

In the context of the COVID-19 pandemic and, considering the decline in vaccination coverage with the first and second doses of the measles, mumps, and rubella vaccine (MMR1 and MMR2), the Pan American Health Organization/World Health Organization (PAHO/WHO) reiterates to Member States that vaccination and epidemiological surveillance for vaccine-preventable diseases should be considered an essential health service that should not be interrupted.

Situation Summary

In 2021, between epidemiological week (EW)1 and EW 43, two countries and one territory in the Region of the Americas reported confirmed cases of measles, as follows: *Brazil*, with 619 confirmed cases including 2 deaths in 6 federal units; the *United States of America*, with 47 confirmed cases in 4 jurisdictions; and *French Guiana*, with 5 confirmed cases. Brazil continues with endemic circulation of the D8 genotype MVs/Gir Somnath.IND /42.16 lineage of the measles virus.

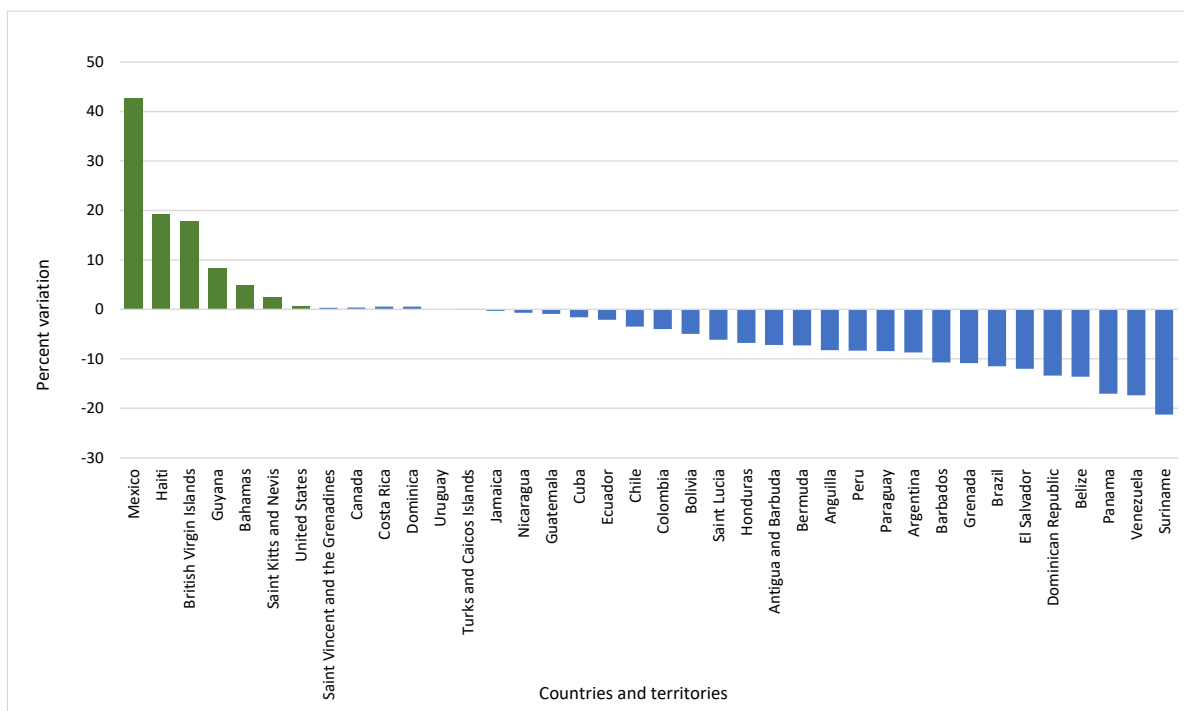
In 2020, nine countries in the Region of the Americas reported a total of 8,726 cases including 11 deaths due to measles¹.

PAHO/WHO has closely monitored the impact of the COVID-19 pandemic on vaccine preventable diseases (VPD) vaccination coverage in the Region. In this regard, between 2019 and 2020, vaccination coverage with the first dose of the measles, mumps, rubella vaccine (MMR1) decreased in 27 countries and territories of the Americas Region. The largest decreases were observed in 5 countries: Suriname, Venezuela, Panama, Belize, and the Dominican Republic, respectively (**Figure 1**). In 2020, MMR1 coverage of $\geq 95\%$ was not achieved in 27 countries and territories of the Region of the Americas; furthermore, 8 countries (Argentina, Bolivia, Brazil, El Salvador, Haiti, Peru, Suriname, and Venezuela) had MMR1 coverage of $< 80\%$.

Between 2019 and 2020, vaccination coverage with the second dose of the measles, mumps, rubella vaccine (MMR2) decreased in 26 countries and territories of the Americas Region. The largest decreases were observed in 5 countries/territories: El Salvador, San Vincent and the Grenadines, Bermuda, Panama, and Peru, respectively (**Figure 2**). In 2020, MMR2 coverage of $\geq 95\%$ was not achieved in 28 countries and territories of the Region of the Americas; furthermore, 19 countries (Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Haiti, Honduras, Mexico, Panama, Paraguay, Peru, Saint Lucia, Suriname, and Venezuela) had MMR2 coverage of $< 80\%$.

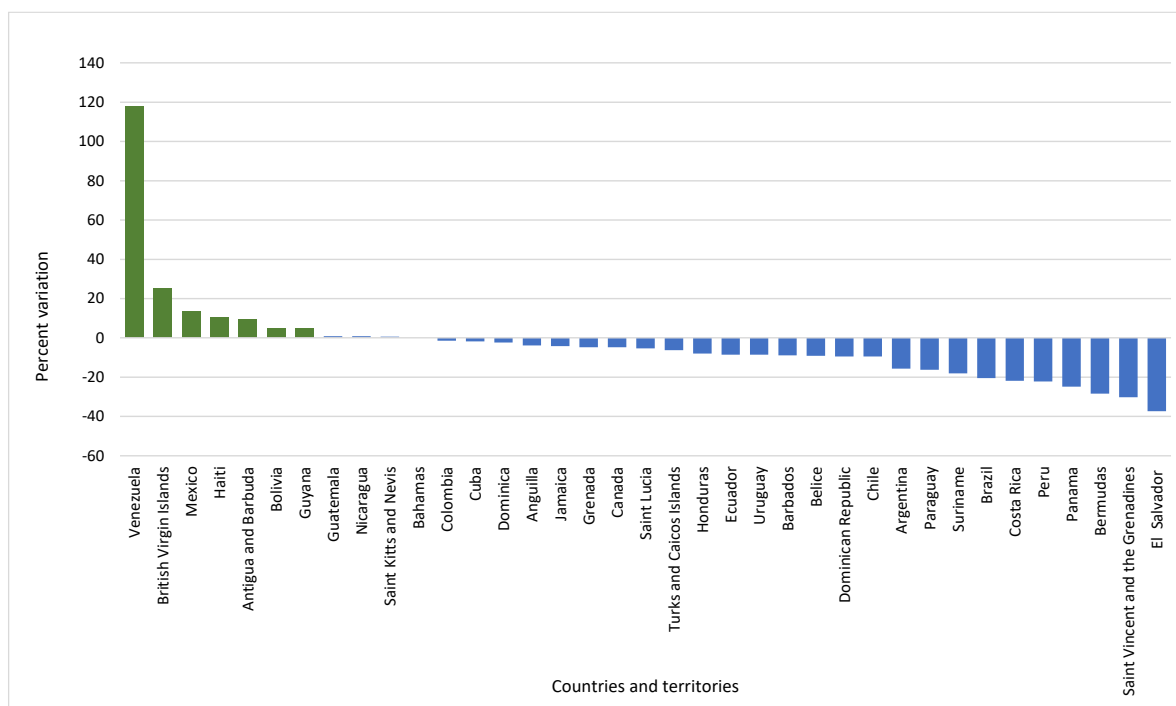
¹ Countries that reported cases and deaths due to measles in 2020: Argentina (61 cases including 1 death), Bolivia (2 cases), Brazil (8,448 cases including 10 deaths), Canada (1 case), Chile (2 cases), Colombia (1 case), Mexico (196 cases), the United States of America (13 cases), and Uruguay (2 cases).

Figure 1. Percent variation in vaccination coverage with the first dose of the measles, mumps, rubella (MMR1) vaccine. Region of the Americas, 2019-2020.



Source: PAHO/WHO Measles-Rubella-Congenital Rubella Syndrome Weekly Bulletin. Available at: <https://bit.ly/3qcmf68>

Figure 2. Percent variation in vaccination coverage with the second dose of the measles, mumps, rubella (MMR2) vaccine. Region of the Americas, 2019-2020.

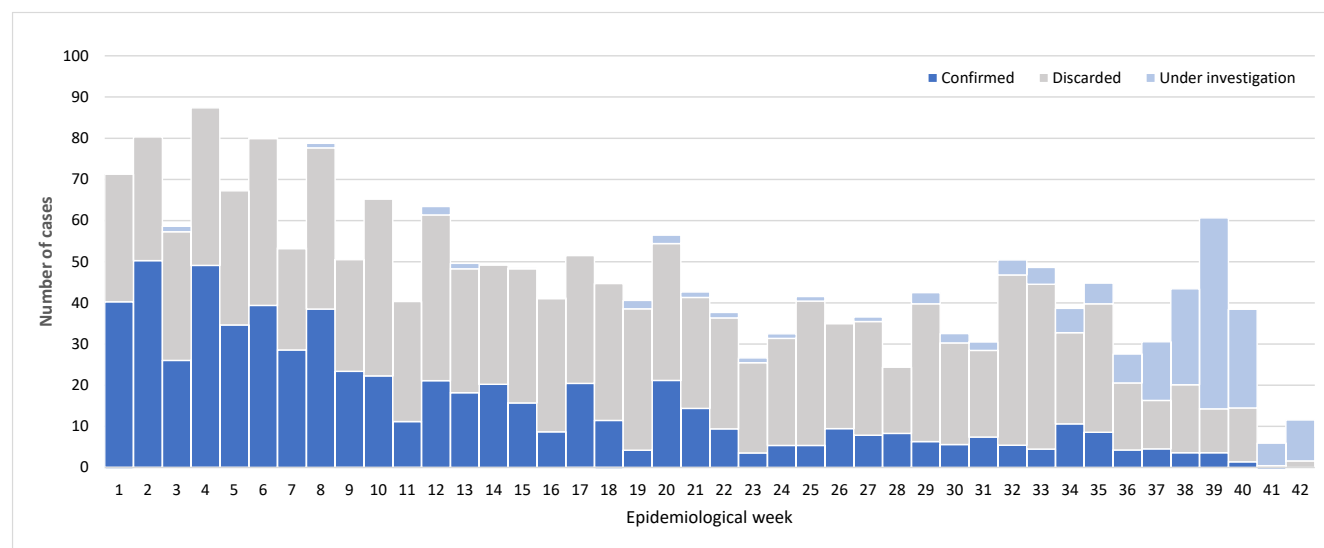


Source: PAHO/WHO Measles-Rubella-Congenital Rubella Syndrome Weekly Bulletin. Available at: <https://bit.ly/3qcmf68>

The following is an update of the measles epidemiological situation in the countries and territory that have reported confirmed measles cases in 2021.

In **Brazil**, between EW 1 and EW 42 of 2021, a total of 1,941 suspected cases were reported, of which 619 (31.9%) were confirmed, 1,152 (59.4%) were discarded, and 170 (8.8%) remain under investigation (**Figure 3**). During the same period, two deaths were reported in Amapá State, both among children under 1-year-old with no history of vaccination.

Figure 3. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil. EW 1 to EW 42 of 2021.



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

In 2021 as of EW 42, the federal units reporting the highest cumulative incidence rates of confirmed measles cases in Brazil were: Amapá (78.7 cases per 100,000 population), Pará (5.2 cases per 100,000 population), Ceará (5.6 cases per 100,000 population), and Alagoas (1.1 cases per 100,000 population).

In 2021 as of EW 42, the highest cumulative incidence rates of confirmed measles cases by age group in Brazil were reported among under 1-year-olds (66.3 cases per 100,000 population), followed by 1 to 4-year-olds (13.5 cases per 100,000 population) and 5 to 9-year-olds (2.4 cases per 100,000 population).

In 2021 as of EW 42, three federal units reported ongoing outbreaks²: Amapá, Pará, and São Paulo. The following is a summary of the epidemiological situation in these federal units:

In *Amapá*, between EW 1 and EW 42 of 2021, a total of 745 suspected cases of measles were reported, of which 487 were confirmed (including 2 deaths), 199 were discarded, and 59 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (1,447.9 cases per 100,000 population), followed by 1 to 4-year-olds (251.7 cases per 100,000 population) and 5 to 9-year-olds (47.8 cases per 100,000 population). Among the confirmed cases, 352 (72.3%) were unvaccinated, 65 (13.3%) were vaccinated (information regarding the number of doses per person was unavailable), and no information regarding vaccination status was available for 70 cases (14.4%). The most recent confirmed case in Amapá State had rash onset on

² Federal units that have reported confirmed cases in the last 90 days.

4 October 2021 and was reported from Mazagão Municipality. Amapá State shares a border with *French Guiana* and *Suriname*.

In *Pará*, between EW 1 and EW 42 of 2021, a total of 308 suspected cases of measles were reported, of which 111 were confirmed, 173 were discarded, and 24 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (48.3 cases per 100,000 population), followed by 1 to 4-year-olds (12.5 cases per 100,000 population) and 20 to 29-year-olds (10.4 cases per 100,000 population). Among the confirmed cases, 89 (80.2%) were unvaccinated, 14 (12.6%) were vaccinated (information regarding the number of doses per person was unavailable), and no information regarding vaccination status was available for 8 cases (7.2%). The most recent confirmed case in Pará State had rash onset on 7 September 2021 and was reported from Canaã dos Carajás Municipality. Pará State shares a border with *Guyana* and *Suriname*.

In *São Paulo*, between EW 1 and EW 42 of 2021, a total of 374 suspected cases of measles were reported, of which 7 were confirmed, 324 were discarded, and 43 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (1.6 cases per 100,000 population) followed by 1 to 4-year-olds (0.3 cases per 100,000 population). Among the confirmed cases, 2 (28.6%) were unvaccinated, 3 (42.9%) were vaccinated (information regarding the number of doses per person was unavailable), and no information regarding vaccination status was available for 2 cases. The most recent confirmed case in São Paulo State had rash onset on 27 August 2021 and was reported from São Paulo Municipality.

In **French Guiana**, between EW 1 and EW 43 of 2021, a total of 6 cases of measles were reported, of which 5 were laboratory-confirmed. No deaths were reported. Of the total cases reported in 2021, one remains under investigation. Information on the first 2 confirmed cases reported in 2021 was included in the Epidemiological Update published on 1 March 2021³.

Of the 5 confirmed cases reported between EW 1 and EW 43 of 2021, 4 are female, ages range from 1 to 47 years (median 14 years), none had a history of complete vaccination. Confirmed cases were reported in the communes of Kourou (2 cases of which one case was imported from Brazil, resulting in a secondary case), Saint-Georges de l'Oyapock (2 cases epidemiologically linked with the imported case from Brazil), and Cayenne (1 case). The D8 genotype was identified in 4 cases and the genotype results are pending for one case.

The most recent confirmed case corresponds to a 3-year-old male with no history of vaccination, and with a history of travel to a commune on the border with Brazil. The onset of rash was on 18 October 2021. Genotype identification is pending.

In the **United States of America**, between 1 January and 3 November 2021, a total of 47 confirmed cases of measles have been reported from 4 jurisdictions.

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

³ Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 1 March 2021, Washington, D.C.: PAHO/WHO; 2021. Available at: <https://bit.ly/3C13EQK>

Advice to national authorities

PAHO/WHO recommends remaining alert to the probable occurrence of new outbreaks of varying magnitude in the Americas Region, due to the following risk factors: 1) gaps in the performance of international indicators for integrated measles/rubella surveillance⁴; 2) the low vaccination coverage with the first and second doses of the measles, mumps, rubella vaccine (MMR1 and MMR2) in many countries and territories of the Region of the Americas in 2020; 3) the ongoing measles outbreaks in Brazil; 4) the wide circulation of the virus worldwide, and 5) the migratory flow of vulnerable populations within the Region of the Americas and from other Regions.

PAHO/WHO urges Member States to follow the recommendations from the 2021 XXVI Meeting of the Technical Advisory Group (TAG) on Preventable Diseases Vaccination (final report available at: <https://bit.ly/2Y8uU1j>), which are framed in the context of the COVID-19 pandemic.

- Maintain and strengthen immunization programs and other essential health programs.
- Implement urgent corrective actions to ensure 95% coverage with the two doses of the MMR vaccine in children under 2 years of age, in addition to carrying out periodic monitoring and mass campaigns directed at vulnerable populations and cohorts of older age groups.
- Strengthen the national and subnational capacity for outbreak response and risk assessment in order to implement interventions at the local level that contribute to closing detected gaps.
- Prioritize the policy of "Reinvigorating immunization as a Public Good for universal health," which was approved at the 168th session of the PAHO/WHO Executive Council (final report available at: <https://bit.ly/2Wob3ud>), which will reverse the decline in vaccination coverage (MMR1 and MMR2) and the surveillance indicators recorded during the last decade, which were affected even more by the COVID-19 pandemic.

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

Vaccination

- In healthcare facilities where vaccination activities are carried out, it is essential that healthcare workers are alert to signs and symptoms of respiratory diseases, offer patients with influenza-like symptoms a surgical mask, and refer them for medical evaluation, in accordance with local protocols for initial triage of suspected COVID-19 patients.
- Maintain infection prevention and control measures and social distancing practices during vaccination services.
- 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 the quarantine has been completed (14 days after the last exposure).
- Vaccinate at-risk populations and those without proof of vaccination or immunity against measles and rubella residing in areas where the measles virus is circulating.

⁴ The international indicators for integrated measles/rubella surveillance are described in the PAHO/WHO Weekly bulletins. Measles, Rubella, and Congenital Rubella Syndrome. Available at: <https://bit.ly/3qcmf68>

- Maintain stock of the measles-rubella (MR) and/or MMR vaccine and syringes/supplies for prevention and control actions of imported cases.

Epidemiological surveillance

- During an outbreak and when it is not possible to confirm suspected cases by laboratory, classification 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, or conjunctivitis) and an epidemiological link, in order to not delay any response actions.
- Routine surveillance for other vaccine-preventable diseases (VPDs) should continue as long as possible. Supplies for the adequate collection and transport of the samples should be maintained. If a laboratory does not have the laboratory diagnostic capacity for the specific event, the samples should be sent to the reference laboratory in order to carry out the analyses to confirm or discard the event within the appropriate timeframe and according to the definitions specified as part of the surveillance program. Countries should guarantee the adequate storage, conservation, and transport of samples.
- 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 through the activation of trained rapid response teams and implementation of national rapid response protocols, in order to avoid the re-establishment of endemic transmission. Once a rapid response team has been activated, continued coordination between the national subnational and local levels should be ensured, with continuous and open communication channels between all levels.
- During outbreaks, establish adequate hospital case management in order 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 months⁵ 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 to 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 Measles⁶.

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/2I3gCSi>

Sources of information

1. **Brazil** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
2. **United States** Centers for Disease Control and Prevention (US CDC). Measles Cases and Outbreaks. Available at: <https://www.cdc.gov/measles/cases-outbreaks.html>
3. **United States** Centers for Disease Control and Prevention (US CDC). Health Alert Network (HAN) Advisory: Guidance for Clinicians Caring for Individuals Recently Evacuated from Afghanistan. 20 September 2021. Available at: <https://bit.ly/3DeDZ7R>
4. **France** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
5. The Regional Framework for the Monitoring and Re-verification of Measles, Rubella, and Congenital Rubella Syndrome Elimination in the Americas. 2021. Available at: <https://bit.ly/3n1kpqI>
6. Immunizations in the Americas: Summary 2021. Available at: <https://bit.ly/3nN22nZ>
7. World Health Organization. Annual WHO/UNICEF Joint Reporting Form. October 2021. Available at: <https://data.unicef.org/topic/child-health/immunization/>
8. XXVI Meeting of the Technical Advisory Group (TAG) on Vaccine-Preventable Diseases. 2021 (Virtual Meeting). Final report available at: <https://bit.ly/2Y8uU1j>
9. PAHO/WHO. Measles, Rubella, and Congenital Rubella Syndrome Surveillance in the Americas, Weekly Bulletin. Available at: <https://bit.ly/2B8O1MU>
10. 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>
11. 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>
12. 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)
13. WHO. Guiding principles for immunization activities during the COVID-19 pandemic. Interim guidance. 26 March 2020. Available at: <https://bit.ly/34sfun8>
14. WHO. COVID-19: Operational guidance for maintaining essential health services during an outbreak. Interim guidance. 25 March 2020. Available at: <https://bit.ly/2xaOa0P>
15. 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>

16. 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>
17. 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>