

### Situation summary in the Americas

In 2019, three countries in the Region of the Americas (Bolivia, Brazil, and Peru) have reported confirmed yellow fever cases occurring between December 2018 and February 2019.

In 2018, there were five countries and territories in the Region of the Americas that reported confirmed cases of yellow fever: Bolivia, Brazil, Colombia, French Guiana, and Peru.

The following provides a situation summary of the countries that reported confirmed yellow fever cases in 2019.

In **Bolivia**, a confirmed yellow fever case was reported in a 17-year-old unvaccinated male with onset of symptoms on 11 February 2019 and probable site of infection in Villa Tunari, Cochabamba Department, an area considered at-risk for yellow fever. There have been no reports of epizootics associated with this case. Samples were tested at the National Center for Tropical Diseases (CENETROP, per its acronym in Spanish) and confirmed for yellow fever by IgM detection and PCR technique.

The last previous confirmed yellow fever case had been reported in the province of San Ramón, Beni Department, in 2018. In the last five years, Bolivia has reported 6 confirmed cases, the majority of which occurred in La Paz Department.

**Brazil** is currently in the period historically 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 confirmed human cases, including 262 deaths, and another during the 2017-2018 seasonal period, with 1,376 confirmed human cases, including 483 deaths.

In the current seasonal period (2018-2019), 50 confirmed human cases, including 12 deaths, have been reported in the states of São Paulo (46 cases) and Paraná (4 cases). In São Paulo, the municipalities considered as probable sites of infection are: Eldorado (15 cases), Iporanga (12 cases), Cananeia (4 cases), Cajati (3 cases), Barra do Turbo (2 cases), Jacupiranga (2 cases), Caraguatatuba (1 case), Registro (1 case), Pariquera-açu (1 case), Serra Negra (1 case), Sete Barras (1 case), Juquiá (1 case), Vargem (1 case), and the probable site of infection for 1 case remains under investigation. With the exception of Serra

Negra, Vargem (bordering the state of Minas Gerais), and Caraguatatuba, the rest of the municipalities are in the southern part of the state of São Paulo.

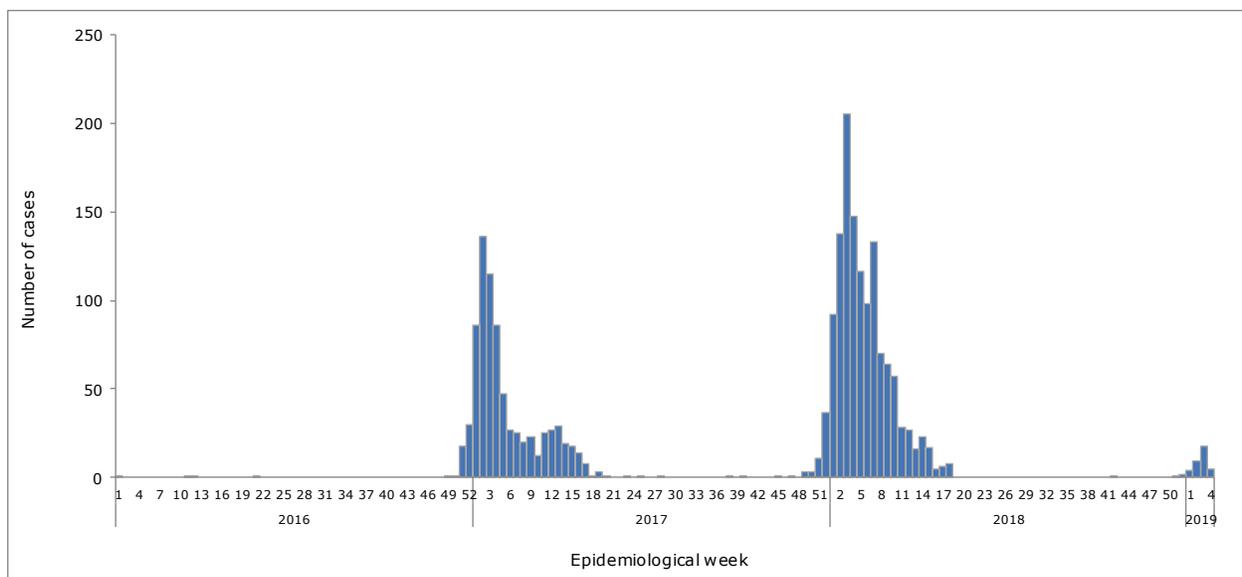
The probable sites of infection for the 4 confirmed cases in the state of Paraná are Guaraqueçaba (2 cases) and Adrianópolis (2 cases) municipalities.

Among confirmed cases, 90% (45/50) are male and the median age is 43 years (range 18 to 87 years). All of the deaths occurred among confirmed cases in the state of São Paulo.

To date, the number of human cases reported during the current 2018-2019 seasonal period is substantially lower than observed during the two previous seasonal periods, when the number of cases surpassed that which was reported in several decades. Nonetheless, the occurrence of cases and epizootics in the southern part of the state of São Paulo and in the state of Paraná indicates the progression of transmission towards the Southeast and South regions of the country (**Figure 2**), with the possibility of reaching bordering countries such as Argentina and Paraguay.

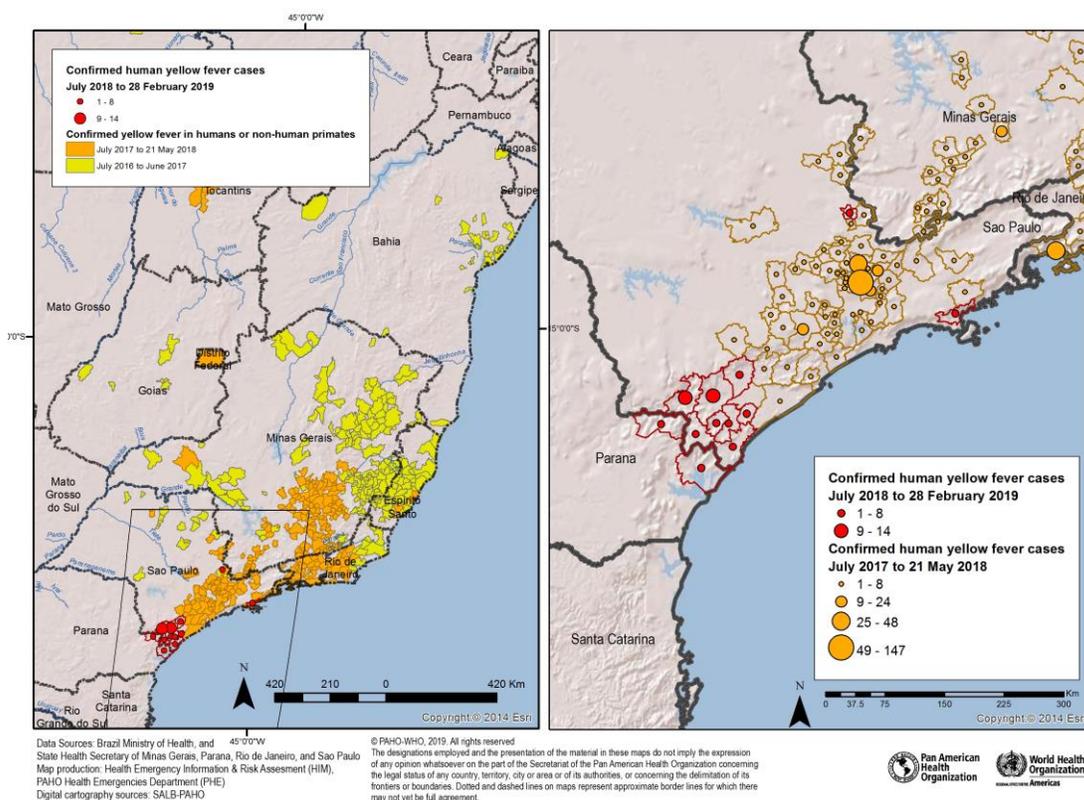
In the 2018-2019 seasonal period, most of the confirmed epizootics (90%) were reported in the Southeast Region of the country (27/30). In epidemiological week (EW) 4 of 2019, a confirmed epizootic was also reported in the South Region in the state of Paraná, in areas where yellow fever virus circulation was not detected since the re-emergence of the virus in 2014.

**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 9 of 2019) and reproduced by PAHO/WHO

**Figure 2.** Distribution of epizootics and confirmed human cases. Brazil, 2016 to EW 9 of 2019.



**Source:** Data published by the Brazil Ministry of Health (2016-2018, as of EW 50) and the São Paulo and Paraná State Secretariats of Health (EW 51 of 2018 to EW 9 of 2019) and reproduced by PAHO/WHO

In **Peru**, between EW 1 and EW 8 of 2019, 9 cases of yellow fever were reported, including one confirmed case and 8 probable cases that remain under investigation.

In the last five years (2014-2018), a total of 121 yellow fever cases were reported in Peru, of which 21 were confirmed and 100 cases were classified as probable.

## Advice for national authorities

The Pan American Health Organization / World Health Organization (PAHO/WHO) encourages 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>1</sup>.

<sup>1</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

- **Bolivia** International Health Regulations (IHR) National Focal Point (NFP) reported provided by email to PAHO/WHO.
- **Brazil** International Health Regulations (IHR) National Focal Point (NFP) reported provided by email to PAHO/WHO.
- São Paulo State Secretariat of Health, **Brazil**. Yellow Fever Epidemiological Bulletin. Available at: <https://bit.ly/2qZVisQ>
- Paraná State Secretariat of Health, **Brazil**. Yellow Fever Epidemiological Bulletin. Available at: <https://bit.ly/2H0WDqJ>
- **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>