

Date: Thursday, April 12, 2018

To: Family, Pediatric, and Obstetrics physicians; Emergency Department Physicians and Staff; Infection Protection Control; Workplace Health and Safety; EPH Team; and CDC.

From: Dr. Digby Horne, Medical Officer of Health – Central Zone

Context: This advisory provides updated information on Zika virus (ZIKV), areas of risk and transmission. According to the Public Health Agency of Canada as of December 1, 2017, 544 travel-related cases and 4 sexually transmitted cases have been reported in Canada since cases started being detected in October 2015. A total of 37 cases have been reported amongst pregnant women in Canada; mother to child transmission and Congenital Zika Syndrome (CZS) has been reported.

Areas of risk: For a complete list of countries around the world and the associated ZIKV classification of risk refer to the [World Health Organization](#) website.

Travel recommendations: Pregnant women and women considering conception within 2 months of travel should avoid travel to areas of risk. Partners of pregnant women and couples considering pregnancy should know the risks to pregnancy and take preventive steps for 6 months following travel. If travel cannot be postponed, strict mosquito bite prevention measures should be followed through all hours of the day and night (wear light-coloured, long-sleeved shirts, long pants, a hat and shoes/boots (not sandals); use insect repellents correctly and consistently; sleep in well-screened and air-conditioned rooms, or use bed nets). Zika virus awareness resources are available on the [Public Health Agency of Canada](#) (PHAC) website.

Microcephaly, GBS and ZIKV infection: Current evidence indicates that ZIKV during pregnancy is a cause of microcephaly, ophthalmic and other congenital defects. The pattern of microcephaly associated with ZIKV appears to be within the context of a broader constellation of fetal anomalies now referred to as Congenital Zika Syndrome (CZS), a syndrome that may be distinct from that caused by other types of fetal insults. Other neurological manifestations have also been reported from several countries affected by ZIKV outbreaks in association with ZIKV infection such as Guillain-Barré syndrome (GBS), acute myelitis, acute disseminated encephalomyelitis and meningoencephalitis.

Transmission: ZIKV is primarily transmitted through the bite of infected mosquitoes, chiefly *Aedes aegypti*. *Aedes albopictus* has also been associated with transmission of ZIKV. Currently, the *Aedes* mosquitoes that transmit Zika virus are not established in Canada due to climate.

- **Pregnancy:** ZIKV can be passed from a pregnant woman to her fetus during pregnancy/delivery.
- **Sexual transmission:** ZIKV can be spread through sex, including vaginal, oral and anal sex, and sharing of sex toys. Using condoms and other barrier methods can reduce the chance of sexual transmission. Current research indicates ZIKV remains in semen longer than other bodily fluids including vaginal fluids, urine and blood.
 - **Male travellers** from an area of risk should consider using condoms or avoid having sex with **any** partner for a period of at least **six months** after their return, even if asymptomatic.
 - **Female travellers** from an area of risk should consider using condoms, other barrier methods or avoid having sex with **any** partner for a period of at least **2 months** after their return, even if asymptomatic.

- **Pregnant women and their partners** should practice abstinence or use barrier methods (e.g. condoms) while in a ZIKV risk area, and for the duration of the pregnancy.
- **Couples planning a pregnancy or in child bearing years:** Women should practice abstinence or use an effective contraceptive measure correctly and consistently to prevent pregnancy **for at least two months** after return from an area of ZIKV risk. Couples where the male partner has travelled to an area of risk should practice abstinence or use an effective contraceptive method correctly and consistently to prevent pregnancy **for six months** after their return.
- **Transmission through blood, cell, tissue and organ donations:** The virus has been reported to be transmitted through blood transfusions from infected donors. Canadian Blood Services employs a 21-day deferral for blood donors returning from travel to ZIKV-affected areas. PHAC also recommends travellers returning from ZIKV countries wait 21 days before donating any cells, tissue and organs.
- **Transmission through semen donations:** Men who have returned from Zika affected countries should postpone semen donations for 6 months.

Clinical Illness: Only about 20-25% of those infected with ZIKV will have symptoms. Symptomatic illness definition: two or more symptoms (acute onset of low-grade fever, maculopapular rash, myalgia/arthralgia, or conjunctivitis) present during or within two weeks of travel to a country in which ZIKV is circulating.

ACTIONS:

For patients with potential ZIKV exposure through travel or sexual transmission meeting the criteria below:

1. **Symptomatic non-pregnant traveller/patient:** (see Laboratory Testing #2 below)
 - Consider testing if clinically warranted – (ZIKV, dengue and chikungunya virus)
 - Provide supportive care including acetaminophen to manage fever; avoid NSAIDs and steroids.
2. **Symptomatic pregnant traveller/patient:**
 - Test for ZIKV, dengue and chikungunya virus (see Laboratory Testing #2 below)
 - Refer to Maternal-Fetal-Medicine (MFM) for consultation and fetal ultrasound (U/S) recommendations [North Central physicians: refer to MFM clinic at (780) 735-4813 or on-call MFM through the RAH switchboard at (780) 735-4111. South Central physicians: refer to MFM or on-call MFM through the FMC switchboard at (403) 944-1110, ext. 2]. Please include in the referral: countries of travel; date of return; date of symptom onset; current symptoms; EDD; all previous U/S reports.
3. **Asymptomatic pregnant female potentially exposed during pregnancy**
 - Test for ZIKV (see Laboratory Testing #3)
 - Refer to Maternal-Fetal-Medicine (MFM) for consultation and fetal ultrasound (U/S) recommendations [North Central physicians: refer to MFM clinic at (780) 735-4813 or on-call MFM through the RAH switchboard at (780) 735-4111. South Central physicians: refer to MFM or on-call MFM through the FMC switchboard at (403) 944-1110, ext. 2]. Please include in referral: countries of travel; date of return; EDD; all previous U/S reports.
4. **Asymptomatic pregnant female potentially exposed in the preconception period**
 - Test for ZIKV (see Laboratory Testing #4)
 - Refer to **Outpatient** Maternal-Fetal-Medicine (MFM) for consultation and fetal ultrasound (U/S) recommendations [North Central physicians: refer to MFM clinic at (780) 735-4813. South Central physicians: refer to Calgary MFM at (403) 289-9269]. Please include in referral: countries of travel; date of return; EDD; all previous U/S reports.

Laboratory testing: Refer to: www.ahs.ca/lab/Page3290.aspx for the most recent Prov Lab bulletin on Zika virus testing.

1. Asymptomatic non-pregnant patient	No testing performed
2. Symptomatic patient (pregnant or non-pregnant)	<p>Molecular Testing: Blood (Lavender Top): Order ZIKV RT-PCR (as well as Dengue and Chikungunya RT-PCR) up to 14 days after symptom onset. Urine: Order ZIKV RT-PCR up to 14 days after symptom onset AND Serology: Order SST (Gold Top) blood for ZIKV serology(IgM and IgG), ideally more than 7 days after symptom onset (the Lab will add dengue and chikungunya serology) Send convalescent blood at least 14 days later</p>
3. Asymptomatic pregnant female presenting within 14 days of potential exposure	<p>ZIKV RT-PCR on blood (lavender top) and urine should be ordered within 14 days of potential exposure to ZIKV Serology for ZIKV only - Order SST (Gold Top) blood for ZIKV IgM and IgG on a sample collected ideally 2 weeks after potential exposure, and on a follow up sample collected 2 weeks later.</p>
4. Asymptomatic pregnant female presenting after 14 days of exposure (conceiving within 2 months of traveling herself or within 6 months of her partner's travel)	<p>Serology for ZIKV only - Order SST (Gold Top) blood for ZIKV IgM and IgG on a sample collected ideally 2 weeks after potential exposure, and on a follow up sample collected 2 weeks later.</p>

Use the ProvLab Zoonotic Serology requisition to order www.ahs.ca/lab/Page3320.aspx. **A complete history is required, including: travel history (areas visited within the past 3 months); date of return to Canada; date of onset of symptoms; nature of symptoms; pregnancy status.**

Additional ZIKV Resources:

- Alberta Health – ZIKV www.health.alberta.ca/health-info/zika-virus.html
- Centers for Disease Control and Prevention www.cdc.gov/zika/ and www.cdc.gov/zika/geo/active-countries.html;
- Public Health Agency of Canada – ZIKV. www.Canada.ca/zika-virus
- Pan American Health Organization www.paho.org/hq/index.php?option=com_content&view=article&id=11585&Itemid=41688&lang=en
- World Health Organization www.who.int/topics/zika/en/ and www.who.int/emergencies/zika-virus/classification-tables/en/