



European Centre for Disease Prevention and Control

Zika virus disease

Stockholm, 19 February 2016

Background information

Zika virus is a member of the Flaviviridae family and transmitted by mosquitoes

First isolations

- 1947 Rhesus monkey, Zika forest, Uganda
- 1948 *Aedes africanus* – mosquito, Zika forest, Uganda
- 1952 Human, Nigeria

Two Zika virus lineages

- African lineage
- Asian lineage: recently emerged in the Pacific and the Americas

Transmission

Vector borne transmission by *Aedes* mosquitoes

- Sylvatic vector in Africa: *Aedes spp.*
- Primary vector in urban settings: *Aedes aegypti*
- Competent vector: *Aedes albopictus*

Other routes of transmission

- Trans-placental transmission
- Sexual transmission through semen
- Potential risk of transmission via blood transfusion



Clinical presentation

Incubation period

- Onset of symptoms is 3 to 12 days after infection

Viraemic period

- Short viraemic period allowing for direct virus detection 3 to 5 days after onset of symptoms

Symptoms

- Rash with/without fever and with the following signs and/or symptoms:
 - arthralgia/arthrititis
 - conjunctivitis (non-purulent/hyperaemia)
 - general fatigue

Most of the infections remain asymptomatic

(approx. 80%)

Potential complications

Microcephaly in fetuses and newborns

- Zika virus has been associated with severe congenital central nervous system malformations and microcephaly
- Zika virus can be spread from a pregnant woman to her foetus. Pregnant women are under follow-up in several affected countries to establish the risk of infecting the foetus

Guillain-Barré syndrome

- Temporal association between Zika outbreaks and increases in the incidence of Guillain-Barré syndrome observed in French Polynesia, Brazil, Venezuela and El Salvador.
- Investigations into this association are ongoing

Detection of viral RNA

- RT-PCR during the viraemic period between day 3 and 5 after onset of symptoms (serum and saliva)
- Detection in urine up to 10 days after onset.
- Specific investigation: amniotic and cerebrospinal fluids and tissues (e.g. placenta).

Serology: Zika-specific IgM antibodies

- IgM antibodies against Zika virus detectable from day 5 after onset of symptoms.
- Detection of Zika-specific IgM antibodies requires confirmation by plaque-reduction neutralisation tests because of cross-reactivity with antibodies against other flaviviruses.
- Vaccination status and infections with other flaviviruses must be considered when interpreting the results.

Treatment and vaccine

Symptomatic treatment

- Often mild disease which requires no specific treatment
- Supportive nursing care and relief of symptoms are the standard treatment

There is no vaccine or specific antiviral treatment



Prevention – Mosquito reduction

Integrated vector management

- Intersectoral collaboration and efficient public communication strategies to ensure community participation are required for sustainable vector control

Reduction of mosquito breeding sites:

- removal of all open containers with stagnant water in and surrounding houses on a regular basis or, if that is not possible, treatment with larvicides
- tight coverage of water containers, barrels, wells and water storage tanks
- wide use of window/door screens by the population

During an outbreak, limitation of adult mosquitoes through aerial spraying with insecticides can be considered

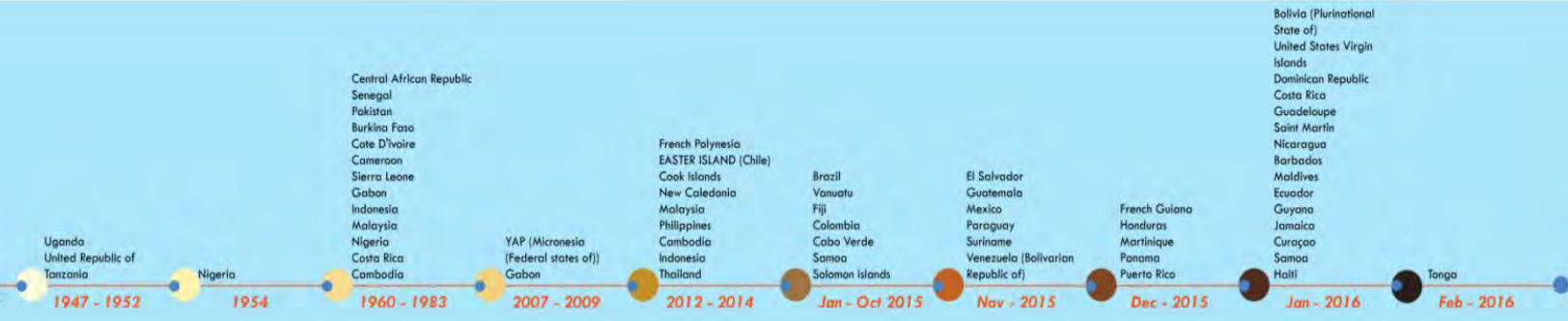
Protection against mosquito bites

- *Aedes* mosquitoes bite during the daytime both indoors and outdoors. Personal protection measures should therefore be applied during the day

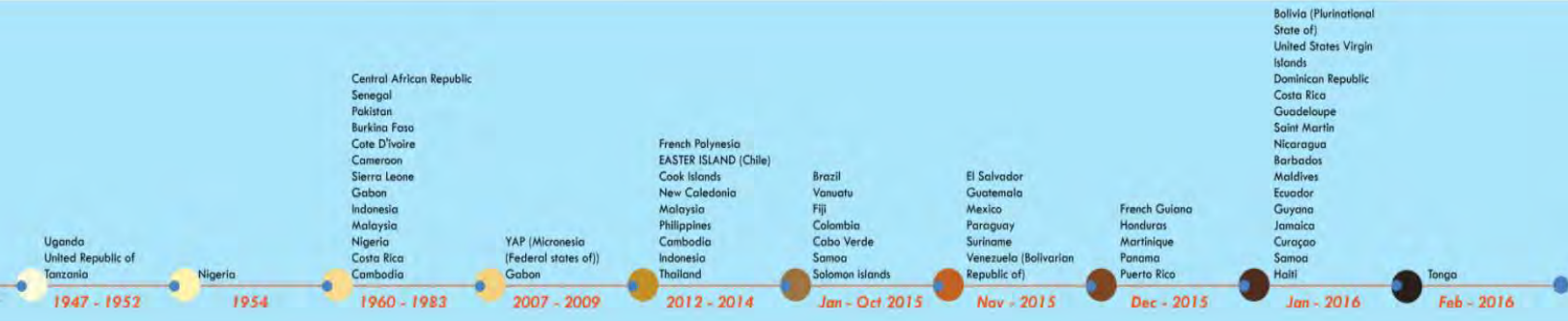
Personal protection measures:

- using appropriate mosquito repellents and wearing long-sleeved shirts and long trousers
- sleeping or resting in screened or air-conditioned rooms, otherwise use insecticidal treated mosquito nets, even during the day
- repellent use must be strictly done in accordance with the instructions indicated on the product label. For infants under three months of age, DEET-based repellent is not recommended

Timeline: global



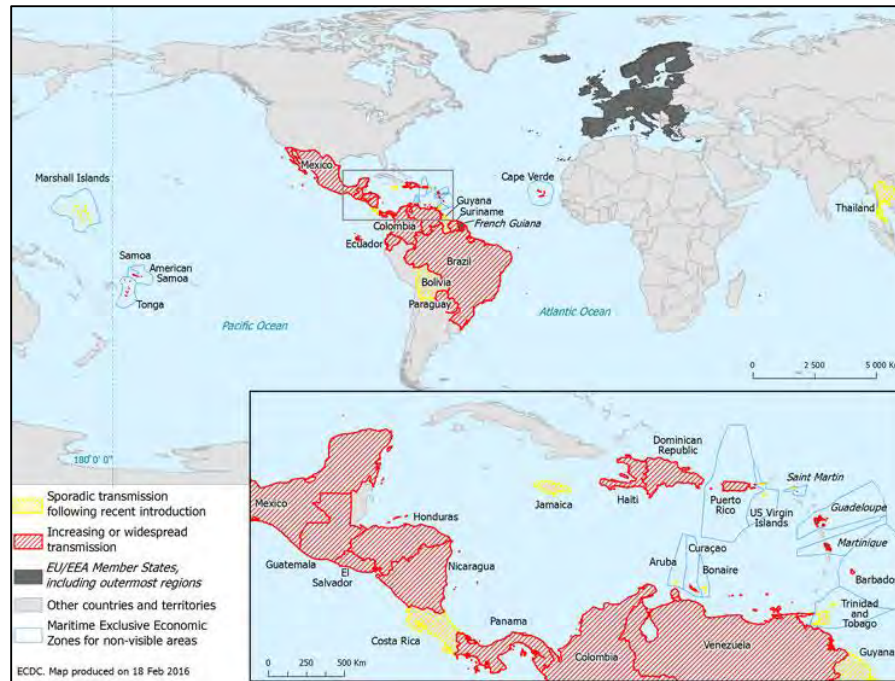
Timeline: the Americas



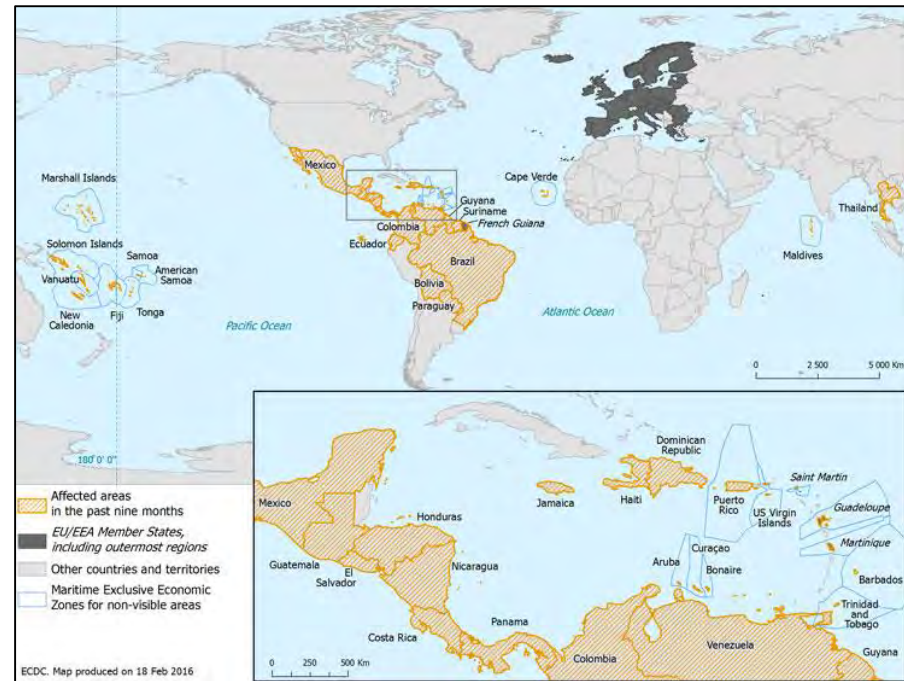
Current outbreak

Reported confirmed autochthonous cases of Zika virus infection

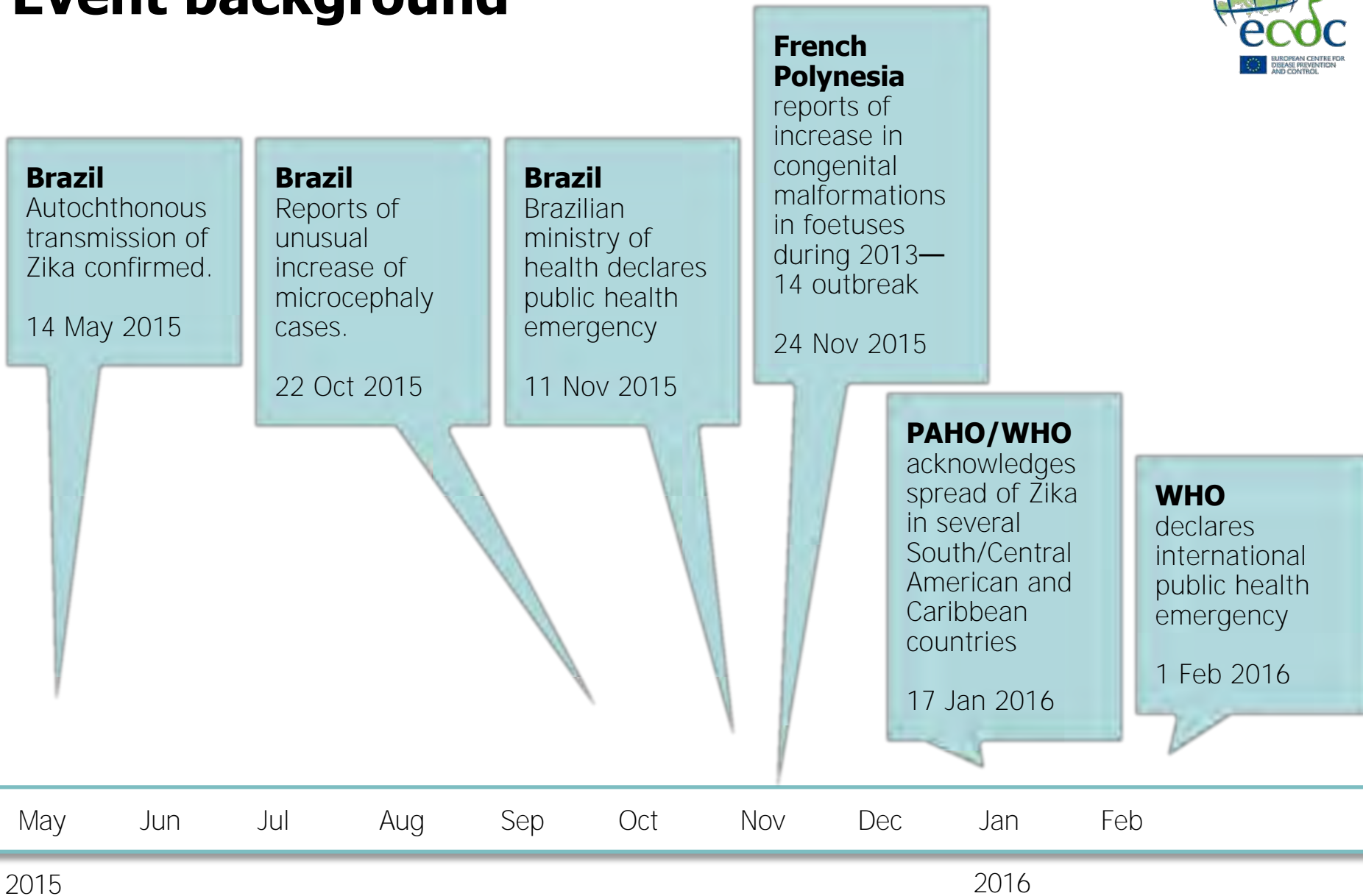
In the past 2 months



In the past 9 months



Event background



2015

2016

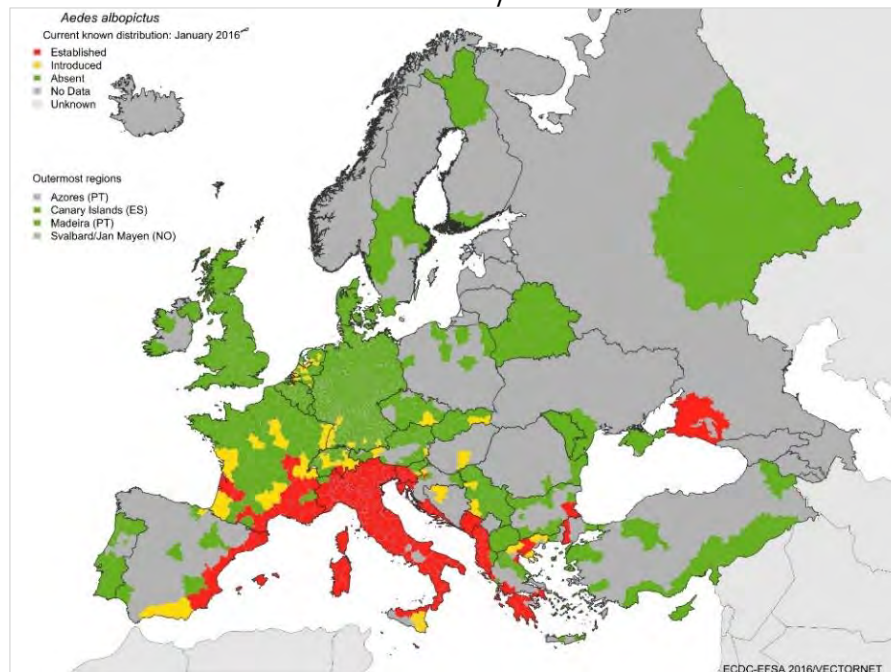
Aedes mosquitoes in Europe

Distribution of the *Aedes mosquito* as of January 2016

Aedes aegypti



Aedes albopictus



Established

Introduced

Absent

No data/unknown

Preparedness in the EU/EEA

Preparedness regarding Zika in the EU includes:

- strengthening surveillance systems to ensure early detection and rapid notification of cases
- reviewing contingency plans for mosquito-borne outbreaks to ensure rapid vector control measures around imported cases in areas with competent vectors
- strengthening intersectoral collaboration and promoting community involvement for the control of the *Aedes* mosquito vectors of Zika virus
- strengthening integrated mosquito surveillance, including invasive species

Ongoing activities

- Public Health Emergency (level 1) activated at ECDC
- Interim technical guidances and EU case definition
- Risk assessments
- Collaboration with CDC and WHO

Travel advise

- Pregnant women and women who are planning to become pregnant should consider postponing non-essential travel to affected areas until after delivery.
- If travel to affected areas cannot be avoided, pregnant women should follow strict personal preventive measures and consult their healthcare providers before departure and upon return.

Supporting documents

- Rapid risk assessments
- Epidemiological updates
- Factsheets for health professionals



European Centre for Disease Prevention and Control

Health Topics | Publications | Data & Tools | Activities | About Us

Zika virus infection
Factsheet for health professionals

Zika outbreak in the Americas and the Pacific

An evolving outbreak of Zika virus infections is currently spreading in the Americas and the Pacific region.

Possible links between Zika virus infection and microcephaly have been under investigation since October 2015, when the Brazilian Ministry of Health reported an unusual increase in cases of microcephaly after Zika virus outbreak. French Polynesia reported an increase in cases of central nervous system malformations during 2014–2015 following the Zika virus infection. Investigations of a link between Zika virus infection and Guillain-Barré syndrome are also ongoing in affected countries.

On 1 February 2016 WHO declared a Public Health Emergency of International Concern (PHEIC) regarding clusters of microcephaly cases and neurological disorders in some areas affected by Zika virus.

ECDC is monitoring the situation and issues risk assessments and epidemiological updates.

Epidemiological situation
12 February 2016

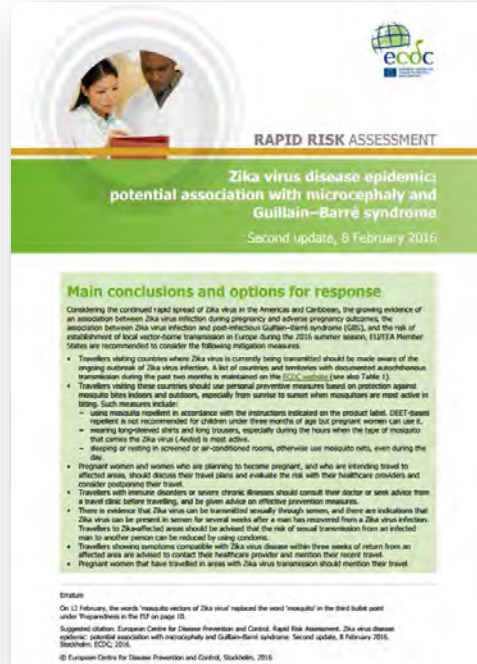
Since last week, no new additional countries or territories have reported laboratory-confirmed autochthonous transmission.

As of 12 February 2016, autochthonous cases of Zika virus infection have been reported from 31 countries or territories worldwide in the past two months and 36 countries or territories have reported autochthonous cases of Zika virus infection in the past nine months.

No autochthonous Zika virus transmission has been reported in the EU. ECDC has recorded imported cases in 14 EU/EEA countries and thirty EU/EEA countries have issued travel advice for people travelling to Zika-affected areas.

Read the weekly update

Latest threat report
Communicable disease reports, 31 January - February 2016, week 5



European Centre for Disease Prevention and Control

RAPID RISK ASSESSMENT

Zika virus disease epidemic: potential association with microcephaly and Guillain-Barré syndrome
Second update, 8 February 2016

Main conclusions and options for response

Considering the continued rapid spread of Zika virus in the Americas and Caribbean, the growing evidence of an association between Zika virus infection during pregnancy and adverse pregnancy outcomes, the association between Zika virus infection and post-infectious Guillain-Barré syndrome (GBS), and the risk of establishment of local vector-borne transmission in Europe during the 2016 summer season, EU/EEA Member States are recommended to consider the following mitigation measures:

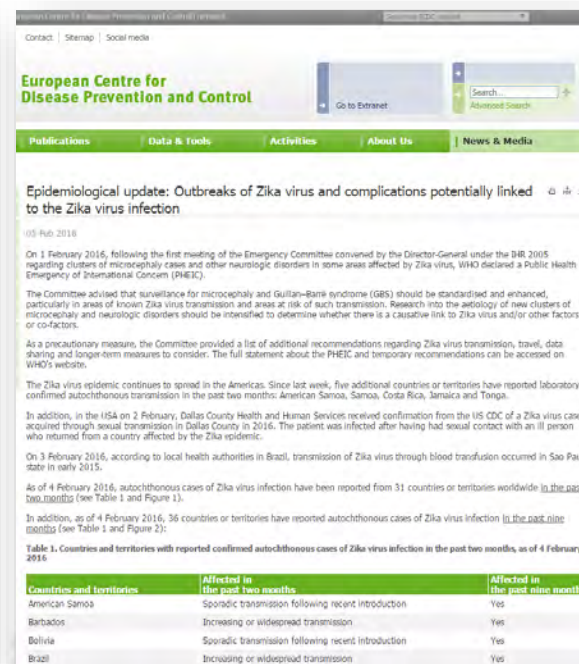
- Travellers visiting countries where Zika virus is currently being transmitted should be made aware of the ongoing outbreak of Zika virus infection. A list of countries and territories with documented autochthonous transmission during the past two months is maintained on the ECDC website (see also Table 1).
- Travellers visiting these countries should use personal protective measures based on protection against mosquito bites indoors and outdoors, especially from sunrise to sunset when mosquitoes are most active in biting. Such measures include:
 - using mosquito repellent in accordance with the instructions indicated on the product label. DEET-based repellents is not recommended for children under three months of age but pregnant women can use it;
 - wearing long-sleeved shirts and long trousers, especially during the hours when the type of mosquito that carries the Zika virus is most active;
 - sleeping or resting in screened or air-conditioned rooms, otherwise use mosquito nets, even during the day;
- Pregnant women and women who are planning to become pregnant, and who are intending travel to affected areas, should discuss their travel plans and evaluate the risk with their healthcare providers and consider postponing their travel;
- Travellers with immune disorders or severe chronic illnesses should consult their doctor or seek advice from a travel clinic before travelling, and be given advice on effective prevention measures;
- There is evidence that Zika virus can be transmitted sexually through semen, and there are indications that Zika virus can be present in semen for several weeks after a man has recovered from a Zika virus infection. Travellers to Zika-affected areas should be advised that the risk of sexual transmission from an infected man to another person can be reduced by using condoms;
- Travellers showing symptoms compatible with Zika virus disease within three weeks of return from an affected area are advised to contact their healthcare provider and mention their recent travel;
- Pregnant women that have travelled in areas with Zika virus transmission should mention their travel.

Enriched

On 12 February, the words "mainly vectors of Zika virus" replaced the word "mosquito" in the third bullet point under "Prevention" in the IIR on page 10.

Suggested citation: European Centre for Disease Prevention and Control. Rapid Risk Assessment: Zika virus disease epidemic: potential association with microcephaly and Guillain-Barré syndrome. Second update, 8 February 2016. Stockholm: ECDC, 2016.

© European Centre for Disease Prevention and Control, Stockholm, 2016



European Centre for Disease Prevention and Control

Epidemiological update: Outbreaks of Zika virus and complications potentially linked to the Zika virus infection

105 Feb 2016

On 1 February 2016, following the first meeting of the Emergency Committee convened by the Director-General under the IHR 2005 regarding clusters of microcephaly cases and other neurologic disorders in some areas affected by Zika virus, WHO declared a Public Health Emergency of International Concern (PHEIC).

The Committee advised that surveillance for microcephaly and Guillain-Barré syndrome (GBS) should be standardised and enhanced, particularly in areas of known Zika virus transmission and areas at risk of such transmission. Research into the aetiology of new clusters of microcephaly and neurologic disorders should be intensified to determine whether there is a causative link to Zika virus and/or other factors or co-factors.

As a precautionary measure, the Committee provided a list of additional recommendations regarding Zika virus transmission, travel, data sharing and longer-term measures to consider. The full statement about the PHEIC and temporary recommendations can be accessed on WHO's website.

The Zika virus epidemic continues to spread in the Americas. Since last week, five additional countries or territories have reported laboratory-confirmed autochthonous transmission in the past two months: American Samoa, Samoa, Costa Rica, Jamaica and Tonga.

In addition, in the USA on 2 February, Dallas County Health and Human Services received confirmation from the US CDC of a Zika virus case acquired through sexual transmission in Dallas County in 2016. The patient was infected after having had sexual contact with an ill person who returned from a country affected by the Zika epidemic.

On 3 February 2016, according to local health authorities in Brazil, transmission of Zika virus through blood transfusion occurred in Sao Paulo state in early 2015.

As of 4 February 2016, autochthonous cases of Zika virus infection have been reported from 31 countries or territories worldwide in the past two months (see Table 1 and Figure 1).

In addition, as of 4 February 2016, 36 countries or territories have reported autochthonous cases of Zika virus infection in the past nine months (see Table 1 and Figure 2):

Table 1. Countries and territories with reported confirmed autochthonous cases of Zika virus infection in the past two months, as of 4 February 2016

Country and territories	Affected in the past two months	Affected in the past nine months
American Samoa	Sporadic transmission following recent introduction	Yes
Barbados	Increasing or widespread transmission	Yes
Bolivia	Sporadic transmission following recent introduction	Yes
Brazil	Increasing or widespread transmission	Yes