Zika virus – information for clinicians and public health practitioners

This page contains information for clinicians and public health practitioners about Zika virus. This is a rapidly evolving situation. Monitoring of Zika virus will occur on an ongoing basis with updates to this website as important information comes to hand. Check regularly for the latest information.

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Zika virus infection is generally a non severe febrile viral illness transmitted by mosquitoes. Zika should be considered in people who have recently travelled overseas.

Limited data from some recent outbreaks in Central and South America, particularly Brazil, have raised concerns that infection with Zika virus in pregnant women might cause certain congenital abnormalities (including microcephaly). The knowledge about any causal link between Zika virus and these outcomes is evolving and further studies are required.

Until more is known, specific travel precautions are recommended for pregnant women or women planning pregnancy.

Summary of recommendations for clinicians and public health practitioners

- Zika virus infection should be considered in patients with acute fever, rash, arthralgia or conjunctivitis, who have travelled in the two weeks prior to onset of illness to areas with current or recent outbreaks or transmission; refer to the Department of Health webpage.
- All travellers should take steps to avoid mosquito bites in order to prevent Zika virus infection and other mosquito-borne diseases such as dengue, malaria and chikungunya;
- Until more is known about Zika virus transmission in pregnancy and the association with adverse foetal outcomes, pregnant women are advised to consider postponing travel to any area where Zika virus transmission is ongoing;

- Pregnant women who do decide to travel to one of these areas are advised to consult with a doctor first and strictly follow mosquito bite prevention measures during their trip;
- Women trying to become pregnant are advised to consult with a doctor before travelling and strictly follow mosquito bite prevention measures;
- Zika virus infection is notifiable in Australia as a Flavivirus (unspecified) infection and should be notified to state and territory health departments;
- In north Queensland and parts of central Queensland where mosquito vectors are present, clinicians should immediately report clinically suspected cases of Zika virus to local public health units, as they do for suspected cases of Dengue. Public health Authorities will take action to mitigate the risk of local transmission.

About Zika virus

Zika virus is a flavivirus, closely related to dengue. It is transmitted to humans primarily through the bite of certain infected *Aedes* species mosquitoes*. Aedes aegypti* mosquitoes are commonly found in tropical and sub-tropical regions around the world including north Queensland and some areas in central Queensland. Another similar mosquito, *Aedes albopictus*, also has the potential to transmit Zika virus, but in Australia is only found in the Torres Strait. These mosquito vectors typically breed in domestic water-holding containers; they are daytime biters and feed both indoors and outdoors near dwellings.

Outbreaks of Zika virus have previously been reported in tropical Africa, Southeast Asia, and the Pacific Islands.[1]

Symptoms of Zika virus infection

Approximately one person in five who becomes infected with Zika is likely to have symptoms. For cases with a clinical illness, symptoms may include:

- Low-grade fever (between 37.8°C and 38.5°C)
- Arthralgia, notably of small joints of hands and feet, with possible swollen joints
- Myalgia
- Headache, retro-ocular headaches
- Conjunctivitis
- Cutaneous maculopapular rash
- Post-infection asthenia which seems to be frequent.

More rarely observed symptoms include digestive problems (abdominal pain, diarrhoea, constipation), mucous membrane ulcerations (aphthae), and pruritus.

1 http://www.nejm.org/doi/full/10.1056/NEJMp1600297

Zika virus infection generally causes a non severe disease (with the possible exception of the effects to the foetus in pregnant women, as discussed below). As Zika infection may cause a rash that could be confused with other diseases such as measles or dengue, these more serious diseases need to be ruled out. Diagnosis of Zika infection will firstly be by exclusion, based on symptoms, travel history and exclusion of other diseases including measles and dengue.

The incubation period is typically 3–12 days. There is no specific therapy for Zika virus infection and acute symptoms typically resolve within 4-7 days.

There is a risk of transmission of Zika from infected returning travellers in areas of North Queensland where a suitable vector, *Aedes aegypti,* occurs and which are currently consider dengue receptive. In these areas, public health authorities follow-up on notified cases to mitigate the risk of local transmission. Cases in areas where transmission could occur will be advised to take additional measures to avoid being bitten by mosquitoes until fever subsides.

In French Polynesia, after a local Zika virus outbreak in 2013 and 2014, an increase in autoimmune and neurological diseases (Guillain-Barré) has been observed. There is no proven link at this stage other than this temporal association. The simultaneous circulation of dengue serotype 1 and 3 viruses may also play a role.

Transmission

Transmission of Zika virus is through the bite of an infected mosquito, most commonly *Aedes aegypti.*

There are no reports at this time of infants becoming infected through breastfeeding.

There has been one case report of possible transmission through sexual contact.

Please see the CDC website for further details http://www.cdc.gov/zika/transmission/index.html

Zika virus and pregnancy

There are concerns that pregnant women who become infected with Zika virus could transmit the disease to their unborn babies, with potentially serious consequences, although no causal link has yet been established. Reports from several countries, most notably Brazil, where Zika virus outbreaks are occurring, indicate that there has been a concurrent increase in severe congenital abnormalities such as microcephaly, . Additional research is necessary and ongoing to determine whether there is a causal link between Zika virus and adverse foetal outcomes.

Until more is known about Zika virus, and taking a cautious approach, we advise women who are pregnant (in any trimester) or who plan to become pregnant to consider postponing travel to any area where Zika virus transmission is ongoing refer to the Department of Health webpage. If women do decide to travel, they are advised to talk to their doctor first and strictly follow mosquito bite prevention measures.

Women who are pregnant and travelled to areas where there was ongoing Zika virus transmission at the time of travel, and who suffered an illness that is suspected to be Zika, are advised to see a doctor. For guidance on managing pregnant women returning from affected areas refer to the CDC guidance.

It should be noted that a range of communicable diseases pose particular risks for pregnant women (such as malaria) and Zika is only one consideration.

Prevention

All travellers are advised to take the following mosquito bite prevention measures when travelling to areas currently affected by Zika virus or wherever mosquito borne diseases are present. These precautions are necessary in the daytime as well as night time.

- Wear long-sleeved shirts and long pants;
- Use insect repellents containing DEET or picaridin. Always use as directed;
- Insect repellents containing DEET or picaridin, are safe for pregnant and breastfeeding women and children older than 2 months when used according to the product label;
- If you use both sunscreen and insect repellent, apply the sunscreen first and then the repellent;
- Use permethrin-treated clothing and gear (such as boots, pants, socks, and tents);
- Use bed nets as necessary;
- Stay and sleep in screened-in or air-conditioned rooms.

Diagnosis

Based on the typical clinical features, the differential diagnosis for Zika virus infection is broad. In addition to dengue, other considerations include leptospirosis, malaria, rickettsia, group A streptococcus, rubella, measles, and parvovirus, enterovirus, adenovirus, and alphavirus infections (e.g., Chikungunya, Mayaro, Ross River, Barmah Forest, O'nyong-nyong, and Sindbis viruses).

Preliminary diagnosis is based on the patient's clinical features, places and dates of travel, and activities. Laboratory diagnosis is generally accomplished by testing serum or plasma to detect virus, viral nucleic acid, or virus-specific immunoglobulin M and neutralizing antibodies.

Laboratory testing

- Zika virus testing is performed at state public health laboratories in Australia. If Zika is suspected, clinicians are advised to discuss testing with their local pathology provider. Testing for Zika infection includes IgM, IgG and PCR (positive only in early infection).
- Acute serum (taken within 5 days of symptom onset) and convalescent serum (2–3 weeks later) should be taken. The two samples are important to rule out false positive tests due to cross reactivity with similar viruses such as Dengue
- Provide overseas travel details and clinical history including the onset day. Onset date is extremely important to ensure that the most appropriate test is performed.

Note: Urgent public health response will be required in north Queensland and parts of central Queensland in areas where vectors are present following Zika virus confirmation.

Treatment

No specific antiviral treatment is available for Zika virus infection. Treatment is generally supportive and can include rest, fluids, and use of analgesics and antipyretics. Because of similar geographic distribution and symptoms, patients with suspected Zika virus infections also should be evaluated and managed for possible dengue or chikungunya virus infection. Aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) should be avoided until dengue can be ruled out to reduce the risk of haemorrhage.

Reporting

Zika virus infection is notifiable in Australia as a Flavivirus (unspecified) infection and should be notified to state and territory health departments. To guide reporting, the surveillance case definition is located on the Department of Health website.

In north Queensland and parts of central Queensland where mosquito vectors are present, clinicians should immediately report clinically suspected cases of Zika to local public health units, as they do for suspected cases of Dengue.

Public health management of a laboratory confirmed case

People infected with Zika virus should be protected from further mosquito exposure during the first few days of illness to prevent other mosquitoes from becoming infected and reduce the risk of local transmission.

In Australia, this is relevant to confirmed cases in Queensland. Confirmed cases who are not resident in Queensland should be advised to avoid travel to these areas until their symptoms have resolved.

In north Queensland and parts of central Queensland, where the *Aedes* vector is known to be present, public health vector control teams may respond to reduce the risk of local transmission. Outside these areas in Queensland, notification is the required public health action.

Further information is available:

- United States Centers for Disease Control and Prevention Interim Guidelines for Pregnant Women During a Zika Virus Outbreak — United States, 2016
- European Centre for Disease Prevention and Control – Zika virus infection
- For the latest travel advice refer to the Smartraveller website.
- For a list of countries with current and recent outbreaks of Zika, and a fact sheet for the general public, refer to the Department of Health webpage
- To notify clinically suspected Zika virus infection in Queensland, contact the local public health unit