Preparedness for Zika virus disease epidemic in Hungary

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Fifth meeting of the CAPSCA-EUR NAT Programme
12-13 October 2016
Country background - Hungary

- Population: 9,855,571 (2015)
- Birth cohort: 94,859
- 19 counties and the capital
In Hungary, public health has had a well-established institutional network

Under the Ministry of Human Capacities
  - the Hungarian National Public Health and Medical Officers’ Service is operating as a public administration agency.
  - Responsible for controlling, coordinating and supervising all public health activities
National Center for Epidemiology

The National Center for Epidemiology (NCE) is part of the NPHMOS, but acts as a scientifically independent expert institution with main responsibilities including

- surveillance,
- threat detection,
- prevention and control of infectious diseases,
- laboratory and reference laboratory functions,
- training of the health officers and post-graduate training.

NCE also provides expertise for epidemiological preparedness and emergency situations of national importance, and is the leading institution against nosocomial infections.

NCE is responsible for the development of the national immunization programme.
Oct 16, 2015: WHO Epidemiological Alert
Increased ZIKV transmission in the Americas

Nov 17, 2015 WHO Epidemiological Alert
Increase of microcephaly in the northeast of Brazil

Nov 24, 2015 ECDC RRA
Microcephaly in Brazil potentially linked to Zika virus epidemic

Dec 10, 2015 ECDC RRA
Zika virus epidemic in the Americas: potential association with microcephaly and GBS

Dec 1, 2015 WHO Epidemiological Alert
Increase of congenital malformations, GBS in areas where Zika virus is circulating
To do list

• Prepare Hungary’s own country risk assessment
• Information for medical professionals
• Information for public, prepare travel advice focusing on risk group of pregnant women
• Evaluation of the existing mosquito surveillance
• Prepare case management advice
• Prepare gynecological advice
Jan 6, 2016
Information for the public website of NCE
About the Zika virus epidemic in the Americas, congenital malformation, GBS

Jan 15, 2016
Information for professionals in the Epidemiological Bulletin

Jan 22, 2016
Travel advice for pregnant women not to travel to affected areas, PPMP!
Website of NCE, NPHMOS

From February, 2016
Enhancing ZIKV laboratory capacity

Febr 1, 2016
WHO
Public Health Emergency of International Concern.
Febr 9, 2016.
ECDC
Survey of laboratory capabilities for the diagnosis of Zika virus in Europe

May 5, 2016
Chief Medical Officer Guideline
Control of Zika virus infected patients, contacts, and Zika virus exposed pregnant women

July 29, 2016
National guidance for infected pregnant women and newborns
Risk of local transmission
Mosquito surveillance

Aedes aegypti  
Established population  
Sporadic

Aedes albopictus  
Absent  
No data

No evidence for established population of Zika virus transmitting Aedes mosquitoes in Hungary.
Likelihood of local transmission of Zika virus in Europe
Principles of preparedness and response

• No mosquito - no autochtonous transmission
• Continuous mosquito surveillance is needed
• Effective communication on travel advice and sexual prevention
• Guidance for case management
• Recommendation for evaluation of possibly infected pregnant and newborn cases
Hungary – case detection

Compulsory laboratory test:

• **Diagnostic test:**
  Probable cases = clinical and epidemiological criteria

**Clinical criteria:**
Rash, with or without fever and
• Arthralgia or
• Myalgia or
• Non-purulent conjunctivitis/hyperaemia

**Epidemiological criteria:**
• History of exposure in an area with transmission of Zika virus within two weeks prior to onset of symptoms or
• Sexual contact with a male with confirmed Zika virus infection in the past four weeks or
• Sexual contact with a male who had been in an area with Zika virus transmission in the past four weeks
Hungary – measures

Compulsory laboratory test:

- **Diagnostical test:**
  - Pregnant women, who were exposed to Zika virus infection with Zika compatible symptoms
  - Cases of neurological complications within 4 weeks after Zika virus infection (ie. GBS, myelitis, meningoencephalitis etc.)

- **Screening test:**
  - Zika virus exposed asymptomatic pregnant women (travel, sexual contact)
  - In case of possible Zika virus infection via blood transfusion, tissue and organ donation donor screening is compulsory
Gynecological recommendations

• Pregnant women should be screened who were exposed to Zika virus infection
  – Pregnant women traveled to an area with Zika virus transmission;
  – Pregnant women had sexual contact with a laboratory confirmed Zika virus infected male during her pregnancy;
  – Pregnant women had sexual contact with a male who had been in an area with Zika virus transmission in the past four weeks.

• Foetuses of pregnant women who were exposed to Zika virus infection should be screened

• Newborns of pregnant women who were exposed to Zika virus infection should be screened
Evaluation of pregnant women with possible exposure to Zika virus

1. Test for Zika virus infection
   - Positive or inconclusive for Zika virus infection:
     - Consider serial fetal ultrasounds
   - Negative for Zika virus infection:
     - Fetal ultrasound to detect abnormalities consistent with Zika virus disease:
       - Fetal abnormalities consistent with Zika virus disease present:
         - Retest pregnant woman for Zika virus infection
       - Fetal abnormalities consistent with Zika virus disease not present:
         - Routine prenatal care

2. CDC logo
Risk of importation of the disease

**Fig. 1.** Calculated per capita risk (probability of being infected). \( \text{Risk}(t) = 1 - \exp(-\lambda(t)t) \), where \( \lambda(t) \) is the force of infection.

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*ORIGINAL ARTICLE*
Estimated Zika virus importations to Europe by travellers from Brazil

Eduardo Massad¹,², Ser-Han Tan³, Kamran Khan⁴ and Annelies Wilder-Smith⁵,⁶,⁷
The preparation of the national Olympic and the Paralympic team

• 155 athletes
• National olympic team: over 300 people
• Oral presentation about the possibly acquired infectious diseases in Brazil
  – Hygenic advices
  – Vaccine preventable diseases
• Public information for travellers to the Olympics
  – NCE website
  – weekly epidemiological bulletin (EPINFO)
• Risk assesment of Zika virus acquisition during the Olympic games – document prepared
  – Sexual abstinence advices
Number of Zika virus virological test requests as of 30 September 2016 (N=116)

So far there was no confirmed Zika infection in Hungary.
Proportion of pregnant women among Zika virus virological testing (N=116)

- Not pregnant: 82%
- Pregnant: 18%

Bar chart showing the number of test requests by week, with green bars for not pregnant and red bars for pregnant. Olympic Games is indicated in a separate box.
Thank you for your attention!