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Centre for Emerging and Zoonotic Diseases, and Division of Public Health Surveillance and Response
National Institute for Communicable Diseases (NICD)
24-hour hotline number: 082-883-9920

Zika virus (ZIKV) is a mosquito borne virus causing a febrile illness known as Zika virus disease (ZVD). As of February 2016, 23 countries in the American region reported active transmission of ZIKV. In Brazil, estimates of ZIKV infections in 2015 ranged from 500,000 to 1.5 million. Zika virus has not been reported from South Africa. Physicians may encounter cases in returning travellers. There is presently no treatment for Zika virus infection, nor is there a vaccine. Person-to-person transmission of ZIKV does not

Geographical distribution and transmission of ZVD

ZVD is transmitted by urban adapted *Aedes* mosquitoes. *Aedes* mosquitoes bite during daylight, and breed in standing water. These mosquitoes also transmit dengue and chikungunya viruses, and epidemics of both viruses are currently underway. Transmission of ZIKV has been reported from central and south American countries, Cape Verde Islands, Thailand, and Micronesia. See <http://www.cdc.gov/zika/index.html> for updated details on transmission in specific countries.



(map courtesy www.ecdc.europa.eu 1 February 2016)

Clinical presentation, differential diagnosis and pathology associated with ZVD

ZVD presents with acute onset of:

- Low-grade fever (37.8-38.5°C)
- Maculopapular rash
- Arthralgia of the small joints of hands/feet
- Conjunctivitis

The incubation period is 2-12 days after mosquito bite. Illness resolves within 2-7 days. Only 1 in 4 persons with Zika is thought to become symptomatic.

ZVD may be associated with congenital microcephaly and fetal loss in pregnant woman, but further investigations are ongoing. It appears that Zika can affect the fetus at any stage of pregnancy. An increase in the rate of Guillain-Barré syndrome has been observed in association with the ZVD outbreak in a number of countries, but causality is not definitively established.

Zika may present similarly to dengue, chikungunya, malaria, parvovirus, measles, rubella, leptospirosis, tickbite fever or other rickettsial infections, group A streptococcal infection, and laboratory tests for these infections should be considered.

Who should be tested for Zika?

- Persons presenting with rash, fever, headache, or arthralgia
- AND**
- who have 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 for ZVD

The NICD offers the following test for ZVD:

- **RT-PCR testing** and **virus culture** (clotted blood/serum) are useful during the transient viraemic stage of infection (1 – 5 days post onset).
- **Paired serological testing** (clotted blood/serum taken up to 14 days apart) . A haemagglutination inhibition test (HAI) and ZIKV specific IgM ELISA is available. Serology is limited by cross-reactivity with other flaviviruses, including dengue and yellow fever, therefore paired serological testing is essential. *Specimens submitted for Zika will also be tested for dengue and chikunguna because of overlapping clinical presentations.* Serology for ZIKV may not provide conclusive results.

Infection with Zika is immunising, and immunity is most likely life-long. Pregnant women should be monitored through ultrasound and other modalities by obstetric services

Procedure to follow to submit specimens for Zika testing to the NICD

1. Collect blood in a red (clotted blood) or yellow top (serum) tube.
2. Complete Zika case investigation form available on www.nicd.ac.za
3. Submit the specimen to the Arbovirus Reference laboratory, Centre for Emerging and Zoonotic Diseases, National Institute for Communicable Diseases for testing. Samples should be kept cold (on ice or cold packs) during transport.
4. Zika testing will be done during office hours (call or email the laboratory to notify them of incoming specimens at 011 386 6391 / 011 386 6353 / 082 908 8045 or cezd@nicd.ac.za; petrusv@nicd.ac.za . If the patient is unstable and dengue infection is a consideration, arrange testing urgently with the NICD HOTLINE 082-883-9920.
5. Submission of convalescent specimens is highly recommended to facilitate interpretation of serological assays.