

## Situation summary in the Americas

Between January 2016 and December 2017, seven countries and territories of the Region of the Americas reported confirmed cases of yellow fever: the Plurinational State of Bolivia, Brazil, Colombia, Ecuador, French Guiana, Peru, and Suriname. The number of human cases and epizootics collectively reported in this period in the Region of the Americas is the highest observed in decades. The observed increase is as much related to an ecosystem favorable to the dissemination of the virus as to the unimmunized populations.

Since the [13 December 2017 Epidemiological Update on Yellow Fever](#) published by the Pan American Health Organization / World Health Organization (PAHO/WHO), only **Brazil** reported new yellow fever cases. A summary of the situation in this country is provided below.

In **Brazil**, following the yellow fever outbreak reported between the second semester of 2016 and June 2017, during which 777 confirmed cases, 261 deaths, and 1,659 epizootics were reported, there was a period with low transmission in humans. There were 11 confirmed cases reported between epidemiological week (EW) 28 and EW 52 of 2017 in the Federal District (1 case) and in the states of São Paulo (8 cases), Minas Gerais (1 case), and Rio de Janeiro (1 case). For the cases confirmed in São Paulo state, the probable site of infection are the municipalities of Itatiba, Jundiaí, Mairiporã, and Nazaré Paulista.<sup>1</sup> The cases notified in Minas Gerais and in Rio de Janeiro's probable site of infection are the municipalities of Brumadinho<sup>2</sup> and Gupimirim<sup>3</sup>, respectively. **Figure 1** shows the distribution of confirmed cases in the country from EW 1 of 2016 to EW 52 of 2017.

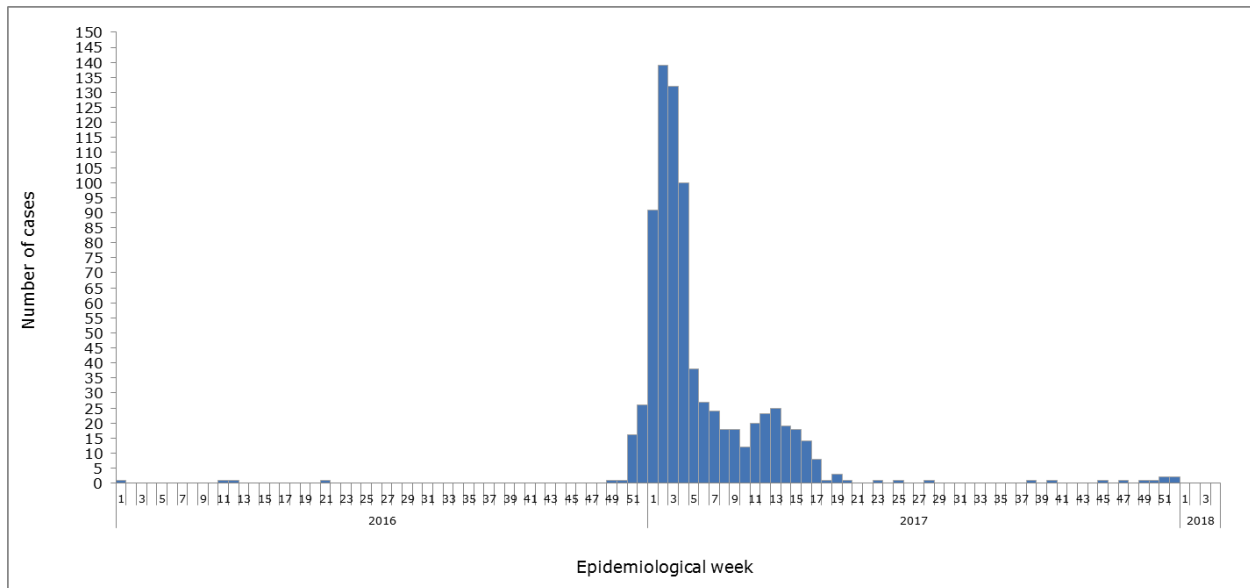
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<sup>1</sup> São Paulo State Health Secretary. Yellow fever epidemiological bulletin. Available at: <http://bit.ly/2qZVisQ>

<sup>2</sup> Minas Gerais State Health Secretary. Available at: <http://bit.ly/2r1ybyd>

<sup>3</sup> Brazil Ministry of Health. Monitoring the yellow fever seasonal period. Report No. 02. Brazil - 2017/2018 (21 November 2017). Available at: <http://portalarquivos2.saude.gov.br/images/pdf/2017/novembro/21/af-informe-febre-amarela-2c.pdf>

**Figure 1.** Distribution of confirmed yellow fever cases by epidemiological week (EW). Brazil, 2016 – 2017



**Source:** Data published by the Ministry of Health of Brazil and reproduced by PAHO/WHO

From July 2017 to EW 1 of 2018 a total of 2,296 epizootics were reported, of which 358 were confirmed for yellow fever, 790 were classified as undetermined (samples were not collected), 687 remain under investigation, and 461 were discarded. The state with the highest number of confirmed epizootics is São Paulo (322). Epizootics were also confirmed in Mato Grosso (1), Minas Gerais (32) and Rio de Janeiro (3). The occurrence of confirmed epizootics in Minas Gerais and São Paulo in the same areas affected by the 2016-2017 outbreak suggest the persistence of the risk of occurrence of human cases.

The 2,296 epizootics were reported in 21 federal entities, including in municipalities that were previously considered as no at risk for yellow fever.

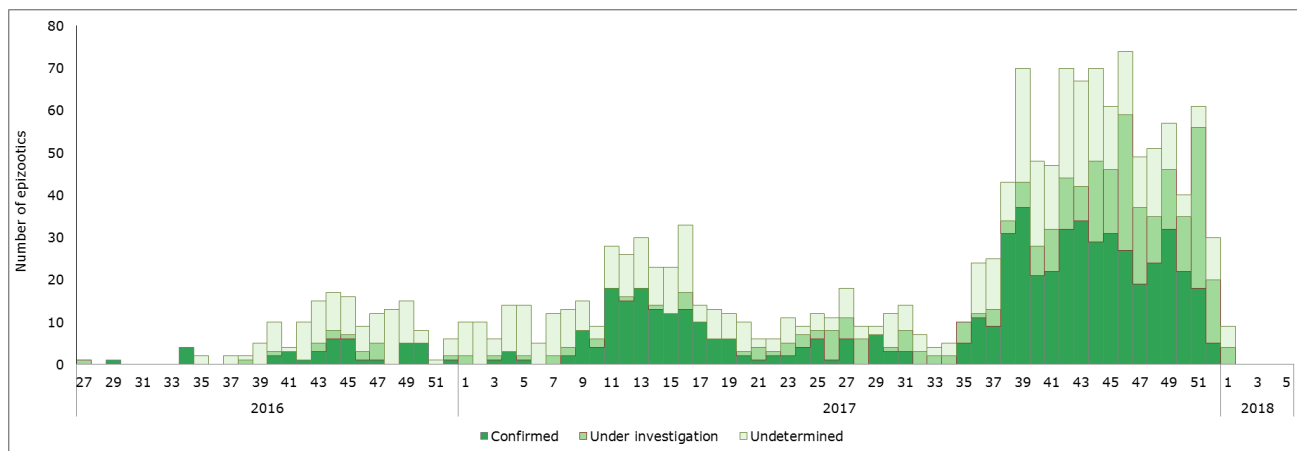
To date, there is no evidence that *Aedes aegypti* is implicated in the transmission.

Considering that a decade ago, the outbreak of yellow fever and the epizootic wave that had affected southeastern and southern Brazil had subsequently reached Argentina and Paraguay, it is necessary to closely monitor the yellow fever situation in the south and southeast of Brazil during the 2017-2018 period.

**Figure 2** shows continuous occurrence of epizootics in São Paulo state, even during months with low temperatures and unfavorable climatic conditions for transmission.

In early January 2018, in order to prevent large yellow fever outbreak the Ministry of Health of Brazil announced plans to conduct a mass yellow fever vaccination campaign, which will include both standard (0.5 mL) and fractional (0.1 mL) doses. The campaign will be conducted between February and March in São Paulo, Rio de Janeiro, and Bahia states, targeting 19.7 million persons (15 million with the fractional dose and 4.7 million with the standard dose) living in 76 municipalities of these three states. In addition, standard doses vaccination in areas considered at risk will be delivered.

**Figure 2.** Distribution of reported epizootics per EW according to classification. São Paulo state, EW 27 of 2016 to EW 1 of 2018.



**Source:** Data published by the São Paulo State Health Secretary and reproduced by PAHO/WHO

## Recommendations

PAHO/WHO encourages Member States to continue efforts to immunize the at risk populations and take the necessary actions to keep travelers informed and vaccinated, when heading to areas where yellow fever vaccination is recommended.

### Vaccination

The yellow fever vaccine is safe and affordable and provides effective immunity against the disease in the range of 80 to 100% of those vaccinated after 10 days and 99% immunity after 30 days. A single dose provides life-long protection against yellow fever disease. A booster dose of yellow fever vaccine is not needed.

Given the limitations on the availability of vaccines and with the aim of promoting the rational use, PAHO/WHO reiterates its recommendations to national authorities:

1. Conduct an assessment of vaccination coverage against yellow fever in areas at risk at the municipal level to guarantee at least 95% coverage<sup>4</sup> among the resident population of these areas.
2. Member States that are not currently experiencing outbreaks should not conduct yellow fever immunization campaigns. Priority should be given to the use of vaccines in susceptible populations and to avoid revaccination.
3. Ensure vaccination of all travelers to endemic areas at least 10 days before traveling.

<sup>4</sup> Pan American Health Organization. Regional immunization action plan. 54th Directing Council of PAHO, 67th session of the WHO Regional Committee for the Americas; 28 September – 1 October 2015; Washington (DC), United States. Washington (DC): PAHO; 2015. Available at: [http://www2.paho.org/hq/index.php?option=com\\_content&view=article&id=13101&Itemid=42296&lang=en](http://www2.paho.org/hq/index.php?option=com_content&view=article&id=13101&Itemid=42296&lang=en)

4. Depending on vaccine availabilities, Member States should have a small stock that allows them to respond to outbreaks.
5. Postpone routine vaccination in children in non-endemic areas until sufficient vaccines are available. Once there is availability, catch-up campaigns should be conducted to complete vaccination schedules.

## Precautions

It is recommended to individually assess the epidemiological risk of contracting disease when faced with the risk of an adverse event occurring in persons over 60 years who have not been previously vaccinated.

- The vaccine can be offered to individuals with asymptomatic HIV infection with CD4+ counts  $\geq 200$  cells / mm<sup>3</sup> requiring vaccination.
- Pregnant women should be vaccinated in emergency epidemiological situations and following the explicit recommendations of health authorities.
- Vaccination is recommended in nursing women who live in endemic areas, since the potential risk of transmitting the vaccine virus to the child is far lower than the benefits of breastfeeding.
- For pregnant or lactating women traveling to areas with yellow fever transmission, vaccination is recommended when travel cannot be postponed or avoided. They should receive advice on the potential benefits and risks of vaccination to make an informed decision. The benefits of breastfeeding are superior to those of other nutritional alternatives.

The following people are usually excluded from yellow fever vaccination:

- Immunocompromised individuals (Including those with thymus disorders, symptomatic HIV, malignant neoplasms under treatment, and those that are receiving or have received immunosuppressive or immunomodulatory treatments, recent transplants, and current or recent radiation therapy).
- People with severe allergies to eggs and their derivatives.

## Related Links

- Brazil Ministry of Health. Yellow Fever Reports. Available at: <http://portals.saude.gov.br/saude-de-a-z/febre-amarela/situacao-epidemiologica-dados>

- PAHO/WHO Yellow Fever. Available at:  
[http://www.paho.org/hq/index.php?option=com\\_topics&view=rdmore&cid=5514&Itemid=40784&lang=en](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. Available at:  
[http://www.paho.org/hq/index.php?option=com\\_docman&task=doc\\_download&Itemid=270&gid=38104&lang=en](http://www.paho.org/hq/index.php?option=com_docman&task=doc_download&Itemid=270&gid=38104&lang=en)
- PAHO/WHO. Requirements for the International Certificate of Vaccination or Prophylaxis (ICVP) with proof of vaccination against yellow fever. Available at:  
[http://www.paho.org/hq/index.php?option=com\\_topics&view=article&id=69&Itemid=40784&lang=en](http://www.paho.org/hq/index.php?option=com_topics&view=article&id=69&Itemid=40784&lang=en)