

### Situation Summary

Between epidemiological week (EW) 1 and EW 28 of 2018, 2,472 confirmed measles cases were reported by 11 countries in the Region of the Americas: Antigua and Barbuda (1 case), Argentina (5 cases), Brazil (677 cases), Canada (19 cases), Colombia (40 cases), Ecuador (17 cases), Guatemala (1 case), Mexico (5 cases), Peru (3 cases), the United States (91 cases), and the Bolivarian Republic of Venezuela (1,613 cases).

Following is a summary of the current outbreaks in the Americas.

In **Argentina**, in EW 29 of 2018, two measles cases were confirmed, one is a 5-months-old child and the other 6-months-old, both residents of the City and Province of Buenos Aires. The rash onset occurred on 12 and 13 July (EW 28), respectively. Both cases presented compatible clinical signs (fever, rash, cough, and conjunctivitis), and have evolved favorably to date. The two cases were confirmed by IgM serology and viral genome detection by PCR in urine and respiratory samples. The investigation to determine the source of infection is ongoing.

In **Brazil**, as of EW 28 of 2018, 6 states have confirmed measles cases: Amazonas (444 cases), Rio Grande do Sul (8 cases), Rio de Janeiro (7 cases), Rondonia (1 case), Roraima (216 cases), and Sao Paulo (1 case). Onset of rash of the confirmed cases occurred between 4 February and 30 June of 2018. According to the laboratory analysis carried out by the Oswaldo Cruz Foundation (Fiocruz/ RJ), the genotype identified in all the confirmed cases of Amazonas and Roraima is D8, with a lineage identical to the one identified in Venezuela in 2017; in Sao Paulo, the genotype identified was D8, identical to the one circulating in countries outside the Region of the Americas. In Rio Grande do Sul, genotype B3 was identified (similar to the genotype circulating outside of the Region) and D8 (identical to the one circulating in Manaus). In Rondonia, the genotype identified was also the D8 identical to the one circulating in Manaus.

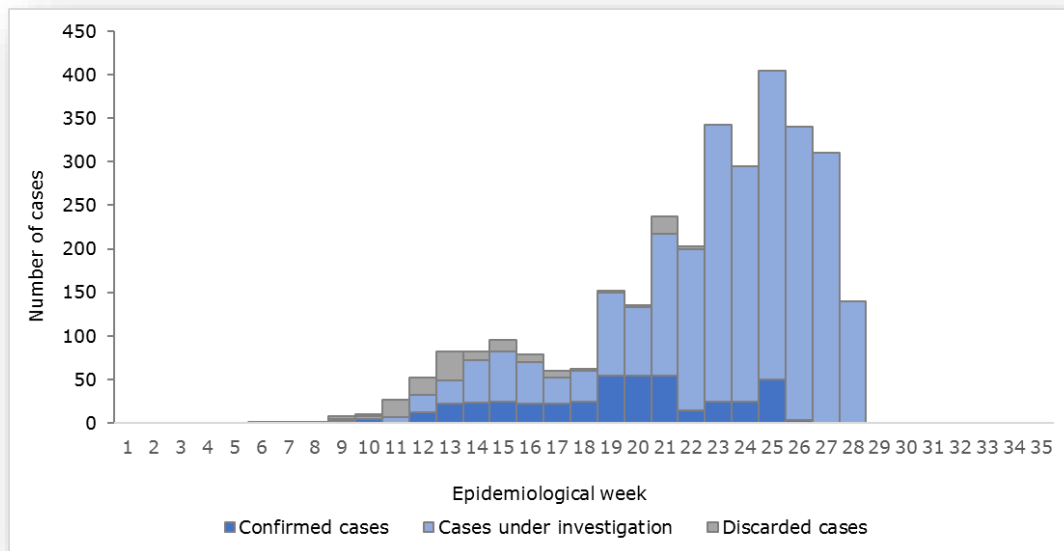
Following is a brief description of the ongoing outbreaks in the states of Amazonas and Roraima.

*In the state of Amazonas*, the outbreak that began in EW 5 of 2018 is ongoing and as of EW 28, 3,120 cases were reported, 444 of them were confirmed, 147 were discarded, and 2,529 remain under investigation. Since EW 19 of 2018, the number of suspected cases increased exponentially with a weekly average of 337 cases reported between EW 20 and EW 25 of 2018 (**Figure 1**). Although 14 of the 62 municipalities reported cases, the highest proportion (85%) of cases reported came from the municipality of Manaus. The last onset of rash date occurred in EW 25 of 2018, however, 81% (2,529) of the cases have not yet been tested, it is expected that the number of confirmed cases will continue to increase,

in Manaus as well in other municipalities of the state. Imported cases from Amazonas have been reported in Rio Grande do Sul and Rondonia.

The cumulative incidence rate of confirmed cases by age group, the group of children < 1-year-old has a rate of 306.2 per 100,000 inhabitants, and the group of 1 to 4-years-old has a rate of 61.7 per 100,000 inhabitants.

**Figure 1.** Reported measles cases by EW of rash onset. State of Amazonas, Brazil, EW 1 to EW 28 of 2018.



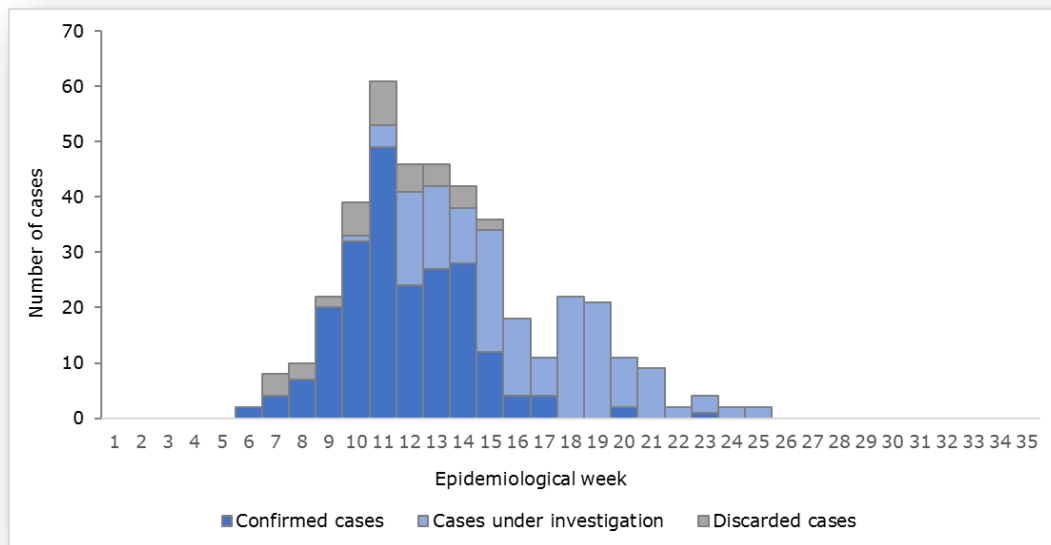
**Source:** Data published by the Brazil Ministry of Health and reproduced by PAHO/WHO.

*In the state of Roraima*, the outbreak that started in EW 6 of 2018 is ongoing and up to EW 28 of 2018, 414 cases were reported, including 3 deaths; of the cases, 216 were confirmed, 160 remain under investigation, and 38 were discarded. The average of cases reported weekly has decreased substantially in the past 6 weeks, passing from an average of 41 cases per week (between EW 9 and EW 15) to 5 cases per week (between EW 20 and EW 25) (**Figure 2**).

Cases have been reported in 11 of the 15 municipalities of the state, with three --Amajari, Boa Vista, and Pacaraima--accounting for 91% of the reported cases and 94% of the confirmed cases.

The cumulative incidence rate of confirmed cases by age group, in the age group < 1-year-old is 505.1 per 100,000 inhabitants and in the group of 1 to 4-years-old is 141.8 per 100,000 inhabitants.

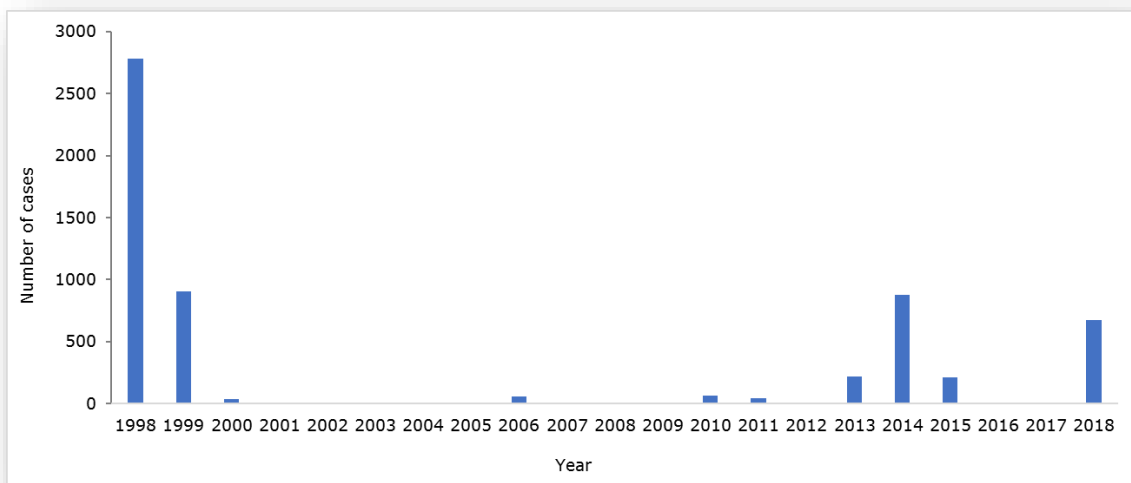
**Figure 2.** Reported measles cases by EW of rash onset. State of Roraima. Brazil. EW 1 to EW 28 of 2018.



**Source:** Data published by the Brazil Ministry of Health and reproduced by PAHO/WHO.

The number of confirmed cases up to EW 28 of 2018 of both states, Amazonas (444) and Roraima (216), is higher than the numbers reported 20 years earlier during a large outbreak that took place between 1998 and 1999 (**Figure 3**), in which a cumulative of 164 and 22 cases had been confirmed in Amazonas and Roraima respectively.

**Figure 3.** Confirmed measles cases by year. Brazil. Amazonas and Roraima states. Brazil. 1998-2018\*



\* Up to EW 28 of 2018

**Source:** Data published by the Ministry of Health of Brazil<sup>1</sup> and reproduced by PAHO/WHO.

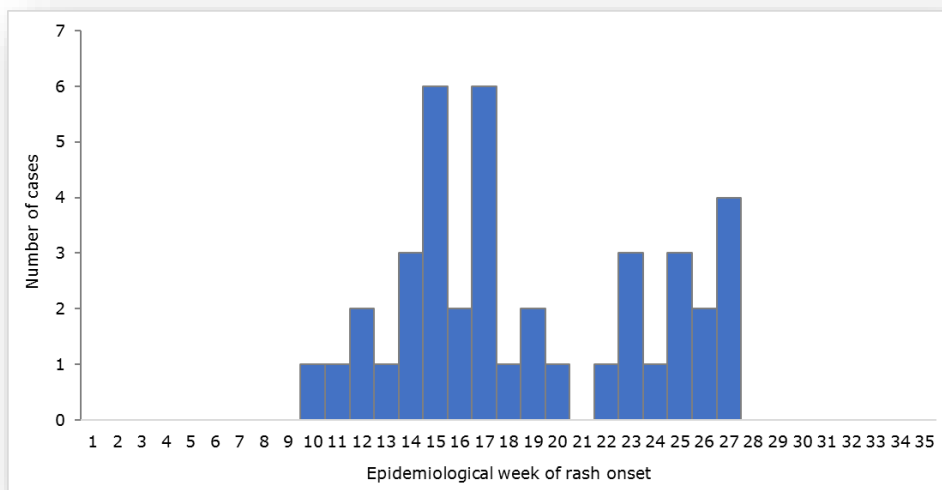
<sup>1</sup> Data published by the Brazil Ministry of Health. Available at: <https://bit.ly/2LOIXzu>.

In **Colombia**, between EW 11 and EW 27 of 2018, there were 40 confirmed measles cases reported (**Figure 4**). Ages ranged between 4-months to 35-years-old. Twelve of the total cases were female. Rash onset between 8 March and 4 July of 2018. Of the 40 cases, 23 were imported from Venezuela, 16 cases were import-related (11 cases are of secondary transmission, in people from Venezuela and 5 cases were related to importation to Colombians), and 1 the source of infection is unknown. No deaths have been reported.

The cases were reported in the departments of: Antioquia, Arauca, Bolívar, Cauca, Cesar, La Guajira, Norte de Santander, Risaralda, Sucre, and the Districts of Barranquilla, Bogota, Cartagena, and Santa Marta.

Laboratory testing of all cases was conducted by the National Health Institute and cases were confirmed by the detection of anti-measles IgM antibodies in serum and by reverse transcription polymerase chain reaction (RT-PCR) in pharyngeal swabs and urine samples. The genotyping from 9 cases indicated genotype D8, lineage MVi/Hulu Langat.MYS/26.11, identical to the one identified in Venezuela in 2017.

**Figure 4.** Reported measles cases by EW of rash onset. Colombia, EW 10 to EW 27 of 2018.



**Source:** Data provided by the Colombia International Health Regulations (IHR) National Focal Point (NFP) and reproduced by PAHO/WHO.

In **Ecuador**, between EW 13 and EW 27 of 2018 there were 17 confirmed measles cases reported, 9 of which were imported and 8 were import-related. The cases were reported in Quito (12 cases), Cuenca (1 case), Riobamba (1 case), and Tulcán (3 cases)<sup>2</sup>; with onset of rash between 28 March and 2 July of 2018. Six of the cases correspond to the same chain of transmission in the southern sector of the city of Quito. Of the total cases, 5 are female, the age range is between 4-months-old and 44-years-old, and 11 of the cases are of Venezuelan nationality (1 is a resident of Ecuador who was exposed to the virus by relatives who recently arrived in Ecuador, and another who contracted the disease within 4 weeks of their stay in Ecuador).

The laboratory confirmation of the cases was carried out in the National Reference Laboratory (INSPI, Quito and Guayaquil) by serological tests by the detection of anti-

<sup>2</sup> Tulcán is the capital of the district of Carchi, in which 1 of the cases was reported in the 8 June 2018 PAHO/WHO Epidemiological Update on measles, available at: <https://bit.ly/2sSrHzo>

measles IgM antibodies and molecular tests by the polymerase chain reaction (PCR). Genotyping is in progress.

In **Peru**, between EW 8 and EW 28 of 2018, there were 3 confirmed cases of measles. Of these, 2 are cases with unconfirmed sources of infection, they are Peruvian residents without travel history, and 1 is imported from Venezuela.

The 3 confirmed cases are male, their ages range from 1 to 44-years-old and rash onset between 24 February and 13 July 2018. The isolated genotype of the first two cases is D8 coming from India; the genotype of the third case remains under investigation.

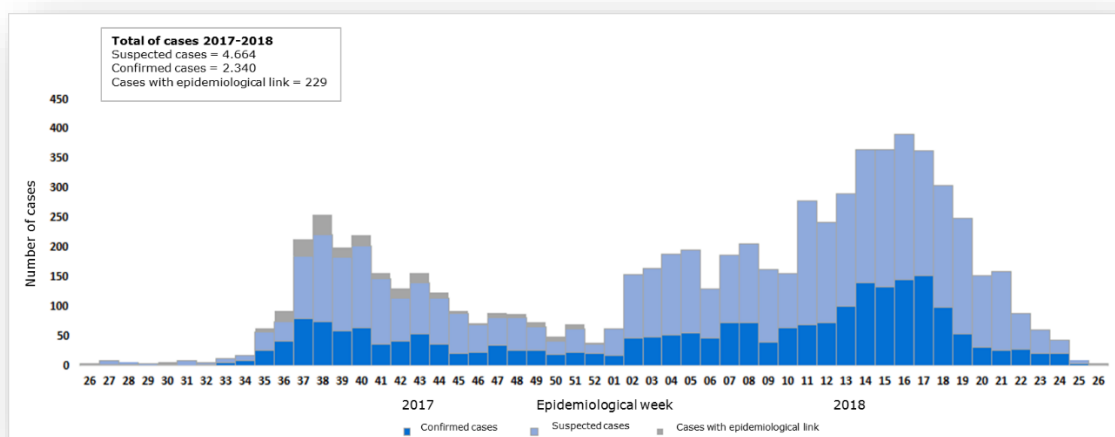
The third case is a male child of 1-year-and-6-months-old, with rash onset 13 July. The case travelled to Peru from Venezuela, via Colombia and Ecuador. On 4 July, in Ecuador, the child had received the first dose of the measles-mumps-rubella (MMR) vaccine, and arrived in Peru (Tumbes- Lima) between 8 and 10 July. On 14 July, samples were taken and on 15 July, the Peru National Institute of Health confirmed the case by serology.

In addition, a vaccine-associated case has been reported that is currently under investigation.

In **Venezuela**, the outbreak is ongoing with measles cases reported in all states and the Capital District. Since the confirmation of the first measles case in EW 26 of 2017 up to EW 26 of 2018, a total of 7,233 cases were reported, of which 2,569 were confirmed (2,340 by laboratory and 229 by epidemiological link), including 44 deaths under investigation to establish the cause (**Figure 5**). Of the total laboratory confirmed cases, 727 correspond to 2017 and 1,613 to 2018 (up to EW 26 of 2018).

The highest incidence of cases is reported in the Capital District, Miranda, Bolivar, and Delta Amacuro. Of the 44 deaths reported, 33 are the state of Delta Amacuro, 7 from Miranda, and 2 from the Capital District.

**Figure 5.** Reported measles cases by EW of rash onset. Venezuela. 2017-2018 (up to EW 26)



**Source:** Venezuela Ministry of Popular Power for Health data and reproduced by PAHO/WHO

## Measles in indigenous communities

As reflected in the Information Document CE162/INF/22 of the 162nd session of the Pan American Health Organization Executive Committee<sup>3</sup>, the indigenous communities living in the border areas of Venezuela are highly vulnerable to epidemics of measles. Of special concern are the Warao living in the border areas of the Delta Amacuro state between Venezuela and Guyana<sup>4</sup>, and the Yanomami that live in remote areas of the Amazon jungle, along the border of Venezuela and Brazil. The outbreak of measles in the Yanomami communities in the municipality of Alto Orinoco, state of Amazonas, Venezuela, began in EW 11 of 2018 and as of EW 27 of 2018, there were 126 cases reported, including 53 deaths probably associated to measles. In addition, up to EW 28 of 2018, the states of Amazonas and Roraima of Brazil confirmed 77 measles cases in Yanomami communities (and the Ye'kuna), most of them in the Indigenous Health District of Auaris bordering Venezuela.

## Advice to national authorities

In light of continuous reports of imported measles cases from other regions and ongoing outbreaks in the Americas, the Pan American Health Organization / World Health Organization (PAHO / WHO) urges all Member States to:

- Vaccinate to **maintain homogeneous coverage of 95%** with the first and second doses of measles, mumps, rubella (MMR) vaccine in all municipalities.
- **Vaccinate at-risk populations** (without proof of vaccination or immunity against measles and rubella), such as healthcare workers, people working in tourism and transportation (hotels and catering, airports, taxi drivers, and others) and international travelers.
- **Maintain** a reserve of measles-rubella (MR) vaccines and syringes for control of imported cases in each country of the Region.
- **Strengthen epidemiological surveillance** of measles to achieve timely detection of all suspected cases of measles in public and private healthcare facilities and ensure that samples are received by laboratories within 5 days of being taken.
- Provide a **rapid response** to imported measles cases through the activation of rapid response teams to avoid the re-establishment of endemic transmission. Once a rapid response team has been activated, continued coordination between the national and local levels must be ensured, with permanent and fluid communication channels between all levels (national, sub-national, and local).
- **Identify** migratory flows from abroad (arrival of foreign persons) and internal flows (movements of population groups) in each country, to facilitate access to vaccination services, according to the national scheme.

Additionally, PAHO/WHO recommends that Member States advise all travelers over 6-months-of-age who cannot show proof of vaccination or immunity, that they **receive the measles and rubella vaccine**, preferably the triple viral vaccine (measles, mumps and rubella - MMR), **at least two weeks before traveling to areas where measles transmission has been documented**. The recommendations of PAHO/WHO in relation to advice for

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<sup>3</sup> PAHO/WHO. 162nd Session of the Executive Committee. PAHO's Response to Maintaining an Effective Technical Cooperation Agenda in Venezuela and Neighboring Member States. CE162/INF/22.

Available at: <https://bit.ly/2uJFyJe>

<sup>4</sup> PAHO / WHO. Epidemiological update, Measles. 6 April 2018. Available at: <https://bit.ly/2Nxm81X>

travelers are available in the 27 October 2017 PAHO/ WHO Epidemiological Update on Measles.<sup>5</sup>

## Sources of Information

1. Argentina International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.
2. Brazil Ministry of Health. Measles situation in Brazil – 2018. Report No. 14. Available at: <https://bit.ly/2NXyd1g>
3. Colombia International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.
4. Ecuador IHR National Focal Point (NFP) Report to PAHO/WHO received by email.
5. Peru IHR National Focal Point (NFP) Report to PAHO/WHO received by email.
6. Venezuela IHR National Focal Point (NFP) Report to PAHO/WHO received by email.

## Related links:

- PAHO/WHO. Vaccine-Preventable Diseases: <http://bit.ly/2G8pQwi>

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<sup>5</sup> Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 27 October 2017, Washington, D.C.: PAHO/WHO; 2017. Available at: <https://bit.ly/2l3gCSi>