



MEMORANDUM

DATE: May 11, 2016

TO: Obstetrical Care Providers

FROM: Mary DiOrio, MD, MPH
Medical Director
State Epidemiologist

SUBJECT: Zika Precautions in Ohio, 2016

Zika virus is getting national and worldwide attention. The purpose of this letter is to provide information and resources to you and your patients about Zika virus to minimize the risk of local transmission in Ohio. First, some general facts:

- Zika virus is spread to people primarily through the bite of an infected mosquito and one Ohio mosquito, the Asian tiger mosquito (*Aedes albopictus*), could potentially pick up and transmit the disease.
- The most common symptoms of Zika virus are fever, rash, joint pain, and conjunctivitis (red eyes).
- The illness is usually mild with symptoms lasting for several days to a week.

Zika virus infection during pregnancy is more serious. Perinatal transmission has been identified with Zika virus. Adverse outcomes that have been associated with Zika virus infection during pregnancy include:

- Microcephaly including absent or poorly developed brain structures
- Pregnancy loss
- Eye defects
- Growth restriction, both intra-uterine and post-natal

Unfortunately, very little is known about the timing, absolute risk, or continuum of outcomes. There is currently no vaccine or medication to prevent Zika virus infection.

The Centers for Disease Control and Prevention (CDC), recommends special precautions for pregnant women. Women who are pregnant should avoid travel to areas where Zika virus transmission is ongoing (<http://www.cdc.gov/zika/pregnancy/index.html>). However, if you have a patient who is pregnant and has traveled to an area with active Zika virus transmission, CDC recommends testing for Zika virus infection:

- Asymptomatic pregnant women (women who do not report clinical illness consistent with Zika virus disease) should be offered serologic testing 2–12 weeks after return from travel.
- For pregnant women with clinical illness consistent with Zika virus disease, testing is recommended during the first week of illness.
- Please contact the local health department where your patient lives to coordinate submission of samples to the Ohio Department of Health (ODH) Laboratory for testing at ODH Laboratory and/or CDC.
- Healthcare providers should discuss reproductive life plans, including pregnancy intention and timing, with women of reproductive age in the context of the potential risks associated with Zika virus infection.

Zika virus can also be spread by a man to his sexual partners. In known cases of sexual transmission, the men developed symptoms of Zika virus infection. From these cases, we know the virus can be spread through sexual contact when the man is experiencing symptoms, before symptoms start and after symptoms resolve. In one case, the virus was spread a few days before symptoms developed. The virus is believed to be present in semen longer than in blood. For a pregnant woman with a partner who has traveled to endemic areas, either abstinence or intercourse with condoms for the duration of the pregnancy is recommended for prevention.

The best way to avoid Zika virus infection and other mosquito-borne diseases is to prevent mosquito bites (<http://www.cdc.gov/vitalsigns/zika/infographic.html#graphic-b>). Asian tiger mosquitoes are container-breeding mosquitoes. They do not breed in ponds, puddles or marshes.

- Remove their breeding sites
 - Empty standing water from flower pots, buckets and barrels.
 - Change the water in pet dishes, and replace the water in bird baths weekly
 - Drill holes in tire swings so water drains out
 - Keep children's wading pools empty and on their sides when they aren't being used
- When outdoors, wear Environmental Protection Agency (EPA)-registered insect repellents. All EPA-registered insect repellents have been evaluated for effectiveness. Always follow the product label instructions.
- Unlike many mosquitoes, the Asian tiger mosquitoes are most active during the day and are most common in shade conditions. Be sure to use insect repellent and wear long sleeves and pants where these mosquitoes are active.
- Make sure you have good screens on your windows and doors to keep mosquitoes out.

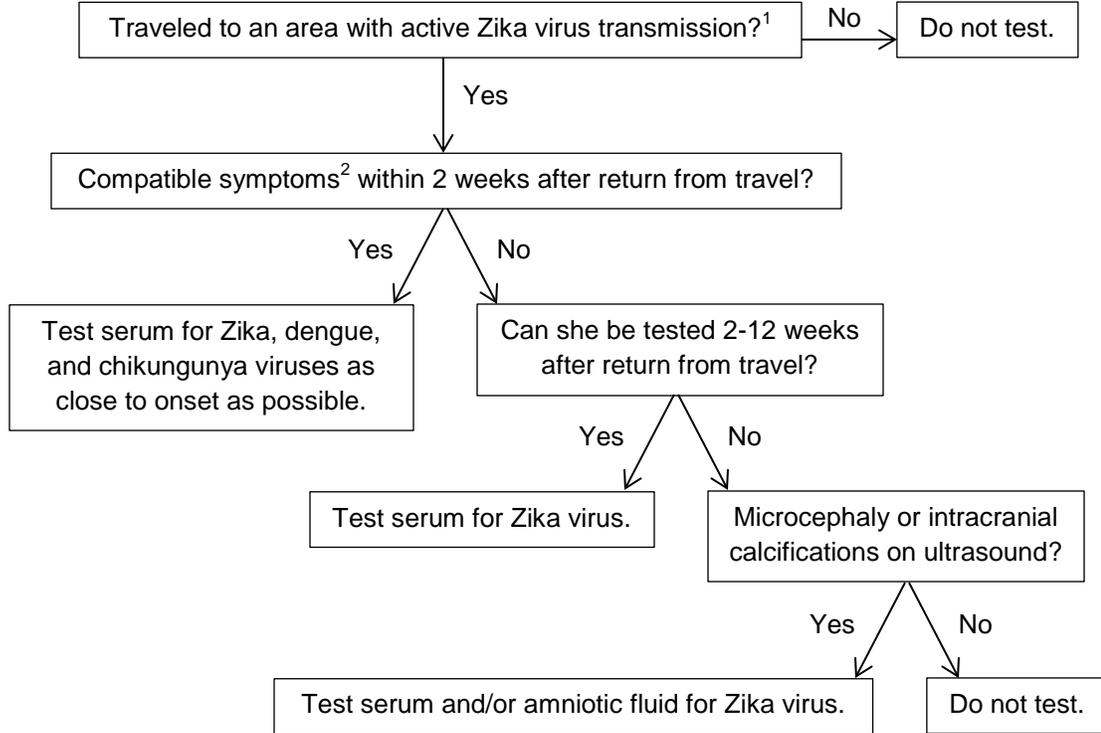
Actions by ODH

The ODH Laboratory has begun Zika virus testing to identify suspected Zika virus infection in symptomatic individuals with an acute illness of less than 7 days' duration. The genetic material of the Zika virus often can be detected in blood specimens collected within seven days of symptom onset. The ODH Laboratory is using a test known as real-time reverse transcription polymerase chain reaction (rRT-PCR). Blood specimens tested by the ODH Laboratory and collected 4 or more days after illness onset will be forwarded to the CDC for antibody testing. Zika virus testing recommendations, specimen collection information, and specimen shipping instructions are attached following this memo.

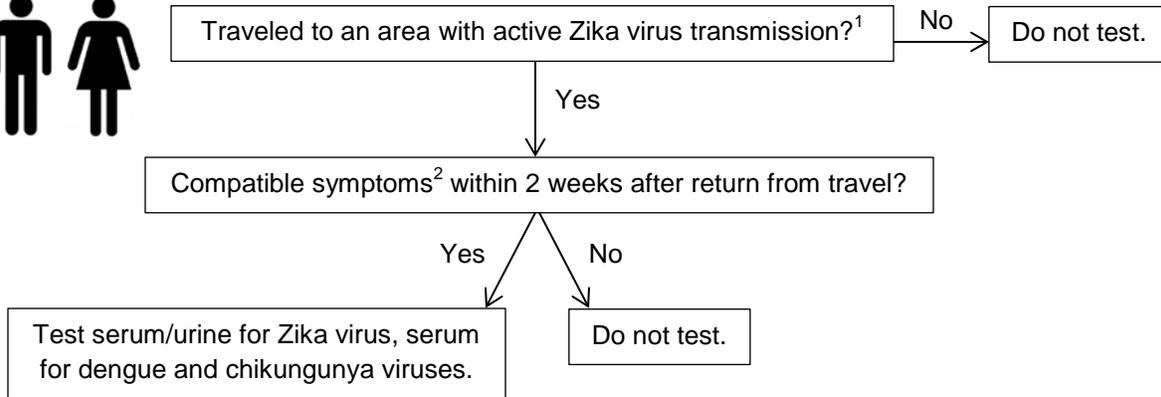
ODH will work with local health jurisdictions and healthcare providers if a human case of Zika virus infection is diagnosed during mosquito season in Ohio either through travel or by local transmission. In addition, if Zika virus infection is found to have occurred as a result of local transmission, additional public health response activities will occur. ODH also works with local health departments and other local partners to carry out mosquito surveillance. Local agencies use this information to issue alerts and target control efforts to reduce the number of mosquitoes that could potentially transmit Zika virus to susceptible people. ODH communicates weekly with surveillance partners and provides an arbovirus activity update every two weeks to all local health departments, surveillance partners and other partnering agencies statewide throughout the arbovirus season (May through October). ODH also provides press releases to alert the public at the first sign of mosquito activity and again if a locally-acquired case were to be reported.

For more information about ODH's activities please check the ODH website at <http://www.odh.ohio.gov/odhprograms/bid/zdp/diseases/zika.aspx>

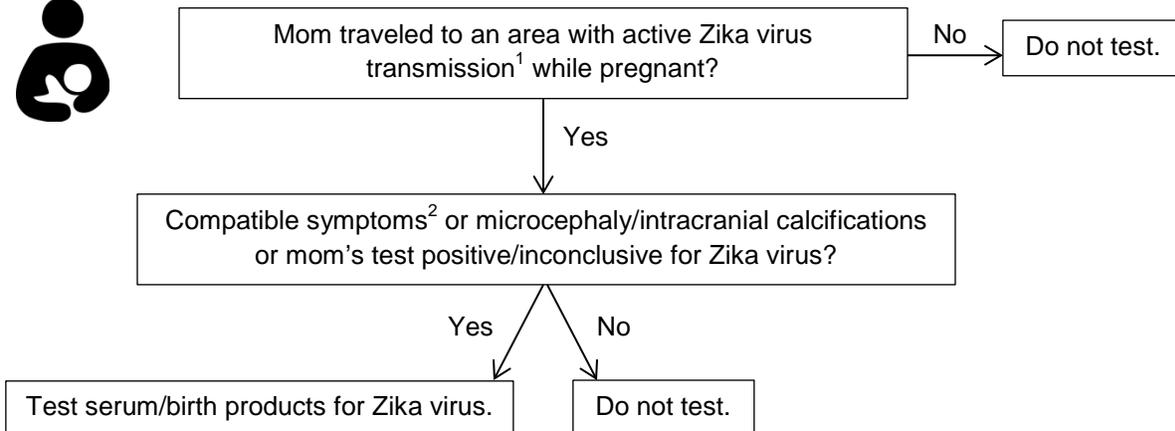
Pregnant Females



Males, Non-Pregnant Females, and Children



Infants (Possible Congenital Infection)



¹ Areas with active Zika virus transmission: www.cdc.gov/zika/geo/.

² Compatible symptoms: Onset of one or more of fever, rash, conjunctivitis, arthralgia.

Specimen Collection:

- Serum: Single serum specimens are acceptable for Zika virus real-time Reverse Transcriptase Polymerase Chain Reaction (rRT-PCR) and antibody testing. A convalescent serum specimen may be requested depending on results of acute specimen testing.
 - Collect 0.5 mL of blood into a serum separator tube.
 - Keep the serum refrigerated until ready to ship.
- Cerebrospinal fluid: Cerebrospinal fluid specimens are acceptable for Zika virus rRT-PCR and antibody testing, although they should only be submitted if collected for other purposes.
 - Collect 1.0 mL of cerebrospinal fluid into a tube.
 - Keep the specimen refrigerated until ready to ship.
- Amniotic fluid: rRT-PCR and virus isolation can be performed on amniotic fluid, although the performance of rRT-PCR testing of amniotic fluid for Zika virus infection is currently unknown.
 - Collect 1.0 mL of amniotic fluid in a sterile container.
 - Keep the specimen refrigerated until ready to ship.
- Urine: rRT-PCR can be performed on urine collected less than 14 days after illness onset. If urine is collected, a serum specimen for the patient should be collected as well for testing. Further information is available on [CDC's Zika website](#).
 - Collect 1.0 mL of urine in a sterile container. Urine should be collected before semen if both are being submitted for the same person.
 - Keep the specimen(s) refrigerated until ready to ship.
- Other body fluid: rRT-PCR and virus isolation can be performed on other body fluids, such as semen and saliva. However, the performance of RT-PCR testing of other body fluids for Zika virus infection is currently unknown. Further information is available on [CDC's Zika website](#).
 - Collect 1.0 mL of semen in a sterile container. Urine should be collected before semen if both are being submitted for the same person.
 - Collect saliva with a dry cotton swab and place in a tube with 1.0 mL of viral transport media.
 - Keep the specimen(s) refrigerated until ready to ship.
- Fetal tissues: Tissues may be submitted for infants or fetuses with suspected congenital infection for rRT-PCR, antibody testing, histopathology, or immunohistochemical staining. Fetal tissues may include cord blood, placental tissue, brain tissue, or autopsy tissues. Further information is available on [CDC's Zika website](#).
 - Collect 0.5 mL of cord blood into a serum separator tube.
 - Provide both formalin-fixed (preferred) and frozen tissues for each type of tissue submitted; if it's not possible to submit both, prioritize formalin-fixed tissues.
 - Collect brain tissue, maintaining the structure of the brain architecture for evaluation of viral neuropathology.
 - Sample placental tissue extensively, including full thickness pieces, section of the placental disk, membranes, umbilical cord, and pathologic lesions when possible.
 - Provide 0.5-1.0 cm of autopsy samples of each major organ (heart, lungs, liver, kidneys, skeletal muscle, bone marrow). Sampling of the eyes is highly recommended.
 - Place tissues into sterile containers containing adequate formalin.
 - Store frozen tissues at -70°C until ready to ship.
 - Keep fixed tissues at room temperature until ready to ship.

Serum is the preferred specimen for Zika virus testing. If submitting a specimen other than serum, it is recommended to also collect and submit a serum specimen for the patient.

Specimen Shipping:

- Complete the [CDC's Specimen Submission Form](#) to accompany the specimen(s).
 - Select “Arbovirus Serology” from the drop-down menu for Test Order Name.
 - Include the date of illness onset and the specimen collect date. Leave the illness onset date blank if the patient was asymptomatic.
 - The healthcare provider can fill his/her information in the Original Submitter section to receive a copy of the results.
 - If the specimen is being drawn by a different facility, the lab can fill its information in the Intermediate Submitter section to receive a copy of the results.
 - The Travel History section on the second page needs to be filled out with country(ies) traveled to and dates of travel.
 - The Brief Clinical Summary section on the second page needs to be completed with the patient’s signs and symptoms. If the patient is pregnant and asymptomatic, please note that in this section.
 - In the Comments section at the bottom of the second page, “Zika, chikungunya, and dengue testing requested” can be filled in. Previous arboviral test results for the patient should be noted here as well, including both positive and negative results.
 - The form should be filled out electronically and then printed. If the form cannot be accessed online, it can be printed and filled in by hand.
- Complete [ODH Lab's Microbiology Submission Form](#) to accompany the specimen(s).
 - Enter “Zika virus” in the Agent Suspected field.
 - Fill in the bubble appropriately in the Specimen Type & Site section.
- Ship serum, cerebrospinal fluid, amniotic fluid, urine, and other body fluids on frozen freeze packs.
- Ship frozen tissues on dry ice.
- Ship fixed tissues at room temperature and separate from specimens requiring freeze packs or dry ice.
- Do not ship specimens for weekend delivery unless otherwise instructed by ODH Laboratory.
- Ship specimens to:
 - Ohio Department of Health Laboratory
 - ATTN: Microbiology Labs
 - 8995 E. Main St.
 - Building 22
 - Reynoldsburg, OH 43068

Contact Information:

- ODH Zoonotic Disease Program
 - Phone: (614) 995-5599
 - E-mail: Zoonoses@odh.ohio.gov
- ODH Laboratory
 - Phone: (888) ODH-LABS
 - E-mail: ODHLabs@odh.ohio.gov