



Water Quality and Health

Zika Virus: What Can We Expect *this* Summer?

By Bob G. Vincent

As summertime approaches and [vulnerable areas of the US](#) warm up, concerns over the potential spread of Zika virus are on the rise. The virus is spread mainly through the bite of an infected [Aedes aegypti mosquito](#), but also can be transmitted sexually. Zika virus is associated with birth defects ([microcephaly](#)) in infants of infected mothers and [Guillain-Barre Syndrome](#), an immune system disorder.

Last summer, several regions of the US were identified as possible sites of Zika virus outbreaks based on [modeling studies](#)¹ and well-publicized outbreaks in Brazil and other areas of Latin America. Although there have been over 5,000 travel-related cases reported² in the US since 2015, *local transmission* of the virus in the continental US occurred in just 224 cases in two geographic “pockets” last summer: Miami-Dade County, Florida (218 cases) and Brownsville, Texas (6). What does this summer hold for those of us on the lookout for Zika virus?



Mosquito repellent can help reduce exposure to mosquitoes that carry Zika virus; infants younger than two months can be protected with mosquito netting.

Zika: State of Play

Globally, the [World Health Organization \(WHO\) reports](#) Zika virus continues to spread to areas where mosquitoes are present that can transmit the virus. For example, the [WHO recently reported](#) three laboratory-confirmed cases of Zika virus in the Gujarat State of India. Because of the potential health effects on infants of infected mothers, the Centers for Disease Control and Prevention (CDC) tracks the [number of pregnant women with any laboratory evidence of possible Zika virus infection](#) in the US and US Territories (1,845 and 3,795, respectively, as of May 9, 2017). As of May 9, 2017, of 1,471 completed pregnancies reported to the [US Zika Pregnancy Registry](#), there have been 64 liveborn infants with birth defects and 8 pregnancy losses with birth defects (approximately 5 percent birth defects).³

Currently, [CDC data](#) show nearly two-thirds of the 50 states have reported laboratory-confirmed cases of Zika virus in 2017. For the period January 1 – May 24, 2017, all 120 reported Zika virus cases were in travelers returning from affected areas. Many more cases, 498, were reported in US territories, with the

¹ These regions included the Gulf Coast and much of the Eastern Seaboard of the US.

² Travel-related cases of Zika virus are those in which people are infected by mosquitoes while visiting countries in which the virus is endemic (regularly found). CDC reported [61](#) of these in 2015, [4,830](#) in 2016 and [119](#) as of May 19, in 2017.

³ [CDC notes](#): “Although these outcomes occurred in pregnancies with laboratory evidence of possible Zika virus infection, we do not know whether they were caused by Zika virus infection or other factors.”

majority in Puerto Rico. CDC presumes that all cases in US Territories were acquired through local mosquito-borne transmission. Meanwhile, [Miami-Dade County](#) and [Brownsville](#) are currently designated by CDC as “cautionary areas” to which pregnant women should consider postponing travel. In Florida, where I work at the Department of Health, none of the more than 90,000 mosquitoes tested to date have been found to be infected with the Zika virus, evidence that the virus has not “overwintered” here. We have a team of over 20 epidemiologists placed around the state to monitor Zika virus, and \$20 million in state funds has gone to “skeeter control” districts for their spraying/larvaciding/eradication efforts. We are also aware that some cities and counties are planning to use genetically modified sterile mosquitoes to reduce mosquito populations.

Hope for a Vaccine

In a [September 2016 interview](#), CDC director, Dr. Tom Frieden, noted that “Zika is likely to become endemic in this hemisphere. That means it will continue to spread at some level for years to come.” On the positive side, government scientists at the National Institute of Allergy and Infectious Diseases have developed an experimental vaccine that is being tested on human volunteers. According to the [March 31, 2017 announcement](#), the trial is expected to conclude in 2019, but initial results could be available by the end of 2017. An effective vaccine will be critical in controlling the spread of Zika virus. Meanwhile, it’s important to implement the many known strategies that can help reduce our exposure to mosquitoes and Zika virus.

Tips from the Frontline of the Zika Virus Battle

The following tips include information from the Florida Department of Health’s “[Drain and Cover](#)” program, and can help control the risk of Zika virus and other mosquito borne illnesses:

- Drain water from garbage cans, house gutters, pool covers, coolers, toys, flower pots, or any other containers where sprinkler or rain water has collected.
- Discard old tires, drums, bottles, cans, pots and pans, broken appliances and other items that aren’t being used.
- Empty and clean birdbaths and pets’ water bowls at least once or twice per week.
- Protect boats and vehicles from rain with tarps that do not accumulate water.
- Maintain appropriate pool chemistry (chlorine level and pH) of swimming pools. Empty plastic swimming pools when not in use and store in a way that avoids accumulating water.
- Repair broken screens on windows, doors, porches and patios.
- If you must be outside when *Aedes* mosquitoes are active (daytime), cover up. Wear shoes, socks, long pants and long sleeves.
- Apply mosquito repellent to bare skin and clothing. Follow label directions. Repellents with DEET, picaridin, oil of lemon eucalyptus, para-menthane-diol, and IR3535 are effective and safe for pregnant and breast-feeding women, when used as directed. Use netting instead of repellents to protect children younger than two months.

Although it is difficult to predict how Zika virus will affect the US this summer, taking reasonable precautions to prevent exposure to mosquitoes is prudent, especially for those of us in vulnerable areas. *Forewarned is forearmed!*

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