



Zika Virus

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History of Zika Virus

- ▶ Zika virus was first discovered in 1947 and is named after the Zika Forest in Uganda.
- ▶ Prior to 2015, Zika virus outbreaks occurred in areas of Africa, Southeast Asia, and the Pacific Islands.
- ▶ In May 2015, the Pan American Health Organization (PAHO) issued an alert regarding the first confirmed Zika virus infections in Brazil.
- ▶ Currently, outbreaks are occurring in many countries and territories.
- ▶ Zika virus will continue to spread and it will be difficult to determine how and where the virus will spread over time.



Reported active transmission



Statistics as of 5/11/2016



US States

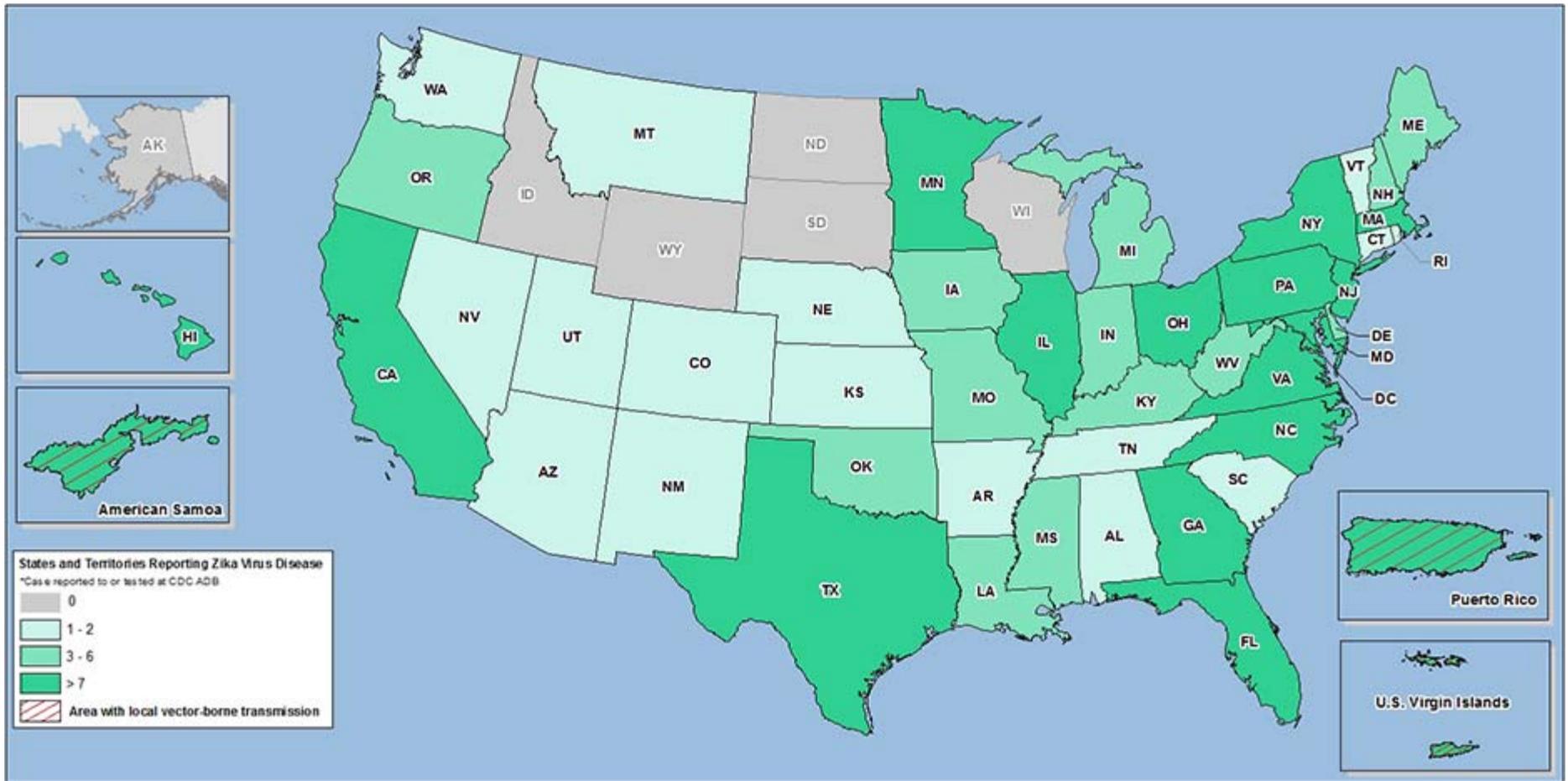
- ▶ Travel-associated cases reported: 503
- ▶ Locally acquired vector-borne cases reported: 0
- ▶ Total: 503
 - Pregnant: 48
 - Sexually transmitted: 10
 - Guillain-Barré syndrome: 1

US Territories

- ▶ Travel-associated cases reported: 3
- ▶ Locally acquired cases reported: 698
- ▶ Total: 701
 - Pregnant: 65
 - Guillain-Barré syndrome: 5



States and Territories Reporting Zika Virus Disease



New York

110 Travel Associated

0 Local Acquisition

Transmission Through Mosquito Bites

- ▶ Zika virus is transmitted to people primarily through the bite of an infected *Aedes* species mosquito (*A. aegypti* and *A. albopictus*).
- ▶ Zika virus is a **flavivirus** related to dengue ,chikungunya, West Nile virus and yellow fever
- ▶ These mosquitoes typically lay eggs in and near standing water in things like buckets, bowls, animal dishes, flower pots and vases. They prefer to bite people, and **live indoors and outdoors** near people. Containers of standing water should be emptied.
- ▶ Mosquitoes become infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites
- ▶ Mosquitoes that spread chikungunya, dengue, and Zika are **aggressive daytime biters**, but they can also bite at night.



Other Ways People Get Zika:

- **During pregnancy**

A pregnant woman can pass Zika virus to her fetus during pregnancy. Zika causes microcephaly, a severe birth defect that is a sign of incomplete brain development



- **Through sex**

Zika virus can be sexually transmitted by a man to his partners



- **Through blood transfusion**

There is a strong possibility that Zika virus can be spread through blood transfusions



Advice for Pregnant Women

- ▶ Avoid travel to areas where Zika virus is spreading.
- ▶ Strictly follow steps to prevent mosquito bites during trips to areas with Zika.
- ▶ Use condoms the right way every time they have sex or not have sex during pregnancy with a male sex partner who lives in or has traveled to areas with Zika.



Zika Virus Symptoms

- ▶ The most common symptoms of Zika are fever, rash, joint pain, and conjunctivitis (red eyes)
- ▶ The illness is usually mild with symptoms lasting for several days to a week after being bitten by an infected mosquito
- ▶ People usually don't get sick enough to go to the hospital
- ▶ Death from Zika is rare
- ▶ Once a person has been infected, he or she is likely to be protected from future infections.



Steps to Prevent Mosquito Bites

- ▶ Wear long-sleeved shirts and long pants.
- ▶ Stay in places with air conditioning and window and door screens to keep mosquitoes outside. Empty containers of standing water.
- ▶ Sleep under a mosquito bed net if you are overseas or outside and are not able to protect yourself from mosquito bites.
- ▶ Use EPA listed insect repellents with one of the following active ingredients: DEET, picaridin, IR3535, oil of lemon eucalyptus, or para-menthane-diol. (Choosing an EPA-registered repellent ensures the EPA has evaluated the product for effectiveness. When used as directed, EPA-registered insect repellents are proven safe and effective, even for pregnant and breast-feeding women.)
- ▶ To protect your child from mosquito bites:
 - Do not use insect repellent on babies younger than 2 months old.
 - Do not use products containing oil of lemon eucalyptus or para-menthane-diol on children younger than 3 year old.
 - Dress your child in clothing that covers arms and legs.
 - Cover crib, stroller, and baby carrier with mosquito netting.
 - Do not apply insect repellent onto a child's hands, eyes, mouth, and cut or irritated skin.
 - Adults: Spray insect repellent onto your hands and then apply to a child's face.
- ▶ Treat clothing and gear with permethrin or purchase permethrin-treated items.
 - Treated clothing remains protective after multiple washings. See product information to learn how long the protection will last.
 - If treating items yourself, follow the product instructions carefully.
 - Do NOT use permethrin products directly on skin. They are intended to treat clothing.



Criteria for Zika Testing



- ▶ Pregnant woman who traveled to an area with active Zika virus transmission while pregnant (see <http://www.cdc.gov/zika/geo/index.html>) OR
- ▶ Non-pregnant woman or man who develops (or developed) compatible symptoms during or within 4 weeks of travel to an area with active Zika virus transmission³ OR
- ▶ A man or woman who become (or became) ill with symptoms of Zika virus within 4 weeks of travel to a place where Zika virus is being transmitted.
- ▶ A person who traveled to an area with active Zika virus transmission and who presents with Guillain- Barré syndrome.



Diagnostic Testing

- ▶ During the first week after onset of symptoms, Zika virus disease can often be diagnosed by performing real-time reverse transcription-polymerase chain reaction (rRT-PCR) on serum.
- ▶ Additionally, now urine samples should be collected less than 14 days after onset of symptoms for rRT-PCR testing.
- ▶ Virus-specific IgM and neutralizing antibodies typically develop toward the end of the first week of illness; cross-reaction with related flaviviruses (e.g., dengue and yellow fever viruses) is common and may be difficult to discern.
- ▶ Plaque-reduction neutralization (PRNT) testing can be performed to measure virus-specific neutralizing antibodies and discriminate between cross-reacting antibodies in primary flavivirus infections.



Treatment for Zika

- ▶ No vaccines or medications are available to prevent or treat Zika virus infections.
- ▶ If someone is ill as a result of Zika virus, the symptoms should be treated. This includes getting plenty of rest, drinking fluids to prevent dehydration, and taking medicines, such as **acetaminophen** or paracetamol, to relieve fever and pain.
- ▶ Because other infections can look like Zika virus, aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs), like ibuprofen and naproxen, should be avoided until other illnesses like dengue fever can be ruled out to reduce the risk of hemorrhage.



Role of State and Local Public Health Agencies

- Work with CDC's Arbovirus Diagnostic Laboratory and health departments with the capacity to test for Zika virus when indicated. NYS Wadsworth Lab was one of the first to be fully capable of testing for ZIKA.
- Report laboratory-confirmed cases to CDC through ArboNET, the national surveillance system for arboviral disease.
- Participate in the U.S. Zika Pregnancy Registry to further understanding of Zika virus infection in pregnancy and congenital infection.
- Activate or enhance mosquito surveillance and control activities to respond to local cases of Zika.
- Hospitals and providers **must report** suspected cases of Zika virus to the LHD **where the patient resides.**



6 Step NYSDOH Zika Action Plan ZAP

1. Eliminate Zika at Its Source
2. Monitor the Aedes Mosquito with Special Trapping and Testing
3. Provide Free Zika Protection Kits to Pregnant Women
4. Deploy Rapid Response Teams
5. Issue Emergency Regulations/
Mandate Local Zika Action Plans
6. Launch Aggressive Public Awareness Campaign





2016 ZIKA RESPONSE CDC IN ACTION



Tracking the spread of Zika virus and other mosquito-borne viruses in the United States and around the world.

Training disease detectives to find and report Zika cases.



Teaching healthcare providers how to identify Zika.

Testing samples for Zika and providing laboratories with diagnostic tests.



Studying links between Zika and birth defects and Guillain-Barré syndrome.

Educating the public about Zika virus.



Advising travelers how to protect themselves while traveling in areas with Zika.