ZIKA AND OTHER TRAVEL-ASSOCIATED ARBOVIRAL DISEASES SCREENING AND EVALUATION GUIDANCE

ACTIONS REQUESTED OF CLINICIANS: If patient meets one of the criteria below, please:

1. Fill out the screening form.
2. Fax it to Oklahoma State Department of Health (OSDH), Acute Disease Service (ADS) at (405) 271-6680.
3. Call the epidemiologist-on-call at (405) 271-4060 to consult and obtain the required pre-approval for testing.
4. If patient is approved for testing, complete the attached OSDH Public Health Lab requisition form for *each* specimen. This form is required to be submitted with each specimen collected for testing at the Public Health Lab.

If a patient meeting the criteria below is seen during non-business hours, specimens can be collected and held refrigerated until the next business day when an OSDH ADS epidemiologist is available for consultation and submission approval. If the patient is part of a suspected outbreak, or suspected local transmission event, please contact the ADS epi-on-call immediately at (405) 271-4060 (available 24/7/365).

❖ **Symptomatic Individuals with Travel History or Concern for Sexual Transmission**:

- Two or more of the following symptoms: Acute fever, rash, arthralgia, conjunctivitis;

AND

- Travel to a Zika-affected area within 2 weeks prior to symptom onset. Countries or areas within the continental U.S. at risk for Zika transmission can be determined by accessing the following website: http://wwwnc.cdc.gov/travel/page/zika-travel-information;

OR

- Concern for sexual transmission: Reports unprotected sex with partner(s) who traveled to a Zika-affected area. Specimen must be collected within 12 weeks after partner's departure from a Zika-affected country in order to be eligible for testing;

AND

- Ability to collect urine and serum specimens within 12 weeks of symptom onset. *Additional specimens may be requested during consultation with an ADS epidemiologist.*

❖ **Asymptomatic, Pregnant Women**:

- *Those with ONGOING* possible Zika exposure:*
  - Should be tested three times during pregnancy.
    - At initial prenatal visit and then two more times, preferably each trimester.
  - Collect urine and serum samples for Zika virus RT-PCR testing.

- *Those without ONGOING* possible Zika exposure*:
  - **Testing is no longer recommended** (i.e., vacation travel, unprotected sexual exposure following vacation travel).

****Ongoing*** possible exposure to Zika virus includes frequent (at least monthly) travel to a Zika-affected area or frequent (at least monthly) unprotected sex with a partner who either resides in or frequently travels to a Zika-affected area. Travelers with short stays overseas (e.g., vacations, short mission trips) regardless of pregnancy status are no longer eligible for testing at the Oklahoma State Department of Health. Patients interested in Zika testing that don't qualify for testing at OSDH can access testing through major reference laboratories at the patient's expense.

❖ **Infant and Placental Testing:**

- Infants who have suspected or confirmed microcephaly or other neurologic abnormality (diagnosed prenatally or at birth) and mother was potentially exposed to Zika virus.
- Infants who were born to mother with laboratory evidence of Zika virus infection during pregnancy.

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Laboratory Testing Guidance

Zika virus testing is performed by the Oklahoma State Department of Health (OSDH) Public Health Laboratory (PHL). However, prior to specimen collection/submission, an epidemiologist from the OSDH Acute Disease Service (ADS) must gather pertinent clinical signs and symptoms, travel, and other epidemiologic information from the clinician to determine if a patient meets the required criteria for Zika virus testing as indicated by the Centers for Disease Control and Prevention (CDC). All specimens must be approved by the ADS prior to shipping to the OSDH PHL for testing.

The OSDH PHL is a CDC-designated laboratory that performs Zika virus testing by Emergency Use Authorization using the CDC Zika IgM Antibody Capture (MAC) ELISA and the CDC Trioplex Real-time RT-PCR Assay. Specimens may be referred by the OSDH PHL to the CDC or other laboratories for additional testing, as indicated.

For questions concerning Zika testing criteria, contact the **OSDH ADS epidemiologist-on-call at (405) 271-4060**.

For questions regarding specimen collection, storage, transport, and lab requisition forms, contact the **OSDH PHL Client Services at (405) 271-5070**.

*Please, note that an **OSDH PHL Test Requisition Form must be submitted with each specimen**.*
If the form is not completed appropriately, or is not received, testing may be canceled or significantly delayed.

- **Urine and serum are the preferred specimen types and are required for each individual approved for testing. Additional specimens may be recommended during consultation with an ADS epidemiologist.**

  Specimen Collection, Storage, and Shipping:

  - **Whole blood** in serum separator tube (SST) (a.k.a., tiger-top tube)
    - Following collection, gently invert SST no more than 8 times then allow blood to clot in upright position for at least 30 mins and no more than 60 mins then centrifuge at 3000 rpm for 10 mins.
    - ≥ 2.0 mL (minimum) required; collect additional tubes to meet volume requirements, as needed.
    - Store refrigerated (2-8 °C) and ship using ice packs.
    - If transit time will be > 7 days post-collection, pour serum into a sterile, leak-proof, screw-cap tube and store/ship frozen (-20°C or colder).
  - **Urine** in sterile container with sterile screw-cap container
    - Following collection, transfer urine to a sterile screw-cap container. To prevent leakage during shipping, secure parafilm around container cap. Do not ship urine cups.
    - ≥ 1.0 mL (minimum) required; must be submitted together with a patient-matched serum specimen.
    - Store refrigerated (2-8 °C) and ship using ice packs; prefer specimen frozen (-20°C or colder), then shipped on dry ice, if possible.
  - **CSF and amniotic fluid** in sterile screw-cap container
    - ≥ 1.0 mL (minimum) required; must be submitted together with a patient-matched serum specimen.
    - Store refrigerated (2-8 °C) and ship using ice packs; prefer specimen frozen (-20°C or colder), then shipped on dry ice, if possible.
  - **Other specimens types**
    - For submission of other specimen types, such as placenta tissue or umbilical cord, coordinate with the OSDH ADS epidemiologist-on-call at (405) 271-4060.

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Completing the Test Requisition Form

- An OSDH *PHL Test Requisition Form* must be completed and submitted with each specimen type.
- The OSDH *PHL Test Requisition Form* can be downloaded/electronically completed at the OSDH PHL website ("Forms") or a hard copy can be provided by the OSDH ADS epidemiologist-on-call.
  - Include patient's name or unique patient identifier (e.g., MR#), DOB, sex, specimen type, date of specimen collection, name and address of submitter, and test requested.
  - Indicate specimen source; a separate test requisition form is required for each specimen type, e.g., if submitting a serum and urine specimen on the same patient, then two test requisition forms will be required.
  - Under the Virology section of the form, mark 'Zika virus, IgM antibodies and/or Zika virus, chikungunya virus, dengue virus, PCR'.

Shipping to the OSDH PHL

- Ship to the OSDH PHL Monday through Thursday using the following address:

  OSDH Public Health Laboratory
  1000 NE 10th Street
  Oklahoma City, OK 73117-1299

- For specimens that cannot be shipped immediately, store according to specimen storage guidelines above.
- Specimens must be packaged and shipped in accordance with Category B agent guidelines.
- Courier service to the OSDH PHL may be available through your local hospital; contact the PHL Client Services.

Cautionary Note Regarding Alternative Commercial Testing

Currently, several commercial laboratories in the US offer Zika virus testing using real-time RT-PCR. However, these laboratories do not provide Zika IgM ELISA testing with PRNT confirmation, and have no routine process to forward specimens to another laboratory when test results are negative. Therefore, if requesting Zika rRT-PCR testing from a commercial laboratory, **providers should request the draw site/laboratory to retain an aliquot of the serum for Zika IgM testing if the rRT-PCR testing is negative**. Whole blood should be collected and processed per guidelines of the commercial testing laboratory but serum from an additional serum separator tube should be transferred to a polypropylene tube and stored refrigerated (2-8°C) until it is known if additional IgM testing is indicated. If a serum aliquot cannot be stored or is not available, but further testing is indicated, a new blood sample should be collected.

ZIKA AND OTHER TRAVEL-ASSOCIATED ARBOVIRAL DISEASES SCREENING FORM

Please complete all sections of the form, fax to the Acute Disease Service (ADS), F:(405) 271-6680, and then call the ADS epidemiologist-on-call at (405) 271-4060 prior to specimen collection and submission. Please complete all fields.

Patient Information

Last Name: _____ First Name: _____ MI: _____
Date of Birth: _____/_____/_____ Sex: □ Male □ Female
Address: _____ City: _____ County: _____ State: ___ Zip: _____
Primary contact number: _____ Secondary contact number: _____
Race: □ White □ Black □ Native America □ Asian □ Native Hawaiian/Pacific Islander □ Asian
□ Unknown □ Other _____
Ethnicity: □ Hispanic □ Non-Hispanic □ Unknown Preferred Language: _____ □ Interpreter needed

Healthcare Provider Information

Name of Reporting Person: _____
Ordering Physician: _____
Work Phone: _____ Fax Number: _____ Organization: _____
Address: _____
City: _____ State: _____ Zip Code: _____

Symptom Information

Did patient have two or more of the symptoms below? □ Yes □ No ***(If yes, complete symptom information below. If no, go to next question.)***

- *Is the patient pregnant?* □ Yes □ No ***(If yes, go to next question. If no, testing not indicated.)***
- *If patient is pregnant, does the patient report having at least monthly travel to a Zika-affected area or monthly sexual contact with partner who resides in/travels to a Zika affected area?* ***(If no, testing not indicated. If yes, skip to exposure assessment.)***

Symptom Onset date: ___/___/_____

Fever (subjective OR measured)	□ Yes □ No □ Unknown	*If yes*, max temp: _____
Rash	□ Yes □ No □ Unknown	Rash description: □ Petechial □ Macular □ Vesicular
Conjunctivitis	□ Yes □ No □ Unknown	
Arthralgia	□ Yes □ No □ Unknown	

Was the patient hospitalized? □ Yes □ No □ Unknown
Hospital name: _____ Admit Date: _____/_____/_____ Discharge Date: ____/_____/_____

Exposure Assessment

If symptomatic:

Within 14 days before symptom onset, did the patient travel in an area in which Zika virus is present?
☐ Yes ☐ No (*If yes*, please list patient's travel details on the following page.)

- *If no*, did the patient report unprotected sex with their sexual partner following their return from a Zika-affected country? ☐ Yes ☐ No (*If yes*, please list partner's travel details on the following page. If no, testing not indicated.)

If asymptomatic and pregnant:

Did the patient live in a foreign country in the eight weeks prior to conception or anytime during pregnancy? ☐ Yes ☐ No
If yes, please list country of foreign residence and dates of residence.
Country: _____ Dates of residence: _____/_____/_____ - _____/_____/_____

Does the pregnant patient report frequent (at least monthly) travel to a Zika outbreak-affected region during pregnancy?

ZIKA AND OTHER TRAVEL-ASSOCIATED ARBOVIRAL DISEASES SCREENING FORM

☐ Yes ☐ No

- ❖ If yes, how often does the patient report travel during pregnancy?

_____

Does the pregnant patient report repeated (at least monthly), unprotected sexual exposure to a partner who has continued to travel to a foreign country during client's pregnancy? ☐ Yes ☐ No

- ❖ If yes, how often does the patient report unprotected sexual exposure during pregnancy?

_____

Exposure Assessment (*Continued*)

Refer to CDC Zika Travelers Advisory page for list of countries: http://wwwnc.cdc.gov/travel/page/zika-travel-information

If yes, list which countries and regions/areas/cities visited, and dates of travel*:*

1) Country: _____
   Date Arrived in Country: _____/_____/_____ Date Departed Country: _____/_____/_____
   Regions/areas/cities visited: _____

2) Country: _____
   Date Arrived in Country: _____/_____/_____ Date Departed Country: _____/_____/_____
   Regions/areas/cities visited: _____

❖ Was the patient pregnant at the time of travel? ☐ Yes ☐ No

If yes, number of gestational weeks at the time of travel: _____ weeks

If yes, is the patient still pregnant? ☐ Yes ☐ No

If the patient is no longer pregnant, indicate outcome of pregnancy: ☐ Live birth ☐ Fetal loss ☐ Elective termination

If live birth, what was date of delivery and facility of delivery:

_____

❖ Did the patient become pregnant within approx. 2 weeks after returning from a Zika affected country or region?
☐ Yes ☐ No

❖ Has the patient ever been vaccinated for Yellow Fever or Japanese encephalitis? ☐ Yes ☐ No ☐ Unknown

❖ Has the patient previously been diagnosed with Dengue, Chikungunya, Yellow Fever, or West Nile virus?
☐ Yes ☐ No ☐ Unknown ***If yes***, specify disease and year: _____

❖ Has the patient been tested for other etiologies for the current illness? ☐ Yes ☐ No ☐ Unknown

☐ Chikungunya	Lab name: _____	Date of test ___/___/___	Result:_____
☐ Dengue	Lab name: _____	Date of test ___/___/___	Result:_____
☐ West Nile Virus	Lab name: _____	Date of test ___/___/___	Result:_____
☐ Other	Lab name: _____	Date of test ___/___/___	Result:_____

FOR INTERNAL USE ONLY:

☐ Symptomatic ☐ Asymptomatic	☐ Pregnant ☐ Not Pregnant	☐ Ongoing Exposure ☐ No Ongoing Exposure	☐ Specimen < 14 days from symptom onset or exposure ☐ Specimen ≥ 14 days and < 12 weeks from symptom onset or exposure

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Oklahoma State Department of Health
Public Health Laboratory
1000 N.E. 10th Street, Oklahoma City, OK 73117-1299
Tel: (405)271-5070; Fax: (405)271-4850
Email: PublicHealthLab@health.ok.gov
Test Directory: http://phl.health.ok.gov

Laboratory Director:
S. Terence Dunn, PhD

CLIA #: 37D0656594

*Please, PRINT; *indicates required fields*

Patient Information

Name *(last, first)** _____ , _____ Initial ___ DOB*____ / ____ / ____

Address _____ City _____ State ____ Zip _____

Sex:* ❑ M ❑ F Ethnicity: ❑ Hispanic/Latino ❑ Non-Hispanic/Non-Latino ❑ Unknown

Race: *(mark all applicable)* ❑ White ❑ Black/African American ❑ Asian ❑ American Indian/ Alaska Native ❑ Native Hawaiian/Other Pacific Islander ❑ Other

Submitter Information

Practitioner Name *(last, first)** _____ , _____ Initial ___ NPI _____

Facility Name* _____ Phone # ( ) - Fax # ( ) -

Address* _____ City* _____ State ____ Zip* _____

Clinical Information

Diagnosis _____ Onset *(mm-dd-yyy)* ___ / ___ / ___

Antibiotics *(list and start dates)*_____

Specimen Information

Collection Date *(mm-dd-yyy)** ____ / ____ / ____ Time *(hour:minute)* _____ AM / PM By _____

Source/Type**(check one only)*

❑ Blood ❑ Serum ❑ Urine ❑ Stool ❑ CSF ❑ Pleural fluid ❑ Pericardial fluid ❑ Blood smears
❑ Sputum, expect. ❑ Sputum, induced ❑ Bronchial brush ❑ Bronchial wash ❑ Bronchoalveolar lavage ❑ Tracheal aspirate
❑ Nasopharynx ❑ Nasal ❑ Throat ❑ Eye ❑ Rectum/anus ❑ Vagina ❑ Cervix
❑ Tissue *(specify)*: ❑ Wound/Lesion *(specify)*:
❑ Cultured isolate *(specify suspect agent)*: ❑ Environmental *(specify)*:
❑ Other *(specify)*:

Test Request *(mark one only)*

Bacteriology

❑ Bacterial isolate, identification/serotyping/confirmation
Variable specimen according to source (contact lab)

❑ Bacteria, non-enteric, isolation and identification
Variable specimen according to source (contact lab; requires pre-approval)

❑ Enteric pathogens, isolation and identification
Feces, 2 g or 5-10 mL in Cary Blair or GN Broth (STEC only)

❑ Bordetella
Nasopharynx, 1 or 2 swabs; Isolate, confirm visible growth

❑ Chlamydia/Gonorrhea
Urine, first 20-60 mL of void – transfer to UPT tube

❑ Group B streptococcus
Vaginal/anal swab in LIM broth (combined vaginal/anal collection preferred)

❑ Syphilis, RPR w/ reflex to TP-PA
Serum in SST, 2 mL

❑ Syphilis, RPR and TP-PA
Serum in SST, 2 mL; (CHDs only, requires pre-approval by DIS)

❑ Bacteria, environmental (contact lab)

Virology

❑ Hepatitis B surface antigen (HBsAg)
Serum, 2 mL (approved submitters only)

❑ HIV-1/2 antigen/antibodies
Serum in SST, 2 mL (approved submitters only)

❑ Human papillomavirus, high risk
Residual ThinPrep, 1 mL

❑ Influenza virus A and B
Nasopharyngeal (preferred), nasal or throat swabs, 1 or 2 in VTM

❑ Rubella antibodies
Serum in SST, 1 mL (female CHD patients only)

❑ Virus isolation and/or identification
Throat, nasopharynx, rectum, eye, lesion, 1 swab in VTM; Blood, 5 mL heparin; Feces, 2 g or 5-10 mL; CSF, 1 mL; Eye scrapings in VTM; Urine, 20 mL (first morning void); Isolate; Other (contact lab)

❑ West Nile virus/St. Louis encephalitis virus, IgM antibodies
Serum in SST, 2 mL; CSF, 1 mL (CSF must be accompanied by serum)

❑ Zika virus, IgM antibodies and/or Zika virus, chikungunya virus, dengue virus, PCR
Serum in SST, 2mL; CSF, 1 mL; Urine 1 mL; Amniotic fluid 1mL (CSF, urine and amniotic fluid must be accompanied by serum)
(requires pre-approval by OSDH Acute Disease Service)

Mycobacteriology/Mycology

❑ Fungal isolate, identification
Plate or slant with visible growth

❑ Mycobacteria, smear and culture w/ reflex to identification
Respiratory sediments, 5-10 mL; Sterile fluid, >2 mL; Blood, 5-10 mL ACD or heparin; Tissue, 1 g; Urine, >5 mL

❑ Mycobacteria, isolate identification
Liquid culture, >3 mL; Solid culture, visible growth

❑ *M. tuberculosis* complex PCR
Respiratory sediments, 5-10 mL (CHDs require OSDH TB physician pre-approval)

Parasitology

❑ Intestinal ova and parasites (O&P)
Solid feces, 2 g or Liquid feces, 5-10 mL in PVA and 10% formalin

❑ Parasites, blood
Babesia/trypanosomes/filariae: Giemsa or Giemsa-Wright-stained blood smears, 1 thick and 1 thin
Malaria: Giemsa or Giemsa-Wright-stained blood smears, 1 thick and 1 thin AND 2-6 mL EDTA blood

❑ Parasites, tissue
Impression or biopsy; Other (contact lab; requires pre-approval)