

## Situation summary in the Americas

Between January 2017 and December 2018, six countries and territories in the Region of the Americas reported confirmed cases of yellow fever: Bolivia, Brazil, Colombia, Ecuador, French Guiana, and Peru. The number of cases reported during this period in the Region of the Americas exceeded the number reported in several decades.

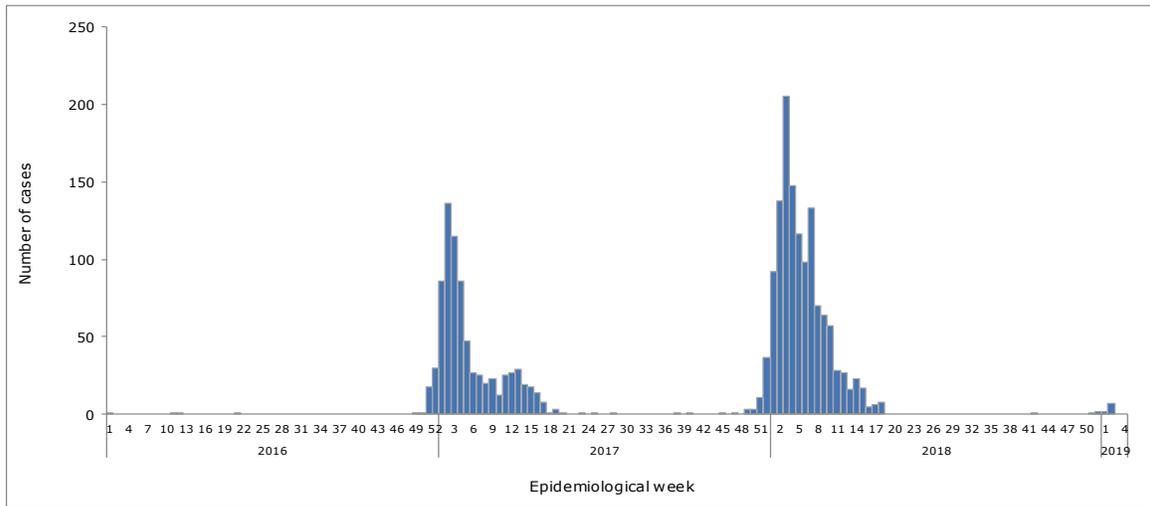
In 2019, Brazil and Peru reported confirmed cases that occurred between December 2018 and January 2019. The following is a summary of the epidemiological situation in both of these countries.

In **Brazil**, it is currently the period which has historically been recognized as having the highest transmission (seasonal period), which occurs between December and May. The expansion of the historical area of yellow fever transmission to areas previously considered risk-free led to two waves of transmission (**Figure 1**), one during the 2016-2017 seasonal period, with 778 human cases, including 262 deaths, and another during the 2017-2018 seasonal period, with 1,376 human cases, including 483 deaths.

In the current seasonal period (2018-2019), 12 confirmed human cases, including 6 deaths, have been reported in the municipalities of Eldorado (9 cases), Jacupiranga (1 case), Iporanga (1 case), and Cananeia (1 case), all of which are located in the southern part of São Paulo State. Among these confirmed cases, 83% (10/12) are male, the median age is 45 years, and 83% (10/12) are rural workers. Additionally, the Paraná Secretariat of Health reported that the tests performed on dead monkeys in Antonina, on the Paraná coast, were positive for yellow fever.

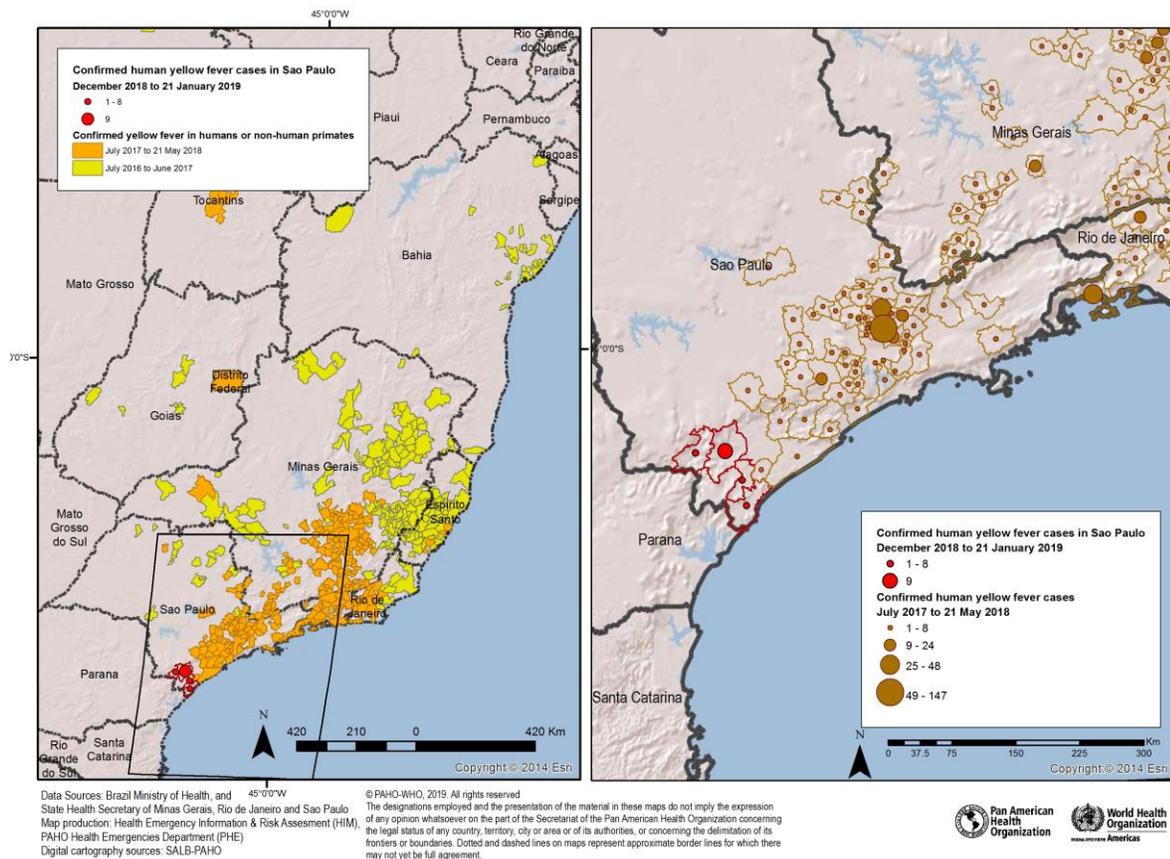
Human cases reported during the current 2018-2019 seasonal period in four municipalities in São Paulo State, as well as the confirmation of epizootics in the state of Paraná, mark the beginning of what could be a third cycle and a progression of the outbreak towards the Southeast and South regions of the country (**Figure 2**).

**Figure 1.** Distribution of confirmed human yellow fever cases by epidemiological week (EW). Brazil, 2016–2019.



**Source:** Data published by the Brazil Ministry of Health (2016-2018, as of EW 50) and the São Paulo State Secretariat of Health (EW 51 of 2018 to EW 2 of 2019) and reproduced by PAHO/WHO

**Figure 2.** Distribution of epizootics and confirmed human cases. Brazil, 2016 to EW 2 of 2019.



**Source:** Data published by the Brazil Ministry of Health (2016-2018, as of EW 50) and the São Paulo State Secretariat of Health (EW 51 of 2018 to EW 2 of 2019) and reproduced by PAHO/WHO

Given the gradual geographical expansion of the epizootic wave that Brazil has faced during the last two seasonal periods, the country has had to adapt its immunization policies for yellow fever. The number of areas with recommended vaccination has increased from 3,526 municipalities in 2010 to 4,469 municipalities in 2018, and to the entire country starting in 2019. In line with the World Health Organization guidelines, Brazil has adopted a single dose vaccination scheme for yellow fever since April 2017. The use of fractional doses to respond to outbreaks and the risk of urbanization of yellow fever, especially in large cities, was also adopted. This strategy was implemented in 77 municipalities with the greatest risk for yellow fever in the states of São Paulo (54 municipalities), Rio de Janeiro (15 municipalities), and Bahia (8 municipalities).

As of epidemiological week (EW) 39 of 2018, preliminary results of the mass vaccination campaign against yellow fever indicate that 13.3 million people in São Paulo, 6.5 million in Rio de Janeiro, and 1.85 million in Bahia states were vaccinated, which represent vaccination coverage of 53.6%, 55.6% and 55.0%, respectively<sup>1</sup>.

In **Peru**, between EW 1 and EW 52 of 2018, there were 20 cases of yellow fever reported, including 6 deaths; of the total cases, 10 were laboratory-confirmed and 10 remain under investigation. This figure is higher than that reported during the same period in 2017 when 6 cases of yellow fever were reported. Of the total confirmed cases, 11 are male and 9 are female.

In 2018, the confirmed cases were from the departments with forests: Loreto, San Martín, Ucayali, and Madre de Dios.

## Advice for national authorities

The occurrence of the first confirmed human cases of yellow fever in Brazil marks the beginning of the seasonal period (December to May) and therefore, the highest risk of transmission to unvaccinated humans. Thus, the Pan American Health Organization / World Health Organization (PAHO/WHO) reiterates its recommendation that Member States with areas at-risk for yellow fever continue efforts to immunize the at-risk populations and to take the necessary actions to keep travelers informed and vaccinated prior to traveling to areas where yellow fever vaccination is recommended.

Recommendations for international travelers regarding yellow fever vaccination are available at: <http://www.who.int/ith/en/>

The guidelines pertaining to laboratory diagnosis and vaccinations are the same as those published in the 7 December 2018 PAHO/WHO Epidemiological Update<sup>2</sup>.

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<sup>1</sup> It should be noted that these figures include 11.3 million people vaccinated in the three states prior to the start of the mass vaccination campaign, which began on 25 January 2018 in São Paulo and Rio de Janeiro and on 19 February 2018 in Bahia.

<sup>2</sup> PAHO/WHO. Epidemiological Update: Yellow Fever. 7 December 2018, Washington, D.C.: PAHO/WHO; 2018. Available at: <https://bit.ly/2Qhwucf>

## Sources of information

- São Paulo State Secretariat of Health, **Brazil**. Yellow Fever Epidemiological Bulletin. Available at: <https://bit.ly/2qZVisQ>
- Paraná State Secretariat of Health, **Brazil**. Tests confirm yellow fever virus in dead monkeys in Paraná. Available at: <https://bit.ly/2UilyqT>
- **Peru** Ministry of Health. Situation room for the Health Situation Analysis: Yellow fever. Available at: <https://bit.ly/2LbENZV>

## Related Links

- PAHO/WHO. Yellow Fever. Available at: <https://bit.ly/2sHAfcl>
- PAHO/WHO. Laboratory Diagnosis of Yellow Fever Virus Infection. Available at: <https://bit.ly/2zuEwE0>
- PAHO/WHO. Requirements for the International Certificate of Vaccination or Prophylaxis (ICVP) with proof of vaccination against yellow fever. Available at: <https://bit.ly/2sGvnnV>