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Update on Zika virus infection in the Pacific

January 27th, 2016

Background

Zika virus infection was first reported in the Pacific in April 2007 in Yap State of the Federated States of Micronesia. It was then reported in French Polynesia in October 2013, and since then, a number of Pacific Island countries and territories (PICTs) have reported cases of Zika virus infection, including New Caledonia (January 2014 to October 2015), Cook Islands (February to May 2014), Solomon Islands (February to May 2015), Vanuatu (February to March 2015), Fiji (August 2015) and Samoa (September to October 2015). An interactive map showing where Zika virus infection and other epidemic and emerging diseases are currently circulating in the region is available at: www.spc.int/phd/epidemics/.

Zikavirus disease

Zika virus disease is caused by a virus transmitted to humans by mosquitoes. Up to eighty per cent of infections are asymptomatic. Symptomatic infections are characterised by a self-limiting febrile illness of 4–7 days duration accompanied by a fine body rash, joint and muscle pains, conjunctivitis of the eyes, and headache. Zika virus has not been noted to cause death in the past, nor has it previously been linked to intra-uterine infections and congenital Central Nervous System (CNS) anomalies. Zika virus infection has not been linked to **Guillain–Barré syndrome** (GBS) before 2014 when a possible association between Zika virus infection and GBS was reported during an outbreak in French Polynesia.

There is no vaccine to prevent Zika virus infections nor is specific anti-viral treatment available.

In May 2015, transmission of Zika virus was confirmed in the states of Bahia and Rio Grande do Norte in Brazil. However, it is likely that Zika virus had been circulating in Salvador de Bahia City prior to that, as an outbreak of a 'fine rash' was reported there between 15 February and 25 June 2015. As of 19 January 2016, cases of Zika virus infection were

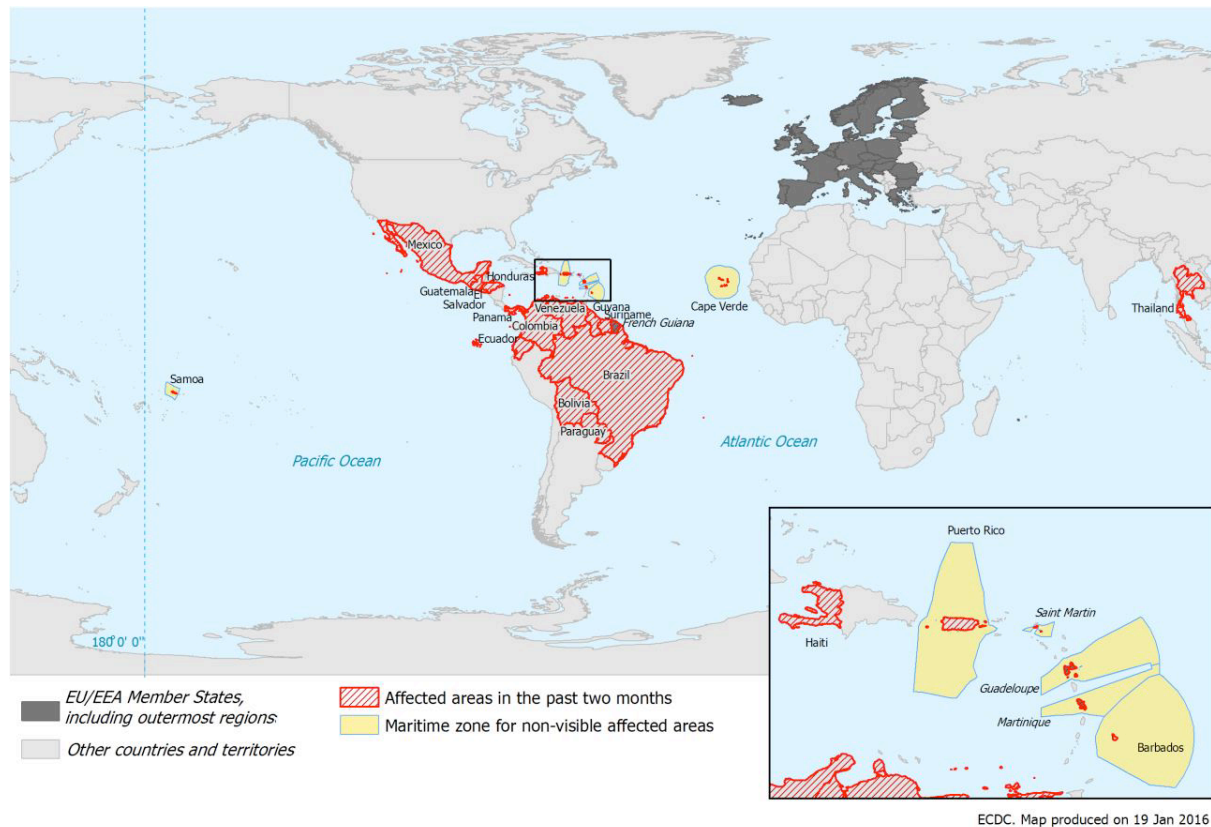
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reported from 23 countries or territories worldwide within the past two months. As of 19 January 2016, 27 countries or territories reported cases of Zika virus infection within the past nine months



In October 2015, following reports of an unusual increase of cases of microcephaly (small head) among newborns in the state of Pernambuco, compared with previous years in several Brazilian states. On 11 November 2015, the Brazilian Ministry of Health declared a public health emergency in response to this public health event.

On 24 November 2015, the health authorities of French Polynesia reported an increase of cases of Central Nervous System (CNS) malformations in fetuses and infants during 2014–2015. Different CNS malformations were observed among 12 of the cases and were reported by the health authorities of French Polynesia as: microcephaly (head circumference <5th percentile), destruction of brain structure, poor growth of the cerebellum, and severe central brain dilatation greater than 10 mm in the first third of pregnancy. The findings led to termination of pregnancy in nine instances. Based on the possible association of these cases with the Zika outbreaks in French Polynesia, the local health authorities hypothesise that Zika virus infection may be associated with these abnormalities if mothers are infected during the first or second third (trimester) of pregnancy.

What is the significance of all this?

A possible association between Zika virus infection in pregnancy and congenital central nervous system malformations, including microcephaly, has been under investigation in

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Brazil since October 2015. This was in response to Brazilian health authorities reporting an unusual increase in cases of microcephaly. This report from Brazilian health authorities is consistent with concerns expressed by French Polynesian authorities in November 2015 of an unusual increase of central nervous system malformations among newborns and fetuses following their Zika virus outbreak. Additional to this, a temporal and spatial association has also previously been identified between Zika virus circulation and the increase of Guillain-Barré syndrome (GBS) in French Polynesia and several other countries.

What does this mean?

There is some evidence of an association between a prior Zika virus infection and an increased frequency of microcephaly, neurological and autoimmune syndromes. While this is not proof that Zika virus has caused these malformations and syndromes, (i.e. that the relationship is causal), a possible causative nature of the association cannot be ruled out given the evidence available.

Clinical case definition for Zika virus: Patient with rash and fever* with at least one of the following symptoms (not explained by any other medical condition):

- Arthralgia (joint pain) or myalgia (muscle pain)
- Non-purulent conjunctivitis (eye inflammation)
- Headache or malaise

**The fever of Zika virus tends to be low grade (<38°C).*

Update on the observed increase of congenital microcephaly and other central nervous system malformations in Brazil

From 22 October 2015 until 9 January 2016, Brazilian health authorities have reported 3 530 suspected cases of congenital microcephaly that meet the definition in the epidemiological surveillance protocol issued by the Brazilian Ministry of Health. The surveillance protocol defines suspected cases that should be reported and investigated as:

- Pregnant women with sudden onset rashes, and excluded other known infectious and non-infectious possible causes
- Foetuses with ultrasound head circumference of below the mean for gestational age, with or without further CNS malformations
- Foetuses with ultrasound CNS findings suggestive of intrauterine infection
- Spontaneous abortions in women with a report of rashes during pregnancy, without other causes identified
- Stillbirths, irrespective of gestational age, in women with a report of rashes during gestation
- Live newborns of <37 weeks gestational age (preterm delivery) and a head circumference <3rd percentile according to the Fenton growth chart, by sex
- Live newborns of ≥37 weeks gestational age (term delivery) and a head circumference ≤32 cm.

Update on Guillain–Barré syndrome

- Several countries in south and central Americas have reported unusual increases in cases of Guillain–Barré syndrome (GBS), as has the Cook Islands in the Pacific.

Travel advice for pregnant women and women trying to become pregnant

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Although a causal association between Zika virus infection during pregnancy and adverse pregnancy outcomes has not been confirmed, the concern over a possible causal link has prompted public health authorities to issue travel advice for the affected areas.

The European Commission published an Information for travellers to areas with local transmission of Zika virus on 16 December 2015. On 15 January 2016, the US Centers for Disease Control and Prevention (US CDC), 'out of an abundance of caution,' issued an interim Travel Guidance for pregnant women travelling or planning to travel to 14 countries and territories with local transmission in Central and South America and the Caribbean. ***The US CDC advises pregnant women to consider postponing travel to areas where transmission is ongoing or, if they must travel, to take necessary precautionary measures to avoid mosquito bites.*** US CDC also advised women trying to become pregnant to consult their healthcare provider and take steps to prevent mosquito bites. On 16 January, the ***Public Health Agency of Canada published a Travel Health Notice with regards to pregnant women and those considering becoming pregnant, encouraging them to discuss their travel plans with their healthcare provider to assess their risk and consider postponing travel to areas where the Zika virus is circulating in the Americas.*** If travel cannot be postponed, then strict mosquito bite prevention measures should be followed.

The following options should be considered for both travellers and their healthcare professionals:

- Advise all travellers to affected areas to take individual protective measures to prevent mosquito bites.
- Advise travellers that have immune disorders or severe chronic illnesses to consult their doctor or seek advice from a travel clinic before travelling.
- Advise pregnant women and women who are trying to become pregnant, and who plan to travel to the areas experiencing transmission of Zika virus, to discuss their travel plans with their healthcare providers and to consider postponing their travel to affected areas, especially to areas with increasing or widespread transmission.
- Advise citizens who live in areas with Zika virus transmission to take individual protective measures to prevent mosquito bites. This applies particularly for pregnant women and women trying to become pregnant living in areas with increasing or widespread transmission.
- Individual protective measures to prevent mosquito bites should be applied all day long, especially during mid-morning and late afternoon to dusk, as these are the periods of highest mosquito activity.
- Personal protection measures to avoid mosquito bites should include:
 - Using mosquito repellents in accordance with the instructions indicated on the product label. DEET or Icaridin are the recommended insect repellents.
 - Wearing long-sleeved shirts and long pants, especially during the hours of highest mosquito activity.
 - Using mosquito nets, whether they are impregnated or not, is essential if accommodation is not adequately screened or air-conditioned.
- Travellers showing symptoms compatible with dengue, chikungunya or Zika virus disease within three weeks after returning from an affected area should contact their healthcare provider.

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

Information to healthcare providers

- Ensure that Zika virus-infected patients in areas with Aedes mosquitoes avoid getting bitten during the first week of illness (by using insecticide treated bed nets, screened doors and windows as recommended by the World Health Organization).
- Increase awareness among health professionals who provide prenatal care of the possible association of Zika virus and microcephaly and adapt prenatal monitoring in accordance with the exposure to the vector.

Additional information on Zika virus infection can be obtained from the sources for this brief:

Pacific Surveillance Network

www.spc.int/phd/epidemics/

WHO website

http://www.wpro.who.int/mediacentre/factsheets/fs_05182015_zika/en/

<http://www.who.int/features/qa/zika/en/>

[http://www.paho.org/hq/index.php?](http://www.paho.org/hq/index.php?option=com_topics&view=article&id=427&Itemid=41484&lang=en)

[option=com_topics&view=article&id=427&Itemid=41484&lang=en](http://www.paho.org/hq/index.php?option=com_topics&view=article&id=427&Itemid=41484&lang=en)

CDC website

<http://www.cdc.gov/zika/geol/index.html>

ECDC website

http://ecdc.europa.eu/en/healthtopics/zika_virus_infection/Pages/index.aspx

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