

What First Responders Should Know About Zika

Current Assessment:

The largest outbreak of the Zika virus continues with active circulation (local transmission) in many countries in South and Central America and the Caribbean, in some of the Islands in Oceania/Pacific Islands and in Cape Verde, Africa. Over a hundred imported cases, by way of returning travelers, have been identified in the United States, Canada, and countries throughout the world. One case in Texas was contracted in the US (not imported) via sexual transmission.

While the Zika virus does not cause obvious infection in most infected people, up to 20% (1 in 5) of those infected will have mild signs and symptoms. These symptoms typically last for up to a week and develop within 2 to 7 days of infection. Once a person has been infected, they will probably not be re-infected. This is important since Dengue, another virus spread by the same mosquito can infect a person again, resulting in a more serious case.

In those countries with local transmission, most infections occur through bites from infected mosquitos. Although less common, person to person transmission has also occurred through sexual contact with infected men, mother to child during pregnancy and during the birth process, and through blood transfusion or transplant. The Zika virus has been identified in blood, semen, saliva, amniotic fluid, urine, placental, and nerve tissue. Other types of transmission or potentially infectious fluids may be identified as investigations continue.

Although the Zika virus does not usually cause lasting harm to those infected, it does appear linked to microencephaly (small head and brain) and other neural malformations in the developing fetus of some pregnant women and Guillain-Barre Syndrome (GBS) in other age groups. GBS is a progressive muscle weakening illness that may lead to body paralysis requiring ventilatory support until recovery; small numbers of those affected may have persistent weakness/paralysis. There have multiple cases of Zika-related microencephaly identified in several states in the U.S. There are also indications that there been may be other neural tissue defects, as well. The CDC and other Global Health partners have published recommendations for those that are pregnant or may become pregnant to help manage the increased risk of Zika infection such as avoiding travel to areas with mosquito-caused cases and avoiding sexual contact with.

Background:

- Zika is a virus that is spread by mosquitoes (Aedes) that also transmit other diseases such as Dengue, Chikungunya, and Yellow Fever. These mosquitoes bite during the day and not just at dawn and dusk, as other types do.
- Currently, the virus is being transmitted locally in a couple of US Territories including Puerto Rico and American Samoa. It has been imported, through infected travelers, into more than 30 US States with most of these cases in

- Florida, New York, and Texas. A link to the current list of affected States and Territories, as well as other Countries are included on the *Zika Resources* page.
- The majority of people will not have any symptoms but will likely be infectious for a period of time, usually about a week, but longer in some people and in some body tissue/fluids.
 - Those with symptoms normally complain of fever, rash, conjunctivitis (red eyes), joint and/or muscle pain, headache, or malaise. A patient may have one or more of these symptoms. Symptoms last for several days to a week after being infected.
 - There is no vaccine or specific treatment for Zika.
 - Diagnosis is made using sophisticated laboratory tests (RT-PCR), currently available only at the CDC and certain State Public Health Labs. Work is ongoing to develop tests all labs or testing sites can use and to widely test the blood supply.
 - Pregnant women are at particular risk due to the effects on the developing fetus. Women in any trimester are considered at risk for microencephaly or other neuro tissue congenital anomalies, though most defects have been in those infected in the first trimester. Investigation is ongoing.
 - Zika is also spread by sexual contact with infected men. Zika virus persists longer in semen than in other fluids, currently considered to be unknown but virus has been detected at 62 days. Zika can be transmitted before, during or after infection, whether or not symptoms are present. Men who are infected or potentially infected (have traveled to an area with mosquito-borne Zika) should properly use condoms for **any** sexual contact. This is particularly important if the partner is of childbearing age. It is unknown if infected women can transmit Zika.
 - Although other person to person transmission is limited, those infected or who have traveled to areas with local transmission, should not donate blood or other body tissue.

Specifically for First Responders:

- Even though local transmission by mosquito bites are **not** currently occurring in the US, the Aedes mosquitoes do live in many States, so there is an ongoing possibility that mosquito bites in the US may begin to transmit the Zika virus. Although this applies to everyone, since First Responders spend a significant part of their days and nights outdoors, it is important to remember to avoid mosquito bites by wearing protective clothing (long sleeves, long pants, etc.), wear insect repellent containing DEET, and/or try to avoid areas with mosquitoes. Notification of the presence of mosquitoes should be made to Mosquito Control Authorities. Frequent searches should be made for areas or

items containing still water, and they should be kept emptied or treated, whenever found. There are multiple published documents related to mosquito control and bite prevention in the *Links/Resources Document*.

- Those who are assessing and/or treating those that may be infected with Zika (by travel history and/or symptoms) should, as always, practice Universal Precautions and report any exposures to blood or body fluids per normal CDC and Occupational Health guidelines. No extra precautions are necessary.
- Health Care Workers, including First Responders, should ask about travel history when confronted with patients with any of the signs or symptoms associated with Zika. It is important to keep in mind that other mosquito- vectored illnesses like Dengue and Chikungunya will have the same presentation and travel history. Co-infection with more than one of these diseases are occurring. Assure that any information collected is input into the PCR/ePCR). This information must also be reported to the receiving hospital's personnel.

Glossary of Terms

Zika Virus: virus that is primarily transmitted by an Aedes mosquito bite but can also be transmitted sexually by men (via semen), mother to child during pregnancy or childbirth, or blood transfusion or tissue transplant. There may be other types of transmission that also occur less commonly. Investigation is ongoing with Global Health Partners sharing information that they have collected.

Incubation Period: the time between the time of exposure/initial infection to the virus to the time that the person becomes symptomatic and/or symptomatic. Considered, for Zika, to be 2 to 7 days.

Guillain-Barre Syndrome: a rare auto immune disorder which occurs for unknown reasons, sometimes after respiratory or gastrointestinal viruses, surgery or associated with some vaccinations. Sometimes, there is no known association. It presents as a muscle weakness or tingling in the lower extremities and is symmetrical (affecting both sides of the body at the same time). If the syndrome progresses, it will climb the body and some patients will become mostly paralyzed, putting their breathing and hemodynamics at risk. Those that have weakness or paralysis of the torso are often placed on ventilators to assist with breathing until the disorder passes. After several weeks, most patients make a full recovery although some may be left with residual weakness.

Microencephaly (also microcephaly): a congenital defect resulting in significantly smaller than normal heads, with brain tissue correspondingly also lessened and often compressed. There are varying degrees with some so bad that the embryo or fetus dies in utero, during birth, or shortly afterwards. Others survive with varying needs of support.



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