Epidemiological Update
Yellow Fever

9 March 2017

Situation summary in the Americas

Since epidemiological week (EW) 1 to EW 8 of 2017, **Brazil**, **Colombia**, **Peru,** and **the Plurinational State of Bolivia,** have reported suspected and confirmed yellow fever cases.

The following is a situation summary in Brazil.

In **Brazil**, since the beginning of the outbreak in December 2016 to EW 9 of 2017, there were 1,500 cases of yellow fever reported (371 confirmed, 163 discarded, and 966 suspected cases remain under investigation), including 241 deaths (127 confirmed, 8 discarded, and 106 under investigation). The case fatality rate (CFR) is 34% among confirmed cases and 11% among suspected cases.

According to the probable site of infection, 79% of the suspected and confirmed cases were reported in the state of Minas Gerais (1,057), followed by Espírito Santo (226), São Paulo (15), Bahia (7), Tocantins (6), Goías (1) and Rio Grande do Norte (1).[1] The confirmed cases are distributed in three states: Minas Gerais (288), Espírito Santo (79), and São Paulo (4). **Figure 1** illustrates the municipalities with confirmed cases and cases under investigation, as well as confirmed epizootics, and epizootics under investigation.

In the state of Minas Gerais, the downward trend in suspected and confirmed cases continues to decline for the fourth consecutive week. Meanwhile, in the state of Espírito Santo cases have increased from EW 1 to EW 4 of 2017 and it will be necessary to continue to observe the evolution of the epidemic (**Figure 2**).

With regard to the number of new cases (confirmed and under investigation) reported between 6 February and 6 March, there were 137 new cases in Espírito Santo and in Minas Gerais during the same period there were 239 new cases reported.

There is possibility of a change in the yellow fever transmission cycle in this current outbreak, however, to date *Aedes aegypti* has not been reported to have a role in transmission. In the states of Espírito Santo, the confirmed cases in the municipalities of Serra and Aracruz—both close to large urban areas—combined with the confirmation of epizootics and notification of

[1] There are also 24 suspected case for which the probable site of infection remains under investigation.

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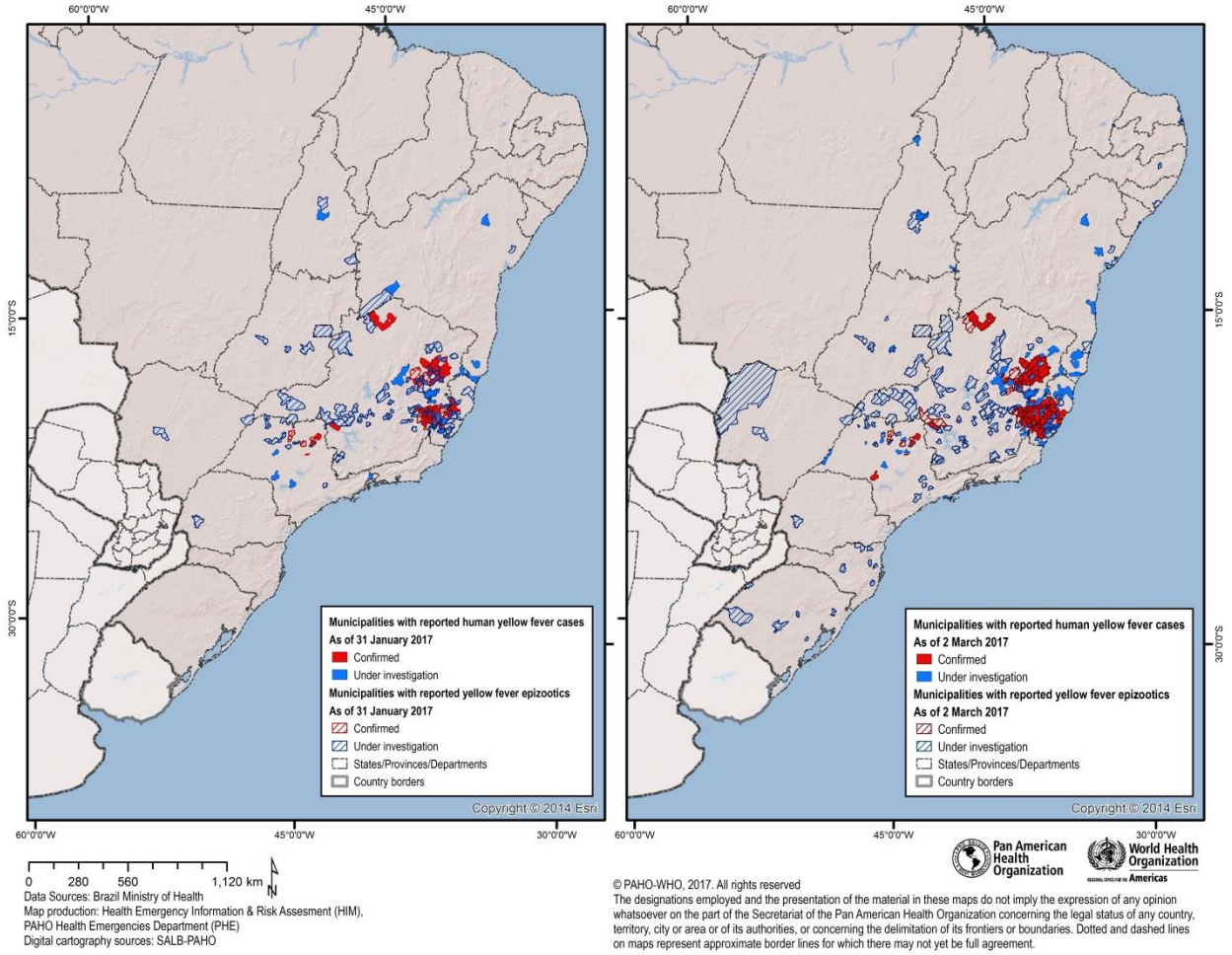
suspected cases in the municipality of Vitoria represent a high risk for a change in the transmission cycle.[2]

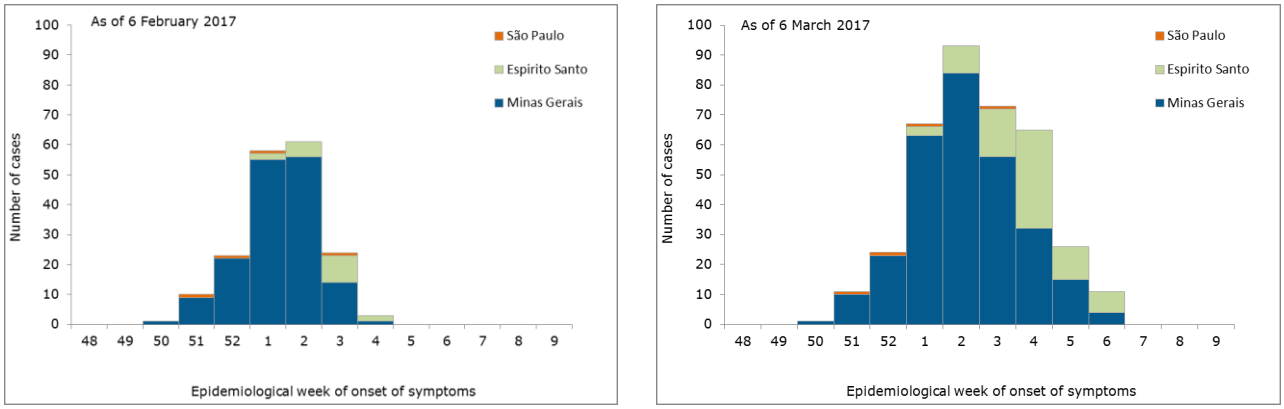
Figure 1. Geographic distribution of reported human yellow fever cases and yellow fever epizootics, Brazil, 31 January to 6 March 2017



Source: Data published by Brazil Ministry of Health (Monitoring of yellow fever cases and deaths) compiled and reproduced by PAHO/WHO

[2] Brazil Ministry of Health list of municipalities with confirmed and reported cases, available at: http://portalarquivos.saude.gov.br/images/2017/SVS/Municipios_casos_suspeitos_e_confirmados_febre_amarela_.pdf

Figure 2. Distribution of confirmed yellow fever cases by place of occurrence and epidemiological week of onset of symptoms. Brazil, 6 February and 6 March 2017



Source: Data published by Brazil Ministry of Health (Monitoring of yellow fever cases and deaths) compiled and reproduced by PAHO/WHO

With regard to the confirmed fatal cases, 105 were infected in the state of Minas Gerais, 3 in the state of São Paulo and 19 in the state of Espírito Santo. In decreasing order, the CFR among suspected and confirmed cases by state is 75% in São Paulo, 36% in Minas Gerais, and 24% in Espírito Santo.

Since the last yellow fever Epidemiological Update[3] up to 6 March 2017, a total of 9 new epizootics were reported in nonhuman primates (NHP) and are under investigation. No new epizootics have been confirmed during this period. Since the beginning of the outbreak, a total of 968 NHP epizootics were reported, of which 386 were yellow fever confirmed and 8 were discarded.

Epizootics in NHP were reported in the Federal District and in the states of Alagoas, Bahia, Goiás, Espírito Santo, Mato Grosso do Sul, Minas Gerais, Paraná, Pernambuco, Rio Grande do Norte, Rio Grande do Sul, Santa Catarina, São Paulo, Sergipe, and Tocantins.

To date, there have been no reports of yellow fever cases linked to the current outbreak in Brazil in other countries and/or territories in the Americas. However, the Pan American Health Organization, Regional Office of the World Health Organization (PAHO/WHO) reiterates that reports of epizootics, currently under investigation, in states of Brazil bordering other countries—Mato Grosso do Sul (bordering Bolivia and Paraguay), Santa Catarina (bordering Argentina), Rio Grande do Sul (bordering Uruguay and Argentina), and Paraná (bordering Argentina and Paraguay)—represent a risk of spread of the virus to the bordering countries, especially in areas with similar ecosystems.

[3] PAHO/WHO Epidemiological Update: Yellow Fever. 2 March 2017. Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&Itemid=270&gid=38466&lang=en

The Brazil situation report on the yellow fever outbreak is published by the Brazil Ministry of Health and is available on their website at: http://portalsaude.saude.gov.br/index.php/o-ministerio/principal/leia-mais-o-ministerio/619-secretaria-svs/l1-svs/27300-febre-amarela-informacao-e-orientacao.

The updated requirements for the **International Certificate of Vaccination or Prophylaxis (ICVP)** with proof of vaccination against yellow fever are available at: http://www.paho.org/hq/index.php?option=com_topics&view=article&id=69&Itemid=40784&lang=en

Recommendations

Taking into account the dynamics of yellow fever spread observed in the state of Espirito Santo, the occurrence of cases close to large urban areas, as well as the expansion of the vaccination campaign against yellow fever in the entire state of Espirito Santo, the Secretariat of the World Health Organization (WHO) has determined that the state of Espirito Santo in its entirety should be considered at risk of transmission of yellow fever.

Accordingly, vaccination against yellow fever is recommended for international travelers visiting any area of the state of Espírito Santo in Brazil.

There are no additional changes with respect to other areas of Brazil determined to be at risk for the transmission of yellow fever in 2013 and those that were published by WHO through the Disease Outbreak News.[4]

Related Links

- PAHO/WHO Yellow Fever. Available at: http://www.paho.org/hq/index.php?option=com_topics&view=rdmore&cid=5514&Itemid=40784&lang=en

- PAHO/WHO Guidance on Laboratory Diagnosis of Yellow Fever Virus Infection, February 2017, Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&Itemid=270&gid=38104&lang=en

[4] WHO Disease Outbreak News, Yellow Fever, Updates on yellow fever vaccination recommendations for international travelers related to the current situation in Brazil. 6 March 2017 available at: http://www.who.int/csr/don/06-march-2017-yellow-fever-brazil/en/

References

1. Yellow fever reports. Brazil Ministry of Health. Available at: http://portalsaude.saude.gov.br/index.php/o-ministerio/principal/leia-mais-o-ministerio/619-secretaria-svs/l1-svs/27300-febre-amarela-informacao-e-orientacao

2. National Center for Epidemiology, Prevention and Control of Diseases - MINSA of the Ministry of Health of Peru; Situational Room for Health Situation Analysis – EW 8 of 2017: Yellow Fever. Available at: http://www.dge.gob.pe/portal/index.php?option=com_content&view=article&id=14&Itemid=121

3. Epidemiological Bulletin EW 8. Colombia National Institute of Health. 2017. Available at: http://www.ins.gov.co/boletin-epidemiologico/Paginas/default.aspx

4. PAHO/WHO. Control of Yellow Fever. Field Guide. 2005. Scientific and Technical Publication No. 603. Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&Itemid=270&gid=20159&lang=en