

Situation Summary

In 2018 there were 12 countries¹ in the Americas that reported confirmed measles cases, of which two reported deaths (Brazil and the Bolivarian Republic of Venezuela).

As of epidemiological week (EW) 2 of 2019, 6 countries reported having confirmed cases between December 2018 and January 2019: Brazil, Canada, Chile, Colombia, the United States of America, and Venezuela.

The following is an update of the epidemiological situation in five of the countries in the Region.

In **Brazil**, there are 11 federal units that reported confirmed measles cases: Amazonas (9,778 cases, 6 deaths), Bahía (2 cases), the Federal District (1 case), Pará (61 cases, 2 deaths²), Pernambuco (4 cases), Rio Grande do Sul (45 cases), Rio de Janeiro (19 cases), Rondônia (2 cases), Roraima (355 cases, 4 deaths), São Paulo (3 cases), and Sergipe (4 cases). In all of the federal units reporting cases, with the exception of one case in Rio Grande do Sul and one in São Paulo, the genotype D8 was identified, lineage MVi/HuluLangat.MYS/26.11, similar to the one circulating in Venezuela.

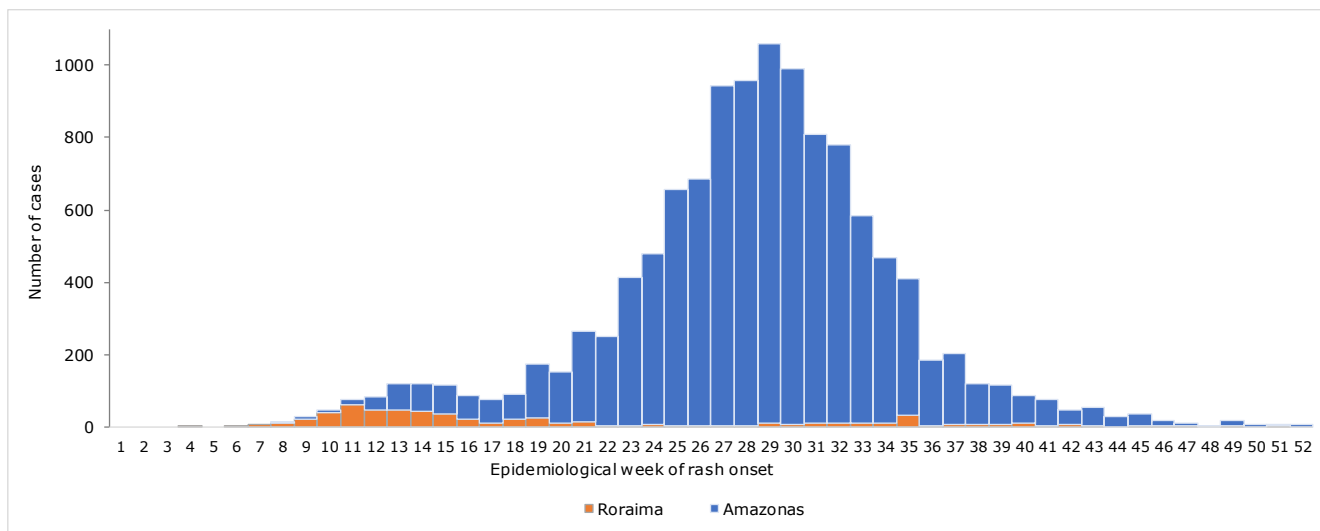
Between EW 6 of 2018 and EW 2 of 2019, there were a total of 10,274 confirmed cases, including 12 deaths. Since the 30 November 2018 PAHO/WHO Epidemiological Update on measles³, there were 376 additional cases reported and Bahía has been added to the federal units reporting cases.

¹ Antigua and Barbuda, Argentina, Brazil, Canada, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru, the United States of America, and the Bolivarian Republic of Venezuela.

² The number of deaths reported in Pará decreased by one, with respect to what was reported in the PAHO/WHO Epidemiological Update of 30 November 2018; this is due to a retrospective reclassification carried out by the Brazilian health authorities.

³ PAHO/WHO Epidemiological Update: Measles. 30 November 2018, Washington, D.C.: PAHO/WHO; 2018. Available at: <https://bit.ly/2P9qBrZ>

Figure 1. Reported confirmed measles cases by EW of rash onset. Amazonas and Roraima states, Brazil, EW 1 to EW 52 of 2018.



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

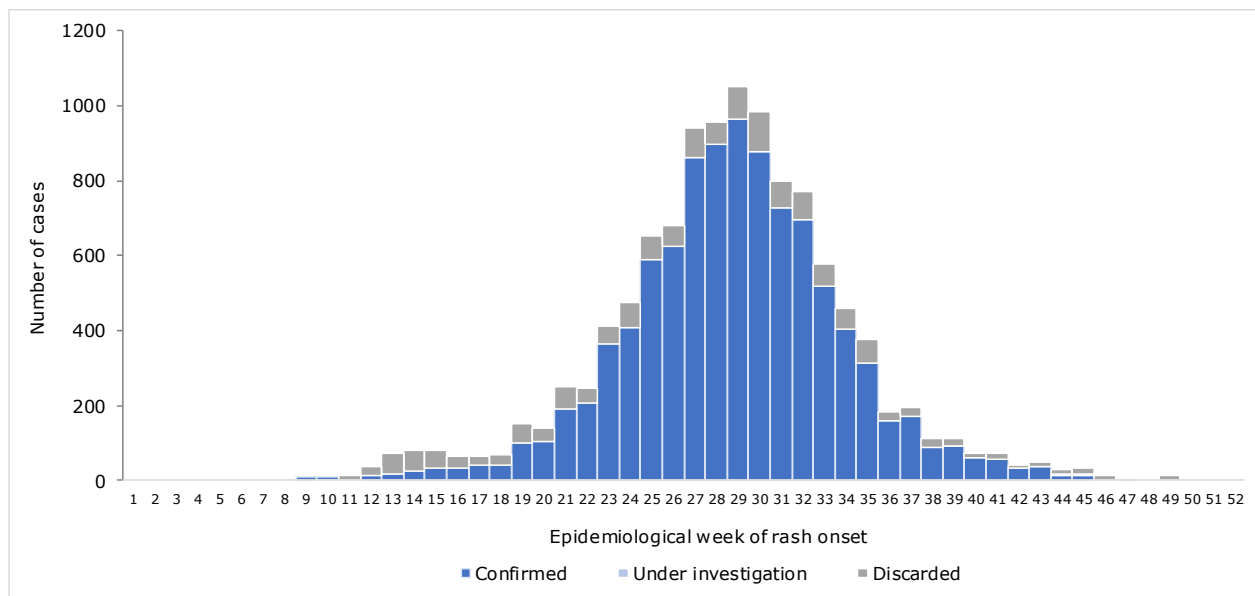
The following is a brief summary of the epidemiological situation in the states of Amazonas and Roraima.

In the state of Amazonas, between 6 February 2018 and 8 January 2019, there were 11,377 suspected cases, including 6 deaths. Of the total suspected cases, 9,778 were confirmed, 1,541 were discarded, and 18 remain under investigation. Of the confirmed cases, 55.6% (5,439) are male.

Of 62 municipalities in the state of Amazonas, 46 have reported confirmed cases. The municipality of Manaus accounts for 78.7% (8,921) of the suspected cases and 82.3% (8,040) of the confirmed cases reported in the state. The cumulative incidence rate for the state is 272.3 per 100,000 population, and the municipalities with the highest incidence rate (in decreasing order) are: Manacapuru (994.2 per 100,000 population), followed by Manaus (377.4 per 100,000 population), and Itacoatiara (142.2 per 100,000 population).

Since EW 30 of 2018, a decreasing trend in the epidemiological curve of cases has been observed in the state (**Figure 2**).

Figure 2. Reported measles cases (confirmed and under investigation) by EW of rash onset. Amazonas State, Brazil, EW 1 to EW 52 of 2018.



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

The highest incidence rate is reported in children under 1 year old (2,176.4 per 100,000 population), followed by 15 to 19-year-olds (550.7 per 100,000 population), 20 to 29-year-olds (358.2 per 100,000 population), 1 to 4-year-olds (352.7 per 100,000 population), and 30 to 39-year-olds (188.8 per 100,000 population).

The most recent confirmed case had rash onset in EW 48 of 2018 and the most recent cases under investigation had rash onset in EW 1 of 2019.

In the state of Roraima, between 4 February 2018 and 8 January 2019, there were 575 suspected cases reported, including 4 deaths. Of the suspected cases, 355 were confirmed, 213 were discarded, and 7 remain under investigation. Of the confirmed cases, 53.5% (190) are male, 61.1% (217) are Venezuelan, 38% (135) are Brazilian, and 1% (2 cases) correspond to persons from other countries. Of the total confirmed cases, 41% are indigenous (127 Venezuelan and 18 Brazilian).

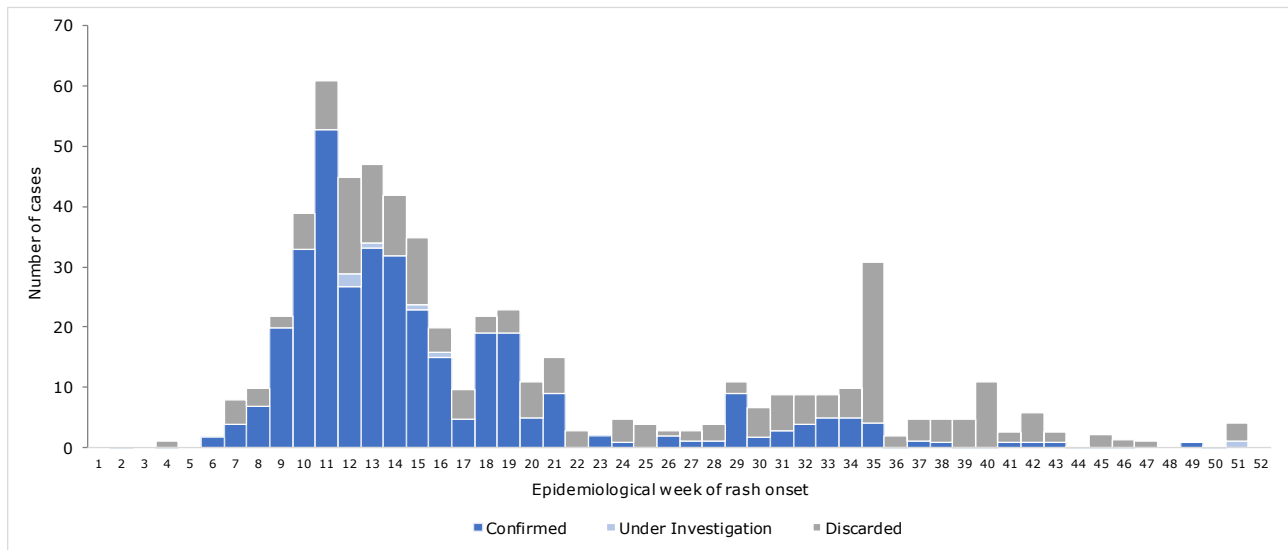
Of the 15 municipalities in the state of Roraima, 13 have reported suspected cases. The municipalities of Amajari, Boa Vista, and Pacaraima account for 90% (517) of the suspected cases and 89% (316) of the confirmed cases reported in Roraima. The incidence rate in Roraima is 80.0 per 100,000 population, and the municipalities with the highest incidence rates (in decreasing order) are: Amajari (683.4 per 100,000 population), followed by Pacaraima (484.4 per 100,000 population), and Boa Vista (53.6 per 100,000 population).

As of EW 19 of 2018, there was a decrease in the number of suspected and confirmed cases, and between EW 29 and EW 35 of 2018, a new increase in cases was reported (**Figure 3**), affecting the municipalities of Boa Vista and Amajari.

The highest incidence rate was reported in children under 1 year old (812.1 per 100,000 population), followed by the age groups of 1 to 4-year-olds (245.7 per 100,000 population), 5 to 9-year-olds (106.9 per 100,000 population), 10 to 14-year-olds (66.6 per 100,000 population), and 15 to 19-year-olds (51.0 per 100,000 population).

The most recent confirmed case had rash onset in EW 49 of 2018 and the most recent cases under investigation had rash onset in EW 1 of 2019. The last confirmed cases imported from Venezuela had rash onset in EW 43 of 2018 and were reported in the state of Roraima.

Figure 3. Reported measles cases by EW of rash onset. Roraima State, Brazil, EW 1 to EW 52 of 2018.



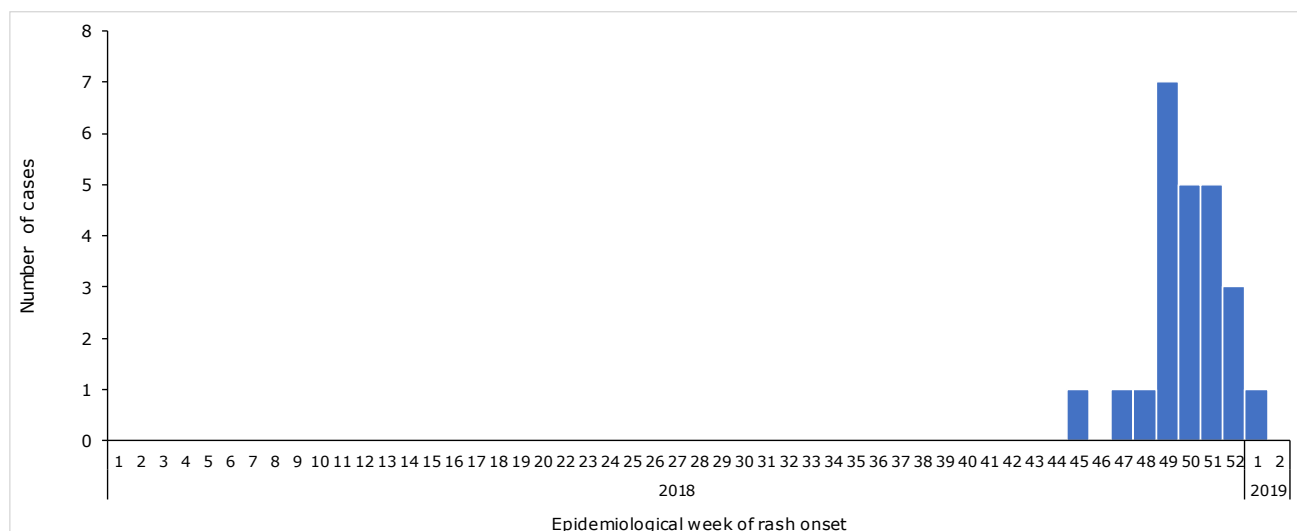
Source: Data published by the Brazil Ministry of Health and reproduced by PAHO/WHO.

In **Chile**, between EW 45 of 2018 and EW 2 of 2019, there were 24 confirmed measles cases (**Figure 4**), of which 7 were imported and 17 were import-related. There were no deaths, however, 11 of the cases required hospitalization. The genotype identified is D8, lineage MVi/HuluLangat.MYS/26.11, similar to the one circulating in other countries of the Region. Of the cases reported, 50% are female and 58.4% are children under 1-year-old.

The cases were reported in the Metropolitan (22 cases) and Biobío (2 cases) regions.

The most recent confirmed case had rash onset in EW 1 of 2019 and, to date, the investigation of suspected cases continues. Rash onset for the last imported case from Venezuela was in EW 52 of 2018 and the case was reported in the Metropolitan Region.

Figure 4. Reported confirmed measles cases by EW of rash onset. Chile, EW 45 of 2018 to EW 2 of 2019.



Source: Data received from the Chile International Health Regulations (IHR) National Focal Point (NFP) and reproduced by PAHO/WHO.

The last outbreak associated with imported cases in Chile was in 2015, with 9 confirmed cases reported, and was 2 months in duration (viral genotype H1).

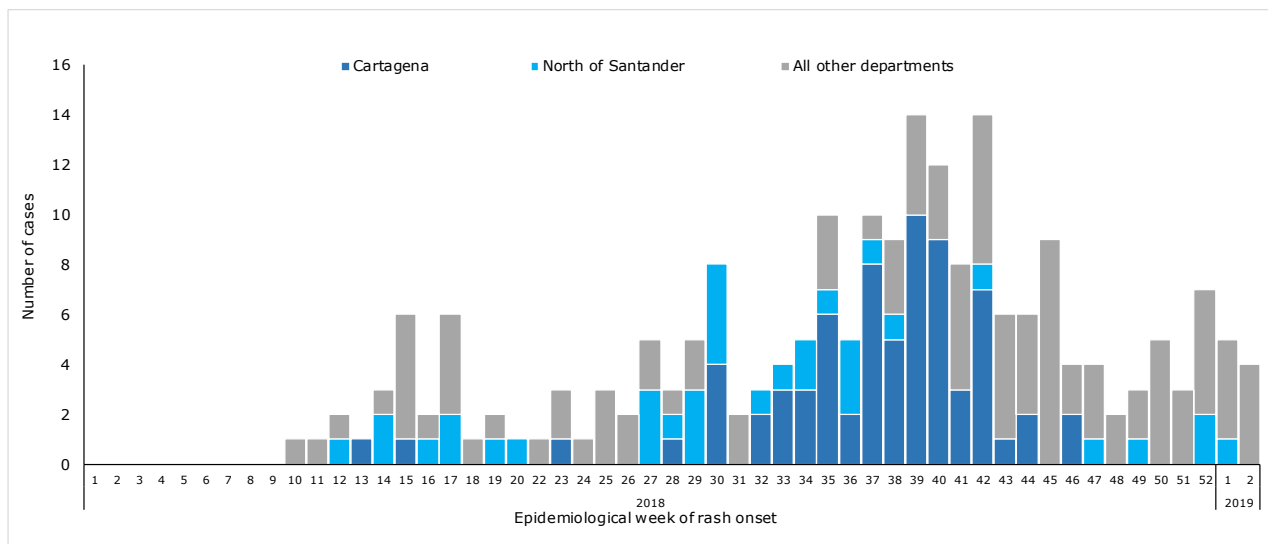
In **Colombia**, between EW 10 of 2018 and EW 2 of 2019, there were 212 confirmed measles cases reported, 103 of which required hospitalization. No deaths were reported. Genotyping performed on samples for 43 cases indicated genotype D8, lineage MVi/Hulu Langat.MYS/26.11, similar to the one circulating in other countries of the Region.

Cases were reported in the departments of Antioquia, Arauca, Atlántico, Bolívar, Cauca, Cesar, Cundinamarca, La Guajira, Magdalena, Norte de Santander, Risaralda, Santander, and Sucre, and in the districts of Barranquilla, Bogotá, Cartagena, and Santa Marta. The districts of Barranquilla and Cartagena and the department of Norte de Santander account for 68% of the total confirmed cases. The cumulative incidence rate in the country is 0.22 per 100,000 population, and the highest incidence rates were reported from the following territorial entities: Cartagena (5.3 cases per 100,000 population), Barranquilla (2.4 cases per 100,000 population), and Bolívar (1.1 cases per 100,000 population).

The highest incidence rates by age group among cases associated with import or secondary transmission among Colombians were observed in children under 1-year-old (6 cases per 100,000 population) followed by children aged 1 to 4-years-old (1.7 cases per 100,000 population).

The most recent confirmed case had rash onset in EW 2 of 2019, and the most recent cases under investigation are in the departments of La Guajira and Norte de Santander and in the districts of Barranquilla, Bogotá, and Cartagena.

Figure 5. Confirmed measles cases by EW of rash onset. Colombia, EW 10 of 2018 to EW 2 of 2019.



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

In the **United States of America**, between 1 January and 29 December 2018, there were 349 confirmed measles cases reported in 26 states and the District of Columbia, corresponding to 17 outbreaks⁴. The 26 states which reported cases are: Arkansas, California, Connecticut, Florida, Illinois, Indiana, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Virginia, and Washington.

The information is updated periodically on the U.S. Centers for Disease Control and Prevention (CDC) website, available at: <https://bit.ly/2iMFK71>.

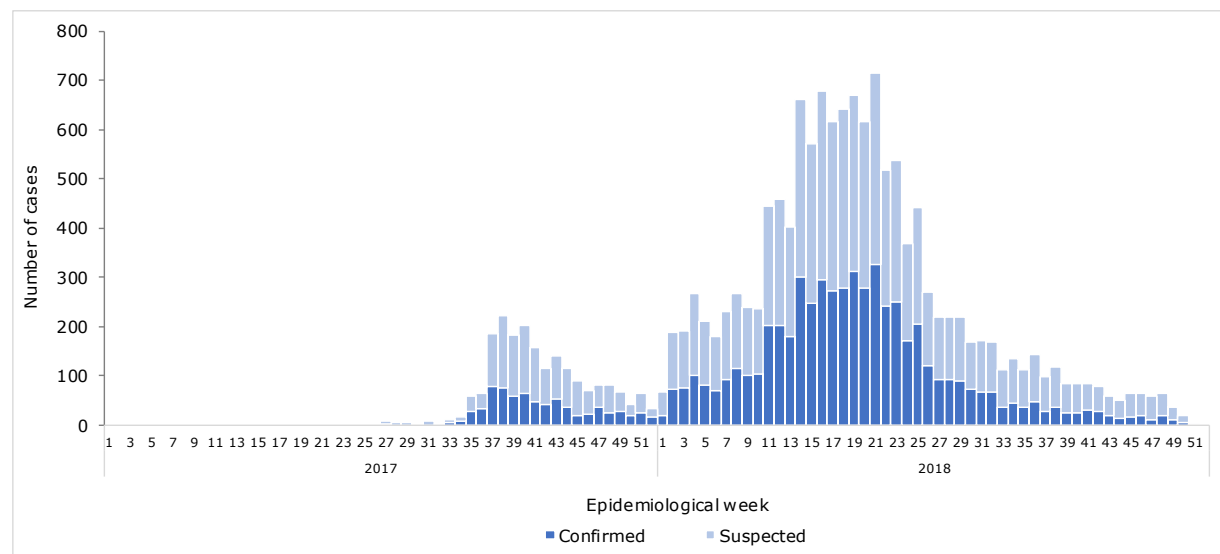
In **Venezuela**, between EW 26 of 2017 and EW 52 of 2018, a total of 9,101 suspected cases, including 6,395 confirmed measles cases (727 in 2017 and 5,668 in 2018), have been reported (**Figure 6**). The cases in 2018 were confirmed by laboratory (2,038), clinical diagnosis (3,137), and epidemiological link (493). There were 76 deaths reported—2 in 2017 and 74 in 2018 (37 in Delta Amacuro, 27 in Amazonas, 6 in Miranda, 3 in the Capital District, and 1 in Bolívar).

The cumulative incidence rate in the country is 17.8 per 100,000 population. The highest incidence rates are reported in: Delta Amacuro (207 per 100,000 population), the Capital District (126 per 100,000 population), Amazonas (83 per 100,000 population), and Vargas (47 per 100,000 population).

The confirmed cases reported in the preceding between EW 44 and EW 50 of 2018 were reported in the states of Apure (7 cases), Aragua (7 cases), Bolívar (8 cases), Carabobo (8 cases), Capital District (18 cases), Falcon (3 cases), Miranda (2 cases), Monagas (7 cases), and Zulia (34 cases).

⁴ Outbreaks defined as 3 or more related cases.

Figure 6. Reported measles cases by EW of rash onset. Venezuela, 2017-2018 (until EW 52)



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

Health authorities in Venezuela are implementing a series of vaccination strategies aimed at interrupting the circulation of the virus. In addition to vaccination campaigns, implemented actions include: intensified acute febrile syndrome surveillance and block vaccination with the measles-rubella (MR) vaccine as well as selective vaccination of contacts of suspected and confirmed cases up to 39 years old.

Measles in indigenous communities

In **Brazil**, in Roraima State, a total of 183 suspected cases have been reported among indigenous populations, of which 145 were confirmed. The majority of cases are from the Auaris Indigenous Health District which borders Venezuela.

In **Venezuela**, between EW 1 and EW 52 of 2018, there have been 499 confirmed measles cases among indigenous populations⁵ in Amazonas (162 cases, of which 135 were in Sanema, 23 in Yanomami⁶, 2 in Yekuana, 1 in Baniva, and 1 in Yeral ethnic groups); Delta Amacuro (309 cases, all in the Warao ethnic group); Monagas (24 cases of which 20 were in Warao, 1 in Shaima, and 1 in Eñepa ethnic groups); and Zulia (2 cases, both in the Wayú ethnic group). In addition, there were 64 deaths reported, 37 in Delta Amacuro (all in the Warao ethnic group) and 27 in Amazonas (16 in the Sanema ethnic group). Additional deaths in the indigenous communities are currently under investigation.

In EW 52 of 2018, no additional measles cases were reported; however, active surveillance and block vaccinations continue. The most recent confirmed case among the indigenous communities had rash onset in EW 50 of 2018 and was reported in the state of Zulia.

⁵ The difference with respect to that reported in previous Epidemiological Updates is due to the retrospective adjustments made by the national authorities based on the review, consolidation, and investigation of cases in indigenous populations.

⁶ According to previous data provided by national authorities, between EW 11 and EW 27 of 2018, there were 126 confirmed (by laboratory and/or epidemiological link) cases reported, including 53 deaths, in the Yanomami municipality of Alto Orinoco, Amazonas State in Venezuela.

Advice to national authorities

Given the continued imported cases of measles from other regions and the 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 the 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 MR and/or MMR **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 collection and that laboratory results are available in a period of no more than 4 days.
- Provide a **rapid response** to imported measles cases to avoid the re-establishment of endemic transmission, through the activation of rapid response teams trained for this purpose and by implementing national rapid response protocols when there are imported cases. 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 (arrival of migrant population) and internal flows (movements of population groups), including indigenous populations, in each country, to facilitate access to vaccination services, according to the national scheme.
- Implement a plan to immunize migrant populations in high traffic border areas, prioritizing those considered at risk, both migrants and local residents of the municipality where the migrants are residing.
- **Increase vaccination coverage** and strengthen epidemiological surveillance in border areas, in order to increase population immunity and rapidly detect/respond to suspected measles cases.
- During outbreaks, **establish adequate hospital case management** to avoid nosocomial transmission, with appropriate referral of patients to isolation rooms for any level of care (avoiding contact with other patients in waiting rooms and/or hospitalization settings).

Additionally, PAHO/WHO recommends that Member States advise all travelers aged 6 months⁷ and older who cannot show proof of vaccination or immunity **receive the measles and rubella vaccine**, preferably the triple viral vaccine (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 travelers are available in the 27 October 2017 PAHO/WHO Epidemiological Update on Measles⁸.

Sources of Information

1. Brazil Ministry of Health. Measles situation in Brazil – 2019. Report No. 35. Available at: <http://portalarquivos2.saude.gov.br/images/pdf/2019/janeiro/10/Informe-Sarampon35-9jan19gab.pdf>
2. Brazil International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.
3. Chile International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.
4. Colombia International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.
5. United States Centers for Disease Control and Prevention. Measles Cases and Outbreaks. Available at: <https://www.cdc.gov/measles/cases-outbreaks.html>
6. Venezuela International Health Regulations (IHR) National Focal Point (NFP) Report to PAHO/WHO received by email.

Related links:

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

⁷ The MMR or MR dose administered to children between 6 and 11 months old does not replace the recommended first dose at 12 months old.

⁸ 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>