



ZIKA VIRUS

The disease

- Zika is a viral disease that is transmitted to people by mosquitoes
- Zika can be passed from a pregnant woman to her foetus, sexual intercourse and blood transfusions
- Infection with Zika is immunising, and immunity is most likely lifelong
- Outbreaks of Zika has been reported in tropical Africa, Souteast Asia, the Pacific islands and the Americas
- Countries and territories where zika cases have been reported (as of September, 2018)



General laboratory investigation

- The laboratory diagnosis of Zika is based primarily on the detection of antibodies by haemagglutination inhibition assay or ELISA in serum
- The detection of IgM antibodies or IgG seroconversion between paired samples which have been taken two weeks apart, indicates recent infection
- Zika IgM antibody can persist for months to years following infection, and might not indicate recent infection
- If serum is collected within 8 days of illness onset, the absence of detectable virus-specific IgM does not rule out a diagnosis, and the test may need to be repeated on a later sample
- Reverse transcription polymerase chain reaction (RT-PCR) and virus isolation from a serum collected early in the course of illness are additional tests that may be useful
- All samples submitted to the laboratory should include a completed case investigation form

More information on arboviral disease:

www.nicd.ac.za under the 'Diseases A-Z' tab

www.cdc.gov/zika/index.html

www.who.int/news-room/fact-sheets/detail/zika-virus

The mosquitoes

- *Aedes* species mosquitoes transmit Zika virus
- These same mosquitoes transmit chikungunya and dengue virus
- These mosquitoes bite mostly during the daytime

Symptoms

- Most people infected with Zika virus are asymptomatic
- The most common symptoms are fever, rash, headache, joint pain, red eyes and muscle pain

Treatment and vaccines

- There is no antiviral medicine to treat Zika disease
- Currently there are no approved vaccines for human use
- Many cases require no treatment
- Symptomatic support such as pain and fever relief is often prescribed

Illness course and outcomes

- Incubation period is 3-14 days
- Most patients feel better within a week (range 2-7 days)
- Zika infection during pregnancy can cause birth defects of the brain (microcephaly) and other serious brain defects
 - It is also linked to miscarriages, still births and other birth defects
 - Pregnant woman should be monitored though ultrasound and other modalities by obstetric services
- There are increased reports of Guillain-Barre syndromes in areas affected by Zika
- Deaths are rare

Prevention

USE INSECT REPELLANT

- Use DEET-containing insect repellents as directed by the manufacturer
- Reapply during the day as needed

WEAR LONG-SLEEVED SHIRTS AND PANTS

- Consider wearing long-sleeved, loose fitting shirts and pants when outdoors and likely to encounter mosquitoes
- When camping or similar activities consider using permethrin treated gear and clothing

KEEP YOUR SURROUNDS MOSQUITO-FREE

- Screen windows and doors
- Reduce mosquito breeding grounds. Mosquitoes lay eggs in and around water. Minimize the amount of standing water in and around the house – for example pots and other containers that contain stagnant water



Who should be tested for Zika?

Persons presenting with rash, fever, headache or arthralgia

AND

Who recently (<14 days) travelled to an area with active Zika virus transmission

OR

Asymptomatic pregnant women with recent travel to an active transmission area

Laboratory testing offered by NICD

- RT-PCR testing and virus culture (clotted blood/serum) are useful during the transient viraemic stage of infection (<7 days post symptom onset). *A negative RT-PCR / viral culture does not exclude recent infection.*
- Paired serological testing (clotted blood/serum taken up to 14 days apart). A haemagglutination test (HAI) and Zika specific IgM or IgG ELISA is available. Serology is limited by cross-reactivity with other flaviviruses therefore paired serological testing is essential. *Specimens submitted for Zika will also be tested for other arboviruses because of overlapping clinical presentations*
- Serology for Zika virus may not provide conclusive results
- Zika virus is a category 3 notifiable medical condition (www.nicd.ac.za/wp-content/uploads/2017/06/SOP-Notifiable-Medical-Conditions_-notification-procedures_v2Jan2018final-Copy.pdf)

Procedures to follow when submitting specimens for Zika testing to the NICD

- Collect blood in a red (clotted blood) or yellow top (serum) tube
- Complete Zika case investigation form available on www.nicd.ac.za/diseases-a-z-index/zika-virus-disease/
- Submit the specimen to the Arbovirus Reference Laboratory, Centre for Emerging Zoonotic and Parasitic Diseases, National Institute for Communicable Diseases for testing
- Samples should be kept cold (on ice packs or cold packs) during transport
- Zika testing will be done during office hours, for additional information contact the laboratory at 011 386 6424 / 082 903 9131 or cezd@nicd.ac.za
- Arrange urgent testing with the NICD Hotline 082 883 9920
- Submission of convalescent specimens is highly recommended to facilitate interpretation of serological assays

