

2017

World Health
Organization

[SCIENTIFIC AND TECHNICAL ADVISORY GROUP ON GEOGRAPHICAL YELLOW FEVER RISK MAPPING (GRYF)]

Fourth teleconference

27 January 2017

2:30–3:35 pm Central European Time



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Opening session

The fourth teleconference of the World Health Organization (WHO) Scientific and Technical Advisory Group on Yellow Fever Risk Mapping (GRYF) was held on 27 January 2017. The teleconference was opened by the Chair, Professor Lucille Blumberg, at 2:30 pm Central European Time. The Chair welcomed participants to the teleconference which had been called because of the increasing number of suspected and confirmed yellow fever cases in certain areas of Brazil. She emphasized the need to review the available evidence, revise current risk mapping and make recommendations. The situation was changing rapidly so the GRYF teleconference was precautionary. The agenda of the meeting is contained in Annex 1 and the list of participants can be found in Annex 2.

Review of evidence for revising risk mapping for Brazil

The Pan American Health Organization (PAHO) noted that the teleconference had been called because of the continuing expansion of the area of yellow fever transmission in Brazil:

- Human and epizootic cases were occurring in areas previously considered not to be at risk.
- The epidemiological situation was evolving rapidly.
- There was a need to take a preliminary and precautionary approach regarding travellers, particularly with the carnival coming soon.
- The teleconference would be the first step in a dynamic risk assessment process, as the definition of areas at risk would need to be revised regularly.

One week earlier GRYF members and advisers had been notified during their third teleconference of the growing outbreak of yellow fever infection in Minas Gerais State, an endemic area for YF transmission. Since then, however, human cases of yellow fever had also been confirmed in the states of Espírito Santo, Rio de Janeiro and São Paulo, and several suspected cases were being investigated in Bahia State. Each of these states have a border with Minas Gerais. It was noted that, in Espírito Santo State, the urban area of Vitoria (the state capital) is not affected, and the at-risk areas of Rio de Janeiro State are northern municipalities bordering Minas Gerais and Espírito Santo.

Epidemiological situation and the public health response

It was reported that, up to 26 January, 550 human cases of yellow fever were reported (72 confirmed, 23 discarded and 455 suspected cases under investigation), including 105 deaths (40 confirmed and 65 under investigation). A case fatality rate

of 55% was reported among confirmed cases. Of the deaths among confirmed cases, 37 occurred in the state of Minas Gerais.

Additionally, a large number of epizootic cases among non-human primates (NHP) were reported in the states of São Paulo (247 epizootic cases, including three confirmed) and Espírito Santo (367 epizootic cases).

Public health authorities at the federal, state and municipal levels are implementing a variety of measures. These include:

- In addition to the routine supply of 650 000 doses of yellow fever vaccine, Brazil's Ministry of Health has distributed the vaccine to the states of Bahia (400 000 doses), Espírito Santo (1 million doses), Minas Gerais (2.4 million doses), and Rio de Janeiro (350 000 doses).
- Vector control activities have begun in an effort to eliminate *Aedes aegypti* mosquito breeding sites in affected municipalities.
- Situation rooms have been established at both state and national levels.
- An Internet portal has been launched by the Ministry of Health to inform the public about the situation, provide guidance and answer questions.

Risk mapping and criteria for extending the area of risk

The GRYF was provided with maps developed by PAHO, showing the spread of infection in the affected states (including the locations of cases, both suspected and confirmed human and epizootic cases), as well as a detailed list of the new at-risk municipalities, as well as the geographical area for which yellow fever vaccination should be recommended as a precaution.

Criteria taken into account for including municipalities in the at-risk area were:

- evidence of transmission cycles currently sustaining the outbreaks and upsurge of human cases of yellow fever (distribution of new epizootic and human cases);
- a shared ecosystem (e.g. typology of forests, non-human primates, hydrogeological basins);
- domestic travel and trade routes;
- risk assessments by the health authorities of Bahia and Espírito Santo states;
- administrative borders of the municipalities.

Hydrological data showed that most new cases are occurring at the edge of rivers, mainly in Espírito Santo state, but also in Rio de Janeiro and Bahia states. Epizootic cases are *Allouatta*, *Callitrix* and *Cebus* monkeys.

The risk assessment presented to the GRYF was prepared by PAHO, and the Ministry of Health is currently conducting its own assessment of yellow fever risk. As the

Ministry of Health of Brazil was unable to participate in the teleconference, it was proposed to have a teleconference with the ministry the following week.

Discussion

GRYF members discussed in detail the maps and data presented, and the proposed extension of the area considered to be at risk for yellow fever infection. Participants in the teleconference expressed concern that the Espírito Santo State capital of Vitória was excluded from the at-risk sector of the maps, although most of the state was considered to be at risk for yellow fever. The exclusion was accepted for the time-being, though the GRYF agreed that the risk status of Vitória, currently classified as not at risk, should be considered carefully if the outbreak develops further.

Yellow fever vaccination coverage was estimated to be around 53% in Minas Gerais. Coverage in Espírito Santo was also considered to be low as normally only travellers going there would be vaccinated. However, while most people are not vaccinated because they are outside the area traditionally considered at risk, recent months have seen the expansion of infection towards the Atlantic coast.

GRYF members agreed that, while it was correct to consider the area at risk to have enlarged, it was important not to try to formally classify the additional municipalities as being at risk of yellow fever transmission in a permanent manner and avoid including them in the yellow fever risk map. A reclassification of these areas was considered to be premature and therefore the yellow fever risk map produced as in 2013 will remain unchanged¹. However the GRYF advise WHO to inform the public of the current increased risk in the additional municipalities, keeping in mind that the situation was still evolving. It would be more important to consider who needs to be vaccinated as a precaution and to give temporary travel advice accordingly.

Advice to travellers

The Chair summarized the GRYF's view that the classification should not be changed but that information should be shared to keep people aware of the changing situation.

The Secretariat said WHO would post temporary advice for travellers on its website and that a draft of this advice would be shared with members of the GRYF shortly after the end of the teleconference. GRYF members were requested to respond within 24 hours.

¹ Yellow fever vaccination recommendations in the Americas, 2013,
http://gamapserver.who.int/mapLibrary/Files/Maps/ITH_YF_vaccination_americas.png?ua=1

The temporary travel advice was published on the WHO website on 31 January:
<http://www.who.int/ith/updates/20170131/en/>.

Closure

Several questions were raised regarding details of the epidemiology of the outbreak. The Chair asked members with specific questions about epidemiology and other aspects of the outbreak to e-mail them to the contacts in PAHO.

Chair closed the meeting at 15:25 Central European Time.

Annex 1 – Agenda

4th Teleconference

WHO/HQ From 2:30 pm to 3:35 pm, Geneva time

Agenda

1. Opening Session

- Objectives of the meeting (Chair)

2. Review of evidence for revising risk mapping for Brazil

- a) Epidemiological situation and public health response for the outbreak of Yellow Fever in Brazil - WHO Secretariat PAHO (5-10min)
- b) Review of the criteria for risk classification agreed by GRYF (table 1) – WHO Secretariat HQ (5 min)
- c) Presentation of WHO rationale to extend the areas of risk for yellow fever transmission in Brazil as a precautionary measure, as published in the EIS – WHO Secretariat PAHO (10-15 min)
- d) Questions and answers from the GRYF members (20 min)

3. Closure

- Conclusion and next steps (Chair)

List of documents shared

1. WHO EIS on yellow fever outbreak in Brazil (internal to WHO, please do not distribute)
2. Table 1 with risk classification criteria
3. Maps Brazil – subnational level (internal to WHO, please do not distribute)
4. ECDC rapid risk assessment outbreak of yellow fever in Brazil

Annex 2 - List of participants

MEMBERS

Professor Lucille Hellen Blumberg, Chair

Deputy Director, National Institute for Communicable Disease (NICD), National Health Laboratory Service (NHLS), South Africa

Professor Oyewale Tomori, Vice Chair (absent)

Professor of virology, Redeemer's University, Nigeria

Dr Kalpana Baruah (rapporteur)

Joint Director, National Vector Borne Disease Control Programme, Ministry of Health & Family Welfare, India

Mark Gershman, MD

Medical Epidemiologist, Travelers' Health Branch, Division of Global Migration and Quarantine, Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Ms Susan Henry (absent)

Principal Consultant, Third Element Consulting, and Risk & Governance Discipline Program Leader, Emergency Management Australia, Attorney General's Department, Australia

Dr Amr Mohamed Kandeel (absent)

Chief, Preventive and Endemic Diseases Sector, Ministry of Health and Population, Egypt

Professor Mapatano Mala Ali

Department of Epidemiology and Nutrition, Ecole de Santé Publique, Democratic Republic of Congo

Dr Chang On

County Medical Officer of Health, Ministry of Health, Trinidad and Tobago

Dr Amadou Sall (absent)

Director of the WHO collaborating Center for arboviruses and viral hemorrhagic fevers, Institut Pasteur de Dakar, Senegal

Dr Néstor Sosa (absent)

Director General, Instituto Conmemorativo Gorgas de Estudios para la Salud (ICGES), Panama

Dr Pedro Fernando da Costa Vasconcelos

Head, Department of Arbovirology and Hemorrhagic Fevers, Director, National Reference Laboratory for Arboviruses, Director, National Institute for Viral Hemorrhagic Fevers, Brazil

Dr Herve Zeller

Senior expert and Head Emerging and Vector borne Disease Programme European Center for Disease Prevention and Control (ECDC), Sweden

ADVISERS

Dr Emily Jentes, PhD, MPH (excused)

CDR, USPHS, Division of Global Migration and Quarantine Centers for Disease Control and Prevention, USA

Dr Jennifer Erin Staples

Medical Epidemiologist, Arboviral Disease Branch, Division of Vector-borne Diseases, Centers for Disease Control and Prevention, USA

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