Arizona
Interim Zika Testing Algorithms for Healthcare Providers

Testing guidance is subject to change

For a summary of the latest changes please see the next page.

Nov 21, 2019

Summary of the Updated CDC Zika Testing Guidance- November 2019

Considering the current global arboviral epidemiological situation, with Zika cases in the Americas down by 30-70-fold and now outnumbered by dengue cases by a ratio of approximately 200:1, CDC has updated its Zika and dengue testing guidance. We have also updated our ADHS Zika Testing Algorithms. The main changes are:

1. For **asymptomatic pregnant women,** regardless of travel history or sexual contact, **Zika testing is NOT recommended**.

Therefore, routine screening of asymptomatic pregnant women with travel for Zika is no longer recommended and ADHS will no longer test asymptomatic pregnant women with travel for Zika.

2. For **symptomatic pregnant women** with a history of travel to an area with risk of Zika virus transmission* or history of unprotected sexual contact with a partner who traveled to or lived in an area with risk of Zika virus transmission*, **dengue and Zika PCR, and dengue IgM testing,** are recommended. **Zika IgM testing is NOT recommended**.

3. For **symptomatic men and non-pregnant women** with a history of travel to an area with risk of Zika virus transmission* or history of unprotected sexual contact with a partner who traveled to or lived in an area with risk of Zika virus transmission*, **test for dengue and chikungunya**, **Zika testing is NOT recommended.**

Please note that these recommendations may change in the eventuality of an active Zika outbreak (**red** area in the CDC Zika Map).

*Areas with risk of Zika transmission are countries or territories that have ever reported Zika cases (purple areas in the CDC Zika map).

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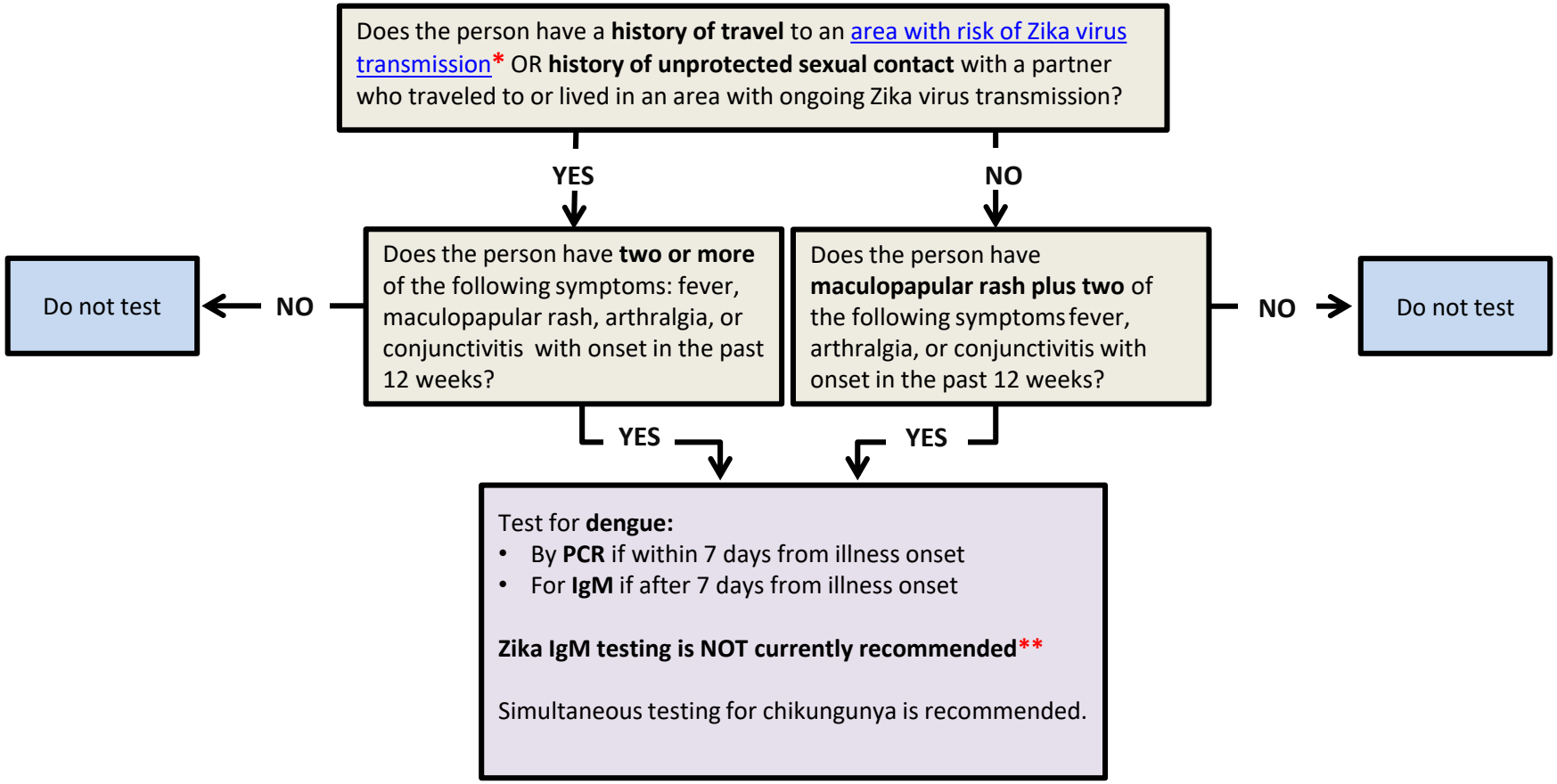
Updated: 11/20/2019

Zika Testing for Men and Non-Pregnant Women



*Areas with risk of Zika transmission are countries or territories that have ever reported Zika cases (purple areas in the CDC Zika map).
**Zika virus serologic testing is NOT recommended as IgM can persist for months to years following infection therefore it might not indicate recent infection; also there is notable cross-reactivity between dengue and Zika IgM antibodies, which can cause Zika IgM to be falsely positive.
*Note: Healthcare providers should **consult with local public health** for patients that may not fit above criteria.*

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Zika Testing for Pregnant Women

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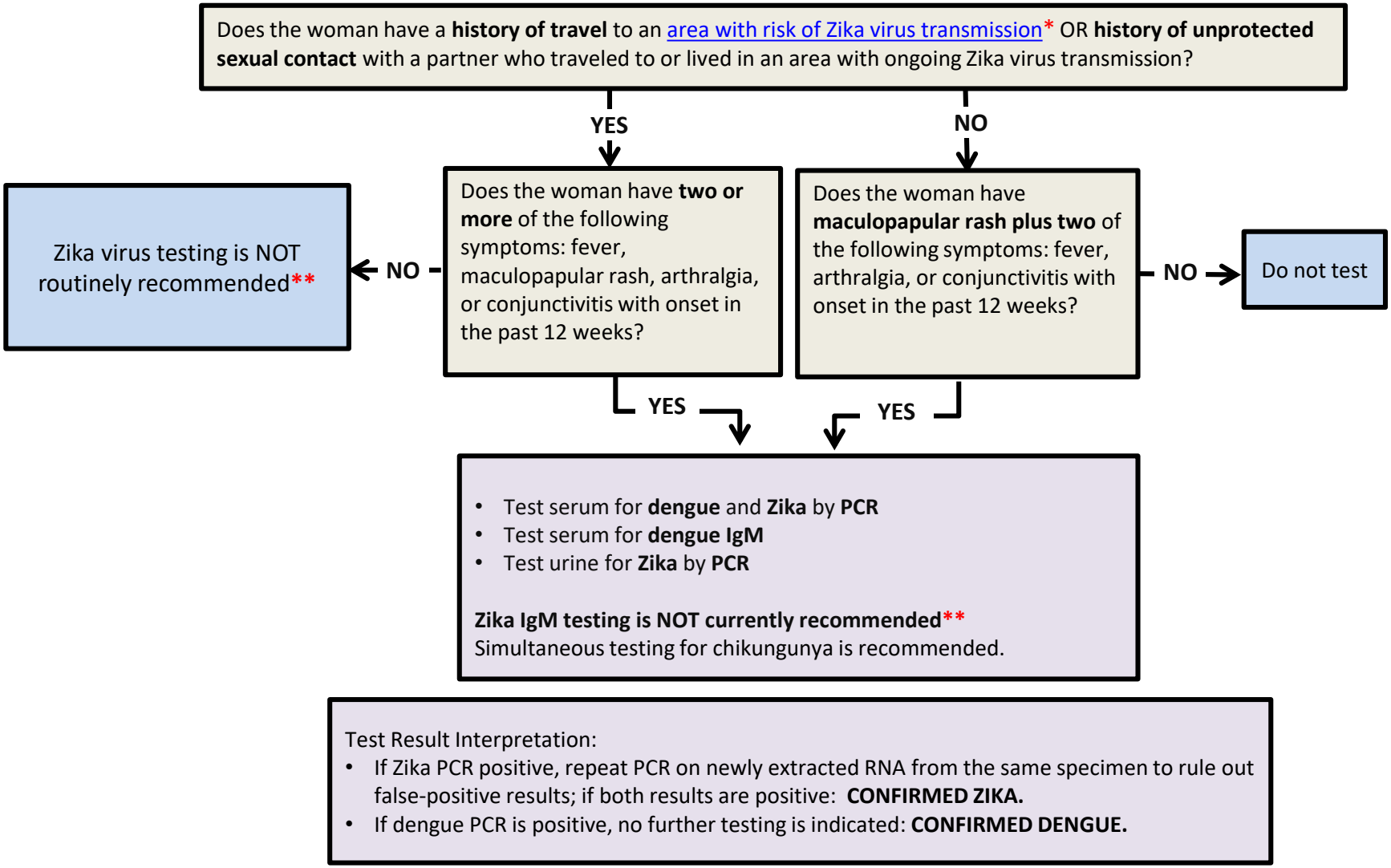

*Areas with risk of Zika transmission are countries or territories that have ever reported Zika cases (purple areas in the CDC Zika map).

**Zika virus serologic testing is NOT recommended as IgM can persist for months to years following infection therefore it might not indicate recent infection; also there is notable cross-reactivity between dengue and Zika IgM antibodies, which can cause Zika IgM to be falsely positive.

*Note: Healthcare providers should **consult with local public health** for patients that may not fit above criteria*

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Infant Follow-up and Infant/Placental Testing

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Does the infant have abnormalities consistent with congenital Zika syndrome (including but not limited to: microcephaly, structural brain abnormalities, contracture of one or more joints, functional neurological abnormalities)?

YES

Does the mother have a **history of travel** during pregnancy or **within 6 weeks of her LMP** to an area with risk of Zika virus transmission OR a **history of unprotected sexual contact** with partner who lived in or traveled to an area with ongoing Zika virus transmission?

NO

Clinically evaluate for other possible etiologies (e.g. SToRCH, genetic, drug exposure).

Consider Zika virus testing.

YES

Contact public health to coordinate Zika virus testing.

NO

Was the mother positive for Zika or other unspecified flaviviruses?

NO/ NOT TESTED

Routine care**

YES

Contact public health to coordinate Zika virus testing.

- Test **maternal** serum and urine for **Zika** by **PCR**
- Test **maternal** serum for **Zika IgM**

Fix and store placenta may be tested based on infant/maternal test results.

AT BIRTH perform standard evaluation, see CDC testing and evaluation guidelines.
BY ONE MONTH OF AGE perform a head ultrasound, newborn hearing assessment using auditory brainstem response (ABR) methodology, and ophthalmologic examination.

* Areas with risk of Zika transmission are countries or territories that have ever reported Zika cases (purple areas in the CDC Zika map).

**Routine care should include, but not be limited to, a comprehensive physical examination, standardized measurement of head circumference, and standard newborn hearing screening. Additional evaluation for congenital Zika virus can be considered in consultation with families, taking into account the infant's complete examination, risks of screenings, and maternal factors.

*Note: Healthcare providers should **consult with local public health** for patients that may not fit above criteria.*

Zika Testing & Counseling Considerations

- **Consult with local public health** to coordinate Zika virus testing.
- **No treatment is available for Zika virus**, and the decision to test should be made carefully after conversations between the patient and healthcare provider.
- **Zika testing can lead to inconclusive results due to IgM antibody cross-reactivity with infections from other flaviviruses including dengue and West Nile, as well as yellow fever and Japanese encephalitis virus vaccination.** A positive or inconclusive serologic test result might not indicate true Zika virus infection.
- **IgM antibodies may persist after infection**. A positive IgM test may not necessarily indicate recent infection.
- **Patients should be informed that presumptive positive IgM results need to be confirmed**. Do not rely on presumptive positive Zika IgM test results as the sole basis of significant patient management decisions.
- **For pregnant women with exposure to Zika virus, there are potential risks for microcephaly, birth defects, and other complications. Consultation with a perinatologist is recommended.**

Case Reporting and Specimen Submission

- **All suspected cases should be reported immediately to the local health department:** http://www.azhealth.gov/localhealth
  - Local health departments can help coordinate testing.

- If testing is approved, specimens can be sent to the Arizona State Public Health Laboratory accompanied by the laboratory submission form: http://azdhs.gov/documents/preparedness/state-laboratory/public-health-microbiology/clinical-microbiology-submission-form.pdf
  - On the submission form, indicate Zika virus (IgM EIA/PCR) under the Virology/Serology section.

- **Serum and urine should be collected for testing.** Serum is a required specimen for testing; whole blood (EDTA), CSF, urine, and amniotic fluid may also be tested alongside a patient-matched serum specimen **at the Arizona State Public Health Laboratory**.

- **Simultaneous testing for dengue and chikungunya is recommended.**

- **Results for Zika virus testing might not be available until 3-4 weeks after the specimen is collected. Zika test interpretation guidance is available from the CDC:**
  - Fact Sheets for Zika test interpretations
  - Interim Guidance for Interpretation of Zika Virus Results

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Zika Virus Terminology

- **IgM testing—** a diagnostic assay that measures the level of virus-specific antibodies in the blood or other body fluids. *Zika IgM cross-reactivity with similar viruses, such as dengue can occur. IgM antibodies can also persist after infection, so an IgM response may not necessarily indicate recent infection.*

- **Polymerase Chain Reaction (PCR)—** a diagnostic assay that detects genetic material (RNA or DNA) specific to a certain virus.

- **Plaque Reduction Neutralization Antibodies (PRNT)—** a virus-specific serological diagnostic method for measuring antibodies that neutralize and prevent viruses from infecting cultured cells.

- **Immunohistochemical staining—** a diagnostic method to visualize antigen-antibody binding reactions by using fluorescence dyes and microscopy techniques.

- **Last menstrual period (LMP)—** the first day of a woman's last menstrual period.

- **Confirmed Zika—** all indicated diagnostic testing has been completed and the individual has evidence of a recent Zika virus infection.

- **Not Zika—** all indicated diagnostic testing has been completed and the individual does not have evidence of a recent Zika virus infection.

- **SToRCH—** syphilis, toxoplasmosis, rubella, cytomegalovirus, herpes testing.

- **U.S. Zika Pregnancy Registry—** a national registry to monitor the frequency and types of pregnancy and infant outcomes following Zika virus infection during pregnancy with the aim of informing prevention efforts and services for Zika virus infections in this population.