

ZIKA VIRUS DISEASE

Although Zika virus is an arbovirus, it has its own protocol (as does Yellow fever) because of the severity of the complications and specialised investigations and management required.

Associated Documents	
	<p>Case Report Form: Arbovirus disease (February 2016) Y:\CFS\ProtectionTeam\FinalDocs\notifiableConditions\Zika\StdForms\LettrsQuest\CaseReportFormArboviral diseaseFeb2016.pdf</p> <p>Zika virus fact sheet: K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\ZikaVirusDiseaseFactSheet.pdf</p>
The Illness¹	
	<p>Introduction Zika virus is a mosquito-borne flavivirus that was first identified in Uganda in 1947 in monkeys through a network that monitored yellow fever. It was later identified in humans in 1952 in Uganda and the United Republic of Tanzania. Outbreaks of Zika virus disease have been recorded in Africa, the Americas, Asia and the Pacific. From the 1960s to 1980s, human infections were found across Africa and Asia, typically accompanied by mild illness. The first large outbreak of disease caused by Zika infection was reported from the Island of Yap (Federated States of Micronesia) in 2007. In July 2015 Brazil reported an association between Zika virus infection and Guillain-Barré syndrome. In October 2015 Brazil reported an association between Zika virus infection and microcephaly.</p> <p>Signs and Symptoms The incubation period (the time from exposure to symptoms) of Zika virus disease is not clear, but is likely to be a few days. The symptoms are similar to other arbovirus infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. These symptoms are usually mild and last for 2-7 days.</p> <p>Complications of Zika virus disease After a comprehensive review of evidence, there is scientific consensus that Zika virus is a cause of microcephaly and Guillain-Barré syndrome. Intense efforts are continuing to investigate the link between Zika virus and a range of neurological disorders, within a rigorous research framework.</p> <p>Transmission</p> <ul style="list-style-type: none"> • Zika virus is primarily transmitted to people through the bite of an infected mosquito from the <i>Aedes</i> genus, mainly <i>Aedes aegypti</i> in tropical regions. <i>Aedes</i> mosquitoes usually bite during the day, peaking during early morning and late afternoon/evening. This is the same mosquito that transmits dengue, chikungunya and yellow fever. Sexual transmission of Zika virus is also possible. Other modes of transmission such as blood transfusion are being investigated.
Laboratory Testing²	
	<p>Testing for Zika virus available to test pregnant women</p> <ul style="list-style-type: none"> • Reverse-transcriptase PCR (RT-PCR) can be used to detect the Zika virus during the first 1 week (in blood) to 2 weeks (in urine) of the illness. This RT-PCR test is currently performed in Wellington at ESR, Auckland at Labplus, and Christchurch at Canterbury Health Laboratories, with an expected turnaround time of 2 working days. • Serology is less reliable due to potential cross reaction with antibodies against other similar viruses (including dengue). This makes it difficult to differentiate Zika virus infection using antibody testing alone. For this reason, Zika virus serology is not recommended at this time as part of the algorithm for assessing pregnant women with a history of travel to areas with active Zika virus transmission. If Zika serology is being requested, a discussion with a microbiologist needs to occur prior to testing.

	<ul style="list-style-type: none"> • Zika virus RT-PCR can also be performed on amniotic fluid, although it is not currently known how sensitive or specific this test is for congenital infection. The likelihood of an infected fetus developing a fetal abnormality is not known at this time.
<p>Notification²</p>	
	<ul style="list-style-type: none"> • The mosquitoes that are able to transmit Zika virus are not normally found in New Zealand, therefore Zika should only be considered in people who have recently travelled overseas or in a sexual partner of someone who has recently travelled to an area where Zika virus is active. For areas of Zika virus disease transmission see the ECDC website.³ • Attending medical practitioners or laboratories must immediately notify the local Medical Officer of Health of suspected cases. Notification should not await confirmation. <p>Case classification</p> <ul style="list-style-type: none"> • Under investigation: A case which has been notified but information is not yet available to classify it as probable or confirmed. • Probable: <i>The definition for a probable case is currently under review but the definition from the Arbovirus protocol⁴ is as follows:</i> <p><i>A clinically compatible illness in a person who has come from an endemic area.</i></p> <p><i>Zika symptoms include²:</i></p> <ul style="list-style-type: none"> • <i>Low-grade fever</i> • <i>Arthralgia, notably of small joints of hands and feet, with possible swollen joints</i> • <i>Myalgia</i> • <i>Headache, retro-ocular headaches</i> • <i>Conjunctivitis</i> • <i>Cutaneous maculopapular rash</i> <ul style="list-style-type: none"> • Confirmed: <i>The definition for a confirmed case is under review but currently has two aspects:</i> <ul style="list-style-type: none"> – A clinically compatible illness that is laboratory confirmed – An asymptomatic pregnant woman in whom one or more of the specified PCR tests (in blood, urine or amniotic fluid) is positive. • Not a case: A case that has been investigated and subsequently has been shown not to meet the case definition.
<p>Management of Case and Treatment</p>	
	<p>ESR (EpiSurv) requirements (Public Health AIDE 2 March 2016)</p> <p>The following details are to be obtained and entered as a priority:</p> <ul style="list-style-type: none"> • Clinical criteria • Lab criteria (note: only testing done in NZ currently is “detection of arbovirus nucleic acid” (PCR) but serology (IgG/IgM) results may also be available for some cases (currently done at Westmead, Australia)) • Classification of case • Onset date • Overseas travel – countries visited and dates of entry and exit are very important to keep information on countries of risk up to date, as well as the new question detailing specific location(s) visited within countries. • Pregnancy questions <p>Diagnosis</p> <p>Differential clinical diagnoses should be considered as well as co-infection with other mosquito-borne diseases such as dengue fever, chikungunya and malaria.</p> <p>Treatment</p> <ul style="list-style-type: none"> • There is no vaccine or specific prophylactic treatment. • The treatment is symptomatic and mainly based on pain relief, fever reduction and anti-histamines for pruritic rash.

	<ul style="list-style-type: none"> Treatment with aspirin and non-steroidal anti-inflammatory drugs is discouraged because of a potential increased risk of haemorrhagic syndrome reported with other flaviviruses as well as the risk of Reye's syndrome after viral infection in children and teenagers. <p>Investigations during pregnancy⁵</p> <ul style="list-style-type: none"> Foetal ultrasound is usually performed at 18-20 weeks to assess foetal anatomy. Microcephaly and intracranial calcifications can be detected then, or later in pregnancy. Additional ultrasounds are recommended for pregnant women who have travelled to an area with Zika virus transmission in order to detect possible foetal abnormalities, and to allow for further management as required.* <p>*Foetal ultrasound recommendation: Pregnant women with a history of travel to an area with Zika virus transmission and who have not experienced clinical symptoms or have negative PCR test results can be offered ultrasound scanning in the community at an appropriate time for detection of microcephaly or intracranial calcifications. A suggested regime is 4 weekly scans after 24 weeks gestation.</p> <p>Counselling</p> <ul style="list-style-type: none"> The Ministry of Health Zika websites: http://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/zika-virus http://www.health.govt.nz/our-work/diseases-and-conditions/zika-virus Zika virus fact sheet (August 2016) K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\ZikaVirusDiseaseFactSheet.pdf
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Public Health Control Measures¹

	<ul style="list-style-type: none"> No vaccine or prophylactic treatment is available. <p><i>The following public health measures are not required in New Zealand as the mosquito vector is not found here.</i></p> <ul style="list-style-type: none"> Integrated vector management aiming to reduce mosquito vector density in a sustainable manner is of primary importance. Intersectoral collaboration and efficient public communication strategies to ensure community participation are required for sustainable vector control program. Activities supporting the reduction of mosquito breeding sites in outdoor/indoor areas by draining or discarding sources of standing water at the community level include: <ul style="list-style-type: none"> removal of all open containers with stagnant water in and surrounding houses on a regular basis (flower plates and pots, used tyres, tree-holes and rock pools), or if that is not possible, treatment with larvicides), tight coverage of water containers, barrels, wells and water storage tanks, extensive use of window/door screens by the population. During an outbreak, elimination of adult mosquitoes through aerial spraying with insecticides should be considered.
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Infection Control, Personal Protection And Prevention

	<p>In Zika-affected areas the following advice is recommended:</p> <ul style="list-style-type: none"> The Ministry of Health recommend that people who travel to any Pacific Island country should protect themselves against mosquito bites (30/9/2016).⁶ For those travelling outside the Pacific area, refer to the ECDC website⁹ for the most up-to-date list of countries with confirmed Zika virus transmissions. <p>Avoid mosquito bites^{1,2}</p> <ul style="list-style-type: none"> Prevention is also based on protection against mosquito bites. <i>Aedes</i> mosquitoes bite during the daytime both indoors and outdoors. Therefore personal protection measures should be applied during the day. <p>Personal protection measures to avoid mosquito bites should be applied when in risk areas by:</p>
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- Use of insect repellents - check the label to make sure they contain DEET, picaridin, oil of lemon eucalyptus (OLE), or IR3535. Always use as directed.
- Insect repellents containing DEET, picaridin, and IR3535 are safe for pregnant and breastfeeding women and children older than 2 months when used according to the product label. Oil of lemon eucalyptus products should not be used on children under 3 years of age.
- If both sunscreen and insect repellent is used, apply the sunscreen first and then the repellent.
- Wear long-sleeved shirts and long pants and use clothing and gear (such as boots, pants, socks, and tents) that have been treated with the insecticide permethrin.
- Use insecticide spray as directed to get rid of mosquitoes.
- Use bed nets to protect sleeping area.
- Stay and sleep in screened-in or air-conditioned rooms.
- In tents, use a zip-up screen.
- Use mosquito repellent in accordance with the instructions indicated on the product label. DEET-based repellent is not recommended for children under two months of age but pregnant women can use it.
- Travelers with immune disorders or severe chronic illnesses should consult their doctor or seek advice from a travel clinic before travelling, particularly on effective prevention measures.
- Similar protective measures apply to a symptomatic patient in order to prevent transmitting the disease to non-infected mosquitoes.

Only one in five people who get the Zika infection will show symptoms, so it's possible to have the infection and not know it.

Advice Regarding Pregnancy And The Prevention Of Sexual Transmission

- The Ministry of Health recommends that women who are pregnant or plan to become pregnant in the near term should defer travel to areas with Zika virus present. If travel is essential, if possible delay pregnancy if travelling to these areas.
- The best way to reduce the possibility of sexual transmission of the virus, or the possibility of becoming pregnant while infected with Zika virus, is to avoid sex or use condoms.
- Men and women travelling in Zika-affected areas should protect themselves against mosquito bites.

The WHO advice⁷ is as follows:

In regions with NO active Zika virus transmission i.e. New Zealand:

- Men and women returning from areas where transmission of Zika virus is known to occur should adopt safer sex practices or consider abstinence for at least 6 months upon return to prevent Zika virus infection through sexual transmission.
- Couples or women planning a pregnancy, who are returning from areas where transmission of Zika virus is known to occur, are advised to wait at least 6 months before trying to conceive to ensure that possible Zika virus infection has cleared.
- Sexual partners of pregnant women, returning from areas where transmission of Zika virus is known to occur, should be advised to practice safer sex or abstain from sexual activity for at least the whole duration of the pregnancy.

Counselling

- The Ministry of Health Zika websites:
<http://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/zika-virus>
<http://www.health.govt.nz/our-work/diseases-and-conditions/zika-virus>
- Zika virus fact sheet (August 2016)
<K:\CFS\Quality\ApprovedDocuments\ProtectionTeam\FactSheets\ZikaVirusDiseaseFactSheet.pdf>

Reporting

- Contact the Ministry of Health if there was any suspicion that the disease was acquired locally.
- Ensure the case details entered on EpiSurv.
- File.

References and further information

1. Ministry of Health, Zika virus (for health professionals)
<http://www.health.govt.nz/our-work/diseases-and-conditions/zika-virus>
2. European Communicable Diseases Centre
http://ecdc.europa.eu/en/healthtopics/zika_virus_infection/zika-outbreak/Pages/Zika-countries-with-transmission.aspx
3. NZ Communicable Diseases Control Manual 2012, Arboviral diseases,
<http://www.health.govt.nz/system/files/documents/publications/cd-manual-arboviral-diseases-may2012.pdf>
<http://www.cdc.gov/mmwr/volumes/65/wr/mm6512e2.htm>
4. NZ Ministry of Health, Zika virus: Interim guidance information for LMCs (midwives), GPs and other health professionals dealing with Zika virus in pregnancy, 27 July 2016
<http://www.health.govt.nz/system/files/documents/pages/zika-virus-interim-guidance-lmcs-gps-27jul16.pdf>
5. Ministry of Health website, Zika virus. Zika virus and pregnancy
<http://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/zika-virus>
6. WHO, Prevention of sexual transmission of Zika virus, Interim guidance update, 6 September 2016, WHO/ZIKV/MOC/16.1 Rev.3.
http://apps.who.int/iris/bitstream/10665/204421/1/WHO_ZIKV_MOC_16.1_eng.pdf

Further information

CDC publications

Centers for Disease Control and Prevention, Atlanta. Zika virus.
<https://www.cdc.gov/zika/index.html>