Zika Virus Issues Document

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Summary

Zika virus (Zika) is an emerging infectious disease transmitted primarily by mosquitoes. On Feb. 1, 2016, the World Health Organization (WHO) declared Zika infection a Public Health Emergency of International Concern (PHEIC). In the U.S., the Centers for Disease Control and Prevention (CDC) confirmed on Apr. 13, 2016, that the Zika virus is a cause of microcephaly and other severe fetal brain defects. Presently, Zika has no specific treatments or vaccines. However, at least two vaccines are under development with one of them scheduled to begin human trials in September, 2016. This document is intended to provide additional information about Zika.

Take-Away Points

- Zika virus (Zika) can be transmitted through mosquito bites, by sexual contact, in blood transfusions, and from a pregnant woman to her fetus.
- Many who are infected with Zika have no symptoms or only very slight ones. In addition, the most common symptoms of Zika are very similar to many other infections – fever, rash, joint pain and conjunctivitis.
- Generally, Zika infection requires no specific treatment other than symptomatic therapy, such as pain relievers and fever reducers, and supportive care, including adequate fluid intake.
- Currently, no vaccine is available. However, vaccines and a blood test to confirm a Zika infection are in development.
- Zika is the first mosquito-borne illness identified as causing birth defects. Women who are pregnant or who are planning to get pregnant and who think they may have been exposed to Zika should consult their healthcare providers.

Zika Virus Background

Zika was first discovered in Ugandan rhesus monkeys in 1947. Since first identified in humans in 1952, small human outbreaks have occurred in Africa, Southeast Asia and island countries in the Pacific Ocean region. The current, much larger outbreak, which already involves most of the Caribbean islands, Central America and South America, is expected to spread north. Its extent and its association with neurological diseases have prompted WHO to designate it as an international public health emergency.

Zika is caused by a virus, which is spread to people primarily through the bite of an infected mosquito. Transmission of the virus also can occur by sexual contact with an infected individual, through transfusions with infected blood and from a pregnant woman to her fetus. The most common symptoms are fever, rash, joint pain and conjunctivitis. Symptoms can last from a few days to a week, but many people who are infected experience only mild symptoms or none at all. Much like some other viral diseases, having one Zika infection is likely to protect affected individuals from future infections with Zika.

Although Zika is mild for most adults, it can be devastating for a developing fetus. According to a recent small study, up to 29% of babies whose mothers had Zika during the first three months of pregnancy may have some type of brain abnormality, and as many as 13% have some degree of microcephaly. Defined as a head size much smaller than other babies of about the same age, microcephaly may cause few problems for some affected infants. However, many babies who have it also have other birth defects, such as cerebral palsy, epilepsy or learning disorders.

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A few adults who have had Zika also developed rare nervous-system conditions, including Guillain-Barré syndrome (GBS). An autoimmune condition that affects nerve cells, GBS causes muscle weakness in both arms and legs. Most patients recover at least some mobility, but symptoms can last for months and some patients develop more severe symptoms. About 5% of GBS cases result in death. No reliable estimates of GBS incidence among Zika patients are available, but in a French Polynesian Zika outbreak during 2013 and 2014, cases of GBS rose significantly about three weeks following an increase in Zika infections. Nearly all of the newly diagnosed GBS patients tested positive for Zika.

Current Zika Outbreak

In May 2015, the Pan American Health Organization (PAHO) issued an alert about the first confirmed case of Zika in Brazil. The virus has reached more than 60 countries, with more than 20 countries in the Americas, with the Health Ministry of Brazil estimating the number of infected individuals to be between 500,000 and 1.5 million. The WHO declared Zika a PHEIC in response to clusters of fetal abnormality cases being reported in Brazil and the increasing evidence linking them to Zika. Based on existing data, the CDC determined that it causes microcephaly and other severe fetal brain defects. Not all women who become infected with Zika during pregnancy will have babies with problems, though.

U.S. territories, including American Samoa, Puerto Rico and the U.S. Virgin Islands already have experienced local mosquito-borne transmission of Zika. Although the continental U.S. has no confirmed cases of direct Zika transmission, the CDC estimates that individuals in 30 or more mainly southern states may be at risk as infected mosquitoes spread north during the summer. The CDC has documented over 500 travel associated Zika cases in the US, including individuals who have contracted the infection through sexual contact with an infected individual.

Sexual transmission of the virus is believed to occur only from men to women. Even though the amount of time the virus is infectious in body fluids, such as blood, is uncertain; it is known to remain active in semen for up to six months. The only certain way to prevent sexual transmission from an infected partner is to avoid sexual activity while Zika remains in semen. The CDC's current recommendation for couples trying to conceive is to wait for six months from the time the male partner exhibited symptoms or traveled to an area with Zika. If individuals recently infected with or exposed to Zika decide to engage in sexual activity, they should use a condom correctly every time they have sex.

Prevention and Treatment

Currently, Zika has no vaccine and no medicine to specifically treat the infection. Individuals with the virus usually suffer only mild symptoms that can be treated with rest, plenty of fluids and with medications for pain and fever. Patients who have symptoms that worsen or persist should seek medical care.

Prevention of Zika involves personal protection from infected mosquitoes in addition to reducing the mosquito population that carries the virus. The best personal protection strategies include wearing long-sleeve shirts and long pants, placing screens on windows and doors, using Environmental Protection Agency (EPA) registered insect repellants when outdoors and using a mosquito bed net if sleeping outdoors. To reduce the mosquito population, places where they live and breed should be any standing water (such as in birdbaths, buckets or rain barrels) should be eliminated or tightly covered. Places, such as septic tank vents and plumbing stacks that cannot be covered with a lid should be topped with small wire mesh.

Vaccine Development

The U.S. National Institute of Allergy and Infectious Diseases (NIAID) is working on a potential vaccine that could enter human trials in September 2016. If it passes safety tests, it will enter effectiveness trials in the first half of 2017. A major Zika outbreak could allow emergency use of that vaccine as early as 2018. Sanofi is the only major pharmaceutical company forging ahead with a Zika vaccine, with plans to begin animal testing in the summer, and human trials in 2017.

Stay Informed

To access the most up-to-date information regarding Zika, please refer to the CDC's website:
http://www.cdc.gov/zika/index.html

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