Arizona
Interim Zika Testing Algorithms for Healthcare Providers

*Testing guidance is subject to change*

5/2/2016
Zika Testing & Counseling Considerations

• **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.

• For pregnant women with positive results, there could be a risk for microcephaly or other complications. Consultation with a medical provider is recommended.

• Although some countries (such as Mexico) have ongoing Zika virus transmission, the risk level for disease transmission is not the same in all areas. **Decisions to test based on travel history can be made on an individual basis at the discretion of the local health department and healthcare provider.**
Case Reporting & Specimen Submission

- All suspected cases should be reported immediately to the local health department:
  www.azdhs.gov/preparedness/epidemiology-disease-control/index.php#resources-county
  - Local health departments can help coordinate testing if warranted

- If testing is approved, send the laboratory submission form with specimens to the Arizona State Public Health Laboratory: www.azdhs.gov/documents/preparedness/state-laboratory/public-health-microbiology/clinical-microbiology-submission-form.pdf
  - On the submission form, indicate Zika serology and/or PCR under Other in the Virology section.

- If testing for Zika, consider testing for dengue and chikungunya
  - If desired, check the dengue and chikungunya boxes on the lab submission form.

- 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 Sheet for Pregnant Women: Understanding Results from the Zika MAC-ELISA
  - Fact Sheet for Patients: Understanding Results from the Zika MAC-ELISA
  - Fact Sheet for Health Care Providers: Interpreting Zika MAC-ELISA Results
Zika Testing for Males and Non-pregnant Females

**Does the person have a history of travel in the last 2 weeks to a city or state with ongoing Zika virus transmission ([http://www.cdc.gov/travel/notices](http://www.cdc.gov/travel/notices))?**

- **Yes**
  - **Does the person have two or more of the following symptoms: acute onset of fever, maculopapular rash, arthalgia, or conjunctivitis?**
    - **Yes**
      - **Collect and send**
        - 2 vials of serum; 5ml urine
          - Clot activated or serum separator tubes such as red top, tiger top, or gold top
          - Refrigerate at 4°C
          - Urine can be tested by RT-PCR in the first two weeks after symptom onset
    - **No**
      - **Notify local public health department of case and consult about specimen collection**
      - Test for Zika virus
      - Consider testing for dengue and chikungunya
  - **No**
    - **Do not test**

- **No**
  - **Does the person have a history of unprotected sexual contact with a male partner** who traveled to or lived in an area with Zika virus transmission?
    - **Yes**
      - **Collect and send**
        - 2 vials of serum; 5ml urine
          - Clot activated or serum separator tubes such as red top, tiger top, or gold top
          - Refrigerate at 4°C
          - Urine can be tested by RT-PCR in the first two weeks after symptom onset
    - **No**
      - **Do not test**

**Female patients**:

**Does the person have two or more of the following symptoms: acute onset of fever, maculopapular rash, arthalgia, or conjunctivitis?**

- **Yes**
  - **Collect and send**
    - 2 vials of serum; 5ml urine
      - Clot activated or serum separator tubes such as red top, tiger top, or gold top
      - Refrigerate at 4°C
      - Urine can be tested by RT-PCR in the first two weeks after symptom onset
  - **No**
    - **Notify local public health department of case and consult about specimen collection**
    - Test for Zika virus
    - Consider testing for dengue and chikungunya

- **No**
  - **Do not test**

**Male partner does not have to be a confirmed Zika virus case.**
Zika Testing for Pregnant Women

Does the woman have a history of travel during pregnancy to a city or state with ongoing Zika virus transmission, OR a history of unprotected sexual contact with a male partner who lived in or traveled to a Zika affected area?

- **No** → Do not test
- **Yes** →

Does the pregnant woman have one or more of the following symptoms (acute onset of fever, maculopapular rash, arthalgia, or conjunctivitis)?

- **No** → Testing for asymptomatic pregnant women will be determined on a case-by-case basis in consultation with the local health department. Factors to consider include:
  - Specific travel location
  - Dates and duration of travel
  - History of mosquito exposure
  - History of unprotected sexual contact with symptomatic male partner

- **Yes** →

  - Notify local public health department of case and consult about specimen collection
  - Test for Zika virus
  - Consider dengue and chikungunya testing

  **Collect and send**
  - 2 vials of serum; 5mls of urine
    - Clot activated or serum separator tubes such as red top, tiger top, or gold top
    - Refrigerate at 4°C
  - Urine can be tested by RT-PCR in the first two weeks after symptom onset

5/2/2016
Next Steps for Pregnant Women after Zika Testing is Completed

**Positive or inconclusive test result for Zika virus infection**

- Discuss with the local public health department. The risk for microcephaly or other birth defects is unknown.
  - Consider serial fetal ultrasounds.

**Negative test result for Zika virus infection**

- Perform a routine fetal ultrasound at 18-20 weeks to assess fetal anatomy.

**Microcephaly, intracranial calcifications, brain and eye abnormalities present**

- Notify and discuss with the local public health department.
  - Consider retesting woman for Zika virus infection.

**Infant specimens can be tested at birth:**

- **Serum** from the umbilical cord or directly from the infant within 2 days of birth: 1 ml (minimum) CSF, if obtained for other studies: 1 ml
- **Frozen and fixed placenta and umbilical cord**

**Microcephaly, intracranial calcifications, brain and eye abnormalities NOT present**

- Routine prenatal care

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*ARIZONA DEPARTMENT OF HEALTH SERVICES*

*Health and Wellness for all Arizonans*

5/2/2016
Zika Testing for Infants With Microcephaly or Intracranial Calcifications or Brain and Eye Abnormalities

Microcephaly or intracranial calcifications or brain and eye abnormalities detected in an infant prenatally or at birth.

Did the mother travel to an area with Zika transmission during pregnancy, or have sexual contact with someone suspected of Zika infection?

Yes

Notify local health department and the Arizona Birth Defects Monitoring Program
Consider referral to a perinatologist

Positive or inconclusive test results for Zika virus infection in infant

- Conduct thorough physical examination
- Consider maternal testing, if not already performed
- Test infant for Zika virus infection
  - Serum from the umbilical cord or directly from the infant within 2 days of birth: 1 ml (minimum)
  - CSF, if obtained for other studies: 1 ml
  - Frozen and fixed placenta and umbilical cord

- Report case to local health department
- Perform additional clinical evaluation
  - Assess infant for possible long-term sequelae

No

Do not test for Zika Evaluate and treat for other possible etiologies

Negative test results for Zika virus infection in infant

Evaluate and treat for other possible etiologies

ARIZONA DEPARTMENT OF HEALTH SERVICES
Health and Wellness for all Arizonans

5/2/2016
Zika Testing for Infants Without Microcephaly, Intracranial Calcifications or Brain and Eye Abnormalities whose Mothers Traveled to or Resided in an Area with Zika Virus Transmission During Pregnancy or within 2 Weeks of Delivery

- **Mother’s possible Zika exposure within 2 weeks of delivery** AND the infant develops fever, rash, conjunctivitis or joint pain within 2 weeks of birth

  - Test infant for Zika virus infection
  - Conduct a thorough physical exam
  - Consider referral to a perinatologist

- **NO microcephaly or intracranial calcifications or brain and eye abnormalities detected** in the infant prenatally or at birth.

  - **Positive or inconclusive result** for Zika virus infection in mother

  - **Negative or NO Zika virus testing** in mother

  - Routine care of infant, including appropriate follow-up on any clinical findings

  - **Negative test results for Zika virus infection in infant**

  - **Positive or inconclusive test results for Zika virus infection in infant**

    - Report case to local health department
    - Perform additional clinical evaluation
    - Assess infant for possible long-term sequelae