

CD Alert

National Centre for Disease Control,
Directorate General of Health Services, Government of India

MARCH 2016

ZIKA VIRUS DISEASE

INTRODUCTION

Zika Virus Disease (ZVD) is a mosquito-borne (Aedes) viral disease caused by Zika virus (ZIKV). It presents as mild fever, rash (mostly maculopapular), headaches, arthralgia, myalgia, asthenia, and non-purulent conjunctivitis, occurring about two to seven days after the bite of the infected mosquito. One out of five people may develop symptoms, but in those who are affected the disease is usually mild and may last between two and seven days. Its clinical manifestation is often similar to dengue, also spread by the same vector.

HISTORY OF THE ZIKA VIRUS

The virus was first identified in a rhesus monkey in the tropical Zika Forest in Uganda in April 1947 by the scientists of the Yellow Fever Research Institute. The first human Zika Fever infection was identified in Nigeria in 1954.



1947

1951-1981: Africa Asia



2007: Yap Island

2013-2014: Pacific Islands

2015-2016: The Americas

Until 1981, evidence of human infection with Zika virus was reported from other African countries, such as the Central African Republic, Egypt, Gabon, Sierra Leone, Tanzania, and Uganda, as well as in parts of Asia including India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam.

GLOBAL SITUATION

Recent Outbreaks

Outbreak in Yap in 2007: Remote island of Yap (7,500 inhabitants), Federated States of Micronesia reported 49 confirmed and 59 probable cases of ZVD. No hospitalization, haemorrhagic manifestations, or deaths were reported. *Aedes hensilli* was identified as the predominant vector species. This outbreak represents transmission of Zika virus outside Africa and Asia.

Outbreak in French Polynesia in 2013-14: 5,895 patients with suspected ZIKV infections were recorded with an estimate of 28,000 ZIKV infections in early February 2014 (about 11% of the population). ZIKV was found circulating in the Pacific in 2015 in New Caledonia, Cook Islands, Eastern Island, Vanuatu, Solomon and Fiji.

May 2015: The World Health Organization reported the first local transmission of Zika virus in the Region of the Americas, with autochthonous cases identified in Brazil. In December 2015, the Ministry of Health estimated that 440,000–1,300,000 suspected cases of Zika virus disease had occurred.

As of 17 March 2016, 59 countries have reported locally acquired circulation of the virus since January 2007. Geographical distribution of the virus has steadily expanded

(Source: <http://www.who.int/emergencies/zika-virus/situation-report/17-march-2016/en/>)

World Health Organisation (WHO) declared Zika Virus Disease as a Public Health Emergency of International Concern on 1st February 2016.

Countries and territories with autochthonous transmission of Zika virus, 2007 – 2016 (WHO 17th March 2016)

Classification	WHO Regional Office	Country/Territory/Area
Reported or indication of autochthonous Zika virus transmission AND Guillain-Barré syndrome AND microcephaly (2)	AMRO/PAHO (1)	Brazil
	WPRO (1)	French Polynesia*
Reported or indication of autochthonous Zika virus transmission, Guillain-Barré syndrome and no reports of microcephaly cases (10)	AMRO/PAHO (10)	Colombia, El Salvador, French Guian Haiti, Honduras, Martinique, Panam Puerto Rico, Suriname, Venezuela (Bolivarian Republic of)
Reported or indication of autochthonous Zika virus transmission and no reports of Guillain-Barré syndrome or microcephaly cases (40)	AFRO (2)	Cabo Verde, Gabon
	AMRO/PAHO (22)	Aruba, Barbados, Bolivia (Plurinatio State of), BONAIRE - Netherlands, C Rica, Cuba, Curaçao, Dominica, Dominican Republic, Ecuador, Guadeloupe, Guatemala, Guyana, Jamaica, Mexico, Nicaragua, Paragu Saint Martin, Saint Vincent and the Grenadines, Sint Maarten, Trinidad Tobago, United States Virgin Islands
	SEARO (4)	Bangladesh, Indonesia, Maldives, Thailand
	WPRO (12)	American Samoa, Cambodia, Fiji, La People's Democratic Republic, Malaysia, Marshall Islands, Papua N Guinea, Philippines, Samoa, Solomo Islands, Tonga, Vanuatu
Countries/territories/areas with outbreaks terminated (4)	AMRO/PAHO (1)	ISLA DE PASCUA - Chile
	WPRO (3)	Cook Islands, New Caledonia, YAP - Micronesia (Federated States of)
Locally acquired without vector-borne transmission (3)	AMRO/PAHO (1)	United States of America
	EURO (2)	France, Italy

EPIDEMIOLOGY

Agent: Zika virus (ZIKV) is an emerging arthropod-borne virus (arbovirus) transmitted by *Aedes* (Stegomyia) mosquitoes. The virus belongs to the genus *Flavivirus*, family *Flaviviridae*, and is closely related to other flaviviruses of public health relevance including dengue, chikungunya, yellow fever and West Nile viruses.

It is a single-strand RNA virus with the genome of 10,794 kb length. Two ZIKV lineages have been described, African and Asian, with the African lineage spitted in East and West African clusters, some authors described three different lineages (West African, East African and Asian). The Asian lineage is expanding, this lineage emerged in the Pacific and in South America and is the currently circulating strain.

Reservoir of infection: Unknown.

Immunity: Once a person has been infected, he or she is likely to be protected lifelong.

Vector: Zika virus is transmitted primarily by *Aedes aegypti* mosquito. *Aedes albopictus* mosquito also might transmit the virus. *Aedes hensilli* was the predominant vector species identified in the Yap outbreak.

About the vector: *Aedes* mosquito is common vector to transmit the viruses that cause dengue, chikungunya, West Nile fever and ZVD. *Aedes* mosquito can be recognized by white markings on its legs and a marking in the form of a lyre on the upper surface of the thorax. An infective female *Aedes* mosquito acquires the virus while feeding on the blood of an infected person and then viruses are passed on to healthy humans through its bites.



The density of *Aedes* mosquito is more during monsoon and post-monsoon season. Female *Aedes* mosquito is a day biter and is most active during daylight, for approximately two hours after sunrise and several hours before sunset. It bites many times to complete full blood meal, therefore it is known as indiscriminate feeder. The male mosquito does not bite humans or animals. *Aedes* prefers to breed in man-made containers viz., water storage containers, coolers, discarded buckets and plastic containers, bottles, tyres and coconuts shells etc. in which water stagnates for more than a week. It prefers to lay its eggs singly on damp surfaces just above the water line, in clean water which contains no other living species.

In unfavorable conditions, the eggs can be viable for over a year in dry state, which allows the mosquito to re-emerge after winter or dry spell. The life cycle lasts for 8-10 days in favorable conditions.

Aedes aegypti rests indoor, in dark corners of the houses, on dark cloths, umbrellas, under furniture-beds, shelves, coolers, behind hanging, shoes, besides household articles, curtains etc. but rarely on walls. Outside it rests in cool and shaded places. The flight range for *Aedes* is generally 100 meters but it can fly up to 400 metres.

Mode of Transmission - ZIKV is transmitted by the bite of infected female *Aedes* mosquitoes. ZIKV has adapted to an enzootic cycle involving arboreal mosquitoes in Africa to a new urban cycle including humans as reservoirs and urban mosquitoes as vectors.

The virus has been isolated from several *Aedes* mosquito species, notably *Aedes aegypti*, which is widespread in the tropics and subtropics, and *Aedes albopictus*, which is established in many parts of Europe, especially in Mediterranean countries. In FP, *Aedes polynesiensis* is also suspected to contribute to ZIKV transmission.

Other modes of transmission are still under investigation. Cases of nonvector borne ZIKV transmission through sexual intercourse and perinatal transmission have been reported. Sexual transmission of Zika Virus is possible and is of particular concern during pregnancy. Sexual transmission of Zika virus from infected women to their sex partners has not been reported. However, transmission of Zika virus has been reported from men who have traveled to or reside in areas with active Zika virus transmission to their sex partners.

Recommendations for prevention of sexual transmission of Zika virus for couples in which a man has traveled to or resides in an area with active Zika virus transmission

- Couples in which a woman is pregnant should use condoms consistently and correctly or abstain from sex for the duration of the pregnancy.
- Couples in which a man had confirmed Zika virus infection or clinical illness consistent with Zika virus disease should consider using condoms or abstaining from sex for at least 6 months after onset of illness.
- Couples in which a man traveled to an area with active Zika virus transmission but did not develop symptoms of Zika virus disease should consider using condoms or abstaining from sex for at least 8 weeks after departure from the area.

- Couples in which a man resides in an area with active Zika virus transmission but has not developed symptoms of Zika virus disease might consider using condoms or abstaining from sex while active transmission persists.

Source:

(http://www.cdc.gov/mmwr/volumes/65/wr/mm6512e3er.htm?s_cid=mm6512e3er.htm_w)

Transfusion related ZIKV transmission is also a potential risk.

Incubation period: 2 to 7 days but may extend to a few weeks.

CLINICAL FEATURES

An estimated 80% of persons who are infected with Zika virus are asymptomatic. In the majority of cases, ZVD is a self-limiting disease.

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.

Other reported symptoms are dizziness, oedema of the extremities, retro-orbital pain, anorexia, photophobia, gastro-intestinal disorders, sore throat, cough, aphthous ulcers, back pain, sweating and lymphadenopathies. None of these symptoms are specific and ZVD can be misdiagnosed with other bacterial and viral infections, especially with other arboviruses in endemic areas.

Complications: Birth defects like microcephaly, neurologic complications like Guillain-Barré syndrome are temporarily associated with this outbreak. Researchers are studying a potential - but unproven - link between the surge in GBS cases and Zika virus infection. There is no evidence that prior Zika virus infection poses a risk for birth defects in future pregnancies.

TREATMENT/MANAGEMENT OF ZIKA VIRUS DISEASE

ZVD is usually **relatively mild** and requires **no specific treatment**.

People sick with Zika virus should:

- Get plenty of rest,
- Drink plenty of fluids, and
- Receive symptomatic treatment with acetaminophen (paracetamol) for pain and fever and antihistaminic for pruritic rash.

If symptoms worsen, they should seek medical care and advice.

Acetylsalicylic acid and non-steroidal anti-inflammatory drugs are **not recommended** due to the increased risk of hemorrhagic syndrome described with other arboviruses as dengue.

PROVISIONAL CASE DEFINITIONS

Suspected case - Patient with skin rash or elevation of body temperature more than or equal to 37.2 degrees with one or more of the following symptoms (not explained by other medical conditions):

- Arthralgia or myalgia
- Non purulent conjunctivitis or conjunctival hyperemia
- Headache or malaise

With history of travel to countries with indigenous transmission of ZIKV in last 2 weeks.

The country details are available at <http://www.who.int/emergencies/zika-virus/situation-report/17-march-2016/en/>

Confirmed case – A suspected case with laboratory positive result for the specific detection of ZIKV by RT-PCR.

GUIDELINES FOR SAMPLE COLLECTION AND LABORATORY DIAGNOSIS OF ZIKA VIRUS DISEASE

During the first week after onset of symptoms, ZVD can often be diagnosed by performing reverse transcriptase-polymerase chain reaction (RT-PCR) on serum by both conventional and real time methods.

Virus-specific IgM and neutralizing antibodies typically develop toward the end of the first week of illness; cross-reaction with related flaviviruses (e.g., dengue and yellow fever viruses) is common and may be difficult to discern.

Plaque-reduction neutralization testing can be performed to measure virus-specific neutralizing antibodies and discriminate between cross-reacting antibodies in primary flavivirus infections.

Viral isolation is not regarded as a diagnostic tool and is recommended only for supplemental research studies in public health surveillance.

Pan American Health Organization (PAHO) has issued interim guidance for laboratory detection and diagnosis of ZVD surveillance in the Americas. An algorithm has been developed for detection of introduction of the virus into a specific area. This algorithm is addressed to reference laboratories with established capacity

(molecular/antigenic and serological) to detect dengue, chikungunya), and Zika viruses. A BSL2 containment level is required to handle suspected samples. These recommendations are subject to modifications that take into account advances in knowledge of the disease and the etiologic agent.

SAMPLE COLLECTION

Virological diagnosis

Type of sample: **Blood** (5ml in plain vial) of suspect case (see previous section for case definition) should be **collected during first five days of illness** and sent to the laboratory for RT PCR with prior intimation. ZIKV RNA also has been detected in urine over an extended period in the acute phase, which means that could be an alternative sample to be considered. However, and since more studies are needed, it is recommended that the serum sample be taken during the first 5 days after the onset of symptoms for diagnosis by RT PCR.

Serological Diagnosis

As on date, this has not been standardized in India. However, the diagnosis can be undertaken by detecting ZIKV-specific IgM antibodies by ELISA or immunofluorescence assays in serum specimens from day 5 after the onset of symptoms. Since a single serum in the acute phase is presumptive, it is recommended that a second sample be taken 1–2 weeks after the first sample to demonstrate seroconversion (negative to positive) or a fourfold increase on the antibody titer (with a quantitative test).

The interpretation of the serological tests is especially important for the diagnosis of ZIKV. In primary infections (first infection with a flavivirus) it has been demonstrated that antibodies cross-reaction is minimal with other genetically related viruses. However, it has been demonstrated that sera of individuals with a previous history of infection from other flaviviruses (especially dengue, yellow fever and West Nile) can cross-react in these tests.

As on date no commercial kits have been approved or validated for the serological determination of ZIKV.

SAMPLE STORAGE

- Keep refrigerated (2-8 degree C) if it is to be processed (or sent to a reference laboratory) within 48 hours.
- Keep frozen (-10 to -20 degree C) if it is to be processed after the first 48 hours or within 7 days.
- Keep frozen (-70 degree C) if it is to be processed after a week. The sample can be preserved for extended periods.

TRANSPORTATION OF THE SAMPLE TO THE REFERENCE LABORATORY

Always use triple layer packaging and ship within 48 hours of collection under cold chain (dry ice or at least with cooling gels). The original samples should be packed, labeled and marked. Always include the completely filled out clinical and epidemiological record (proforma- on Page 7).

PREVENTION AND CONTROL

The key to control ZVD is adoption of a comprehensive approach by way of regular vector surveillance and integrated management of the *Aedes* mosquitoes through biological and chemical control that are safe, cost effective; and environmental management, legislations as well as action at household and community levels.

INTEGRATED VECTOR MANAGEMENT:

1. Vector Surveillance:

Several indices have been described and are currently used to monitor *Aedes* population.

Larval surveys: Water holding containers are examined for the presence of mosquito larvae and pupae in the house or premises. Indices commonly used to monitor *Aedes* are: House index (HI), Container Index (CI), Breteau Index (BI) and Pupae Index (PI)

Adult Surveys are done by Landing/biting collection, Resting collection, Oviposition traps.

2. Vector management:

Environmental Management

- **Environmental modification:** Long lasting physical transformation of vector habitats. Improved water supply, mosquito proofing of overhead tanks, cisterns or underground reservoirs.
- **Environmental manipulation:** Temporary changes to vector habitats as a result of planned activity to produce conditions unfavourable to vector breeding.
- **Changes in human habitations:** Efforts to reduce human-pathogen-vector interactions

3. Personal prophylactic measures:

Personal protection against mosquitoes by using mosquito coils, pyrethrum space spray and aerosols. Insecticide treated bed nets can be effectively used to protect infants and night workers while sleeping in daytime

4. Biological control

- Larvivorous fish are recommended for control of *Aedes aegypti* in large water bodies or large water containers.

- Endotoxin-producing bacteria, *Bacillus thuringiensis* serotype H-14 (Bt H-14) has been found as an effective mosquito control agent.

5. Chemical control

Chemical control measures (larvicides, adulticides) are recommended in permanent big water containers where water has to be conserved or stored because of scarcity of water or irregular and unreliable water supply.

Larvicide: Temephos, an organophosphate compound insecticide is being used under the public health programme. The recommended dose for application of Temephos (50 EC) is 1 ppm (1 mg per liter of water).

Adulticide: Recommended methods for the control of adult *Aedes* are:

- Pyrethrum spray used in indoor situations as space spray at a concentration of 0.1% - 0.2% @ 30-60 ml/1000 cu. ft. One litre of 2% pyrethrum extract is diluted with 19 litres of kerosene to make 0.1% pyrethrum formulation ('ready-to-spray' formulation). After dilution, pyrethrum extract is sprayed with Flit pump or hand operated fogging machine fitted with micro-discharge nozzle.
- Malathion fogging or Ultra Low Volume (ULV) spray by using 95% or pure technical malathion provides maximum effectiveness against target vectors.

6. Legislation:

Laws and byelaws should be enacted and implemented for avoidance of mosquitogenic conditions at construction sites, factories, etc.

7. Health education

At Household Level:

- Adult mosquitoes should be killed by using of commercially available safe aerosols (Pyrethroid-based).
- Wear protective clothing (full sleeved shirts & full pants during day time) and use mosquito nets, preferably insecticide treated ones, while sleeping, even during day time.
- Use mosquito repellents.
- Use tight-fitting screens/wire mesh on doors and windows.
- Intensify efforts to reduce actual or potential larval habitats in and around houses by:
 - Covering all water containers in the house to prevent fresh egg laying by the vector.
 - Emptying, drying water tanks, containers, coolers, bird baths, pets' water bowls, plant pots, drip trays at least once each week.

- Regularly checking for clogged gutters and flat roofs that may have poor drainage.
- Introducing larvivorous fishes (e.g., Gambusia / Guppy) in ornamental water tanks.

At Community Level:

- Identify commercial activities such as traders dealing in used tyres or small construction projects, etc, which may be creating larval habitats for the vector.
- Launch awareness campaigns on ZVD and seek cooperation for prevention of mosquito breeding and protection from mosquito bites.
- Community activities against larvae and adult mosquitoes include:
 - Cleaning and covering water storage containers.
 - Keeping the surroundings clean and improving basic sanitation measures.
 - Burning mosquito coils to kill or repel the mosquitoes/burning neem leaves, coconut shells and husk to repel mosquitoes and eliminating outdoor breeding sites.
 - Cleaning weeds and tall grass to reduce available outdoor resting places for adult mosquitoes near houses.
 - Organizing camps for insecticide treatment of community owned mosquito nets/curtains.
 - In case water containers cannot be emptied, applying Temephos (1 ppm) on weekly basis in coordination with the Health authorities.
 - Mobilizing households to cooperate during spraying / fogging.

At Institutional Level (Hospitals, Schools, Colleges, Other Institutions, Offices, etc):

- Weekly checking for Aedes larval habitats especially overhead tanks, ground water storage tanks, air coolers, planters, flower pots, etc
- Ensuring source elimination

Source:

(http://nvbdcp.gov.in/Doc/dengue_1_.%20Director_Desk%20DGH%20meeting%20OCT%2006.pdf)

VACCINE

There is **no vaccine** against Zika fever.

INDIA PREPAREDNESS

• Travel Advisory:

The salient points include

- Non-essential travel to the affected countries to be deferred/ cancelled.

- Pregnant women or women who are trying to become pregnant should defer/ cancel their travel to the affected areas.
- All travelers to the affected countries/ areas should strictly follow individual protective measures, especially during day time, to prevent mosquito bites (use of mosquito repellent cream, electronic mosquito repellants, use of bed nets, and dress that appropriately covers most of the body parts).
- Persons with co-morbid conditions (diabetes, hypertension, chronic respiratory illness, Immune disorders etc.) should seek advice from the nearest health facility, prior to travel to an affected country.

- Travelers having febrile illness within two weeks of return from an affected country should report to the nearest health facility.

- Pregnant women who have travelled to areas with Zika virus transmission should mention about their travel during ante-natal visits in order to be assessed and monitored appropriately.

• International Airports and Ports

- All the International Airports / Ports have displayed billboards/ signage providing information to travelers on ZVD and advised to report to Immigration authorities if they are returning from affected countries and suffering from febrile illness.

- Directorate General of Civil Aviation, Ministry of Civil Aviation have instructed all international airlines to follow the recommended aircraft disinfection guidelines

- The APHOs have circulated guidelines for aircraft disinsection (as per International Health Regulations) to all the international airlines and monitor appropriate vector control measures with the assistance from NVBDCP in airport premises and in the defined perimeter.

• Surveillance

- Provisional Case definitions for suspected and confirmed cases of ZVD have been shared with all the state surveillance units.
- Integrated Disease Surveillance Programme (IDSP) through its community and hospital based data gathering mechanism to track clustering of acute febrile illness, if any, among those who travelled to areas with ongoing transmission in the 2 weeks preceding the onset of illness.
- Rapid Response Teams (RRTs) activated at

Central and State surveillance units. Each team consists of an epidemiologist / public health specialist, microbiologist and a medical / pediatric specialist and other experts (entomologist etc.) to travel at short notice to investigate suspected outbreak.

- The Maternal and Child Health Division (under NHM) has established Sentinel Surveillance System in identified institutions representing different parts of the country to identify any unusual increase or clustering of microcephaly cases. Instructions have been issued to Sentinel Sites for identification and notification of newborns with microcephaly (Head circumference- starting above the eyebrows and ears and around the back of the head measuring less than 31 cm measured within 48 to 72 hours of birth). The details of such identification may be notified weekly to the National Monitoring team including "a nil" report by email. (nationalrbskunit@gmail.com).
- Sample collection and transportation guidelines have been shared with all the State surveillance units.
- ICMR Institutes namely Vector Control Research Centre, Puducherry; Centre for Research in Medical Entomology, Madurai; National Institute of Malaria Research, Delhi & its Field Unit at Bengaluru, have initiated mosquito surveillance for Zika virus within the States of Tamil Nadu, Kerala, Karnataka and Puducherry. This is to gather information on circulation of virus in the community and vector population, if prevalent, in the high risk areas.
- National Blood Transfusion Council (NBTC) has advised the blood banks not to accept blood from donors till 2 weeks following complete recovery from acute viral infection and cessation of therapy/ medications. Potential blood donors who have returned from outbreak zone should not donate blood for 4 weeks from date of return.

Laboratories strengthened for ZVD:

As on date, National Institute of Virology (NIV), Pune and National Centre for Disease Control (NCDC), Delhi, have the capacity to undertake diagnosis of ZVD by RT-PCR test.

Further, ten Viral Research & Diagnostic Laboratories of Department of Health Research and ICMR and ICMR institutes are strengthened:

1. King Institute of Preventive Medicine, Chennai
2. NIV Field Unit, Allapuzha
3. Manipal Centre for Virus Research, KMC, Manipal
4. BJ Medical College, Ahmedabad
5. Regional Medical Research Centre, Bhubaneswar
6. National Institute for Cholera & Enteric Diseases, Kolkata

7. King George Medical University, Lucknow
8. Regional Medical Research Centre, Dibrugarh
9. Regional Medical Research Centre, Jabalpur
10. Jawaharlal Institute of Post Graduate Medical Education & Research, Puducherry

Risk Communication:

- The States/ UT Administrations to create increased awareness among clinicians including obstetricians, pediatricians and neurologists about ZVD and its possible link with adverse pregnancy outcome (fetal loss, microcephaly etc.). There should be enhanced vigilance to take note of travel history to the affected countries in the preceding two weeks.
- The Central/ State Government to take all necessary steps to work closely with technical institutions, professionals and global health partners. The public needs to be reassured that there is no cause for undue concern.

Call Centre for ZVD at Emergency Medical Relief, DteGHS at Nirman Bhawan, MOHFW.
Contact nos: 011 – 23063205 / 23061469

Clinical & Epidemiological record proforma

National Centre for Disease Control
 22, Sham Nath Marg, Delhi 110054

Proforma for sample submission of a suspected case of Zika Virus Disease

Referred by (name, complete address with phone, email etc)		Hospital IP/OP number	
Name			
Age/Gender			
Father's/Husband's Name			
Complete address			
History of travel to the Central and Latin American countries* in last 2 weeks		Yes/No	If Yes, which one: When (dates): Date of return:
Signs & Symptoms			
Fever	Yes/No If yes date of onset of fever:	Rash	Yes/No Type of rash: Macular/Maculo-papular
Conjunctivitis	Yes/ No, if yes, date of onset	Joint Pain	Yes/No
Others: Headache/Myalgia/Malaise/Dizziness/retro-orbital pain/Gastrointestinal disorders			
Pregnancy	Yes/No	Weeks of gestation	
Type of sample	Blood**/plasma/Amniotic fluid/ Others (Please specify)		
Date of collection of sample			
Any other remarks			
Signatures, Name & Designation			

* Barbados, Bolivia, Brazil, Colombia, Commonwealth of Puerto Rico, Costa Rica, Curacao, Dominican Republic, Ecuador, El Salvador, French Guiana, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Nicaragua, Panama, Paraguay, Saint Martin, Suriname, US Virgin Islands, Venezuela, American Samoa, Samoa, Tonga, Cape Verde. For updated list refer to www.cdc.gov/zika/geo/index.html

** Guidelines for sample collection and transportation
 Sample: 5 ml of blood in sterile plain vial/vacutainer (red/yellow cap) or any other sample as per indication
 Time of collection: within first five days of onset of illness
 Packaging and transportation: Triple layer package to be sent in cold chain.
 Sample to be sent to : Outbreak Monitoring Cell (24 x 7)/Zoonosis Division, National Centre for Disease Control, 22-Sham Nath Marg, Delhi – 110054. Information may be sent on: nicdzoosis@yahoo.com. Phone: 01123981607

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Zika virus infection and Zika fever: Frequently asked questions

What is Zika virus infection?

Zika virus infection is caused by the bite of an infected Aedes mosquito, usually causing mild fever, rash, conjunctivitis, and muscle pain. The virus was isolated for the first time in 1947 in the Zika forest in Uganda. Since then, it has remained mainly in Africa, with small and sporadic outbreaks in Asia. In 2007, a major epidemic was reported on the island of Yap (Micronesia), where nearly 75% of the population was infected.

On 3 March 2014, Chile notified PAHO/WHO that it had confirmed a case of indigenous transmission of Zika virus on Easter Island, where the virus continued to be detected until June 2014. In May 2015, the public health authorities of Brazil confirmed the transmission of Zika virus in the northeast of the country. Since October 2015, other countries and territories of the Americas have reported the presence of the virus.

What are the symptoms?

The most common symptoms of Zika virus infection are mild fever and exanthema (skin rash), usually accompanied by conjunctivitis, muscle or joint pain, and general malaise that begins 2-7 days after the bite of an infected mosquito.

One out of four infected people develops symptoms of the disease. Among those who do, the disease is usually mild and can last 2-7 days. Symptoms are similar to those of dengue or chikungunya, which are transmitted by the same type of mosquito. Neurological and autoimmune complications are infrequent, but have been described in the outbreaks in Polynesia and, more recently, in Brazil.

How is Zika virus transmitted?

Zika virus is transmitted to people through the bite of an infected Aedes mosquito. This is the same mosquito that transmits dengue and chikungunya.

Can it be transmitted through blood or sexual contact?

In general, the Zika virus needs a vector (a means of transportation) to infect people. That vector is the mosquito. The virus has also been isolated in semen, and one case of possible person-to-person sexual transmission has been described. Zika can be transmitted through blood, but this is an infrequent mechanism. The usual recommendations for safe transfusions should be followed (e.g., healthy volunteer donors).

Can it be transmitted from mother to child?

There is little information on transmission from mother to baby during pregnancy or childbirth. Perinatal transmission has been reported with other vector-borne viruses, such as dengue and chikungunya. Studies are now being conducted on possible mother-to-child transmission of the virus and its possible effects on the baby.

What treatment is there?

Treatment consists of relieving pain, fever, and any other symptom that inconveniences the patient. To prevent dehydration, it is recommended to control the fever, rest, and drink plenty of water. There is no vaccine or specific drug for this virus.

Can it cause death?

In this Region, it is a new virus that up until now has had a very limited geographical and demographic distribution, and there is no evidence that it can cause death. However, sporadic cases have been reported of more serious manifestations and complications in patients with pre-existing diseases or conditions, causing death.

Who is at risk of Zika infection?

Anyone not previously exposed to the virus and who lives in an area where the mosquito is present, and where imported or local cases have been reported, may be infected.

How is Zika diagnosed?

By RT-PCR in the first 3-5 days after the onset of symptoms. Once it has been demonstrated that the virus is present in a given area or territory, confirmation of all cases is not necessary, and laboratory testing will be adjusted to routine virological surveillance of the disease.

Which is the difference between Zika, dengue, and chikungunya?

All these diseases present similar symptoms, but certain symptoms suggest one disease or another:

Dengue usually presents with higher fever and more severe muscle pain. There can be complications when the fever breaks: attention should be paid to warning signs such as bleeding.

Chikungunya presents with higher fever and more intense joint pain, affecting the hands, feet, knees, and back. It can disable people, bending them over so that they cannot walk or perform simple actions such as opening a water bottle.

Zika does not have clearly characteristic features, but most patients have skin rashes and some have conjunctivitis.

Is there a relationship between Guillain-Barre syndrome and Zika virus?

An increase in Guillain-Barre syndrome (GBS) has been observed in areas where a Zika virus epidemic has been documented (e.g., in French Polynesia and Brazil). However, a direct causal relationship has not been established between Zika virus infection and GBS. Prior infection with dengue or genetic factors could contribute to or increase cases of GBS. Several studies are underway to better establish the relationship between Zika and GBS.

...about CDAlert

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