
Regional situation summary

In the Region of the Americas, the risk of yellow fever outbreaks occurring is high. While immunization is one of the most successful public health interventions to prevent this disease, the COVID-19 pandemic, among other factors, has led to vaccination activities being affected, impacting vaccination coverage against yellow fever (1,2).

As of 19 March 2024, Colombia, Guyana, and Peru have reported yellow fever cases in the Region of the Americas.

It is necessary for countries to guarantee vaccination coverage is uniformly greater than or equal to 95% and for health authorities to ensure they have a strategic reserve inventory that allows them to maintain routine vaccination and, at the same time, respond to possible outbreaks (3).

Epidemiological situation of yellow fever in the Region of the Americas

In 2023, four countries in the Region of the Americas reported 41 confirmed cases of yellow fever, including 23 deaths: Bolivia (five cases, including two deaths) (4,5), Brazil (six cases, including four deaths) (6), Colombia (two cases, including one death) (7,8), and Peru (28 cases, including 16 deaths) (9) (Figure 1).

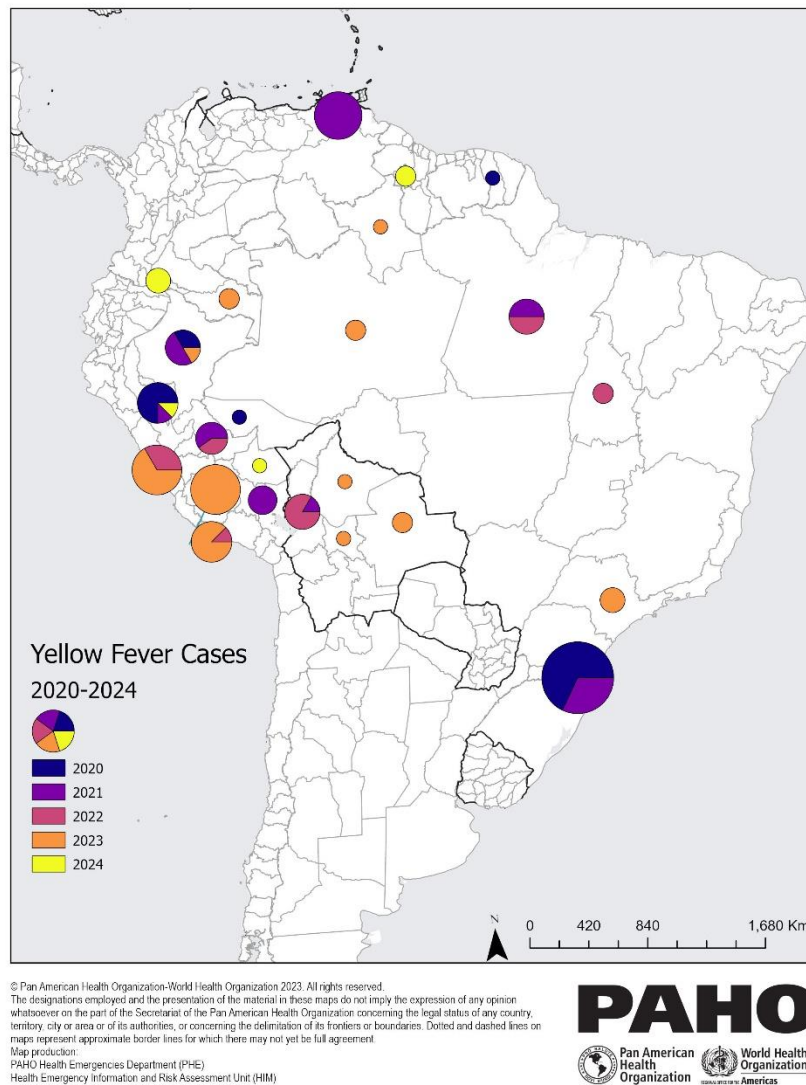
As of 19 March 2024, seven confirmed cases of yellow fever have been reported in the Region of the Americas, including four fatal cases. Cases have been reported in three countries in the Region: Colombia (three fatal cases) (7), Guyana (two cases) (10), and Peru (two cases, including one death) (8,11) (Figure 2). In addition, Brazil has reported confirmed cases of yellow fever in non-human primates.

In **Brazil**, no autochthonous cases of yellow fever have been reported during 2024; however, for the current monitoring period (July 2023 to June 2024), as of epidemiological week (EW) 10, 1,157 events involving dead non-human primates (monkeys) were reported. Of this total, six (0.5%) were confirmed for yellow fever by laboratory criteria in the state of Rio Grande do Sul (6).

In **Colombia**, during EW 11 of 2024, three fatal cases of yellow fever were reported, captured in laboratory surveillance and histopathology for dengue mortality; confirmed through real-time PCR analysis. The cases originate from the municipalities of Villagarzón, Orito, and Valle del Guamuez, in the department of Putumayo. These cases correspond to three males between 20 and 66 years of age, with symptom onset between 3 January and 18 February 2024. All cases had a history of exposure to wild or wooded areas, due to agricultural work

activities, with no history of vaccination against yellow fever. Additionally, a case from the municipality of Magangué, department of Bolívar, is under investigation. The case corresponds to a 17-year-old male with a history of vaccination against yellow fever in 2007 and a history of travel to the municipality of Sucre, department of Sucre, with symptom onset on 14 February 2024. The case was discharged, has recovered, and is currently in good general condition (7).

Figure 1. Geographic distribution of human yellow fever cases in the Region of the Americas, between January 2020 and March 2024.



Source: Adapted from data provided by countries or published by Ministries of Health and reproduced by PAHO/WHO.

In **Guyana**, during EW 11, two laboratory-confirmed cases were identified. The first case was identified in Boa Vista, in the state of Roraima, Brazil, corresponding to a 17-year-old male, resident of the community of Massara, 100 km from Lethen, bordering Bonfim, Roraima, with no history of vaccination. The case works in the rural area of Siparuni (forest region) harvesting trees; he presented onset of symptoms on 29 February. On 12 March 2024, the RT-PCR test confirmed the identification of yellow fever jungle virus by the Central Public Health

Laboratory of Roraima. The second case was identified during the investigation process and the performance of detection tests after the identification of the initial case. The case is a 21-year-old woman, with no history of vaccination, resident in Siparuni, in the same logging camp where the first case comes from. Her symptom onset began on 13 March 2024, with a positive result for yellow fever by RT-PCR test on 16 March 2024. Both cases are stable and under medical management (10).

Figure 2. Geographic distribution of human yellow fever cases in the Region of the Americas, 2024.



Source: Adapted from data provided by countries or published by Ministries of Health and reproduced by PAHO/WHO.

In **Peru**, between EW 1 and EW 11 of 2024, 25 probable cases of yellow fever were reported; 22 were discarded, one case remains under investigation in the department of San Martín, and two cases were laboratory confirmed. All had a history of exposure to wild and/or wooded areas, due to agricultural work activities. Cases were confirmed in the departments of Madre de Dios in the municipality of Tambopata (one case) and San Martín in the municipality of Lamas (one fatal case), the latter being the only death recorded for this period (9,11).

Recommendations for health authorities

The Pan American Health Organization / World Health Organization (PAHO/WHO) encourages Member States with yellow fever risk areas to continue their efforts to strengthen surveillance and vaccination in endemic areas.

Surveillance

Member States with risk areas for yellow fever are recommended to implement the following strategies to strengthen surveillance:

- Issue epidemiological alerts to municipalities and health services.
- Conduct an active search for persons with illness compatible with the definition of a suspected case and/or with acute febrile icteric syndrome in the areas where cases have occurred, as well as in the surrounding municipalities and the places visited by the cases in the period of 3 to 6 days prior to the onset of the disease.
- Conduct retrospective investigation of death certificates to detect cases compatible with the case definition.
- Intensify surveillance actions for epizootics in non-human primates, since the death of non-human primates can serve as an early warning to identify yellow fever circulation and indicate the need to intensify vaccination actions.

Clinical management:

Yellow fever is a serious viral hemorrhagic disease that presents a challenge to the health care professional. It requires early recognition of signs and symptoms, which are often nonspecific and may mimic other acute febrile syndromes.

Classic studies on the natural history of the disease show that it is clinically characterized by three phases: 1) *infection phase*, with elevated body temperature; 2) *remission phase*, with the presence of albuminuria; and 3) *toxic phase*, with hemorrhagic manifestations and signs and symptoms of acute liver failure, such as jaundice and hepatic encephalopathy.

There is still no specific treatment for yellow fever; therefore, early detection of suspected or confirmed cases, monitoring of vital signs, life support measures, and management of acute liver failure remain the recommended strategies for case management (12).

Vaccination

The yellow fever vaccine is safe, affordable and a single dose is sufficient to confer lifelong immunity and protection, without the need for booster doses.

PAHO/WHO reiterates its recommendations to national authorities:

- **Universal vaccination** in children in endemic countries at 12 months of age, administered simultaneously with measles, rubella, and mumps (MMR) vaccine.
- Endemic countries with scheduled follow-up campaigns for measles/rubella in children under 5 years of age should take the opportunity to **integrate** yellow fever vaccination and administer these two vaccines simultaneously.
- Update the **risk assessment and the estimate of the susceptible population**, taking into account changes in ecological factors, migration, vaccination coverage, socioeconomic activities, as well as the risk of urbanization, to guide vaccination and control measures.
- Vaccination of the population in at-risk areas, reaching at least **95% coverage** in residents of these areas (urban, rural, and jungle), through different strategies:
 - At the intramural level, make rational use of the vaccine and avoid missed opportunities for vaccination.
 - Extramurally, when yellow fever vaccine is more widely available, countries should conduct **catch-up campaigns**, identifying unvaccinated populations, occupational and professional risk groups, and age groups with suboptimal coverage, for example, young men who do not readily accept vaccination.
- Ensure vaccination of all travelers to endemic areas at least 10 days prior to travel.
- **To have a reserve inventory in the country** to maintain routine vaccination and to respond in a timely manner in case of outbreaks.

Recommendations for international travelers on yellow fever vaccination are available from: <https://www.who.int/travel-advice>.

Guidance for laboratory diagnosis is the same as that published in the 7 December 2018 PAHO Epidemiological Update on yellow fever (13).

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12. Pan American Health Organization / World Health Organization. Clinical Management of Yellow Fever in the Region of the Americas. Experiences and Recommendations for Health Services. Washington, DC: PAHO/WHO; 2023. Available from: <https://iris.paho.org/handle/10665.2/57318>

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14. Pan American Health Organization. Control of Yellow Fever: Field Guide. Washington, D.C.: PAHO; 2005. Available from: <https://www.paho.org/en/documents/control-yellow-fever-field-guide>
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Useful links

- Pan American Health Organization. Yellow fever. Available from: <https://www.paho.org/en/topics/yellow-fever>
- Pan American Health Organization / World Health Organization. Epidemiological updates on yellow fever. Available from: <https://www.paho.org/en/epidemiological-alerts-and-updates?d%5Bmin%5D=&d%5Bmax%5D=&page=0&topic=40>
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