

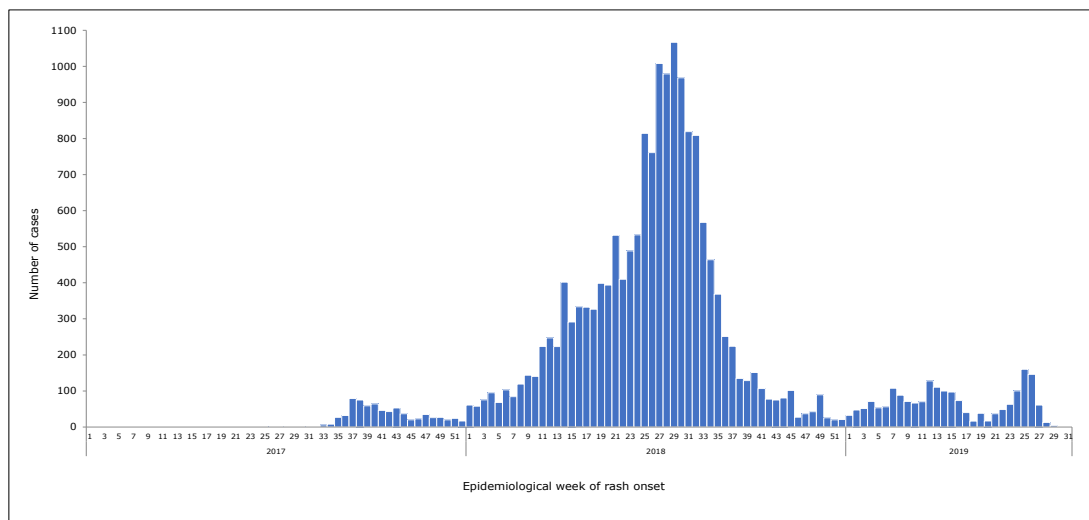
Situation Summary

Between 1 January and 7 August 2019, a total of 2,927 confirmed cases of measles, including one death, have been reported in 14 countries and territories of the Region of the Americas: Argentina (5 cases), the Bahamas (1 case), Brazil (1,045 cases), Canada (82 cases), Chile (4 cases), Colombia (175 cases), Costa Rica (10 cases), Cuba (1 case), Curaçao (1 case), Mexico (3 cases), Peru (2 cases), the United States of America (1,172 cases), Uruguay (9 cases), and the Bolivarian Republic of Venezuela (417 cases).

Since the PAHO/WHO Epidemiological Update on Measles published on 18 June¹, there has been a 70% increase in the total number of confirmed cases of measles reported, with 7 countries and territories reporting additional confirmed cases: Brazil (923 cases), Canada (17 cases), Colombia (50 cases), Curaçao (1 case), Mexico (1 case), the United States (128 cases), and Venezuela (85 cases).

In 2018, the highest proportion of confirmed cases in the Region of the Americas were reported in Brazil and Venezuela, while in 2019, the majority of confirmed cases have been reported from the United States (40%) and Brazil (36%) (**Figure 1**).

Figure 1. Distribution of confirmed measles cases* by epidemiological week of rash onset in the Region of the Americas. 2017–EW 31 of 2019



*Cases with information available for epidemiological week of rash onset (19,498 cases).

Source: Data provided by the IHR National Focal Points or published on the websites of Ministries of Health or Health Agencies and reproduced by PAHO/WHO.

¹ PAHO/WHO. Epidemiological Update: Measles. 18 June 2019, Washington, D.C.: PAHO/WHO; 2019. Available at: <https://bit.ly/33id2i2>

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 7 August 2019, Washington, D.C.: PAHO/WHO; 2019

The following is a summary of the epidemiological situation of measles for countries/territories that have reported confirmed cases in the past 6 weeks (18 June to 3 August).

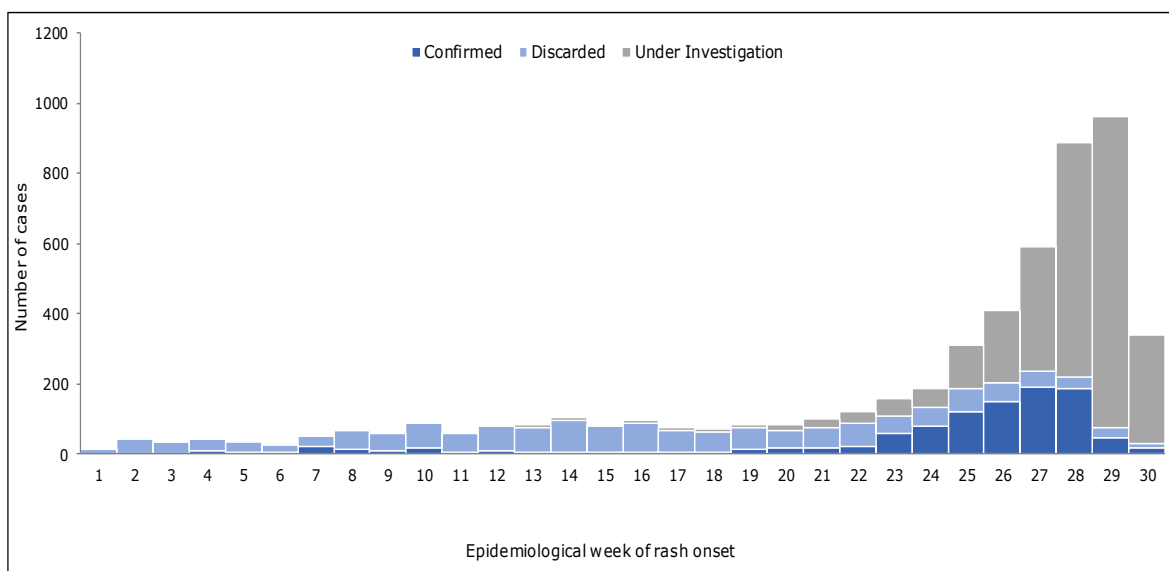
In **Brazil**, between epidemiological week (EW) 1 of 2018 and EW 31 of 2019, a total of 22,654 suspected cases of measles have been reported, of which 11,371 have been confirmed (10,326 in 2018 and 1,045 in 2019), including 12 deaths (all in 2018) (**Figure 2**).

Between 2018 and EW 31 of 2019, the cumulative national incidence rate is 5.4 cases per 100,000 population (5.0 cases per 100,000 population in 2018 and 0.4 cases per 100,000 population in 2019).

In 2019, 9 federal units have reported confirmed cases: Amazonas (4 cases), Bahía (1 case), Minas Gerais (4 cases), Pará (53 cases), Rio de Janeiro (13 cases), Roraima (1 case), Santa Catarina (3 cases), São Paulo (965 cases), and Sergipe (1 case). However, only Bahía, Rio de Janeiro, and São Paulo have active outbreaks². In those federal units, genotype D8 has been identified.

As of this Update, the most recent confirmed case in Brazil had rash onset on 25 July (EW 30 of 2019) and was reported in São Paulo State.

Figure 2. Reported cases of measles by epidemiological week of rash onset. Brazil. EW 1 to EW 30 of 2019.



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

² Active outbreak: federal units with measles cases reported within the past 12 weeks.

The epidemiological situation in the states of Bahía, Rio de Janeiro, and São Paulo is described below.

Table 1. Distribution of confirmed measles cases. Bahía, Rio de Janeiro, and São Paulo states, Brazil. EW 1 to EW 31 of 2019.

Federal Units	Number of confirmed cases in 2018	Number of confirmed cases in 2019	Peak in cases in 2019 (EW)	Cumulative incidence rate* in 2019	% Routine vaccine coverage (MMR second dose)**
Bahía	3	1	27	0.0005	61.7
Rio de Janeiro	20	13	19	0.1	51.2
São Paulo	3	965	27	1.2	74.7

*Cases per 100,000 population

**pni.datasus.gov.br; Partial data updated on 23 July 2019; data subject to change.

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

In the *state of Bahía*, between 1 January and 7 August 2019, a total of 167 suspected cases were reported, of which one case has been confirmed. The confirmed case had rash onset in EW 27 of 2019, and the most recent cases under investigation had rash onset in EW 30 of 2019.

The age group for the confirmed case is 10 to 14 years.

In the *state of Rio de Janeiro*, between 1 January and 7 August 2019, a total of 13 confirmed cases were reported. The most recent confirmed case had rash onset in EW 27 of 2019, and the most recent cases under investigation had rash onset in EW 30 of 2019.

The three age groups with the highest cumulative incidence rates among confirmed cases are: children under 1 year (2.2 cases per 100,000 population); 1 to 4 years (0.13 cases per 100,000 population); and 5 to 9 years (0.10 cases per 100,000 population).

In the *state of São Paulo*, between 1 January and 7 August 2019, a total of 965 confirmed cases were reported. The most recent confirmed case had rash onset in EW 30 of 2019, and the most recent cases under investigation had rash onset in EW 29 of 2019. Viral genotype D8 has been identified.

The three age groups with the highest cumulative incidence rates among confirmed cases are: children under 1 year (9.5 cases per 100,000 population); 1 to 4 years (3.6 cases per 100,000 population); and 20 to 29 years (2.9 cases per 100,000 population) (**Table 2**).

Table 2. Distribution of confirmed cases and age-specific incidence rates by age group. São Paulo State, Brazil. EW 1 to EW 30 of 2019*.

Age group	Number of cases	%	Incidence rate**
< 1 year	58	10.2	9.5
1 to 4 years	76	13.4	3.6
5 to 9 years	19	3.4	0.7
10 to 14 years	19	3.4	0.6
15 to 19 years	57	10.1	1.7
20 to 29 years	207	36.5	2.9
30 to 39 years	86	15.2	1.2
40 to 49 years	30	5.3	0.5
> 50 years	15	2.6	0.1
Total	567	100	1.2

*Available data as of 26 July 2019.

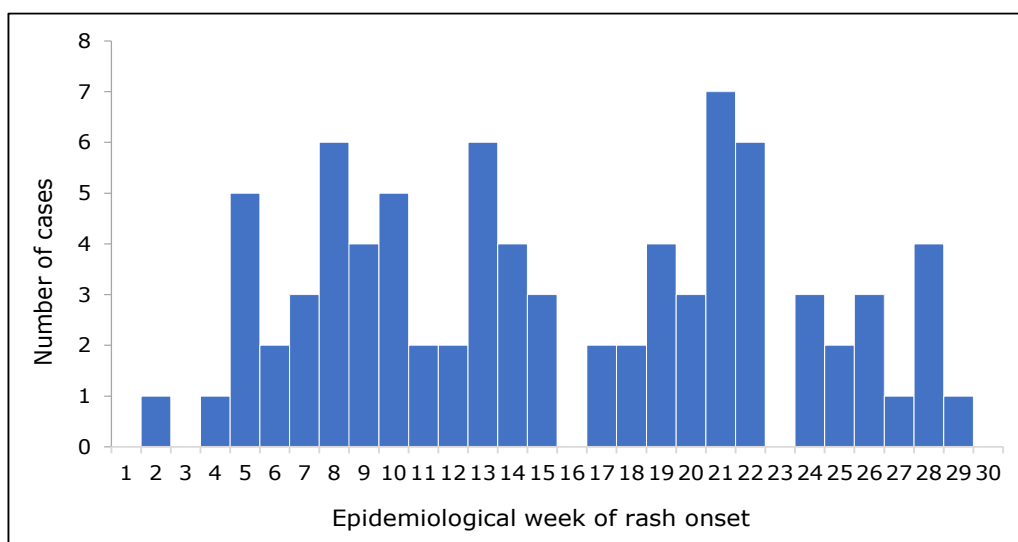
**Cases per 100,000 population

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

In **Canada**, between EW 1 and EW 29 of 2019, a total of 82 confirmed cases of measles were reported in the provinces of Alberta, British Columbia, Manitoba, New Brunswick, Ontario, Quebec, Saskatchewan, and the Northwest Territories. Of the total confirmed cases, 65 were genotyped, for which genotype B3 (17 cases) and genotype D8 (48 cases) were identified, similar to those circulating globally.

The Public Health Agency of Canada (PHAC) periodically updates this information, available at: <https://bit.ly/2J7BDAt>.

Figure 3. Confirmed cases of measles by epidemiological week of rash onset. Canada. EW 1 to EW 29 of 2019.



Source: Data published by the Public Health Agency of Canada and reproduced by PAHO/WHO.

In **Colombia**³, between EW 10 of 2018 and EW 30 of 2019, a total of 10,305 suspected cases of measles were reported (7,186 in 2018 and 3,119 in 2019), of which 383 were confirmed (208⁴ with rash onset in 2018 and 175 in 2019), including one death.

The death, related to complications due to measles, corresponds to a 3-month-old Colombian male of the Wayúu indigenous ethnic group, from Uribia in La Guajira.

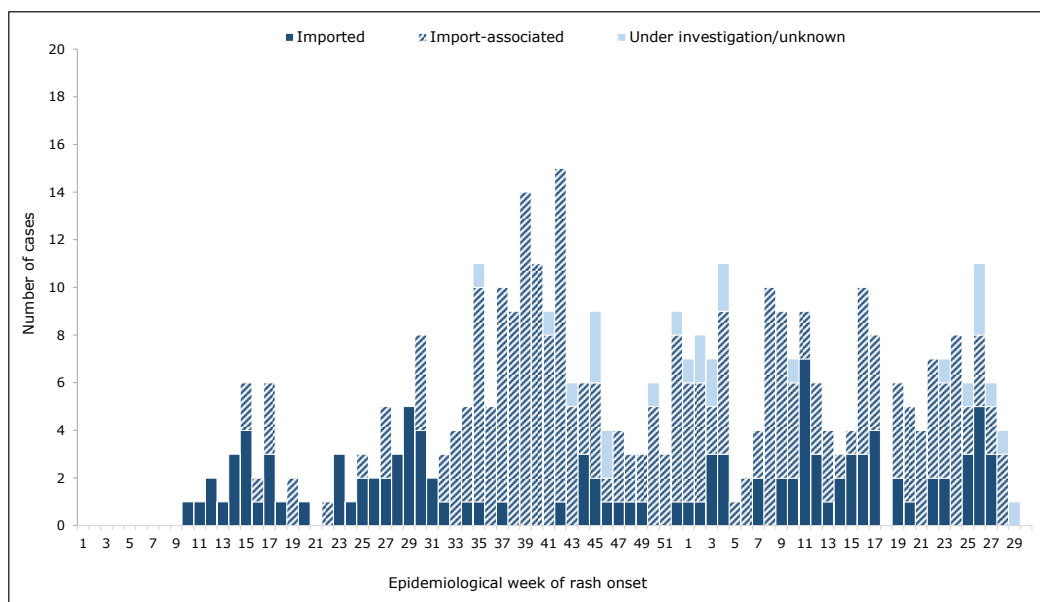
Genotyping performed on samples for 112 cases identified genotype D8, similar to that circulating in Venezuela and other countries in the Region.

In 2019, confirmed cases have been reported in the departments of Atlántico, César, Córdoba, Cundinamarca, La Guajira, Norte de Santander, and in the districts of Barranquilla, Cartagena, and Bogotá.

In the past four weeks (EW 26 – EW 30), a total of 28 cases were confirmed, in La Guajira (21 cases), Norte de Santander (6 cases), and Cartagena District (1 case).

The most recent confirmed case (imported) had rash onset on 2 July 2019, and the most recent suspected case under investigation had rash onset on 5 August 2019.

Figure 4. Confirmed cases of measles by epidemiological week of rash onset. Colombia, EW 10 of 2018 to EW 30 of 2019.



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

³ The data provided in this PAHO/WHO Epidemiological Update may differ from previous PAHO/WHO Epidemiological Updates, due to adjustments made by the national authorities of the Colombia Ministry of Health.

⁴ According to previous data provided by the national authorities of the Colombia Ministry of Health, the PAHO/WHO Epidemiological Update published on 17 May 2019 reported 209 cases with rash onset in 2018; however, one case was reclassified.

In **Curaçao**, one imported laboratory-confirmed case of measles has been reported. The case is a 51-year-old male resident of São Paulo, Brazil, with a history of travel to Europe. The case had a history of measles vaccination (one dose at the age of 4 years) and had rash onset on 17 July 2019. The viral genotype and lineage identified by the National Institute of Public Health and Environment (RIVM, per its acronym in Dutch) in the Netherlands in a urine sample was genotype D8, lineage MVs / Gir Somnath.IND/42.16, similar to the strain circulating recently in Europe.

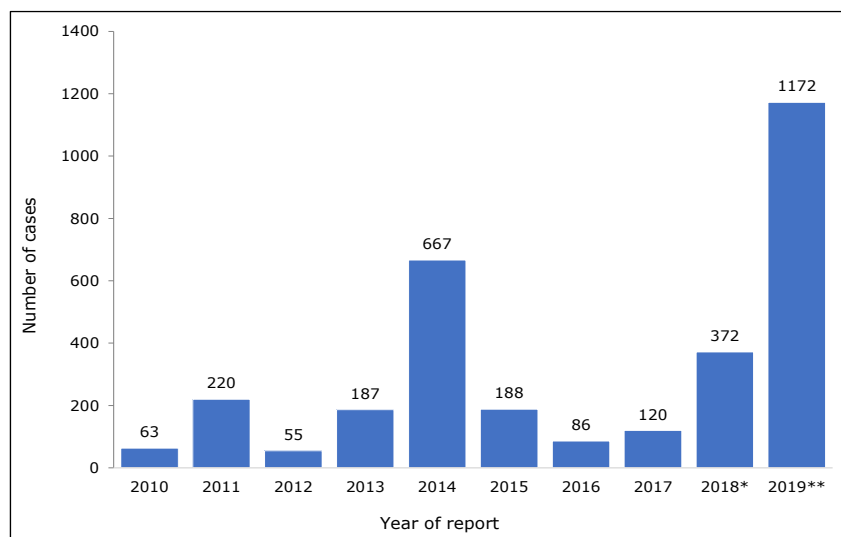
In **Mexico**, one laboratory-confirmed case of measles was recently reported in an 11-month-old female resident of Ecatepec Municipality, Mexico State. Rash onset was on 20 July 2019. The case had no history of travel outside of the country, and likely acquired the infection when in contact with European citizens during a mass gathering event in Mexico City. The viral genotype is pending.

Between EW 1 and EW 29 of 2019, a total of 3 confirmed measles cases have been reported in Mexico, 2 classified as imported cases and the most recent classified as import-related.

In the **United States**, between 1 January and 1 August 2019, a total of 1,172⁵ confirmed cases of measles were reported in 30 states: Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, New Mexico, Nevada, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and Washington.

Currently, measles outbreaks are ongoing⁶ in 4 states: California (Los Angeles County), New York (New York City and Rockland County), Texas (El Paso), and Washington. These outbreaks are linked to travelers that visited other countries, such as Israel, Ukraine, and the Philippines. The majority of cases were unvaccinated.

Figure 5. Reported cases of measles by year of report. United States, 2010-2019 (until 1 August).



*Cases until 29 December 2018. The case count is preliminary and subject to change.

**Cases as of 1 August 2019. The case count is preliminary and subject to change. Data are updated weekly.

Source: Data published by the United States Centers for Disease Control and Prevention and reproduced by PAHO/WHO.

⁵ Preliminary number of cases as of 1 August 2019; data subject to change.

⁶ Defined as 3 or more related cases.

This information is regularly updated on the United States Centers for Disease Control and Prevention (CDC) website, available at: <https://bit.ly/2iMFK71>.

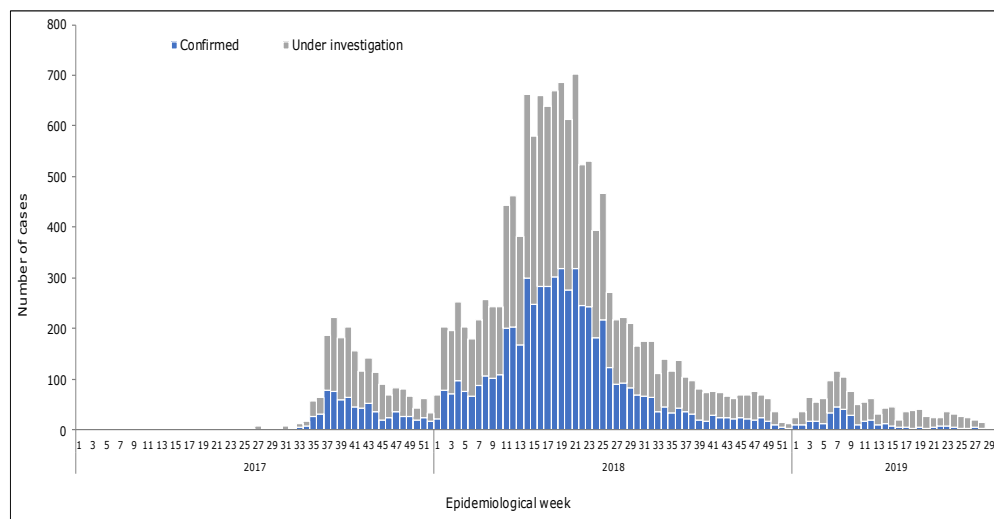
In **Venezuela**, the outbreak that began in 2017 remains ongoing. Between EW 26 of 2017 and EW 29 of 2019, a total of 10,329 suspected cases (1,307 in 2017, 8,005 in 2018⁷, and 1,017 in 2019) were reported, of which 6,923 were confirmed (727 in 2017, 5,779 in 2018, and 417 in 2019). In 2018, cases were confirmed by laboratory (2,272 cases), clinical diagnosis (2,899 cases), and epidemiological link (608 cases). In 2019, cases were confirmed by laboratory (189 cases), clinical diagnosis (170 cases), and epidemiological link (58 cases). In 2019, no deaths have been reported, whereas during 2017-2018, 81 deaths were reported: 2 in 2017 (in Bolívar) and 79 in 2018 (37 in Delta Amacuro, 27 in Amazonas, 9 in Miranda, 4 in the Capital District, 1 in Bolívar and 1 in Vargas)⁸.

The most recent laboratory-confirmed case had rash onset on 4 July 2019, from Jesús María Semprun Municipality, Jesús María Semprun Parish, Zulia State.

The average national incidence rate during 2017-2019 is 22 cases per 100,000 population. The highest incidence rates have been reported in Delta Amacuro (215 cases per 100,000 population), the Capital District (127 cases per 100,000 population), Amazonas (85 cases per 100,000 population), Bolívar (56 cases per 100,000 population), Vargas (48 cases per 100,000 population), and Miranda (39 cases per 100,000 population).

Confirmed cases with dates of rash onset between EW 1 and EW 29 of 2019 were reported from Zulia (229 cases), Anzoátegui (145 cases), Carabobo (17 cases), the Capital District (7 cases), Miranda (4 cases), Monagas (4 cases), Nueva Esparta (3 cases), Cojedes (2 cases), Yaracuy (2 cases), Aragua (1 case), Sucre (1 case), Amazonas (1), and Bolívar (1).

Figure 6. Reported cases of measles by epidemiological week of rash onset. Venezuela. 2017-2019 (until EW 29).



Source: Data from the Ministry of People's Power for Health of Venezuela and reproduced by PAHO/WHO.

⁷ According to the previous data provided by the authorities of the Ministry of People's Power for Health of Venezuela, in the Epidemiological Update published by PAHO / WHO on 18 June 2019, 7,790 suspected cases had rash onset in 2018 and 5,670 cases were confirmed for the same year; in addition, 79 deaths were reported (2 in 2017 and 77 in 2018). The current figures for 2018 (8,005 suspected cases, 5,779 confirmed cases, and 79 deaths) were updated by the health authorities of the Ministry of People's Power for Health of Venezuela, according to information recently received with new records found in the federal units.

⁸ The data in this analysis reflects the current case numbers; however, there may be delays in the reporting and completeness of the information. The data are subject to change as the information for each case is updated and validated.

Measles in indigenous communities

In **Brazil**, a total of 183 suspected cases have been reported among indigenous populations, of which 145 were confirmed in Roraima State and 2 (both fatal) in Pará State. The majority of confirmed cases in Roraima State are from the Auaris Indigenous Health District, which borders Venezuela.

In 2019, there have been no suspected cases of measles reported in indigenous communities.

In **Colombia**, between EW 10 of 2018 and EW 30 of 2019, 91 cases of measles were confirmed among indigenous populations (4 in 2018 and 87 in 2019), all among the Wayuu ethnic group in La Guajira Department.

In **Venezuela**, between EW 1 and EW 52 of 2018, there were 541 confirmed cases of measles reported among indigenous populations in the states of Amazonas⁹ (162 cases, of which 135 were in the Sanema, 24 in the Yanomami¹⁰, 2 in the Yekuana and 1 in the Baniva ethnic groups); Bolívar (9 in the Kariña and 1 in the Pemón ethnic groups); the Capital District (1 case in the Wayú ethnic group); Delta Amacuro (332 cases, all in the Warao ethnic group); Monagas (22 cases, of which 20 were in the Warao, 1 in the Shaima, and 1 in the Eñepa ethnic groups); and Zulia (9 cases in the Wayú ethnic group). Additionally, 62 deaths were reported, of which 35 were in Delta Amacuro (all in the Warao ethnic group) and 27 were in Amazonas (26 in the Sanema and 1 in the Yanomami ethnic groups).

In 2019, Venezuelan authorities have not reported any measles cases in the indigenous communities.

Advice to national authorities

Given the continued imported cases of measles from other regions and the ongoing outbreaks in countries and territories of the Region of the Americas, the Pan American Health Organization / World Health Organization (PAHO/WHO) reinforces the recommendations made since February 2015 to all Member States, to:

- Vaccinate to **maintain homogenous coverage of 95%** with the first and second doses of the measles, mumps and rubella (MMR) vaccine in all municipalities.
- **Vaccinate at-risk populations** (without proof of vaccination or immunity against measles and rubella), such as healthcare workers, persons working in tourism and transportation (hotels, airports, border crossings, mass urban transportation, and others), and international travelers.
- **Maintain a vaccine stock** of the measles-rubella (MR) and/or MMR vaccine **and syringes/supplies** for prevention and control actions of imported cases.
- **Identify migratory flows**, both external (arrival of foreigners or persons from the same country who visit countries with ongoing outbreaks) and internal (displaced populations) within each country, including indigenous populations and other vulnerable populations, in order to facilitate access to vaccination services according to the national scheme.

⁹ 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.

¹⁰ According to previous data provided by national authorities, between EW 11 and EW 27 of 2018, there were 126 confirmed cases, including 53 deaths, in the Yanomami Municipality of Alto Orinoco, Amazonas State in Venezuela.

- Implement a **plan to immunize migrant populations** in high-traffic border areas, prioritizing those considered at-risk, including both migrants and local residents, in these municipalities.
- **Increase vaccination coverage** in order to increase population immunity.
- **Strengthen epidemiological surveillance** for measles to achieve timely detection of all suspected cases in public, private, and social security healthcare facilities in order to contain the risk through timely public health actions and ensure that samples are received by laboratories within 5 days of collection and that laboratory results are available in a timely manner.
- **During an outbreak** and when it is not possible to confirm the suspected cases by laboratory, **classifications of a confirmed case may be based on clinical criteria (fever, rash, cough, coryza and conjunctivitis) and epidemiological link**, in order to not delay the response actions.
- Strengthen **epidemiological surveillance in border areas** to rapidly detect and respond to highly suspected cases of measles.
- 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).
- During outbreaks, **establish adequate hospital case management to avoid nosocomial transmission**, with appropriate referral of patients to isolation rooms (for any level of care) and avoiding contact with other patients in waiting rooms and/or other hospital rooms.

Additionally, PAHO/WHO recommends that Member States advise all travelers aged 6 months¹¹ and older who cannot show proof of vaccination or immunity to **receive the measles and rubella vaccine**, preferably the triple viral vaccine (MMR), **at least two weeks prior traveling to areas where measles transmission has been documented**. PAHO/WHO recommendations regarding advice for travelers are available in the 27 October 2017 PAHO/WHO Epidemiological Update on Measles¹².

Sources of information

1. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
2. **Brazil** Ministry of Health. Measles. Situation Monitoring in Brazil – 2019. Report No. 45. 26 July 2019. Available at: <https://bit.ly/2YFxfLz>
3. **Brazil** Ministry of Health. Measles. Situation Monitoring in Brazil – 2019. Report No. 46. 6 August 2019. Available at: <https://bit.ly/2M4geZo>

¹¹ The dose of the MMR or MR vaccine given to children aged 6 to 11 months does not replace the first dose of the recommended schedule at 12 months of age.

¹² Information available in the Epidemiological Update on Measles of 27 October 2017, Washington, D.C. PAHO/WHO. 2017. Available at: <https://bit.ly/2l3gCSi>

4. **Canada** Public Health Agency of Canada (PHAC). Measles and Rubella Weekly Monitoring Reports. Week 28 of 2019 (7-13 July 2019). Available at: <https://bit.ly/2lj4r5f>
5. **Colombia** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
6. **The Netherlands** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
7. **Mexico** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
8. **United States** Centers for Disease Control and Prevention. Measles cases and outbreaks. Available at: <https://bit.ly/2iMFK71>
9. **Venezuela** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.

Related link:

- PAHO/WHO – Vaccine-Preventable Diseases. Available at: <https://bit.ly/2Ksx97m>