

Situation Summary

Between 1 January and 12 December 2019, a total of 15,802 confirmed cases of measles, including 18 deaths, have been reported in 14 countries and territories of the Region of the Americas¹: Argentina (85 cases), the Bahamas (3 cases), Brazil (13,489 cases, including 15 deaths), Canada (113 cases), Chile (11 cases), Colombia (230 cases, including 1 death), Costa Rica (10 cases), Cuba (1 case), Curaçao (1 case), Mexico (20 cases), Peru (2 cases), the United States of America (1,276 cases), Uruguay (9 cases), and the Bolivarian Republic of Venezuela (552 cases, including 2 deaths) (**Figure 1**).

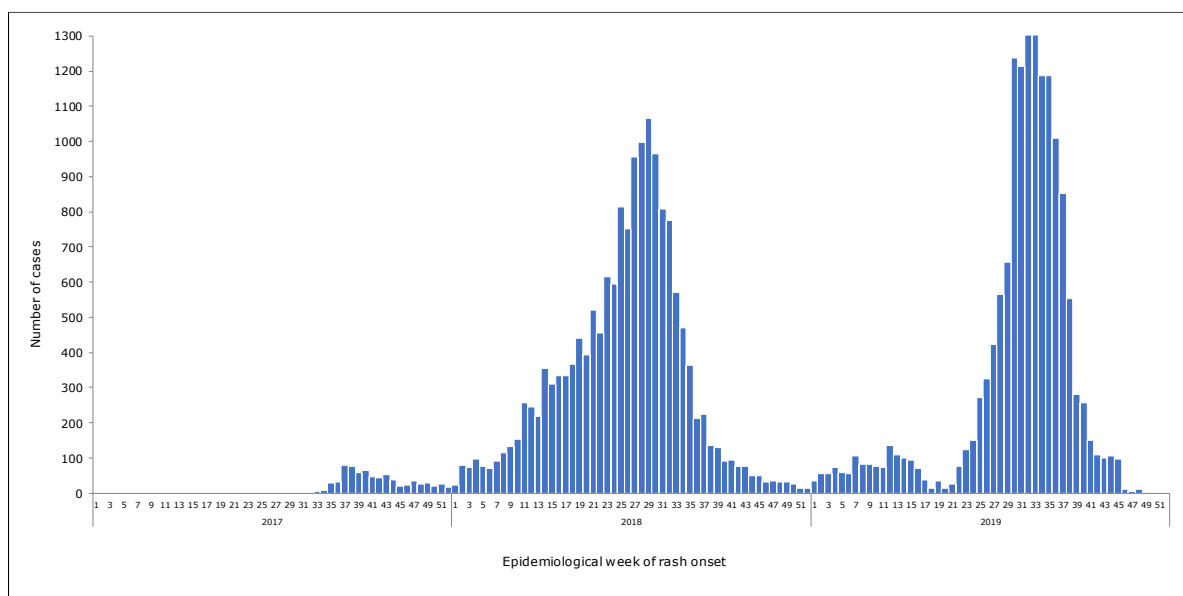
In 2018, the highest proportion of confirmed cases in the Region of the Americas was reported in Brazil (62%) and Venezuela (34%). In 2019, the majority of confirmed cases have been reported from Brazil (85%).

Since the PAHO/WHO Epidemiological Update on Measles published on 1 November 2019², there has been a 37.6% increase in the total number of confirmed cases of measles reported, with 9 countries reporting additional confirmed cases: Argentina (47 cases), the Bahamas (1 case), Brazil (4,185 cases), Canada (1 case), Chile (1 case), Colombia (18 cases), Mexico (4 cases), the United States (26 cases), and Venezuela (32 cases).

¹ The number of cases reported by each country may differ from prior Epidemiological Updates published due to the continuous review and data adjustment process carried out by each country.

² PAHO/WHO. Epidemiological Update: Measles. 1 November 2019, Washington, D.C.: PAHO/WHO; 2019. Available at: <https://bit.ly/2N7bHEZ>.

Figure 1. Distribution of confirmed measles cases* by epidemiological week (EW) of rash onset in the Region of the Americas. EW 1 of 2017– EW 50 of 2019.



*Confirmed cases with information available. 2017–EW 50 of 2019 (32,122 cases).

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

The following is a summary of the epidemiological situation of measles for countries/territories that have reported confirmed cases between 1 November and 7 December 2019.

In **Argentina**, between epidemiological week (EW) 1 and EW 49 of 2019, a total of 85 confirmed cases of measles were reported, of which 83 were detected in Argentina and 2 in Spain³. Of the cases detected in Argentina, 7 were imported or import-related and 76 have no travel history or epidemiological link with imported cases. Of these 76 cases with no travel history or epidemiological link with imported cases, 48 are associated with 8 transmission chains while for 28 cases, the links remain under investigation; furthermore, 15 are residents of the city of Buenos Aires and 61 are residents of Buenos Aires Province.

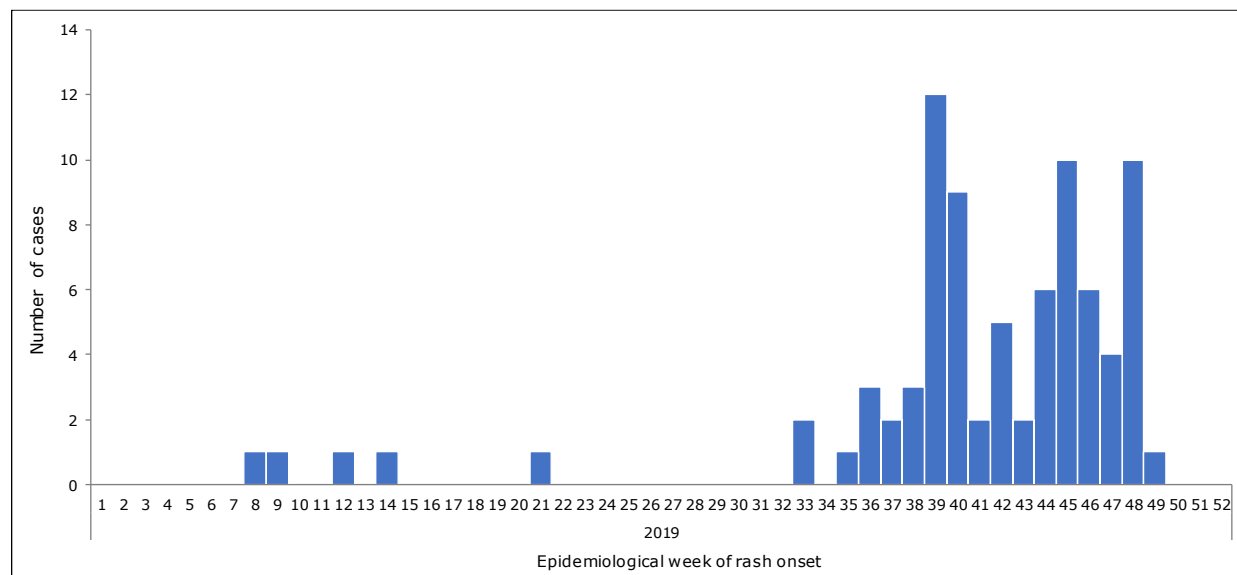
Among the 83 confirmed cases detected in Argentina, 61 had a known vaccination history, of which 22 were vaccinated (7 with two or more doses, 14 with one dose, and 1 with dose zero) and 39 were not vaccinated; the remaining 22 cases had no information on vaccination.

The highest incidence rates by age group are among children under 1-year-old (2.97 cases per 100,000 population), followed by 1-year-olds (0.81 cases per 100,000 population), 2 to 4-year-olds (0.36 cases per 100,000 population), and 25 to 34-year-olds (0.21 cases per 100,000 population).

Genotype D8, lineage MVs/Gir Somnath.IND/42.16 has been identified in this outbreak. Onset of rash for the most recent confirmed case was in EW 49 of 2019.

³ Two cases were confirmed in Spain and had travel history to Buenos Aires during the period of exposure.

Figure 2. Confirmed measles cases by epidemiological week (EW) of rash onset. Argentina. EW 1 to EW 49 of 2019.



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

In the **Bahamas**, between EW 1 and EW 49 of 2019, there were 3 confirmed measles cases reported, of which 2 were imported and one was import-related.⁴ The most recent case is an imported case in a 3-year-old child who traveled from Ontario Province, Canada, to the city of Nassau, the Bahamas, on 22 November 2019 on a direct flight. Rash onset was on 24 November (EW 48 of 2019) and the case had no fever. The vaccination history included receiving one dose of the measles, mumps, rubella (MMR) vaccine at one-year-old. Genotype and lineage results for this case are pending.

No secondary cases related to this case have been reported.

In **Brazil**⁵, between EW 1 of 2018 and EW 47 of 2019, a total of 75,827 suspected cases of measles have been reported, of which 23,835 have been confirmed (10,346 in 2018 and 13,489⁶ in 2019), including 27 deaths (12 in 2018 and 15 in 2019) (**Figure 3**).

Between EW 1 of 2018 and EW 47 of 2019, the cumulative national incidence rate is 12.27 cases per 100,000 population (5.3 cases per 100,000 population in 2018 and 6.9 cases per 100,000 population in 2019).

⁴ The information on the first imported case, is available in the 18 April 2019 Epidemiological Update on Measles, available at: <https://bit.ly/2KOdu2t>, and the information on the import-related case (second case) is available in the 1 November 2019 Epidemiological Update on Measles, available at: <https://bit.ly/2N7bHEZ>.

⁵ 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 Brazil Ministry of Health.

⁶ Of the 9,304 confirmed cases in 2019, 80.7% were confirmed by laboratory criteria and 19.3% were confirmed by clinical-epidemiological criteria.

At the beginning of 2019, cases were reported from 23 federal units: Alagoas, Amapá, Amazonas, Bahia, Ceará, the Federal District, Goiás, Mato Grosso do Sul, Maranhão, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Piauí, Rio Grande do Norte, Rio Grande do Sul, Rio de Janeiro, Roraima, Rondônia, Santa Catarina, São Paulo, and Sergipe. The predominant circulating genotype and lineage was D8, lineage MVi/HuluLangat.MYS/26. However, since the occurrence of an outbreak on a cruise ship in São Paulo State (EW 8 of 2019), the circulation of three different lineages of genotype D8 has been detected: MVs/FrankfurtMain.DEU/17.11, MVi/Delhi.IND/01.14/06, and MVs/Gir Somnath.IND/42.16.

Between EW 36 and EW 47 of 2019, 17 federal units have reported confirmed cases: Alagoas (14 cases), Amapá (2 cases), Bahia (30 cases), Ceará (2 cases), the Federal District (1 case), Maranhão (4 cases), Minas Gerais (81 cases), Pará (29 cases), Paraíba (28 cases), Paraná (405 cases), Pernambuco (50 cases), Rio de Janeiro (119 cases), Rio Grande do Norte (1 case), Rio Grande do Sul (27 cases), Santa Catarina (68 cases), São Paulo (2,702 cases), and Sergipe (2 cases).

The federal units with the most recently reported confirmed measles cases (between EW 36 and EW 47 of 2019) are provided in **Table 1**.

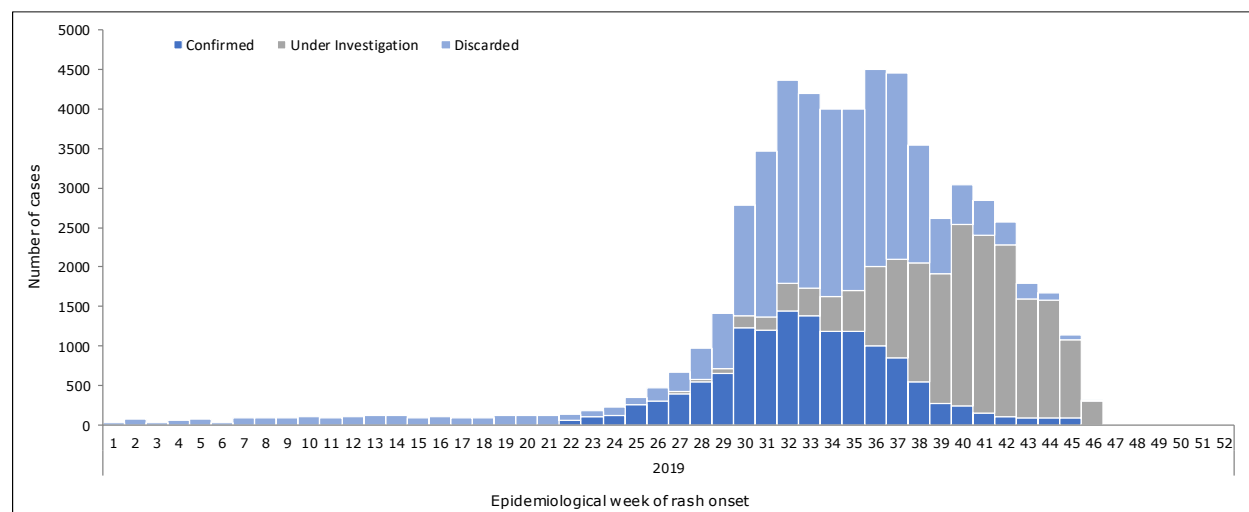
The most recent confirmed cases in Brazil had rash onset in EW 46 of 2019 and were reported in the states of Paraná and Rio de Janeiro.

Table 1. Federal units reporting confirmed cases between EW 36 and EW 47 of 2019 in Brazil.

Federal Unit	Confirmed cases between EW 36 - 47 of 2019	Incidence rate per 100,000 population	EW of rash onset of the last confirmed case reported
Paraná	405	8.04	46
Rio de Janeiro	119	1.16	46
São Paulo	2,702	8.21	45
Bahía	30	0.94	45
Minas Gerais	81	1.61	45
Santa Catarina	68	3.64	44
Pará	29	1.53	44
Pernambuco	50	2.28	43
Rio Grande do Sul	27	1.29	43
Alagoas	14	1.05	43

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

Figure 3. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil. EW 1 to EW 46 of 2019.



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

With respect to the distribution of the confirmed cases by age group, the highest proportion of cases is among 20 to 39-year-olds, which may explain the rapid spread of the outbreak due to high mobility of this age group to places of work or study, and their probable links (as parents, caregivers, health service providers, amongst others) with children aged less than 1 year, for which the highest incidence rates are observed (**Table 2**).

Table 2. Incidence rates and proportion of confirmed cases by age group and epidemiological week (EW) of rash onset. Brazil. EW 24 to EW 47 of 2019.

Age group	Incidence rate* per 100,000 population		Proportion (%) of cases	
	EW 24 to EW 35	EW 36 to EW 47	EW 24 to EW 35	EW 36 to EW 47
< 1 year	54.2	53.7	13.8	16.3
1 to 4 years	15.8	12.5	14.3	13.7
5 to 9 years	2.3	2.0	2.7	2.9
10 to 14 years	1.4	1.0	1.9	1.7
15 to 19 years	9.8	8.5	13.3	14.2
20 to 29 years	10.5	8.7	32.7	32.7
30 to 39 years	4.9	3.7	14.0	12.3
40 to 49 years	1.9	1.3	4.4	3.7
≥50 years	0.8	0.6	2.8	2.5

*The incidence rates were calculated considering the population of the municipalities of residence of the confirmed cases.

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

The epidemiological situation in the state of São Paulo is described below.

In the state of São Paulo, between EW 1 and EW 47 of 2019, a total of 48,754 suspected cases of measles were reported, of which 12,296 were confirmed (including 14 deaths), 20,857 were discarded, and 15,601 remain under investigation (**Figure 4**). The confirmed cases in São Paulo represent 91% of the confirmed cases reported nationally.

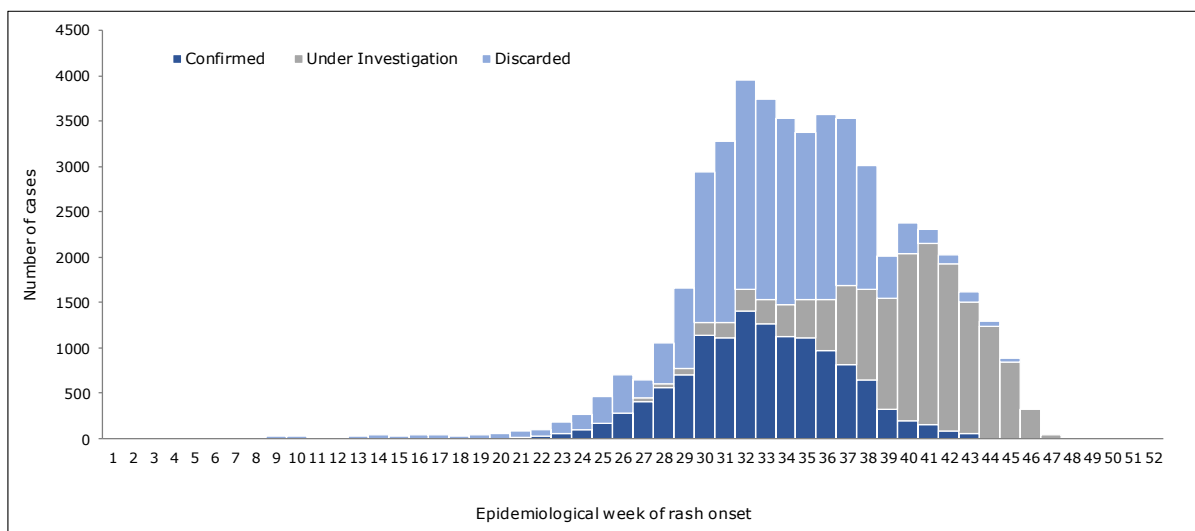
Of the 14 deaths reported in São Paulo, 50% are aged less than 5 years, 57% had an underlying condition, and 57% were female.

In São Paulo, highest incidence rates are among children aged less than 1 year (127.5 cases per 100,000 population among less than 6-month-olds and 808.9 cases per 100,000 population among 6 to 11-month-olds), followed by 1 to 4-year-olds (81.7 cases per 100,000 population) and 25 to 29-year-olds (57.3 cases per 100,000).

Of the 645 municipalities in the state of São Paulo, suspected cases have been reported from 473 municipalities and confirmed cases from 252 municipalities. São Paulo Municipality has reported the majority (51%) of reported cases within the state.

The most recent confirmed case had rash onset in EW 45 of 2019 and the most recent cases under investigation had rash onset in EW 46 of 2019.

Figure 4. Reported cases of measles by epidemiological week (EW) of rash onset. São Paulo State, Brazil. EW 1 to EW 47 of 2019.



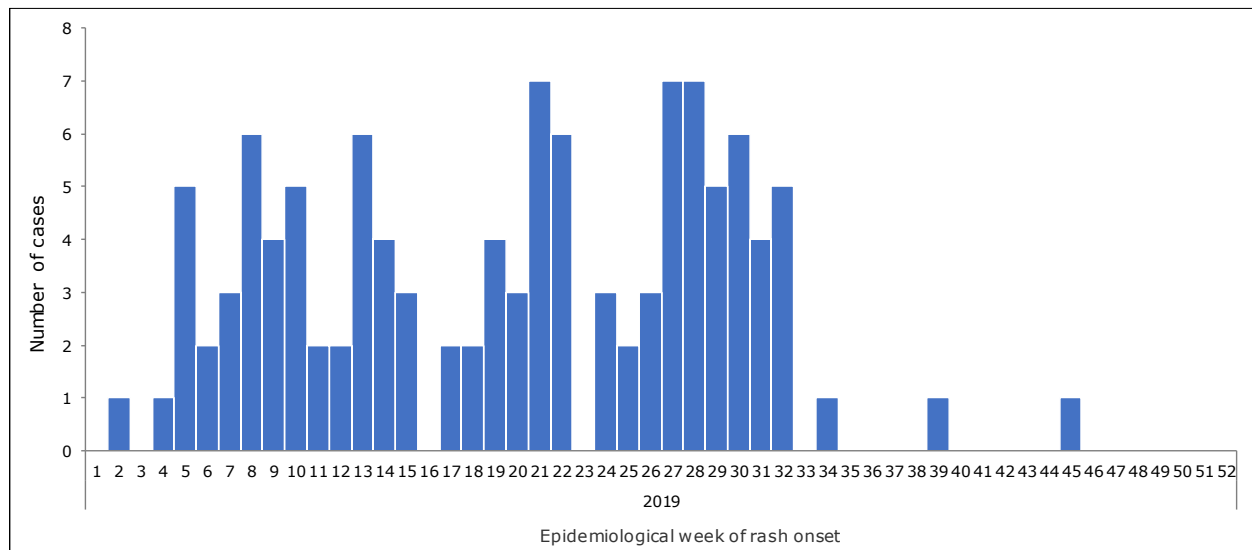
Source: Data published by the São Paulo State Secretariat of Health and reproduced by PAHO/WHO.

In **Canada**, between EW 1 and EW 47 of 2019, a total of 113 confirmed cases of measles have been reported in the provinces of Alberta, British Columbia, Manitoba, New Brunswick, Ontario, Quebec, Saskatchewan, and the Northwest Territories. Of the total confirmed cases, 73 were genotyped, for which genotype B3 (20 cases) and genotype D8 (53 cases) were identified, similar to those circulating globally.

The rash onset date for the most recent confirmed case was in EW 45 of 2019 (**Figure 5**).

The Public Health Agency of Canada (PHAC) periodically updates this information, available at: <https://bit.ly/2lj4r5f>

Figure 5. Confirmed cases of measles by epidemiological week (EW) of rash onset. Canada. EW 1 to EW 47 of 2019.



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

In **Chile**, between EW 45 of 2018 and EW 49 of 2019, a total of 34 confirmed measles cases have been reported (23 in 2018 and 11 in 2019), of which 12 were imported and 22 were import-related.

Of the 34 confirmed cases, 2 were vaccinated, 15 had not been vaccinated due to being under 1-year-old, and the remaining cases had no proof of vaccination history. Genotype D8 was identified for 24 cases.

The most recent confirmed case (case 11 in 2019)⁷ is a 47-year-old male who had travel history to São Paulo, Brazil, and returned to Chile on 15 October 2019. Symptom onset was on 25 October 2019. The case had no proof of vaccination history. Genotype D8 was identified. There were no secondary cases related to this case.

In **Colombia**⁸, between EW 10 of 2018 and EW 48 of 2019, a total of 11,443 suspected cases of measles were reported (7,185 in 2018 and 4,248 in 2019), of which 438 were confirmed (208 with rash onset in 2018 and 230 in 2019), including one death (**Figure 6**). A total of 66 transmission chains have been identified for 320 confirmed cases, while 118 isolated cases did not generate secondary cases.

⁷ Information on the first 10 cases in 2019 was reported in the PAHO/WHO Epidemiological Updates on Measles of 25 September 2019 and 1 November 2019, available at: <https://bit.ly/2IPMzqk> and <https://bit.ly/2N7bHEZ>, respectively.

⁸ 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.

Genotyping performed on samples for 119 cases identified genotype D8, of which 91 were lineage Mvi/Hulu Langat.MYS/26.11⁹, 2 were lineage MVs/Gir Somnath.IND/42.16¹⁰, and the lineage identification for 26 samples remains pending.

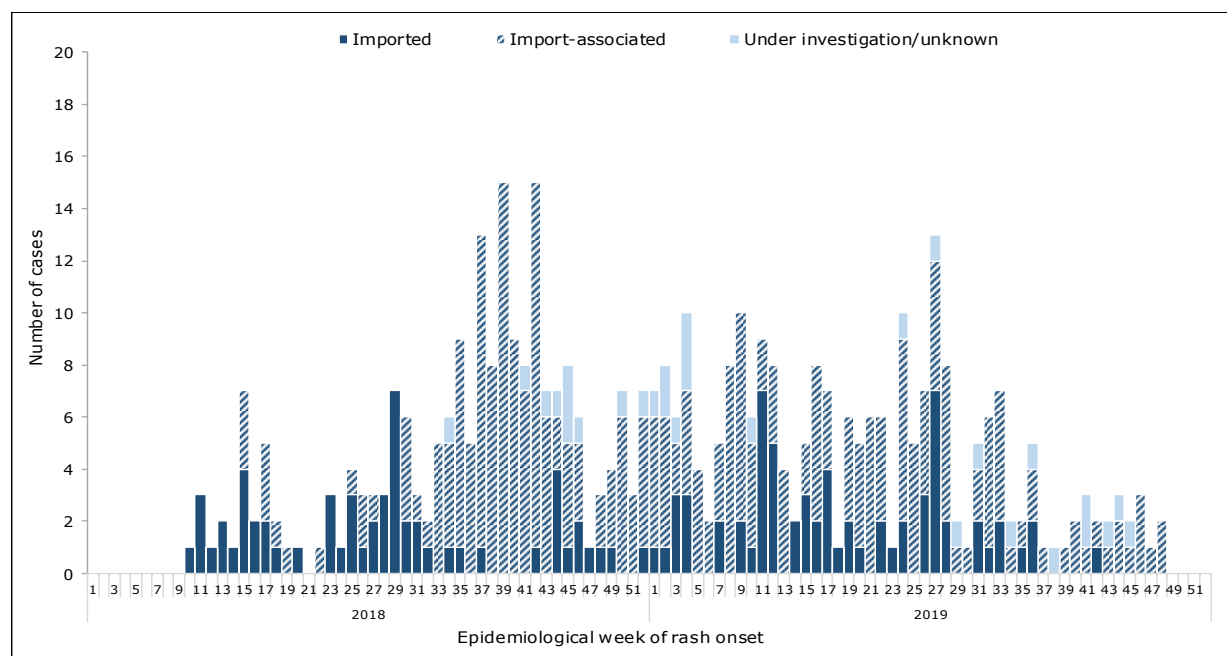
The highest incidence rate among the Colombian population is among children aged less than 1 year, which was 5.9 cases per 100,000 population in 2018 and is 3.1 cases per 100,000 population in 2019, followed by 1 to 4-year-olds, with an incidence rate of 0.6 cases per 100,000 population in both 2018 and 2019.

As of EW 48 of 2019, the departments of Atlántico, César, Córdoba, Cundinamarca, La Guajira, Norte de Santander, and Sucre, and the districts of Barranquilla, Bogotá, and Cartagena have reported 230 confirmed cases.

Between EW 45 and EW 48 of 2019, a total of 9 confirmed cases have been reported, of which 8 were import-related (2 in Norte de Santander and 6 in César) and one case for which the source of infection remains under investigation.

The most recent confirmed case (imported) had rash onset in EW 42 of 2019 (17 October 2019), and the most recent suspected case had rash onset in EW 50 of 2019 (10 December 2019).

Figure 6. Confirmed cases of measles by epidemiological week (EW) of rash onset. Colombia. EW 1 of 2018 to EW 48 of 2019.



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

⁹ Of the D8 genotype, lineage Mvi/Hulu Langat.MYS/26.11 cases, 43 are imported cases from Venezuela, 43 are import-related, 4 cases have the source of infection under investigation, and one case has an unknown source of infection.

¹⁰ Of the genotype D8, lineage MVs/Gir Somnath.IND/42.16 cases, one case was imported from Europe and one case was imported from São Paulo, Brazil.

In **Mexico**, between EW 1 and EW 47 of 2019, there were 20 confirmed measles cases reported, including 6 imported and 14 import-related. Most of the cases (80%) were reported in four states: Quintana Roo (5 cases), México (4 cases), Chihuahua (3 cases), and Tabasco (4 cases), and the remaining cases were reported from the states of Guerrero (1 case), Nuevo León (1 case), San Luis Potosí (1 case), and Veracruz (1 case).

Of the confirmed cases, 60% are female, 30% are aged 1 to 4 years, and 50% are aged 18 years and older.

Of the 20 confirmed cases, 9 were vaccinated and 11 were unvaccinated (including 2 infants under the age of 1 year).

Rash onset occurred between 10 February (EW 7 of 2019) and 26 October (EW 43 of 2019). The 3 most recent reported cases were related to a case with travel history to Miami, United States of America. Rash onset for these 3 cases occurred on 22 and 25 October for 2 cases that are residents of Tabasco and on 26 October for a case who resides in Querétaro and had visited the primary case in Tabasco.

Genotyping results for samples from 9 cases identified genotype B3, lineage MVi/Ibadan.NGA/0.97 (2 cases) and genotype D8, lineage MVi/Manchester.GBR/30.94 (7 cases). Genotype and lineage results are pending for 7 cases, and samples were not available for 4 cases.

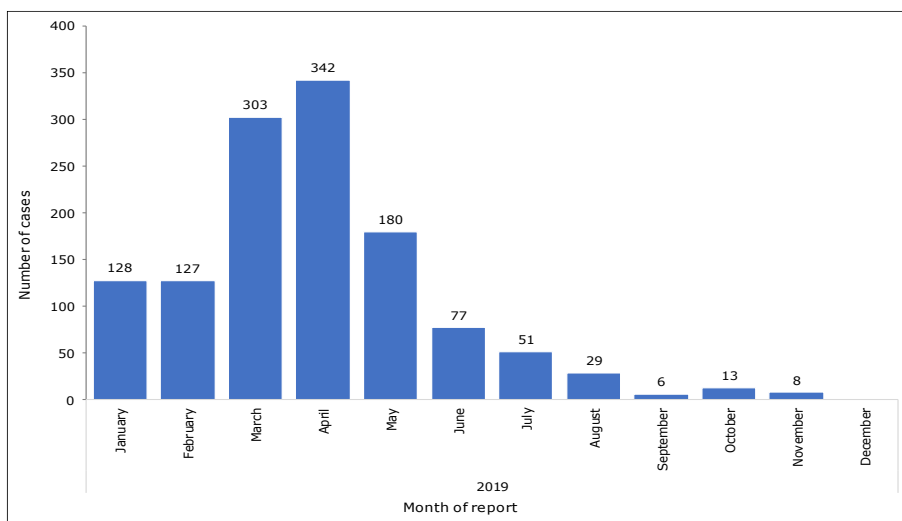
In the **United States**, between 1 January and 5 December 2019, a total of 1,276¹¹ confirmed cases of measles were reported in 31 states: Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, New Mexico, Nevada, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and Washington.

While the cases reported in 2019 represent the greatest number of cases reported in the U.S. since 1992, a decreasing trend has been observed since May 2019 (**Figure 7**). The majority of cases are among persons who were unvaccinated for measles.

This information is regularly updated on the United States Centers for Disease Control and Prevention (CDC) website, available at: <https://bit.ly/2Nzal4C>

¹¹ Preliminary number of cases as of 5 December 2019; data subject to change.

Figure 7. Confirmed cases of measles by month of report. United States, January to December 2019*



*Cases as of 5 December 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.

In **Venezuela**, between EW 26 of 2017 and EW 50 of 2019, a total of 11,181 suspected cases were reported (1,307 in 2017, 8,005 in 2018, and 1,869 in 2019), of which 7,058 were confirmed (727 in 2017, 5,779 in 2018, and 552 in 2019), including 83 deaths: 81 deaths in 2017-2018, of which 2 were in 2017 in Bolívar, 75 were in 2018 (33 in Delta Amacuro, 27 in Amazonas, 9 in Miranda, 4 in the Capital District, 1 in Bolívar, and 1 in Vargas), and 2 deaths in 2019 (in Zulia).¹²

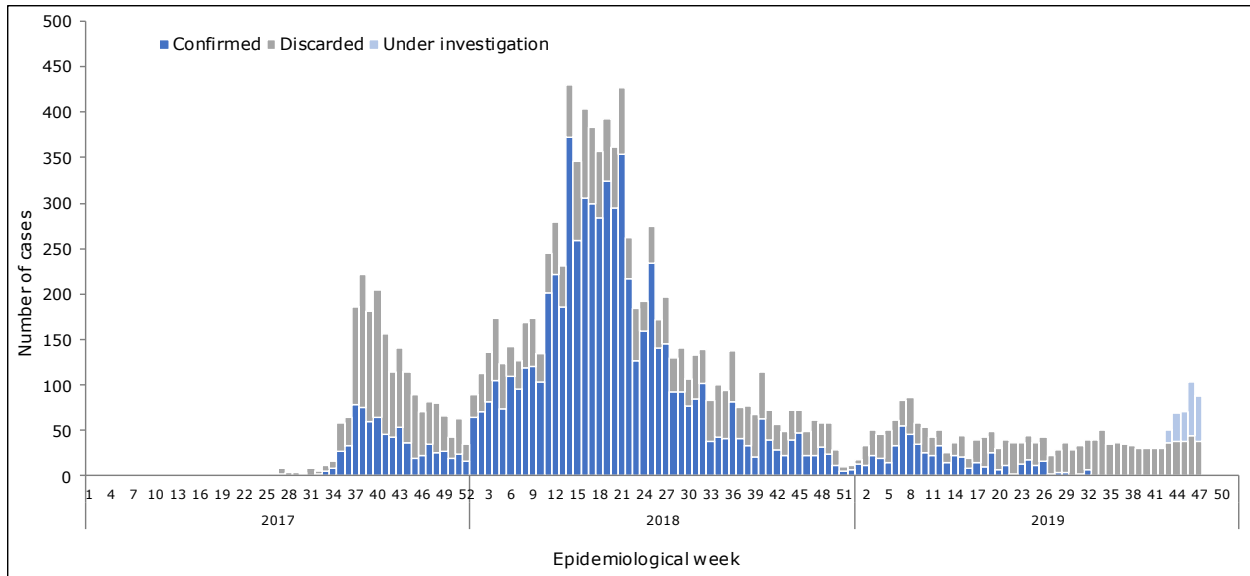
The most recent laboratory-confirmed case had rash onset on 11 August 2019, from Guajira Municipality, Alta Guajira Parish, Zulia State.

The average national incidence rate during 2017-2019 is 22.2 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), and Amazonas (85 cases per 100,000 population).

Confirmed cases with dates of rash onset between EW 1 and EW 50 of 2019 were reported from Zulia (364 cases), Anzoátegui (145 cases), Carabobo (17 cases), Monagas (4 cases), the Capital District (7 cases), Miranda (4 cases), Nueva Esparta (3 cases), Cojedes (2 cases), Yaracuy (2 cases), Amazonas (1 case), Aragua (1 case), Bolívar (1), and Sucre (1 case).

Figure 8. Reported cases of measles by epidemiological week (EW) of rash onset. Venezuela. 2017-2019 (until EW 50).

¹² 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.



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

Measles in indigenous communities

In **Brazil**, in 2018 a total of 183 suspected cases were 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 confirmed cases of measles reported in indigenous communities.

In **Colombia**, between EW 10 of 2018 and EW 48 of 2019, a total of 105 confirmed cases of measles were reported among indigenous populations (4 in 2018 and 101 in 2019), of which 93 were among the Wayuu ethnic group in La Guajira Department, one among the Zenú ethnic group in Córdoba Department, one among the Barasano ethnic group in Norte de Santander Department, and 10 among the Arhuaco ethnic group in César.

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 Amazonas¹³ (162 cases, of which 135 were in the Sanema, 24 in the Yanomami¹⁴, 2 in the Yekuana, and 1 in the Baniva ethnic groups); Bolivar (14 cases, of which 9 were in the Kariña and 5 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

¹³ 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.

¹⁴ 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.

ethnic group) and 27 were in Amazonas (26 in the Sanema and 1 in the Yanomami ethnic groups).

In 2019, between EW 1 and EW 50, a total of 139 cases of measles have been reported among indigenous communities, all in Zulia State, in the following ethnic groups: Añu (50 cases), Putumayo (2 cases), Wayu (85 cases), and Yukpa (2 cases).

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:

Vaccination

- 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.
- 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.

Epidemiological surveillance

- **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.

Rapid response

- 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 months¹⁵ 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 Measles¹⁶.

¹⁵ 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.

¹⁶ Information available in the Epidemiological Update on Measles of 27 October 2017, Washington, D.C. PAHO/WHO, 2017. Available at: <https://bit.ly/2l3gCSi>

Sources of information

1. **Argentina** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
2. **The Bahamas** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
3. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
4. **Brazil**, São Paulo State Secretariat of Health, “Prof. Alexandre Vranjac” Epidemiological Surveillance Center, Epidemiological Bulletin Vol I N° 16 año 2019. Available at: <https://bit.ly/2rlp8cq>
5. **Canada** Public Health Agency of Canada (PHAC). Measles and Rubella Weekly Monitoring Reports. Week 47 of 2019 (17-23 November 2019). Available at: <https://bit.ly/2lj4r5f>
6. **Chile** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
7. **Colombia** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
8. **Mexico** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
9. **United States** Centers for Disease Control and Prevention. Measles cases and outbreaks. Available at: <https://bit.ly/2iMFK71>
10. **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>