

Situation summary in the Americas

In 2017, as of 8 February, yellow fever cases have been confirmed in Brazil, whereas **Colombia** and **Peru** have only reported probable cases, one and three respectively.

In **Brazil**, between 1 December 2016 and 8 February 2017, there were 1,060 cases of yellow fever reported (215 confirmed, 80 discarded, and 765 suspected cases remain under investigation), including 166 deaths (70 confirmed, 3 discarded, and 93 under investigation). The case fatality rate (CFR) is 33% among confirmed cases and 12% among suspected cases.

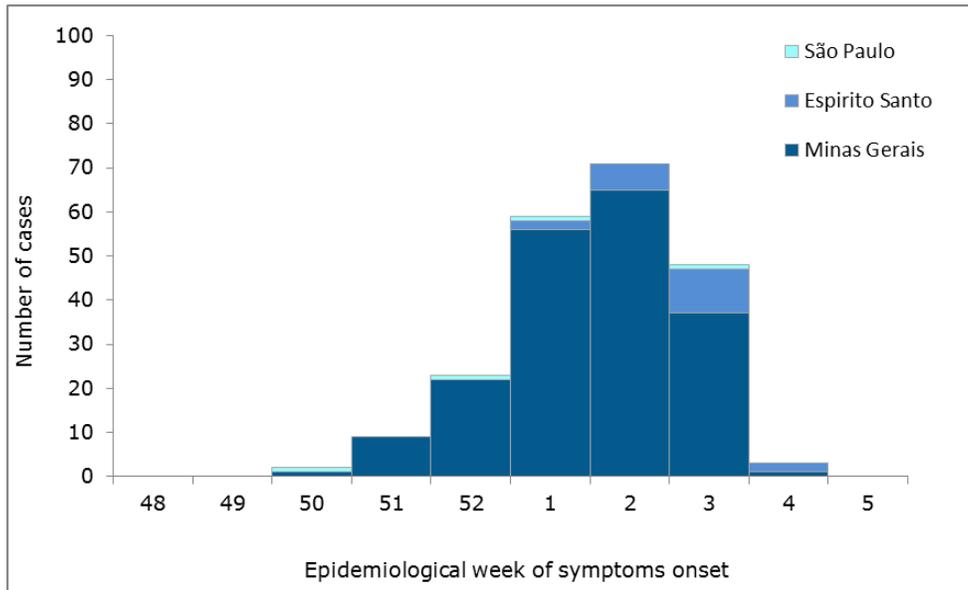
According to the probable site of infection, the suspected and confirmed cases are distributed in five states: Bahia (9), Espírito Santo (109), Minas Gerais (847), São Paulo (9), and Tocantins (1).¹

The confirmed cases are distributed in three states: Espírito Santo (20), Minas Gerais (191), and São Paulo (4) (**Figure 1**). Of the confirmed cases, 69% were men between 21 and 60 years of age (**Figure 2**).

With regard to the confirmed deaths, 61 occurred in the state of Minas Gerais, three in the state of São Paulo and 6 in the state of Espírito Santo. In decreasing order, the CFR among suspected and confirmed cases by state is 33% in São Paulo, 7% in Minas Gerais, and 6% in Espírito Santo.

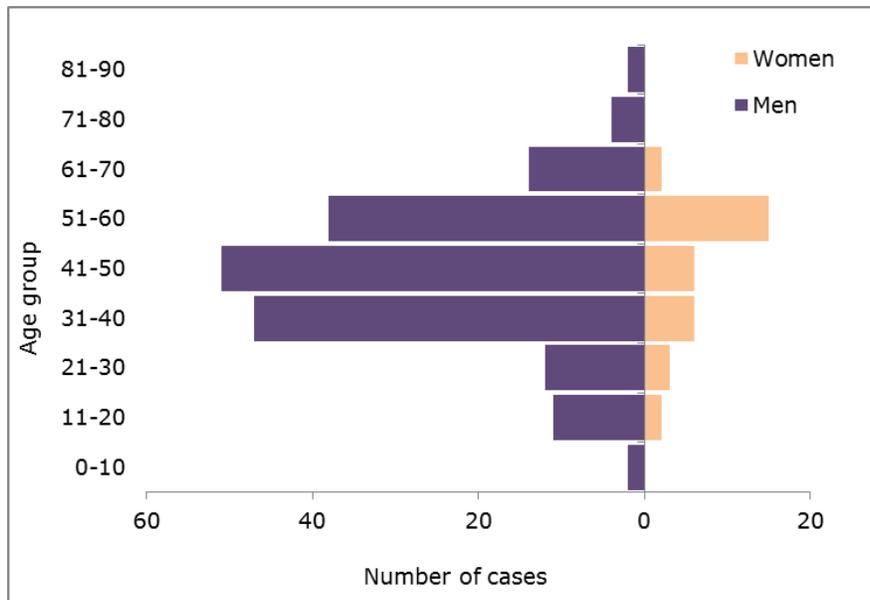
¹ There are also five suspected case for which the probable site of infection remains under investigation.

Figure 1. Distribution of confirmed cases of yellow fever by epidemiological week (EW) of symptom onset, Brazil, EW 48 of 2016 to EW 4 of 2017



Source: Brazil Ministry of Health

Figure 2. Distribution of confirmed cases of yellow fever by age and sex, Brazil, EW 48 of 2016 to EW 4 of 2017 (N= 215)



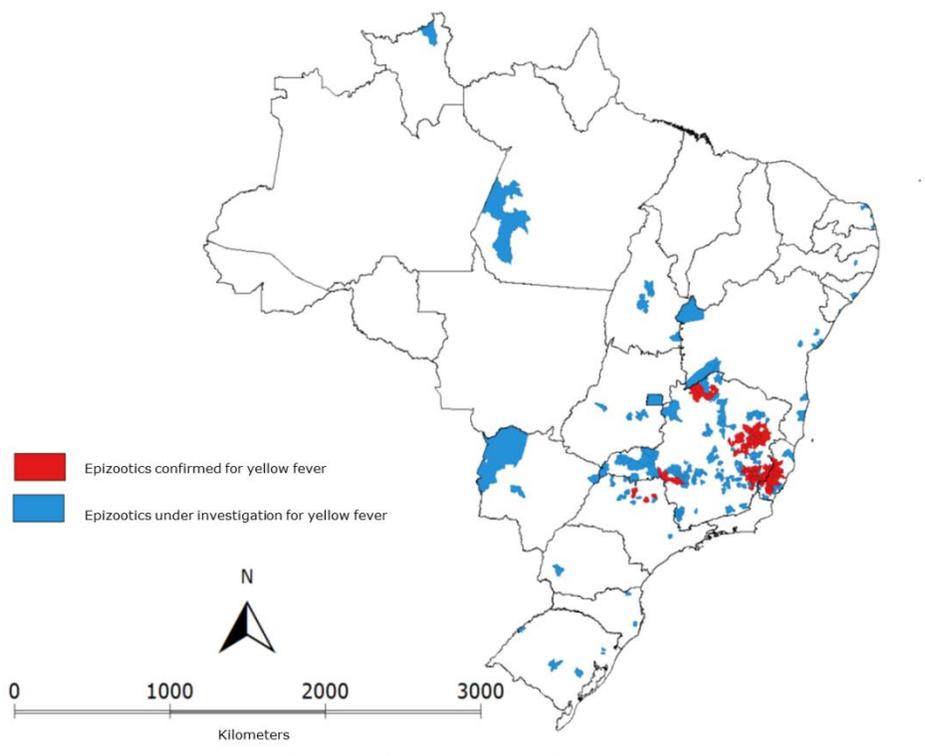
Source: Brazil Ministry of Health

In addition, 531 epizootics were reported in nonhuman primates (NHP), with a total of 1,408 NHP deaths. To date, 298 of them were yellow fever confirmed.

Epizootics in NHP were reported in the states of Alagoas, Bahia, Goiás, Espírito Santo, Mato Grosso do Sul, Minas Gerais, Pará, Paraná, Pernambuco, Rio Grande do Norte, Rio

Grande do Sul, Roraima, Santa Catarina, São Paulo, Sergipe, Tocantins, and the Federal District (**Figure 3**). Although 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, reports of epizootics, currently under investigation, in states of Brazil bordering other countries—Roraima (bordering Venezuela), Pará (bordering Suriname and Guyana), 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.

Figure 3. Distribution of yellow fever epizootics, Brazil, 1 December 2016 to 8 February of 2017



Source: Brazil Ministry of Health

In response to this situation, public health authorities at the federal, state and municipal levels are implementing various activities, including the distribution of 9.9 million vaccines to the states of Minas Gerais, Espírito Santo, São Paulo, Bahia, and Rio de Janeiro.

While the possibility of a change in the yellow fever transmission cycle in this current outbreak remains, to date there is no evidence that *Aedes aegypti* plays a role in the transmission.

The Brazil situation report on the yellow fever outbreak is published daily and is 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>

Recommendations

The Pan American Health Organization, Regional Office of the World Health Organization (PAHO / WHO), recommends Member States to continue efforts to detect, confirm, and appropriately treat cases of yellow fever in a timely manner and in a context of circulation of various arboviruses. Member States are encouraged to keep health care personnel up-to-date and trained to detect and treat cases especially in well-known areas of virus circulation.

The most important yellow fever prevention measure is vaccination. Preventive vaccination can be carried out through systematic immunization in childhood or through unique mass campaigns to increase vaccination coverage in risk areas and also through vaccination of those traveling to at-risk areas.

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 is sufficient to confer immunity and protection for life, without the need for booster doses.** Severe side effects are extremely rare.

Given the limitations on the availability of vaccines, it is recommended that national authorities conduct an assessment of vaccination coverage against yellow fever in risk areas in order to focus the distribution of vaccines. In addition, it is recommended to keep a stock of vaccines at a national level to respond to possible outbreaks.

PAHO/WHO does not recommend any restrictions on travel or trade to countries with ongoing outbreaks of yellow fever.

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/11-svs/27300-febre-amarela-informacao-e-orientacao>
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