Zika Virus Exposure

Zika virus is a mosquito-borne virus that has been associated with congenital microcephaly, severe fetal brain abnormalities, and congenital contractures. Symptoms of Zika virus infection include fever, maculopapular rash, arthralgia, and conjunctivitis, however, only 1 out of 5 patients will have symptoms.

The CDC maintains an updated list of travel areas where Zika transmission has been identified, with areas located in Mexico, Caribbean, Central and South America, North America, Africa, Asia, and the Pacific Islands (https://www.cdc.gov/zika/geo/index.html).

All pregnant patients should be counseled to avoid travel to areas with active Zika virus. If pregnant patients still plan to travel to an affected area, recommend:

- Use of EPA-approved DEET bug spray
- Cover exposed skin with long-sleeved clothing
- Stay in air conditioned or screened-in areas
- Treat clothes with permethrin

Up to date information is available at: http://www.cdc.gov/zika/

**MANAGEMENT:**

1. Ask all patients about travel to areas with active Zika virus transmission.

2. If pregnant patient is symptomatic with possible Zika virus exposure:
   - Perform concurrent IgM and NAT, up to 12 weeks after onset of symptoms (serum Zika IgM, serum and urine Zika NAT)

3. If a pregnant patient is asymptomatic with ongoing Zika exposure (e.g., living in an area with Zika transmission or sex with partner who travels to Zika area):
   - Perform serum and urine Zika NAT only (testing should be offered at initiation of prenatal care, then twice more during the pregnancy)

4. If a pregnant patient is asymptomatic without ongoing Zika exposure:
   - CDC no longer recommends Zika virus testing, but may be considered based on shared decision making with a pregnant patient

5. If maternal testing does not suggest infection or Zika testing is not indicated, ultrasounds should be performed only as indicated for routine prenatal care.
6. If maternal testing suggests Zika infection, recommend referral to Maternal-Fetal Medicine for ultrasound to evaluate for signs of congenital Zika infection.

7. If maternal testing is positive and/or ultrasound findings are present, offer amniocentesis for Zika virus testing. Of note, negative amniotic fluid testing cannot definitively rule out congenital Zika infection.

8. No antiviral treatment is available.

9. Sexual transmission of Zika virus infection has been reported:
   - Women who may have been exposed or had symptoms of Zika virus should wait at least 8 weeks before trying to conceive.
   - Men who may have been exposed or had symptoms of Zika virus should wait at least 6 months before trying to conceive.
   - If a male partner travels to an affected area, recommend use of condoms or abstinence for the duration of the pregnancy.

**CDC Updated Interim Testing Recommendations and Interpretation of Results for Asymptomatic Pregnant Women with Possible Zika Virus Exposure**

![Flowchart image]

- **ASK pregnant women about**
  - Travel to or residence in areas with risk for Zika virus transmission before and during pregnancy
  - Possible sexual exposure before and during current pregnancy
  - A diagnosis of laboratory-confirmed Zika virus infection before current pregnancy
  - Symptoms of Zika virus disease during current pregnancy (e.g., fever, rash, conjunctivitis, and arthralgia)
  - If symptoms are reported, refer to symptomatic algorithm

- **WHOM to test?**
  - Asymptomatic pregnant women with ongoing possible Zika virus exposure

- **WHEN to test?**
  - Three times during pregnancy
  - First test at initiation of prenatal care

- **WHICH tests?**
  - Zika virus NAT (serum and urine)

- **RESULTS**
  - Positive Zika virus NAT
  - Negative Zika virus NAT

- **INTERPRETATION**
  - Acute Zika virus infection
  - No Zika virus RNA detected (Zika virus infection during pregnancy cannot be ruled out)
LABORATORY TESTING:

Zika laboratory testing should be submitted to Maine’s Health and Environmental Testing Laboratory (HETL) for processing and submission to the CDC.

All laboratory samples must include two forms:
- HETL requisition form (specify Zika virus testing in ‘Additional Information’ box)
- Human arbovirus specimen submission form
# Maine Health and Environmental Testing Laboratory

221 State Street, SHS 12  
Augusta, Maine 04333-0012  
Phone: 207-287-2727  
Fax: 207-287-1727  
This form and others available for download or printing from our website: [www.maine.gov/dhhs](http://www.maine.gov/dhhs)

## (*REQUIRED FIELDS*)

<table>
<thead>
<tr>
<th>Field</th>
<th>Information</th>
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<tbody>
<tr>
<td><strong>Submitter Name/Address</strong></td>
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<tr>
<td><strong>Submitter Phone</strong></td>
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<tr>
<td><strong>Submitter Fax#</strong></td>
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<tr>
<td><strong>Patient Name</strong></td>
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<tr>
<td><strong>Gender</strong></td>
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<td><strong>Date of Birth</strong></td>
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<tr>
<td><strong>Specimen source:</strong></td>
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<tr>
<td><strong>Is patient hospitalized?</strong></td>
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<td><strong>Symptom Onset Date</strong></td>
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<tr>
<td><strong>Date of Collection</strong></td>
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<tr>
<td><strong>Information below required for Blood Lead, Reportable Disease or MaineCare Primary Insurance</strong></td>
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<tr>
<td><strong>Race</strong></td>
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<td><strong>Ethnicity</strong></td>
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<td><strong>MarineCare (if primary)</strong></td>
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<tr>
<td><strong>Blood Lead</strong></td>
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<tr>
<td><strong>Blood Lead – ONLY</strong></td>
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<tr>
<td><strong>Check only if patient has No Private Insurance Coverage AND No MaineCare Coverage</strong></td>
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</tr>
<tr>
<td><strong>Additional Information</strong></td>
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</tbody>
</table>

## BACTERIOLOGY
- Chlamydia/Gonorrhea screen  
- Trichomonas (Amplified Probe)  
- Bordetella species - PCR  
- Campylobacter Identification  
- Carbapenem resistance (CRE) PCR-Isolate  
- Clostridium difficile PCR  
- C. difficile PFGE Subtyping  
- Cryptosporidium PCR  
- E. coli Identification/serotyping  
- E. coli Shiga Toxin by PCR  
- Enteric Pathogen Screen  
- Human Papillomavirus (HPV)  
- MERSA – Isolate only  
- Neisseria rononohia culture  
- Neisseria meningitidis grouping  
- Neisseria meningitidis PCR – CSF only  
- Salmonella Identification  
- Shigella Identification/serotyping  
- Vancomycin resistance (VRE) PCR-Isolate  
- Vibrio Identification  
- Yersinia Identification  
- Reference Culture Identification; Organism Suspected:  

## SEROLOGY
- Arbovirus IgM Panel  
- Anaplasm/Ehrlichia RT-PCR**  
- Babesia PCR**  
- Chikungunya RT-PCR**  
- Deer Tick/Powassan RT-PCR**  
- Requires Arboviral Submission Form:  
- Hepatitis C IgG Antibody screen  
- HIV-1/HIV-2 Antibody/Anthem screen  
- HIV-1/2 Screen and Confirmation  
- Mumps IgG Antibody screen  
- Mumps IsM Antibody screen  
- Quantiferon®-TB Gold /GRA – Serology  
- Rubeola (Measles) IgA Antibody screen  
- Rubeola (Measles) IgM Antibody screen  
- EPR, Syphilis screen  
- Syphilis serum confirmation  
- Syphilis VDRL, Spinal Fluid Only  
- Varicella zoster IgG Antibody screen  

## VIROLOGY
- Adenovirus RT-PCR  
- Enterovirus RT-PCR  
- Herpes simplex (HSV1/2) PCR  
- Influenza A/B RT-PCR (includes pdmH1N1)  
- Mumps RT-PCR  
- Norovirus RT-PCR  
- Rhinovirus RT-PCR  
- Respiratory Enterovirus RT-PCR  
- RSV RT-PCR  
- Rubeola (Measles) RT-PCR  
- Varicella-Herpes Zoster RT-PCR (“chicken pox” “shingles”)  
- Reflex to Viral Culture if PCR Test Selected is Negative  
- Viral Culture, Routine, (10 days)  

## MYCOBACTERIOLOGY
- Acid fast (AFB) smear  
- Acid fast culture  
- M. tuberculosis complex PCR  
- Reference Culture Identification  

## BLOOD LEAD
- Blood Lead, venous  
- Blood Lead, capillary  
- Check if Symptomatic or Repeat Test  

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**Rev. December 2015**

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**Reviewed 6/13/2018**  
**Updated 06/13/18**
# Maine Center for Disease Control and Prevention

Human Arbovirus Specimen Submission Form

**Rev. 2/2016**

In order to submit a sample for Arbovirus testing, the health care provider needs to complete this form. The lab also needs to complete and submit a HETL virology requisition form.

<table>
<thead>
<tr>
<th>Patient Name: ____________________________</th>
<th>DOB: __________</th>
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</thead>
<tbody>
<tr>
<td>Address: ________________________________</td>
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</tr>
<tr>
<td>Gender: _______ Race/Ethnicity: __________</td>
<td>Pregnant: ☐ Yes ☐ No</td>
</tr>
<tr>
<td>Health Care Provider: ____________________</td>
<td>Phone Number:</td>
</tr>
</tbody>
</table>
For questions about a disease outbreak or notifiable conditions, please call
Maine CDC- Disease Reporting

HOW TO REPORT:

TELEPHONE: 1-800-821-5821
(24 hours a day)

FAX: 1-800-293-7534
(24 hours a day)

Influenza A/H5 or Novel Influenza Testing
Consult with Infectious Disease Epidemiology – Maine CDC
1-800-821-5821
As soon as a suspect/possible case has been identified
• For direction on whether a patient should be tested
• For infection control measures
• For information on current sampling guidelines and specimen transport
• For immediate coordination with laboratory

For a full test catalog, specific specimen collection instructions, test kit order forms, arboviral surveillance forms and an electronic version of this requisition form, please visit:
www.maine.publichealth.gov/lab

Specimen types, storage and shipping conditions:
• General test kits are available from HETL for PCR/Viral Culture, Serology and Mycobacteriology.
• Specific test kits are available for Blood Lead, B. pertussis PCR, Chlamydia/Gonorhea, Trichomonas and HPV screen amplifi ed probe testing, and Quantiferon®-TB Gold (IGRA) in-tube test.
• Specific instructions for specimen collection available at www.maine.publichealth.gov/lab
• Test kits include sampling materials and instructions as well as packing materials and shipping containers for couriers or US Mail.
• To order test kits please call 207-287-2727 or fax order to 207-287-8925.

ARBOVIRUS TESTING
All specimens submitted for Arboviral testing must be accompanied by the Arboviral Submission Form before testing will be performed.

PCR/VIRAL CULTURE
• Collect specimens promptly (ideally within 1-3 days of onset)
• Use polyester/Dacron swabs and viral transport medium
• Urine or stool specimens should be sent in sterile, leak proof containers. Small amount of stool (pea sized) can also be added to viral transport medium
• Store specimens at refrigerator temp. and ship on frozen gel packs
• Do not freeze specimens. Do not ship on dry ice
• Viral Culture Reflex Test for PCR: if selected PCR test is negative, routine culture will be ordered to detect other viruses
• Minimum of 1.0mL of spinal fluid is required to perform PCR and viral culture

BACTERIOLOGY
• Chlamydia/Gonorhea amplified probe test: urine and swab specimens from both male and female patients are acceptable. GenProbe collection tubes are REQUIRED for this test (available from HETL - call 207-287-2727)
• S/Dia toxin positive broth should be sent for confirmation and serotyping
• Isolates sent for identification should include prior lab results

BLOOD LEAD
• Minimum of 300ul whole blood
• Hepatia (green top) or EDTA (purple top) tubes are acceptable
• Sodium Citrate (light blue top) is NOT acceptable
• Capillary specimens with high levels will require various confirmation
• Check No Insurance box ONLY if patient does not have insurance to cover blood lead testing

MYCOBACTERIOLOGY
• 5ml is the recommended minimum sample volume for AFB recovery
• Respiratory specimens and other body fluids - collect in sterile container
• Bone marrow and blood - collect in heparin (green top) tube
• Tissue biopsy and bone - collect in sterile container with 1-2ml distilled H2O or saline
• Urine – collect first morning in sterile container shipped on ice
• Use only HETL kits to collect specimens for Quantiferon®-TB Gold (IGRA) in-tube test

CSF PANEL
• Minimum of 1.0mL of spinal fluid is required to perform CSF Panel and reflex to Arbovirus Panel if all PCR tests are negative.