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# WISCONSIN’S ZIKA RESPONSE ACTIVITY OVERVIEW

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## PURPOSE

This document provides information on the actions the Wisconsin Department of Health Services (DHS) is taking to respond to the ongoing outbreak of Zika virus occurring in South and Central America and parts of the South Pacific, as well as local transmissions confirmed in certain parts of southern Florida and southern Texas. This overview outlines the state’s response with the objective of building a common picture of the roles and actions of DHS, local health departments and tribal health clinics (LHDs and THC), health care providers, and other partners in working together to best serve the people of Wisconsin. This plan will be updated as evolving information and circumstances warrant.

## BACKGROUND

### *Transmission*

Zika virus is transmitted primarily by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. Zika virus can also be transmitted via sexual contact with an infected person. A pregnant woman infected with Zika virus can also pass the virus to her fetus.<sup>1</sup> The Centers for Disease Control and Prevention (CDC) also notes a “strong possibility Zika virus can be spread through blood transfusions.”<sup>2</sup>

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<sup>1</sup> <http://www.cdc.gov/zika/about/>

<sup>2</sup> <http://www.cdc.gov/zika/transmission/blood-transfusion.html>

The time between exposure and symptom onset has not been determined as yet, but CDC suggests between a few days to a week.<sup>3</sup>

### *Health Effects*

Up to 80% of individuals infected with Zika virus do not develop symptoms. Those who develop symptoms typically only suffer mild effects such as fever, rash, joint pain, red eyes, and sometimes headaches and muscle pain. These symptoms may last from several days to a week.

Some countries, including Brazil, have reported an increase in the incidence of Guillain-Barré Syndrome among adults infected with Zika virus. Guillain-Barré Syndrome is an uncommon nervous system illness that causes weakness affecting movement, facial control, and, in the most severe cases, may cause paralysis impacting muscles that control breathing. The World Health Organization has found a scientific consensus regarding the linkage between Zika virus disease and Guillain-Barré Syndrome, but CDC is still investigating the connection.

Most notably, Zika virus infection during pregnancy has been linked to the occurrence of microcephaly in infants and other birth defects. The range of birth defects linked to a Zika virus infection during pregnancy is now described as congenital Zika virus syndrome. Microcephaly is a condition that results in an abnormally small head due to incomplete brain development. Children with microcephaly often have severe developmental issues. Some infected pregnant women have also experienced miscarriages believed to be linked to Zika virus infection.

## **ZIKA VIRUS IN WISCONSIN**

To date, confirmed Zika virus cases in Wisconsin residents are all traveled-related, occurring in people who traveled to locations with active Zika virus transmission or in people who had sexual contact with someone who traveled to a location with active Zika virus transmission. Maps assembled by the CDC show that the *Aedes aegypti* mosquitos are not found as far north as Wisconsin. However, the potential range of the *Aedes albopictus* mosquito reaches farther north and includes Midwestern states such as Iowa, southern Minnesota, and Illinois. To date, *Aedes albopictus* has not been found in Wisconsin.

Like all other U.S. states, however, Wisconsin has residents who travel to areas where Zika virus is being spread by the local mosquito population, and these individuals can become infected with the virus. If the individual is a woman of child-bearing age, there is particular concern over the potential effects on the fetus should she become pregnant (as many as 50% of pregnancies are unplanned<sup>4</sup>). Pregnant women are advised not to travel to an area with Zika virus disease. Likewise, both women and men who become infected with Zika virus while traveling can give it to their sexual partners upon their return. Sexual transmission has been reported from both symptomatic and asymptomatic individuals.

## **OBJECTIVES**

Wisconsin's objectives in regards to Zika virus are:

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<sup>3</sup> <http://www.cdc.gov/zika/symptoms/index.html>

<sup>4</sup> [Unintended pregnancy in the United States: incidence and disparities, 2006](#). *Contraception*. 2011;84(5):478–485.

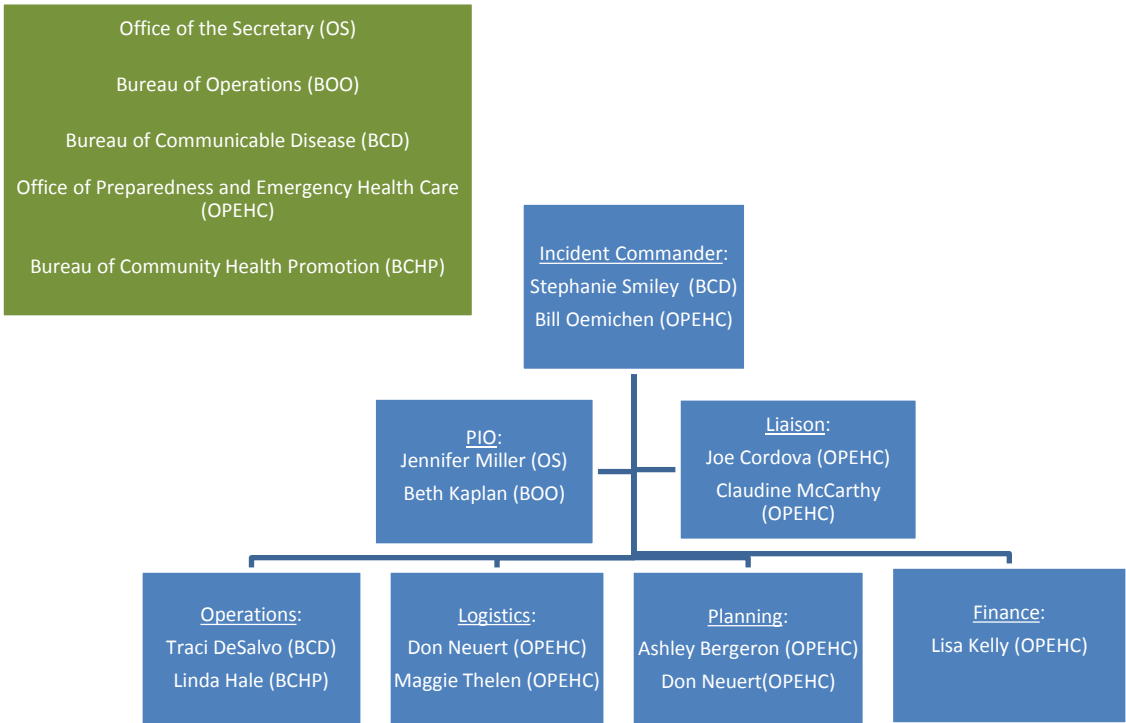
- To achieve consistent and clear communications and overall understanding among all partners, including health care providers, local public health departments and tribal health clinics, the Wisconsin State Laboratory of Hygiene, blood centers, and the Department of Health Services, regarding the efforts to address Zika virus in Wisconsin.
- To share fact-based messages regarding Zika virus awareness and prevention with the people of Wisconsin through creative approaches to reach all audiences, especially those most at risk for being exposed to or spreading the disease (i.e., travelers, pregnant women, women of child-bearing age, individuals already infected).
- To mount targeted surveillance efforts to monitor for *Aedes albopictus* mosquitos, and respond accordingly if any are found.
- To build capability within the Wisconsin State Lab of Hygiene (WSLH) to perform needed testing quickly and accurately.
- To ensure health care providers are contacting DHS to obtain testing for individuals, as merited, to determine whether or not they have patients infected with Zika virus.
- To ensure public health partners have the information they need to be able to counsel those people who test positive.
- To work with health care providers of pregnant individuals with laboratory evidence of Zika virus infection to assist in gathering data regarding the effects and outcomes of the disease.
- To identify infants born with conditions related to Zika virus and connect their families to resources and support.

### **DHS RESPONSE STRUCTURE**

Zika virus-related activities within DHS's Division of Public Health (DPH) are being coordinated among the Bureau of Communicable Diseases, the Bureau of Community Health Promotion, and the Office of Preparedness and Emergency Health Care.

DHS has been addressing Zika virus since January 2016. In order to support a well-coordinated and targeted response, Wisconsin first activated an Incident Command System (ICS) for Zika virus in July 2016. In August 2016, ICS activated the public information officer position, adding the Bureau of Operations and Office of the Secretary to Wisconsin's coordinated response.

The current ICS structure is reflected in the chart below:



## KEY PARTNERS

DHS works closely with its partners to manage travel-associated cases of Zika virus infection and to provide the public with the most current information about prevention. The primary roles for partners are described below.

*Health Care Sector:* Hospitals, ambulatory clinics, federally qualified health centers, and obstetrics and gynecology clinics follow guidance provided by DHS on how to screen for patients with possible Zika virus exposure and will then work with the WSLH to access testing (see [Case Finding and Public Health Follow-Up](#)), if warranted. Prenatal care providers work with DHS to ensure they have the information they need to work with pregnant women with confirmed or suspected Zika virus infection (see [Case Finding and Public Health Follow-Up](#)). Clinics and practices may wish to distribute informational resources about Zika virus to their clients (see [Public Communication](#)).

*Local Health Departments and Tribal Health Clinics (LHDs and THC):* During Wisconsin’s Zika virus response, LHDs and THCs can provide information to the public and to partners. These agencies also assist in the response by amplifying DHS messages to health care providers using their own relationships and distribution networks. This helps ensure the greatest awareness of current Zika virus information within the health care community. LHDs and THCs also perform follow-up investigation and education with patients who are confirmed to have Zika virus infection.

*Professional Associations*<sup>5</sup>: Several nonprofit associations representing different health care disciplines collaborate with DHS to help distribute information to providers.

*UW Department of Entomology*: UW Department of Entomology and participating LHDs and THC's will coordinate with DHS on mosquito surveillance. (See [Vector Surveillance and Control](#).)

## **INFORMATION SHARING**

Every Wednesday afternoon, DHS posts the total number of confirmed cases of Zika virus infection and the total number of individuals tested in Wisconsin on the DHS [Zika webpage](#), and county and tribal health agencies are notified of cases within their jurisdictions. No specific information regarding cases will be shared (gender, age, pregnancy status, etc.) on the public website, nor will DHS release information in the event a baby is born in the state with (a) Zika virus infection related birth defect(s).

Standardized guidance and informational memos regarding the disease, recommended practices, and other new information are being shared with key partners as needed. These partners include LHDs and THC's, hospitals, clinics, blood banks, care providers, health care coalitions, and related professional associations.<sup>6</sup> DHS typically distributes information to these entities via email or webinar. The entities may then choose to share that information with their communities, systems, patients, memberships, and other networks through websites, blogs, distribution lists, and whatever other means they have to distribute information as broadly as possible to appropriate audiences.

## **VECTOR SURVEILLANCE AND CONTROL**

Currently, only two mosquito species in the Americas are known to spread the Zika virus—*Aedes aegypti* and *Aedes albopictus*. Neither species has ever been found in Wisconsin. Although Wisconsin is far outside of the range of *A. aegypti*, *A. albopictus* have been reported in Illinois, Iowa, and southern Minnesota. For this reason, DHS, in conjunction with the UW Department of Entomology and selected local health departments, has instituted surveillance for *A. albopictus* using ovitraps. Surveillance began in July of 2016. Participating LHDs include Adams, Buffalo, Crawford, Eau Claire, Grant, Green, Iowa, Jefferson, Kenosha, La Crosse, Lafayette, Dane, Rock, Sauk, Trempealeau, Vernon, Walworth, and Waukesha counties, as well as the cities of Milwaukee, Racine, Franklin, and North Shore. The UW entomologists update DHS periodically, and will notify DHS immediately if *A. albopictus* is identified.

If this occurs, an increased emphasis within Wisconsin will be placed on avoidance of mosquito bites for both returning travelers (so as not to infect a potential vector) and for the public in general. Efforts to eliminate larval habitats will also be enhanced in locales where the vector is found. Based on past experience with the Dengue virus, we do not expect to see indigenous transmission of Zika virus in Wisconsin. However, if a locally acquired case were to occur in Wisconsin, intense efforts would be undertaken to treat the area with an insecticide designed to kill adult mosquitos within about 150 yards

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<sup>5</sup> Associations include the Wisconsin Medical Society; Wisconsin Primary Care Association; Wisconsin Hospital Association; Wisconsin Academy of Family Physicians; Wisconsin Association for Perinatal Care; Wisconsin Chapter of the American Academy of Pediatrics; Wisconsin Section of the American Congress of Obstetricians and Gynecologists; and the Wisconsin Section of the Association of Women's Health, Obstetric, and Neonatal Nurses.

of the case's home, along with elimination of habitats favorable to larval mosquitoes. Insecticide resistance testing of mosquitoes would be conducted to determine effective mosquito control strategies. Such responses would likely necessitate contracting with private sector pest control companies.

### **CASE FINDING AND PUBLIC HEALTH FOLLOW-UP**

Surveillance for Zika virus infections occurs via passive reporting of cases by providers and by laboratories. Because Zika virus is an arbovirus, Zika virus infection is a notifiable condition under Wis. Stat. § 252 and Wis. Admin. Code DHS § 145. Results from WSLH testing are faxed to the Bureau of Communicable Diseases (BCD), and also flow electronically into WEDSS by electronic lab reporting (ELR). Reporting by commercial laboratories varies by the facility; some labs send results via ELR and some fax results to BCD.

For patients being tested at WSLH, information on demographics, exposure history, illness onset, and pregnancy status are collected at the time of testing approval and are entered into WEDSS. For patients tested at commercial laboratories, this information must be obtained by contacting the provider after BCD is notified of the test results.

Potentially infected individuals typically present to health care providers if they are ill and perceive themselves to be at risk of Zika virus infection. Additionally, asymptomatic pregnant women who perceive themselves to be at risk of Zika virus infection may present to their health care providers out of concern for adverse pregnancy outcomes. CDC recommends primary care providers ask all pregnant patients about potential exposure to Zika virus at each prenatal visit, and this message has been stressed in a DHS webinar for providers. Additionally, DPH has developed and disseminated guidance for persons who may have been exposed to Zika virus—either by travel or via sexual contact.

Recommendations include the prevention of mosquito bites, use of barrier precautions during sexual contact, and avoiding conception after recent exposure. These recommendations should be given to each patient by providers upon presentation. They are also given verbally by LHD staff when conducting public health follow-up on patients who have positive results for Zika virus infection. There is no public health follow up performed for patients whose results show no indication of Zika virus infection, although, depending on the circumstances, additional clinical monitoring and future testing (such as of the placenta and infant at delivery) may be suggested.

If a pregnant woman has laboratory evidence of Zika virus infection (regardless of whether she has symptoms), BCD contacts the Bureau of Community Health Promotion (BCHP) and the patient is included in the CDC Zika Pregnancy Registry. The purpose of the registry is to collect enhanced surveillance data about pregnant women and their infants. BCHP staff works with providers to gather and report relevant information to CDC. In addition, BCHP is conducting active surveillance to identify infants with birth defects associated with Zika virus infection, which may result in the identification of additional Zika virus infections and/or cases.

Wisconsin will follow the Council for State and Territorial Epidemiologists (CSTE) definitions for congenital/non-congenital Zika virus cases and infections.

## **LABORATORY TESTING**

WSLH performs fee-exempt testing for Zika virus infection on specimens that meet current CDC criteria and are approved by an epidemiologist in BCD. There are two basic types of assays performed at the WSLH: (1) a PCR assay that detects the actual RNA of the Zika virus, and (2) a serologic test that detects IgM antibody to the virus. Which test is run depends on when patient specimens are collected in relation to their exposure or clinical onset.

Fee-exempt testing is approved on a case-by-case basis by BCD staff. Clinic personnel contact BCD by phone and provide exposure information to determine whether the patient meets testing criteria. If criteria are met, an approved submission form and instructions on submission to WSLH are faxed to the clinic. The WSLH performs testing at least weekly, so the turnaround time for results typically does not exceed 7 days.

A positive PCR assay on serum or urine is confirmatory for Zika virus infection. However, serologic results are more nuanced. IgM antibody detection is not reliable if specimen collection occurs less than 14 days from patient exposure or disease onset. In such cases, an additional specimen collected at a later date would be advised. IgM antibody detection is also not reliable if specimen collection occurs greater than 12 weeks from the patient's exposure or disease onset. Serologic testing is, therefore, not routinely recommended in these cases, although certain exceptions can be made for pregnant women when fetal abnormalities have been detected during prenatal ultrasound. Additionally, antibodies to the Dengue virus can cross-react and produce a falsely positive Zika virus test result. For this reason, samples that are presumptive positive, equivocal, or inconclusive on IgM testing at the WSLH must be forwarded to CDC for confirmation by the plaque reduction neutralization test (PRNT). Turnaround time for PRNT testing at CDC is currently about four weeks.

Several commercial laboratories offer both PCR and serologic testing for Zika virus infection.

## **SERVICES FOR AFFECTED BABIES**

In the event a child is born with microcephaly and/or Zika virus infection-associated defects in Wisconsin, DHS will work to ensure the child and their family is connected to health, early intervention, and social services in the community. This effort will utilize the existing network of five regional centers (RCs) for children and youth with special health care needs (CYSHCN) and other CYSHCN collaborators to work together to ensure CYSHCN and their families are connected to available supports and services. The CYSHCN Program and its RCs will work with the Zika Birth Defect Surveillance Program Coordinator to link identified children to supports and services.

A procedure is being established to support timely, direct contact and follow up with each affected child's health care provider utilizing RCs, as well as LHD and tribal agency infrastructure. A referral information package will be created for health care providers and the child's family, including the RC brochure, the DHS booklet, "[Finding Your Way: A Guide for Wisconsin Families](#)," and RC and Birth to 3 referral forms for providers. The program coordinator will conduct outreach to health care providers and their practice staff on the referral process to RCs and Birth to 3. The RC would conduct an assessment of a child's eligibility for supports and services (SSI, child waivers, MA, other local supports),

assist the family with referrals as needed, and follow up with the family regarding referral outcomes. The project coordinator will also develop a protocol to refer identified children to the Birth to 3 State Program.

## **PUBLIC COMMUNICATION**

DHS messaging around Zika virus focuses on three core messages:

1. Babies born to women who contract Zika virus while pregnant may develop serious birth defects, so pregnant women should avoid travel to areas where Zika virus transmission is occurring.
2. Zika virus is transmitted to people primarily by mosquitos. These mosquitos do not live in Wisconsin; however, people could encounter them in places to which they travel. Travelers should take precautions against mosquito bites when going to areas where Zika virus is currently locally transmitted.
3. Zika virus infection can also be transmitted sexually. People who return from travel to places with current local Zika virus transmission should use condoms when having sex and delay attempts to conceive for recommended time periods (men, six months; women, eight weeks). All pregnant women with sex partners who live in or traveled to an area with Zika virus should use condoms during sex or abstain from sex for the remainder of their pregnancy.

DHS has collected communication materials and resources consistent with Wisconsin's core messaging and made them available on the [Zika Communications Resources](#) page on the DHS website. These materials may be used by partners to inform the people of Wisconsin about the disease, its risks, and how to protect themselves. Partners looking for additional materials can request them on the website. If DHS is unable to find pre-existing materials from other sources, new items may be created.

DHS will identify opportunities around which certain messaging efforts can be mounted—such as times of increased travel during the winter holidays or spring break—and will work to promote appropriate messaging using social media, media releases, and other means. These efforts will be shared with LHDs, tribal health clinics, and partners to amplify these messages using their own networks and resources, in their own communities.

## **ONGOING ACTIVITIES**

As the outbreak evolves and knowledge about the disease changes, DHS will continue to update this plan to reflect the agency's approaches, activities, and expectations. The plan will remain posted on the Zika virus webpage on the DHS website.

## **CONTACT INFORMATION**

Questions regarding this plan or Zika virus in general should be directed to [dhsdphbcd@wi.gov](mailto:dhsdphbcd@wi.gov).