Epidemiological Update
Measles

28 February 2020

Situation Summary

Between 1 January and 22 February 2020, 6 countries have reported confirmed cases in the Region of the Americas: Argentina (45 cases, including 1 death), Brazil (338 cases, including 1 death), Canada (1 case), Chile (2 cases), the United States of America (5 cases), and Uruguay (2 cases).

In 2019, a total of 20,554 confirmed cases of measles, including 19 deaths, were reported in 14 countries and territories of the Region of the Americas[1]: Argentina (107 cases), the Bahamas (3 cases), Brazil (18,203 cases, including 15 deaths), Canada (113 cases), Chile (11 cases), Colombia (244 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 (1,282 cases), Uruguay (9 cases), and the Bolivarian Republic of Venezuela (548 cases, including 3 deaths).

The following is a summary of the epidemiological situation of measles for countries that have reported confirmed measles cases in 2020.

In **Argentina**, a total of 107 confirmed measles cases had rash onset in 2019 and 45 confirmed cases had rash onset in 2020 (**Figure 1**).

The current epidemic outbreak began in epidemiological week (EW) 35 of 2019 and, as of EW 7 of 2020, there have been 145 confirmed measles cases reported, including one death. Of the 145 cases, 3 were imported from the United States and 4 imported from Brazil; genotype and lineage are under investigation. For the 138 remaining cases, the origin could not be established and they are part of the same outbreak.

With respect to the distribution of cases by place of residence, one case is a resident of Córdoba Province (with travel history to Brazil), 118 cases (81.4%) are residents of Buenos Aires Province (including 2 cases imported from the United States), and 26 cases (17.9%) are residents of the city of Buenos Aires (including 4 imported cases).

Among the 145 confirmed cases, 92 (63%) were unvaccinated, 14 (10%) were vaccinated with one dose, and 11 (8%) were vaccinated with two doses.[2] For 28 cases (19%), no information regarding vaccination status was available.

[1] The number of cases reported by each country may differ from prior Pan American Health Organization / World Health Organization (PAHO/WHO) Epidemiological Updates published due to the continuous review and data adjustment process carried out by each country.
[2] Three vaccinated patients were immunocompromised.

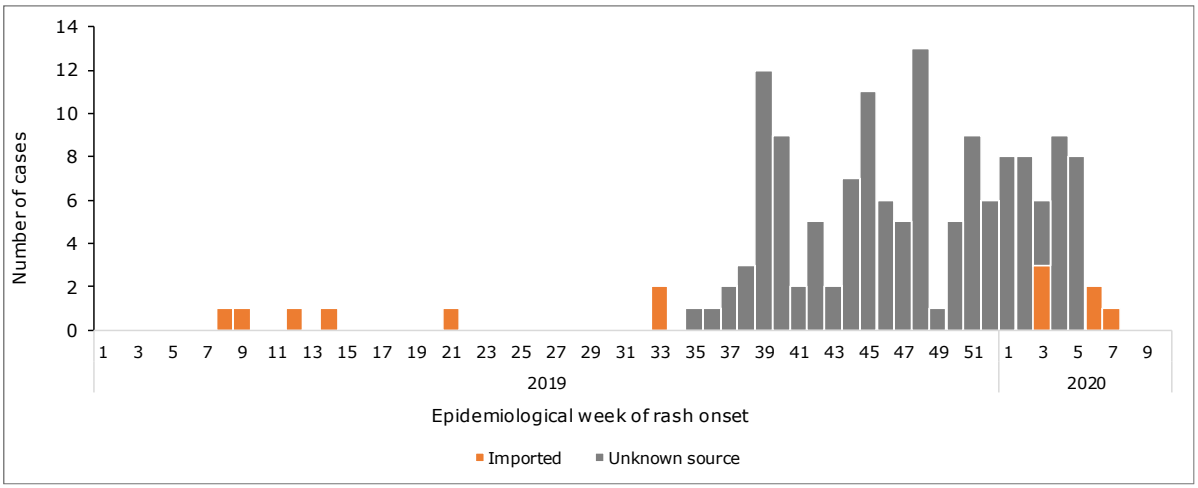
Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 28 February 2020, Washington, D.C.: PAHO/WHO; 2020

The highest incidence rates are all among children aged less than 5 years: among under 1-year-olds (4.06 cases per 100,000 population); 1-year-olds (2.00 cases per 100,000 population); and 2 to 4-year-olds (0.80 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 16 February 2020.

Figure 1. Confirmed measles cases by epidemiological week (EW) of rash onset. Argentina. EW 1 of 2019 to EW 7 of 2020.



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

Since the declaration of measles elimination in the Americas Region in 2016, **Brazil**, like other countries in the region, have been exposed to the importation of cases from other regions, generating isolated cases. However, this situation changed in Brazil when viral circulation was re-established in the country following an imported case from Venezuela in February 2018, generating an outbreak the same year with 10,330 confirmed cases and which mainly affected the northern region of the country; genotype D8, lineage MVi/HuluLangat.MYS/26.11, was identified. At the beginning of 2019, while the outbreaks in states of the northern region of the country ended, new transmission chains resulting from imported cases (from Israel and Norway) generated an outbreak even larger than the previous year, with 18,203 confirmed cases by the end of 2019 and the detection of 3 different lineages of genotype D8 in circulation: MVs/FrankfurtMain.DEU/17.11, MVi/Delhi.IND/01.14/06 and MVs/GirSomnath.IND/42.16. MVs/GirSomnath.IND/42.16 was the predominant lineage detected.

The outbreaks in 2018 and 2019 far exceeded the outbreaks observed in the preceding two decades (**Figure 2**).

Figure 2. Confirmed cases of measles by year. Brazil. 1999 to 2019.

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

In 2019[3], a total of 64,765 suspected cases of measles were reported, of which 18,203[4] were confirmed, including 15 deaths, 35,669 were discarded, and 10,893 remain under investigation. The cumulative incidence rate is 19.0 cases per 100,000 population.

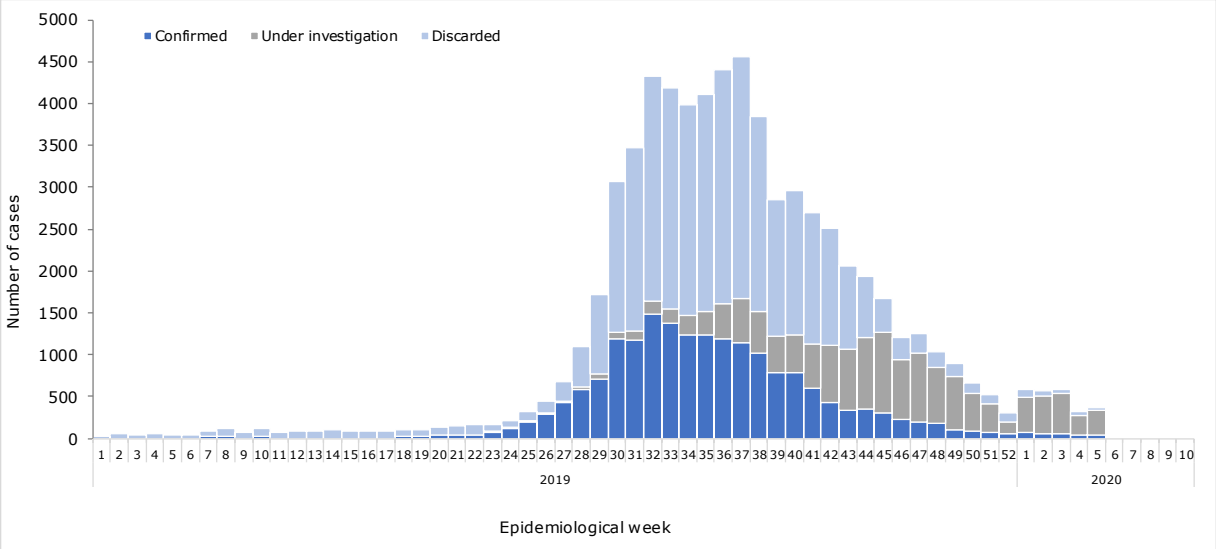
The current outbreak began in April 2019 in the state of São Paulo and subsequently spread to 21 other states and the Federal District, with a total of 526 municipalities across 23 federal units[5] reporting confirmed cases in 2019.

The epidemic curve shows a sustained increase as of EW 23 of 2019, reaching a peak in confirmed cases in EW 37 of 2019, followed by a gradual decrease with an average of 451.5 cases reported weekly in 2020 (**Figure 3**).

Between EW 1 and EW 5 of 2020, 2,184 suspected cases have been reported, of which 338 were confirmed (including one death), 291 were discarded, and 1,555 remain under investigation. The predominant genotype and lineage in 2020 continues to be D8, lineage MVs/Gir Somnath.IND/42.16.

[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 Brazil Ministry of Health.
[4] Of the 18,203 confirmed cases, 13,873 were confirmed by laboratory criteria and 4,366 were confirmed by clinical-epidemiological criteria.
[5] Alagoas, Amapá, Amazonas, Bahía, Ceará, Espírito Santo, the Federal District, Goiás, Maranhão, Mato Grosso do Sul, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Roraima, Santa Catarina, São Paulo, and Sergipe.

Figure 3. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil. EW 1 of 2019 to EW 5 of 2020.



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

The federal units with active outbreaks[6] in 2020 are: Alagoas, Bahía, Minas Gerais, Pará, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo, and Sergipe.

Table 1 shows the number of confirmed cases in 2020, incidence rates, and EW of rash onset for the most recent confirmed case, by federal unit.

Table 1. Federal units reporting confirmed cases in Brazil in 2020.

Federal Unit	Confirmed cases in 2020	Incidence rate* per 100,000 population	EW of rash onset for the most recent confirmed case
Alagoas	1	0.10	2
Pará	4	0.24	1
Paraná	64	2.05	4
Pernambuco	7	0.30	4
Rio de Janeiro	93	0.76	5
Rio Grande do Sul	11	0.57	4
Santa Catarina	22	1.45	4
São Paulo	136	0.85	4

*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.

[6] Federal units that have reported confirmed cases in the last 90 days.

Given that São Paulo State accounts for the largest proportion of measles cases in Brazil (87.5% of total cases), a description of the epidemiological situation in São Paulo State is presented below.

In São Paulo State, from the beginning of the outbreak until 8 February 2020, there were 54,214 suspected measles cases reported, of which 16,266 were confirmed (including 15 deaths), 29,201 were discarded, and 8,747 remain under investigation.

With respect to the age distribution among confirmed cases, children under 5-years-old account for 32% of cases and persons aged 15 to 29-years-old account for 43%. The majority of cases are male (52%) and 12.6% required hospitalization.

In **Chile**, between EW 1 and EW 52 of 2019, there were 11 confirmed measles cases.

In January 2020, 2 confirmed imported measles cases were reported. The first confirmed case reported in 2020 is an imported case from Brazil, for which genotype D8, lineage MVs/Gir.Somnath.IND/42.16, was identified.[7] The second confirmed case is a 44-year-old male with travel history to the United States. Rash onset was 16 January 2020, 13 days after his arrival in Chile. Genotype D8, lineage MVs/Gir.Somnath.IND/42.16 was identified.

In the **United States**, between 1 January and 31 December 2019, a total of 1,282[8] confirmed measles cases were reported.

In 2020, as of 31 January, there were 5 confirmed measles cases reported in 5 states.

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

In **Uruguay**, between EW 1 and EW 52 of 2019, there were 9 confirmed measles cases reported.

Between January and February 2020, 2 import-related cases were reported. The cases correspond to an 11-month-old infant and 42-year-old mother who resided with a case that was confirmed in Argentina during the period of transmissibility. Rash onset for the mother was in EW 5 of 2020 and rash onset for the infant was in EW 6 of 2020. Genotype and lineage are pending.

No additional related cases have been reported.

[7] For more information please see: Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 24 January 2020, Washington, D.C.: PAHO/WHO; 2020 available at: https://bit.ly/37tTEk0

[8] Preliminary number of cases as of 31 January 2019; data subject to change.

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 months[9] 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 Measles[10].

Sources of information

1. **Argentina** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
2. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
3. **Chile** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
4. **United States** Centers for Disease Control and Prevention. Measles cases and outbreaks. Available at: https://bit.ly/2iMFK71
5. **Uruguay** 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

[9] 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.
[10] Information available in the Epidemiological Update on Measles of 27 October 2017, Washington, D.C. PAHO/WHO. 2017. Available at: https://bit.ly/2I3gCSi