Epidemiological Update
Measles

1 March 2021

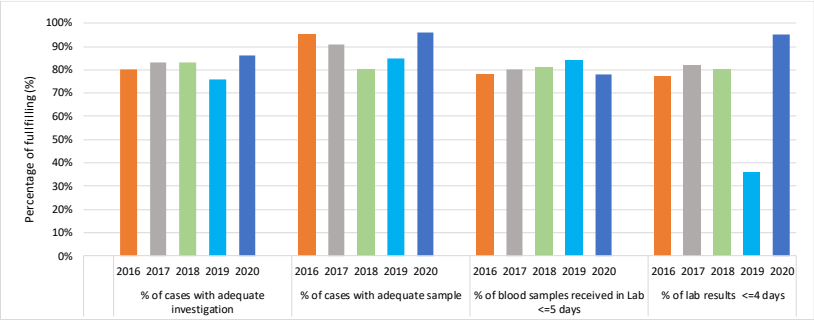
Situation Summary

In 2021, between epidemiological week (EW)1 and EW 6, one country and one territory in the Region of the Americas have reported confirmed cases of measles: Brazil with 54 confirmed cases and French Guiana with 2 confirmed cases. Currently, only Brazil is reporting active outbreaks of measles, this event constitutes a hazard for other countries and territories in the Region of the Americas.

In 2020, a total of 9 countries in the Region of the Americas have reported a total of 8,726 confirmed cases of measles, including 11 deaths: Argentina (61 cases including 1 death), Bolivia (2 cases), Brazil (8,448 cases including 10 deaths), Canada (1 case), Chile (2 cases), Colombia (1 case), Mexico (196 cases), the United States of America (13 cases), and Uruguay (2 cases).

During the period from 2016 to 2020[1], three of the six international indicators for integrated measles/rubella surveillance were met: 1) the percentage of cases with adequate blood samples 2) the percentage of laboratory results in ≤4 days and 3)the percentage of cases with adequate investigations; however, 3 indicators have not been met: Notification rate of suspected cases per 100,000 population; 2) the percentage of sites reporting weekly and 3) percentage of blood samples received by the laboratory in ≤5 days (**Figure 1, Figure 2**). Therefore, considering these gaps among the indicators, the low vaccination coverage of the first and second doses of vaccines against measles, mumps and rubella (MMR1 and MMR2) in many countries and territories of the Region of the Americas, the wide circulation of viruses in other Regions, and the opening of the borders, the occurrence of new outbreaks of varying magnitude in the Americas cannot be ruled out.

Figure 1. Distribution of 4 of the 6 international indicators of integrated measles/rubella surveillance. Region of the Americas, 2016 to 2020.

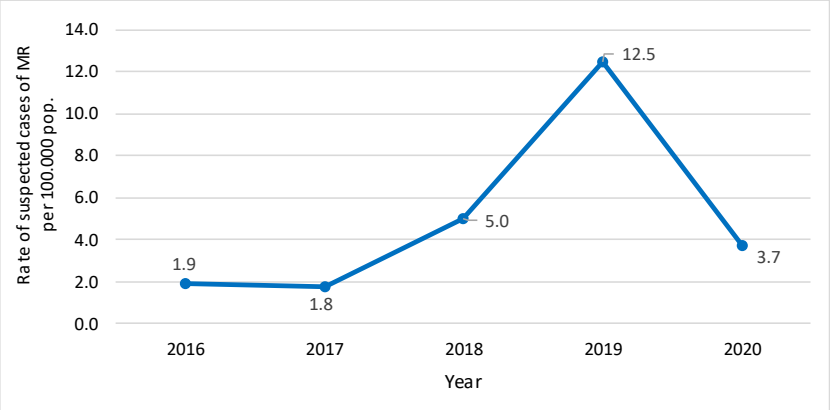


Source: PAHO/WHO Weekly bulletin. Measles, Rubella, and Congenital Rubella Syndrome. Available at: https://bit.ly/3qcmf68

[1] Source: For the period 2016-2019: PAHO / WHO Weekly bulletin of Measles, Rubella, and Congenital Rubella Syndrome. For 2020 (as of EW 53): Integrated Surveillance Information System (ISIS) and the country report. Data is not available for Brazil for the following indicators: cases with adequate samples and percentage of cases with adequate investigations.

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 1 March 2021, Washington, D.C.: PAHO/WHO; 2021

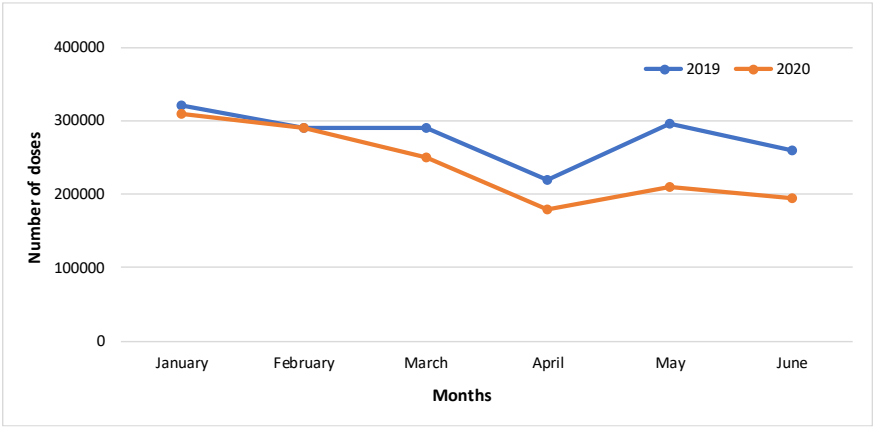
Figure 2. Rate of suspected cases of measles/rubella per 100.000 population by year of notification. Region of the Americas, 2016 to 2020.



Source: PAHO/WHO Weekly bulletin. Measles, Rubella, and Congenital Rubella Syndrome. Available at: https://bit.ly/3qcmf68

Since the WHO declared COVID-19 a pandemic as a Public Health Emergency of international Concern (PHEIC) on 11 March 2020, PAHO/WHO has monitored the impact of the pandemic on vaccination coverage. Comparing vaccination coverages 2020 with 2019's coverage, confirming a plummet in the number of MMR1 doses applied from March to June 2020. (**Figure 3**)

Figure 3. Decrease in MMR1 doses administered administered in 25 countries of Latin America and The Caribbean, 2019-2020. (between January and June)



Source: PAHO/WHO Sixth ad hoc Meeting of PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases. United States of America (virtual meeting). 16 November 2020. Available at: https://bit.ly/3q1xy0B

Since April 2020, PAHO has conducted a total of six country surveys in the Region[2], to monitor the operation of immunization services and to design a response plan based on needs expressed. The results of these surveys show that the functionality of vaccine services had increased in normalcy from May to August 2020, with partially or totally suspended services decreasing from 43% to 16%. The same decreasing trend was observed regarding the impact of vaccination demand, with 80% of the demand affected in May to being 51% affected by August. The main reasons for persons abstaining from getting vaccinated included limited public transportation, lockdowns, physical distancing policies, as well as user concerns about the risk of exposure to COVID-19 if they visited a vaccination service.

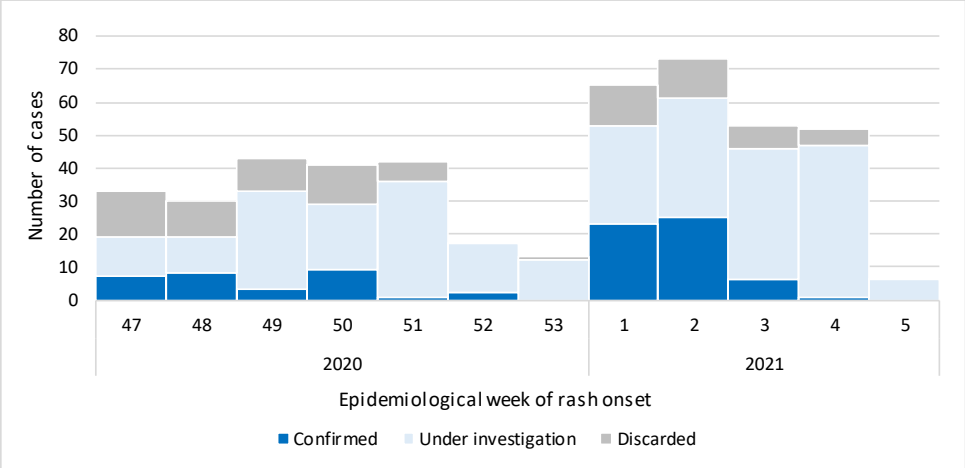
[2] PAHO/WHO. Sixth ad hoc Meeting of PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases. United States of America (virtual meeting). 16 November 2020. Available at: https://bit.ly/3sBjzR4

The following is a summary of the epidemiological situation of measles for Brazil and French Guiana that have reported confirmed measles cases since the last PAHO/WHO Epidemiological Update on Measles published on 1 February 2021[3].

In **Brazil**, between EW 1 and EW 5 of 2021, a total of 250 suspected cases have been reported, of which 54 (22%) were confirmed, 35 (14%) were discarded, and 161 (64%) remain under investigation. (**Figure 4**). No deaths were reported.

In 2020, a total of 16,836 suspected cases have been reported, of which 8,448 (50%) were confirmed, including 10 deaths, 7,975 (47%) were discarded, and 413 (2%) remain under investigation. The genotype D8, lineage MVs/Gir Somnath.IND/42.16/, was circulating in 2019 and 2020. Among the 8,448 confirmed cases, 4,892 (58%) were unvaccinated, 1,744 (21%) were vaccinated. For 1,812 cases (21%), no information regarding vaccination status was available.

Figure 4. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil. EW 47 of 2020 to EW 5 of 2021.



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

In 2020, the federal units with the highest cumulative incidence rates of confirmed measles cases in Brazil are: Pará (94 cases per 100,000 population), Amapá (34 cases per 100,000 population). Maranhão (32 cases per 100,000 population) and Rio de Janeiro (10 cases per 100,000 population).

In 2020, the highest incidence rates of confirmed cases of measles by age group in Brazil were reported among under 5-year-olds (38 cases per 100,000 population), followed by 5 to 19-year-olds (12 cases per 100,000 population), 20 to 49-year-olds (10 cases per 100,000 population) and older than 60-year-olds (1 case per 100,000 population).

In 2021, the 3 federal units with ongoing outbreaks[4] are: Amapá, Pará and São Paulo.

[3] PAHO/WHO Epidemiological Update: Measles. 1 February 2021, Washington, D.C.: PAHO/WHO; 2021, Available at: https://bit.ly/3sHpl3l

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

The following is a summary of the epidemiological situation of federal units with ongoing outbreaks:

In *Amapá State*, between EW 47 of 2020 and EW 5 of 2021, a total of 250 suspected cases of measles were reported, of which 67 were confirmed, 27 were discarded, and 156 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (176 cases per 100,000 population), followed by 1 to 4-year-olds (64 cases per 100,000 population), and 5 to 9-year-olds (9 cases per 100,000 population). Among the confirmed cases, 43 (64%) were unvaccinated, 10 (15%) were vaccinated (information regarding the number of doses per person was unavailable). For 14 cases (21%), no information regarding vaccination status was available. The most recent confirmed case in Amapá had rash onset on 22 January 2021 and was reported in Macapá Municipality. This State shares border with *French Guiana* and *Suriname*.

In *Pará State*, between EW 47 of 2020 and EW 5 of 2021, a total of 73 suspected cases of measles were reported, of which 10 were confirmed, 6 were discarded, and 57 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (43 cases per 100,000 population), followed by 1 to 4-year-olds (19 cases per 100,000 population), and 15 to 19-year-olds (19 cases per 100,000 population). Among the confirmed cases, all were unvaccinated. The most recent confirmed case in Pará had rash onset on 11 December 2020 and was reported in Bagre Municipality. This State shares border with *Guyana* and *Suriname*.

In *São Paulo State*, between EW 47 of 2020 and EW 5 of 2021, a total of 47 suspected cases of measles were reported, of which 4 were confirmed, 18 were discarded, and 27 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (1 case per 100,000 population), followed by 20 to 29-year-olds (0.03 cases per 100,000 population). Among the confirmed cases, one was unvaccinated, and three were vaccinated (information regarding the number of doses per person was unavailable). The most recent confirmed case in São Paulo had rash onset on 7 January 2021 and was reported in São Paulo Municipality.

In **French Guiana**, between EW 1 and EW 6 of 2021, a total of 2 confirmed measles cases have been reported.

The *first case* corresponds to an 18-month-old female with no vaccination history and with travel history to Brazil. The case had rash onset on 26 January. The genotype identified for this case was D8.

The *second case* corresponds to a 42-year-old female healthcare worker, with no vaccination history or travel history. The case had rash onset on 9 February of 2021. This case has epidemiological link with the first confirmed case. Genotype results for this case are pending.

Advice to national authorities

On 27 September 2016, the Region of the Americas was the first in the world to be declared measles-free, as a 22-year effort, which involved extensive administration of the measles, mumps, and rubella vaccine in the continent. The elimination of measles and rubella in the Region of the Americas has been a very important milestone, for which PAHO / WHO urges Member States to follow the recommendations of the XXV Meeting of the Technical Advisory Group (TAG) on Preventable Diseases 2019 Vaccination, which are subject to adjustments in the context of the COVID-19 pandemic, with the objective of reverifying the elimination of measles and rubella in the Region of the Americas.

In light of the current COVID-19 pandemic, the Pan American Health Organization/World Health Organization PAHO/WHO has issued guiding principles for immunization activities during the COVID-19 pandemic, 26 March of 2020, available at https://bit.ly/2VALMsi in consultation with members of the PAHO/WHO Technical Advisory Group (TAG) for vaccine-preventable diseases (VPD), and aligned with the recommendations of WHO's Strategic Advisory Group of Experts on Immunization (SAGE).

Among the recommendations for countries with measles outbreaks, the following are highlighted:

Vaccination

- Involve the National Immunizations Technical Advisory Group (NITAG) in decision-making on the continuity of vaccination services.
- In health care facilities where vaccination activities are carried out, it is essential that health care workers are alert to signs and symptoms of respiratory diseases and offer patients with flu-like symptoms a surgical mask and refer them for medical evaluation, in accordance with local protocols for initial triage of suspected COVID-19 patients.
- Although there are currently no known medical contraindications to vaccination of a person who has had contact with a case of COVID-19, it is recommended to defer vaccination until quarantine has been completed (14 days after the last exposure).
- Under circumstances of a VPD outbreak, the decision to conduct outbreak response mass vaccination campaigns will require a risk-benefit assessment on a case by case basis and must factor in the health system's capacity to effectively conduct a safe and high-quality mass campaign in the context of the COVID-19 pandemic. The assessment should evaluate the risks of a delayed response against the risks associated with an immediate response, both in terms of morbidity and mortality for the VPD and the potential impact of further transmission of the COVID-19 virus.
- If an outbreak of a vaccine preventable disease (VDP) occurs, the risk-benefit of carrying out an outbreak-response vaccination campaign should be assessed taking into account the health system's capacity to effectively conduct a safe and high-quality mass campaign in the context of the COVID-19 pandemic. The assessment should evaluate the risks of a delayed response against the risks associated with an immediate response, both in terms of morbidity and mortality for the VPD and the potential impact of further transmission of the COVID-19 virus. Should an outbreak response vaccination campaign be pursued, stringent measures are required to uphold standard and COVID-19 infection prevention and control, adequately handle injection waste, protect health workers and safeguard the public.

Should an outbreak response vaccination campaign be delayed, a periodic assessment based on local VPD morbidity and mortality, will be required to evaluate risk of further delay.

- Immunization services should be resumed when the risk of transmission of SARS-CoV-2 has been reduced and the capacity of the health system has recovered sufficiently to resume these activities. It is likely that some level of SARS-CoV-2 transmission will still be in progress when services resume. Stricter infection prevention and control measures and social distancing practices are likely to still be needed in the early stages of resuming the vaccination service. NITAG should advise the country on how to resume service and which populations should be prioritized.
- Vaccinate at-risk populations residing in areas where the measles virus is circulating that do not have proof of vaccination or immunity against measles and rubella, such as health personnel, people working in essential services companies, hotels and tourism, institutions with a captive population and transportation (hospitals, airports, jails, hostels, border municipalities, urban mass transportation and others), as well as international travelers.
- 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.

Epidemiological surveillance

- Surveillance systems must continue to carry out early detection and the management of VPD cases, at a minimum for diseases with global surveillance mandates and elimination objectives such as measles and rubella, among others.
- 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, maculopapular rash with at least one of the following signs and symptoms: cough, coryza and conjunctivitis) and epidemiological link, in order to not delay the response actions. This is particularly important in scenarios with arbovirus circulation such as dengue, Zika, and Chikungunya.
- Routine surveillance for other VPD should continue as long as possible; when laboratory testing is not possible, samples should be stored appropriately for confirmation when laboratory capacity permits testing. Countries should ensure sufficient sample storage capacity at the provincial and central levels and this should be monitored regularly.
- 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[5] 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[6].

Sources of information

1. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.

2. **France** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.

3. PAHO/WHO. Measles, Rubella, and Congenital Rubella Syndrome Surveillance in the Americas, Weekly Bulletin. Vol. 26, No. 18. Available at: https://bit.ly/2B8O1MU

4. PAHO/WHO. Sixth ad hoc Meeting of PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases. United States of America (virtual meeting). 16 November 2020. Available at: https://bit.ly/3sBjzR4

5. PAHO/WHO. Fifth ad hoc Meeting of the Technical Advisory Group (TAG) on Vaccine-preventable Diseases. 4 August 2020, USA (virtual meeting). Available at: https://bit.ly/3uEhbux

6. PAHO/WHO. The Immunization Program in the Context of the COVID-19 Pandemic. 26 March 2020. Available at: https://bit.ly/2VALMsi (in English), https://bit.ly/2XKtkAe (in Spanish) and https://bit.ly/2xCi1iM (in Portuguese)

7. WHO. Guiding principles for immunization activities during the COVID-19 pandemic. Interim guidance. 26 March 2020. Available at: https://bit.ly/34sfun8

8. WHO. COVID-19: Operational guidance for maintaining essential health services during an outbreak. Interim guidance. 25 March 2020. Available at: https://bit.ly/2xaOa0P

9. WHO: Framework for decision-making: implementation of mass vaccination campaigns in the context of COVID-19, 22 May 2020. Available at: https://bit.ly/35u5w79

10. PAHO/WHO. Immunization throughout the Life Course at the Primary Care Level in the Context of the COVID-19 Pandemic. 17 June 2020. Available at: https://bit.ly/3ltMy60

[5] 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.

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

11. PAHO/WHO. Summary of the Status of National Immunization Programs during the COVID-19 Pandemic, July 2020. Available at: https://bit.ly/3eW2Kug

Related link:

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