**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/arthitis
  – conjunctivitis (non-purulent/hyperaemia)
  – general fatigue

Most of the infections remain asymptomatic (approx. 80%)
Potential complications

Microcephaly in foetuses 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
Diagnostics

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
Prevention – Transmission reduction

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


ECDC, 19 February 2016
Timeline: the Americas

Current outbreak

Reported confirmed autochthonous cases of Zika virus infection

In the past 2 months

In the past 9 months

Data as of 19 February 2016
Event background

**Brazil**
Autochthonous transmission of Zika confirmed.
14 May 2015

**Brazil**
Reports of unusual increase of microcephaly cases.
22 Oct 2015

**Brazil**
Brazilian ministry of health declares public health emergency
11 Nov 2015

**French Polynesia**
Reports of increase in congenital malformations in foetuses during 2013—14 outbreak
24 Nov 2015

**PAHO/WHO**
acknowledges spread of Zika in several South/Central American and Caribbean countries
17 Jan 2016

**WHO**
declares international public health emergency
1 Feb 2016

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2016
Aedes mosquitoes in Europe

Distribution of the *Aedes mosquito* as of January 2016

**Aedes aegypti**

**Aedes albopictus**

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
Response by ECDC

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.
Response by ECDC

Supporting documents

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