Epidemiological Alert Oropouche in the Region of the Americas

1 August 2024

Considering the increase in reported cases of Oropouche in 2024, including in areas in which no cases had been historically recorded, as well as the identification of fatal cases associated with Oropouche virus (OROV) infection and possible cases of vertical transmission of the virus and its consequences, the Pan American Health Organization / World Health Organization (PAHO / WHO) urges Member States to strengthen surveillance and implement laboratory diagnosis for the identification and characterization of cases, including fatal cases and vertical transmission potentially associated with OROV infection.

Situation Summary

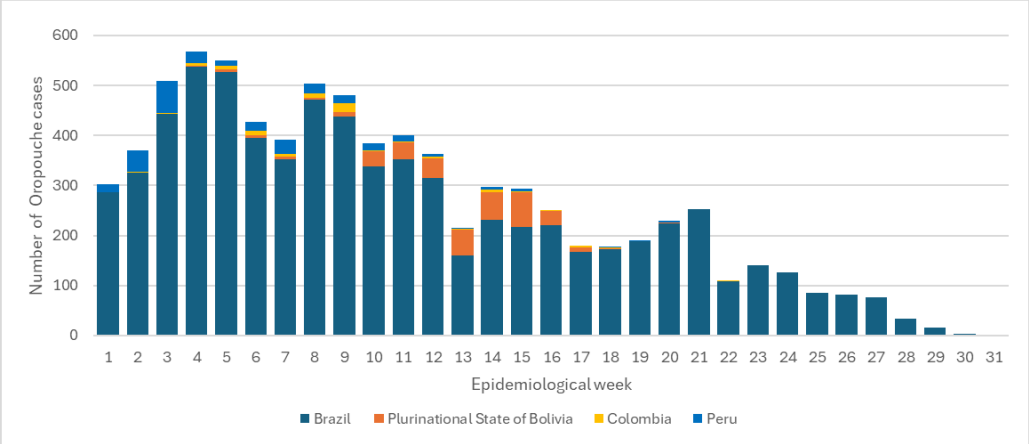
Between epidemiological week (EW) 1 and EW 29 of 2024, there were 8,078 confirmed Oropouche cases, including two deaths reported in the Region of the Americas. The cases are reported among five countries of the Region of the Americas: the Plurinational State of Bolivia (n = 356 cases), Brazil[1] (n = 7,284 cases, including two deaths), Colombia (n= 74 cases), Cuba[2] (n= 74 cases), and Peru (n= 290 cases). Since the 9 May 2024 Pan American Health Organization / World Health Organization (PAHO/WHO) Epidemiological Alert on Oropouche in the Region of the Americas, 2,885 additional Oropouche cases have been reported in the Region among: Bolivia (n= 43 cases), Brazil (n= 2,701 cases), Colombia (n= 36 cases), Cuba (n= 74 cases), and Peru (n= 31 cases) *(1-10)*.

Regarding the cases of vertical transmission of Oropouche virus infection (OROV) and their consequences, Brazil has reported one fetal death and one miscarriage in the state of Pernambuco, as well as four cases of newborns with microcephaly, identified through retrospective studies in the states of Acre and Pará.[3] Additionally, Brazil reported that three additional possible cases of vertical transmission and their consequences are being investigated in the state of Pernambuco in relation to three fetal deaths *(2)*.

[1] Cases in Brazil are reported up to EW 30 of 2024.
[2] 31 May 2024 is the most recent update received from Cuba.
[3] The detailed Information concerning these cases was published in the PAHO/WHO Epidemiological Alert on Oropouche in the Region of the Americas: vertical transmission event under investigation in Brazil, 17 July 2024. Washington, D.C.: PAHO/WHO; 2024. Available from: https://www.paho.org/en/documents/epidemiological-alert-oropouche-region-americas-vertical-transmission-event-under

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Alert: Oropouche in the Region of the Americas, 1 August 2024. Washington, D.C.: PAHO/WHO; 2024.

Figure 1. Number of confirmed Oropouche cases in 2024 by country and epidemiological week of symptom onset, Region of the Americas*



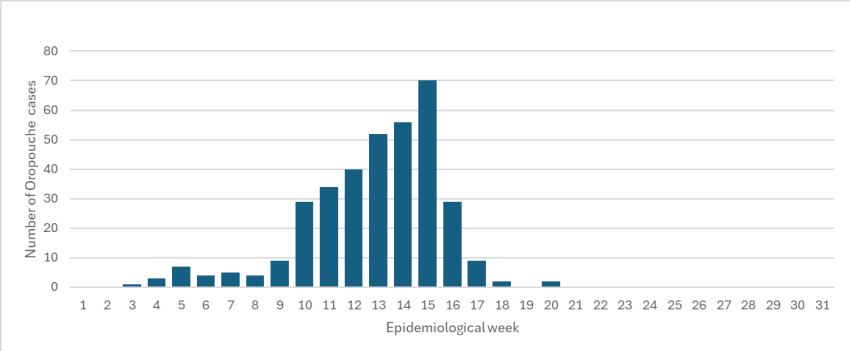
***Note:** Data by epidemiological week of onset is not available for Cuba.

Source: Adapted and reproduced by PAHO/WHO from the data reported by the respective countries *(1, 2, 6, 9)*.

The following is a summary of the situation in the countries that have reported confirmed Oropouche cases in the Americas during 2024.

In **Bolivia** between EW1 and EW 29 of 2024, there were 356 Oropouche cases confirmed by laboratory by using the molecular biology technique (RT-PCR) *(1)*. Transmission has been recorded in three departments: La Paz with 75.3% of the cases (n= 268), followed by Beni with 21.3% of the cases (n= 76), and Pando with 3.4% of the cases (n= 12). The cases are reported among 16 municipalities that are considered endemic for this disease, with the highest proportion of cases reported in the municipalities of Irupana, La Paz, with 33% of the cases, followed by La Asunta, La Paz, with 13% of the cases, and Chulumani, La Paz, and Guayaramerin, Beni, with 12% each. Regarding the distribution of cases by sex and age group, 50% (n= 179) of the cases are female and the most represented age range is the 30 to 39 years group with 20% of cases (n= 70). No deaths have been recorded that could be associated with OROV infection. Additionally, between EW 12 and EW 15 of 2024, five cases of Oropouche co-infection with dengue were reported in patients from three municipalities in the department of La Paz, who presented with positive results for dengue (RT-PCR) with DENV-1 serotype (one case) and DENV-2 (four cases) *(1)*.

Figure 2. Number of confirmed Oropouche cases by epidemiological week of symptom onset, Bolivia, 2024.

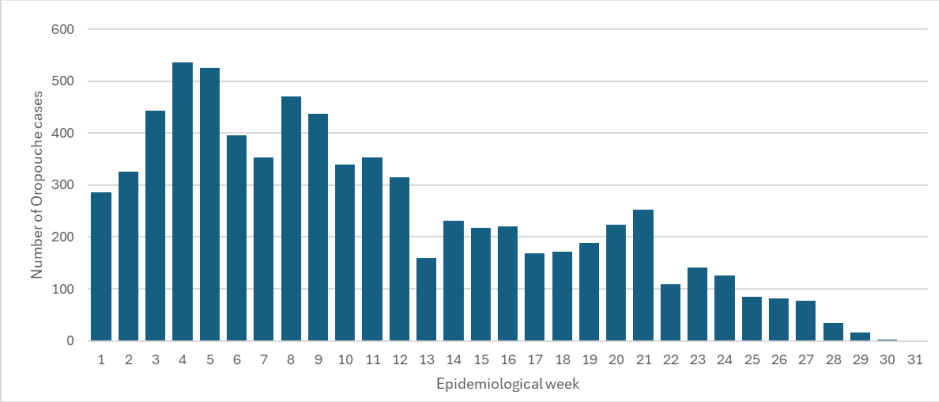


Source: Adapted from Bolivia International Health Regulations (IHR) National Focal Point (NFP). Communication received on 30 July 2024 via e-mail. La Paz; 2024. Unpublished *(1)*.

In **Brazil**, between EW 1 and EW 30 of 2024, 7,284 Oropouche cases confirmed by laboratory by using the molecular biology technique (RT-PCR). Most of the cases have had the probable place of infection in municipalities in the northern states. The Amazon region, considered endemic for Oropouche, accounted for 75.7% of the cases recorded in the country, with six states reporting cases: Amazonas (n= 3,224), Rondônia (n= 1,709), Acre (n= 265), Roraima (n = 239), Pará (n= 74), and Tocantins (n=2) *(2, 3)*.

Additionally, autochthonous transmission has been documented in ten non-Amazonian states, some of which had not previously reported cases: Bahía (n= 831), Espírito Santo (n= 420), Santa Catarina (n= 165), Pernambuco (n= 92), Minas Gerais (n= 83), Rio de Janeiro (n= 64), Ceará (n= 39), Piauí (n= 28), Maranhão (n= 19), and Mato Grosso (n=17). In addition, the probable place of infection is being investigated for cases registered in the states of Amapá (n=7), Paraná (n= 3), Sergipe (n=2), and Paraíba (n= 1). Regarding the distribution of cases by sex and age group, 51.9% (n= 3,779) are male and the most represented age range is the group of 30 to 39 years with 21.2 % of cases (n= 1,541) *(2, 3)*.

Figure 3. Number of confirmed Oropouche cases by epidemiological week of symptom onset, Brazil, 2024.



Source: Adapted from Brazil International Health Regulations (IHR) National Focal Point (NFP). Communication received on 30 July 2024 via e-mail. Brasilia; 2024. Unpublished *(2)*.

Regarding the deaths associated with Oropouche, Brazil's International Health Regulations (IHR) National Focal Point (NFP) reported two deaths associated with OROV infection and another that is under investigation. The following is a summary of these cases *(2, 4)*.

A retrospective analysis conducted in the state of Bahia identified fatal cases associated with OROV infection. One fatal case corresponds to a 24-year-old female, resident of the municipality of Valença, state of Bahia. She presented with symptoms on 23 March 2024, consisting of fever, headache, retro-orbital pain, myalgia, severe abdominal pain, diarrhea, nausea, and vomiting; she had no history of comorbidities. On 23 March 2024, she sought medical attention, was discharged with outpatient management, and sought medical attention again on several occasions. On 26 March 2024, she was hospitalized and on 27 March 2024, after 13 hours of admission to the hospital unit, she died *(2, 4)*. On 27 March 2024, serum samples were collected and sent to the Central Public Health Laboratory of Bahia (LACEN-BA per its acronym in Portuguese). On 26 April 2024, the presence of the viral genome

was confirmed through molecular biology testing (RT-PCR). The samples were negative for other arboviruses (dengue, Zika, chikungunya, and Mayaro) through molecular and serological testing *(2, 4)*.

The other fatal case is a 21-year-old female, resident of Camamú, state of Bahia. The case presented with symptoms on 6 May 2024, consisting of fever, myalgia, headache, retro-orbital pain, pain in the lower extremities, asthenia, and joint pain. After four days, she developed a reddish rash with purple spots, bleeding (nasal, gingival, and vaginal), followed by weakness, drowsiness, and vomiting; she had no history of comorbidities. On 9 May 2024, she was admitted to a health unit of the Municipal Hospital and was transferred to a second hospital due to drowsiness, persistent emesis, cyanosis in the extremities, bleeding gums, epistaxis, vaginal bleeding, and the presence of extended petechiae. Due to her critical condition, the patient died two hours after her admission *(2, 4)*. On 10 May 2024, serum samples were collected and sent to the LACEN-BA. On 18 May 2024, the presence of the virus genome was confirmed through molecular biology (RT-PCR) and serology in the blood samples analyzed. The samples were negative for other arboviruses (dengue, Zika, chikungunya, and Mayaro) through molecular and serological testing *(2, 4)*.

The fatal case that remains under investigation is a 57-year-old male resident of Apucarana municipality, state of Paraná, with a probable site of infection in the state of Santa Catarina. He presented with symptoms on 11 April 2024 consisting of fever, headache, myalgia, severe abdominal pain, diarrhea, nausea, and digestive bleeding; he had no history of comorbidities. On 15 April 2024, he sought medical attention and died the same day. On 15 April 2024, serum samples were collected and sent to the Central Public Health Laboratory. On 24 April 2024, the presence of the viral genome was confirmed through molecular biology tests (RT-PCR). The samples were negative for other arboviruses (dengue, Zika, chikungunya, yellow fever, and Mayaro) through molecular and serological testing *(2)*.

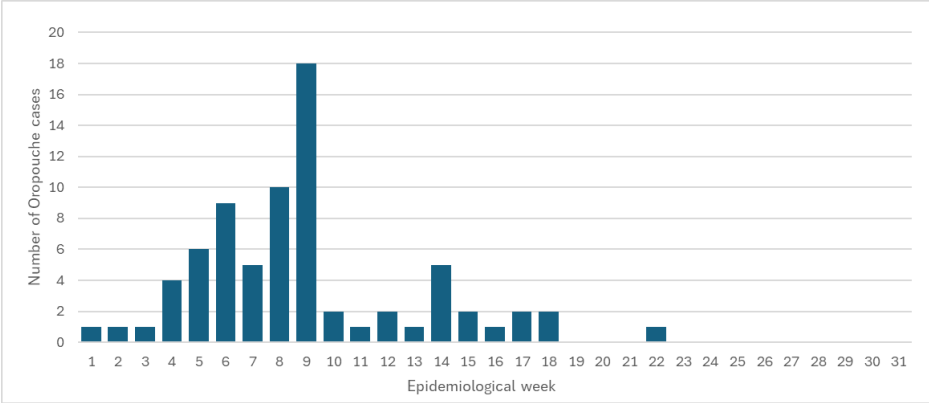
As of 25 July 2024, the cases of vertical transmission that are under investigation in Brazil include one case of fetal death and one miscarriage in the state of Pernambuco and four cases of newborns with microcephaly, identified through retrospective studies in the states of Acre and Pará. Detailed information on these cases is available in the 17 July 2024 Epidemiological Alert on Oropouche in the Region of the Americas: vertical transmission event under investigation in Brazil, available from: https://www.paho.org/en/documents/epidemiological-alert-oropouche-region-americas-vertical-transmission-event-under *(5)*.

Additionally, on 30 July 2024 the Brazil IHR NFP informed PAHO/WHO that three other possible cases of vertical transmission and their outcomes are under investigation in the state of Pernambuco, corresponding to three fetal deaths, in the municipalities of Ipojuca, Recife, and Sirinhaém. For one of these cases, the Oropouche virus genome was detected in fetal tissue and blood samples using RT-PCR and the remaining two cases continue under investigation *(2)*.

In **Colombia**, between EW 1 and EW 29 of 2024, 74 confirmed Oropouche cases have been reported in three departments of the country: Amazonas (n= 70), Caquetá (n= 1), and Meta (n= 1); additionally, two cases were identified from Tabatinga, Brazil. The cases were identified through a retrospective laboratory case-finding strategy implemented by the National Institute of Health of Colombia (INS, per its acronym in Spanish) based on dengue surveillance (n= 38 cases) and through investigation of febrile syndrome cases (n= 36 cases). Regarding

the distribution of cases by sex and age group, 51.4% (n=38) are female cases and the most represented age range is the 10 to 19 years group with 36.5% of the cases (n= 27). No deaths have been recorded that could be associated with OROV infection *(6)*.

Figure 4. Number of confirmed Oropouche cases by epidemiological week of symptom onset, Colombia, 2024.

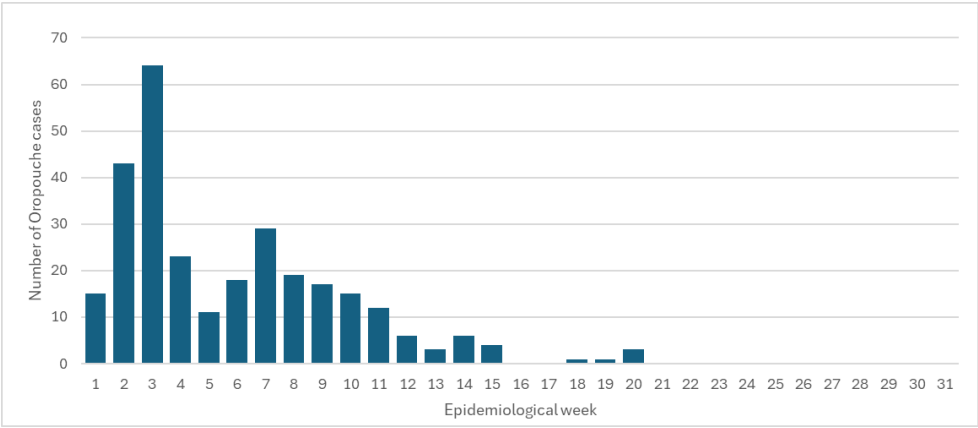


Source: Adapted from Colombia International Health Regulations (IHR) National Focal Point (NFP). Communication received on 30 July 2024 via e-mail. Bogota; 2024. Unpublished *(6)*.

In **Cuba**, on 27 May 2024, the Ministry of Public Health of Cuba reported the first outbreak of Oropouche virus disease in the country. A total of 74 confirmed cases were reported from the Santiago de Cuba Province (n= 54) and Cienfuegos Province (n= 20). By sex, 50% (n= 38) are female and the most represented age range is 15 to 19 years group with 16% of the cases (n= 12). No deaths have been recorded that could be associated with OROV infection *(7)*.

In **Peru**, between EW 1 and EW 29 of 2024, 290 confirmed Oropouche cases have been reported in five departments--the highest number of cases reported to date in this country. The departments with confirmed cases reported are: Loreto (n= 193), Madre de Dios (n= 47), Ucayali (n= 41), Huánuco (n= 8), and Tumbes (n= 1). Regarding the distribution of cases by sex and age group, 52% (n= 150) were male and the most represented age range is the 30 to 39 years group with 40% of the cases (n=115) *(8, 9)*.

Figure 5. Number of confirmed Oropouche cases by epidemiological week of symptom onset, Peru, 2024.



Source: Adapted from Peru International Health Regulations (IHR) National Focal Point (NFP). Communication received on 30 July 2024 via e-mail. Lima; 2024. Unpublished *(9)*.

Guidance to Member States

The Pan American Health Organization / World Health Organization (PAHO / WHO) reiterates its guidance to Member States below on Oropouche virus disease diagnosis and clinical management, laboratory diagnostics, vector prevention and control, as well as the recommendations related to cases of vertical transmission and their consequences such as congenital malformation, miscarriages, and deaths potentially associated with OROV infection.

Likewise, in order to contribute to the body of knowledge about this disease, Member States are requested to notify any related unusual event, including deaths associated with OROV infection, as well as possible cases of vertical transmission and their consequences.

Diagnosis and clinical management

After an incubation period of 5 to 7 days, patients experience high fever, headache with photophobia, myalgia, arthralgia and, in some cases, rash. In certain patients, symptoms may include vomiting and bleeding, manifesting as petechiae, epistaxis and gingival bleeding. Generally, the infection resolves within 2 to 3 weeks *(11)*.

In exceptional situations, OROV can cause meningitis or encephalitis. In these cases, patients show neurological symptoms and signs such as vertigo, lethargy, nystagmus, and neck stiffness. The virus can be detected in cerebrospinal fluid (CSF) *(11)*.

During the first week of the disease, the main differential diagnosis is dengue infection. In the second week of the disease, the clinical differential diagnosis should consider the possibility of meningitis and encephalitis *(11)*.

Currently, there are no vaccines or specific antiviral drugs available to prevent or treat OROV infection. The treatment approach is palliative, focused on pain relief, rehydration and control of any vomiting that may occur. In situations where the disease manifests itself in a neuroinvasive form, the patient will need to be admitted to specialized units that allow constant monitoring *(11)*.

Laboratory diagnosis and surveillance

Guidance on laboratory diagnosis and surveillance of emerging arboviruses, including OROV, is detailed in the "**Guidelines for the Detection and Surveillance of Emerging Arboviruses in the Context of Other Arbovirus Circulation**" and "**Guidelines for the Detection and Surveillance of Oropouche in Potential Cases of Vertical Infection, Congenital Malformation or Fetal Death**" *(12, 13)*.

Vector prevention and control

OROV is transmitted to humans mainly through the bite of the midge *Culicoides paraensis*, which is present in the Region of the Americas, but can also be transmitted by the mosquito *Culex quinquefasciatus (14)*.

Thus, the proximity of vector breeding sites to human habitation is an important risk factor for OROV infection. Vector control measures focus on reducing vector populations by identifying and eliminating vector breeding and resting sites. These measures include *(15-17)*:

- Strengthen entomological surveillance for the detection of species with vector potential.
- Map urban, peri-urban and rural areas with conditions for the development of potential vectors.
- The promotion of good agricultural practices to avoid the accumulation of residues that serve as breeding and resting sites.
- The filling or draining of water collections, ponds or temporary waterlogging sites that may serve as oviposition sites for females and breeding sites for vector larvae.
- Elimination of weeds around the premises to reduce resting and shelter sites for vectors.

In addition, measures should be taken to prevent vector bites, which are reinforced in the case of pregnant women. These measures include *(15, 16*):

- Protection of houses with fine mesh nets on doors and windows, thus also preventing other arboviruses.
- Use of clothing that covers the legs and arms, especially in homes where there is someone sick.
- Use of repellents containing DEET, IR3535 or icaridin, which may be applied to exposed skin or clothing, and their use must be in strict accordance with product label instructions.
- Use of insecticide-impregnated or non-insecticide-treated mosquito nets for daytime sleepers (e.g. pregnant women, infants, sick or bedridden people, elderly).
- In outbreak situations, outdoor activities should be avoided during the period of peak vector activity (dawn and dusk).
- In the case of people with a higher risk of being bitten, such as forestry workers, agricultural workers, etc. The use of clothing that covers the exposed parts of the body is recommended, as well as the use of the previously mentioned repellents.

Finally, taking into account the ecological characteristics of the main vectors of OROV, it is important to consider that the decision to carry out vector control activities with insecticides depends on entomological surveillance data and the variables that may condition an increase in the risk of transmission. In areas of transmission, insecticide spraying may be an additional measure, especially in urban and peri-urban areas, when technically advisable and feasible.

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