21 days of illness (**10 ml collected in a sterile container).**
- Both serum and urine samples are preferred at least initially until we get a sense if using a particular sample type consistently improves test sensitivity.
- Other samples that may be tested using PCR if available: CSF, amniotic fluid, birth cord blood, and tissues (placenta, umbilical cord, fetal tissues, etc.). Please contact Dr. Bingham or Dr. Stanek immediately for any requests to submit these samples.
- All samples meeting the requirements for Zika fever PCR testing at BPHL will also be tested for dengue and chikungunya **if the patient reported fever**.
- All samples collected in the first week of illness and meeting standard requirements for dengue and chikungunya testing will also be tested for Zika virus by PCR if travel to an area with Zika virus activity is reported.

**IgM antibody and serum neutralization testing at CDC:**

- PCR is the definitive test. If PCR is positive, serologic testing is not necessary.
- Acute serum samples should be collected ≤8 days after illness onset**;** convalescent serum samples should be collected >8 days after illness onset. (**2 ml serum/red or tiger top tube for each sample)**
- Commercial testing for Zika virus is currently not available.
- Cross-reaction with related flaviviruses (e.g. dengue, West Nile, yellow fever, Japanese encephalitis viruses) on serological tests is common and results may be difficult to interpret. Currently, any serologic testing would need to be done at CDC in consultation with Zoonotic and Vectorborne Disease Program staff.

**Ordering and shipping:**

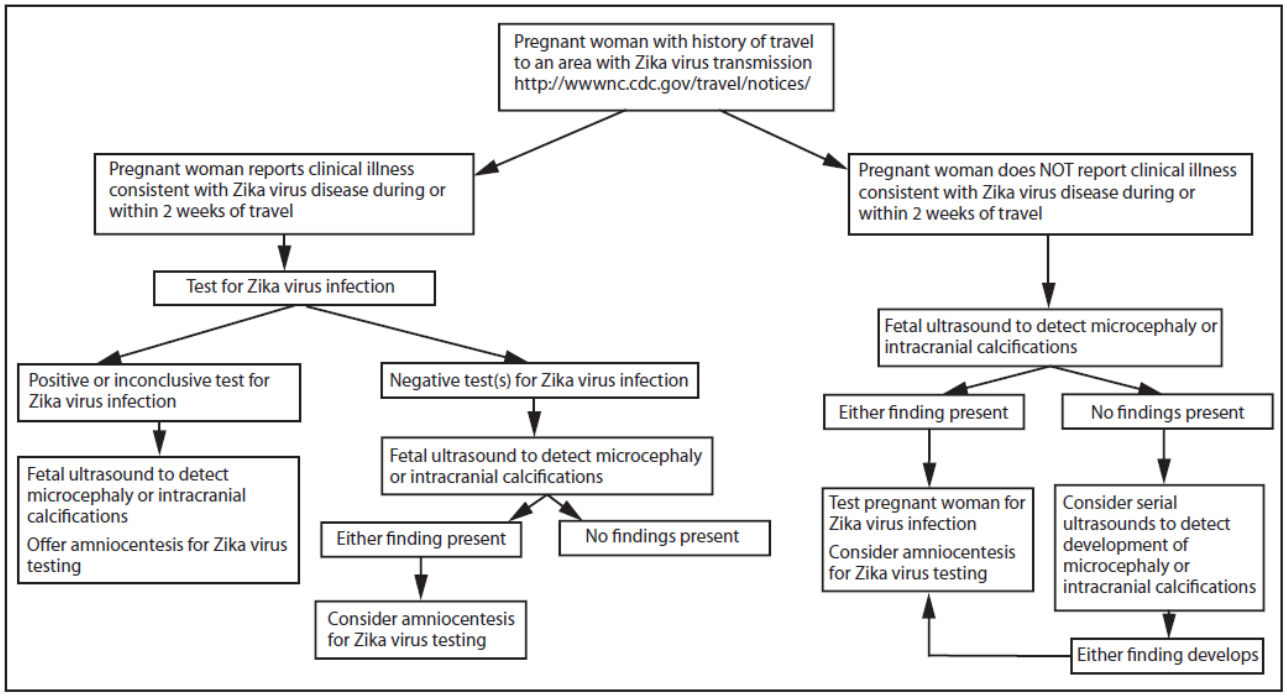
- PCR testing for Zika virus at BPHL can be ordered using test code 1680 (Arbovirus PCR) in the virology section of the standard BPHL form and write "Zika PCR" in the comment box. **Be sure to include onset and sample collection date, and whether fever was reported or not.**
- Please notify BPHL before submitting the sample.
- Ship 2 ml of serum (red or tiger top blood collection tube) kept chilled and shipped overnight to BPHL as for dengue and chikungunya samples. Ship 10 ml of urine (sterile container) using the same method.
- Serum should be separated from red blood cell component before shipping to prevent hemolysis.
- Serologic testing at CDC:
    - A standard BPHL form will also be needed for serology samples going to CDC. Use test code 1510 (Arbovirus Antibody) in the virology section of the standard BPHL form and write "Zika serology at CDC" in the comment box. Ship as for PCR at BPHL
    - CDC Form 50.34 must be completed. Templates of the form for BPHL-Tampa or BPHL-Jacksonville will be provided by BOE.
    - **Testing at CDC will not be initiated without the inclusion of:**
        1. **date of onset** of symptoms
        2. **date of specimen** collection
           **NOTE**: If the specimen collection occurs within 8 days after the onset of symptoms, a convalescent specimen will be requested.
        3. any **pertinent travel history** (3 months prior to the date of symptom onset)
        4. the **patient's name** (**REQUIRED** for submitting specimens)

      **To enable printing of CDC submission form 50.34, each of the following fields must be completed, as directed:**
        1. Specimen Origin field (located on 1st page, top left corner), select "HUMAN" from the drop-down menu
        2. Test Order Name field (located on 1st page, top left), select "ARBOVIRUS SEROLOGY" from the drop-down menu
        3. Original Submitter e-mail field (located on 1st page, middle right box), type your e-mail address
        4. Brief clinical summary (located on 2nd page, top of page), include the name(s) of the arbovirus(es) for which you are requesting testing, if known. Also, if you would like to request testing other than serology, please note the type of test requested in this field.

**Reporting:** Please enter Zika fever cases into Merlin under the 06010 Florida disease code. Please direct questions about Zika fever to Dr. Andrea Bingham at 850-245-4444 ext. 3425 or Dr. Danielle Stanek 850-245-4117.

Useful algorithm for clinicians evaluating pregnant women taken from the CDC MMWR: Interim Guidelines for Pregnant Women During a Zika Virus Outbreak — United States, 2016 at: http://www.cdc.gov/mmwr/volumes/65/wr/mm6502e1er.htm

**FIGURE. Interim guidance: testing algorithm*,†,§ for a pregnant woman with history of travel to an area¶ with Zika virus transmission, with or without clinical illness** consistent with Zika virus disease**




* Availability of Zika virus testing is limited; consult your state or local health department to facilitate testing. Tests include Zika virus reverse transcription–polymerase chain reaction (RT-PCR) and Zika virus immunoglobulin M (IgM) and neutralizing antibodies on serum specimens. Given the overlap of symptoms and endemic areas with other viral illnesses, evaluate for possible dengue or chikungunya virus infection.
† Laboratory evidence of maternal Zika virus infection: 1) Zika virus RNA detected by RT-PCR in any clinical specimen; or 2) positive Zika virus IgM with confirmatory neutralizing antibody titers that are ≥4-fold higher than dengue virus neutralizing antibody titers in serum. Testing would be considered inconclusive if Zika virus neutralizing antibody titers are <4-fold higher than dengue virus neutralizing antibody titers.
§ Amniocentesis is not recommended until after 15 weeks of gestation. Amniotic fluid should be tested for Zika virus RNA by RT-PCR.
¶ Updates on areas with ongoing Zika virus transmission are available online (http://wwwnc.cdc.gov/travel/notices/).
** Clinical illness is consistent with Zika virus disease if two or more symptoms (acute onset of fever, maculopapular rash, arthralgia, or conjunctivitis) are present.