

Situation Summary

Between 1 January and 20 May 2020, 9 countries have reported a total of 3,407 confirmed cases of measles in the Region of the Americas: Argentina (60 cases, including 1 death), Bolivia (2 cases), Brazil (3,155 cases, including 4 deaths), Canada (1 case), Chile (2 cases), Colombia (1 case), Mexico (172 cases), the United States of America (12 cases), and Uruguay (2 cases).

The following is a summary of the epidemiological situation of measles for Argentina, Bolivia, Brazil and Mexico—countries that have reported confirmed measles cases since the last PAHO/WHO Epidemiological Update on Measles was published¹.

In **Argentina**, a total of 119² confirmed measles cases had rash onset in 2019 and 60 confirmed cases had rash onset in 2020 (**Figure 1**).

Between epidemiological week (EW) 33 of 2019 and EW 20 of 2020, there have been 5,440 suspected cases reported, of which 174³ were confirmed, including one death. This period corresponds to the notification of cases during a single outbreak; Argentina is at-risk of re-establishing endemic transmission as of EW 33 of 2020 unless interruption of transmission is achieved prior to that date. Of the total confirmed cases, the origin could not be established for 159 cases that are part of the same outbreak. Genotype D8, lineage MVs/Gir Somnath.IND/42.16/, has been identified in this outbreak. The remaining 15 cases were imported, 3 from the United States of America, 9 from Brazil, and 3 with travel history to Spain and Southeast Asia. For 8 of the imported cases, genotype D8 has been identified (lineage MVs/Gir Somnath.IND/42.16/ for 4 of these cases) and for one case, genotype B3 lineage MVs/Kabul.AFG/20.2014/3 was identified.

Regarding distribution of cases by residence, one case is a resident of Córdoba Province (with travel history to Brazil), 141 cases (81%) are residents of Buenos Aires Province (including 5 imported cases), and 32 cases (18.4%) are residents of the city of Buenos Aires (including 9 imported cases).

Among the 174 confirmed cases, 131 (85.6%) were unvaccinated, 22 (14.4%) were vaccinated with one dose, and 13 (8.5%) were vaccinated with two doses⁴. For 8 cases (5%), no information regarding vaccination status was available.

¹ PAHO/WHO Epidemiological Update: Measles. 17 April 2020, Washington, D.C.: PAHO/WHO; 2020, Available at: <https://bit.ly/3enCUho>

² 5 cases had onset of rash between EW 1 and EW 32 of 2019, all of them imported.

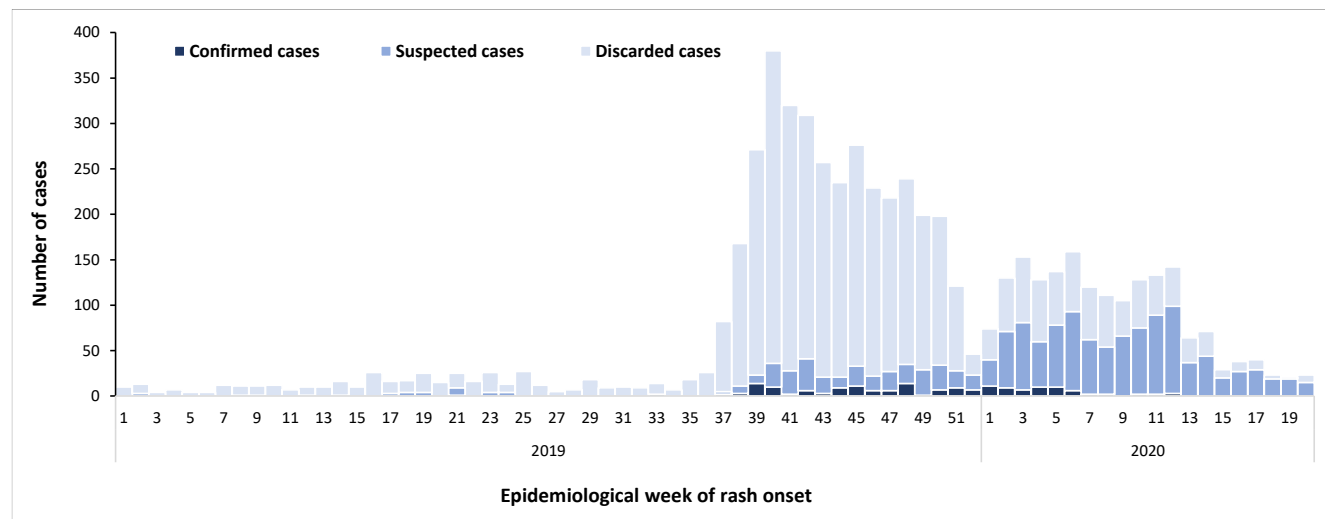
³ The difference between cases with respect to the last update is due to confirmation by clinical criteria carried out by the National Commission for the Certification of Endemic Elimination of Argentina, during the case review.

⁴ Three vaccinated patients were immunocompromised.

The highest incidence rates are all among children aged less than 5 years: among under 1-year-olds (5.27 cases per 100,000 population); 1-year-olds (2.96 cases per 100,000 population); and 2 to 4-year-olds (0.80 cases per 100,000 population).

Onset of rash for the most recent confirmed case was 19 March 2020, in Ezeiza Municipality, Buenos Aires Province.

Figure 1. Reported measles cases by epidemiological week (EW) of rash onset. Argentina. EW 1 of 2019 to EW 20 of 2020.



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

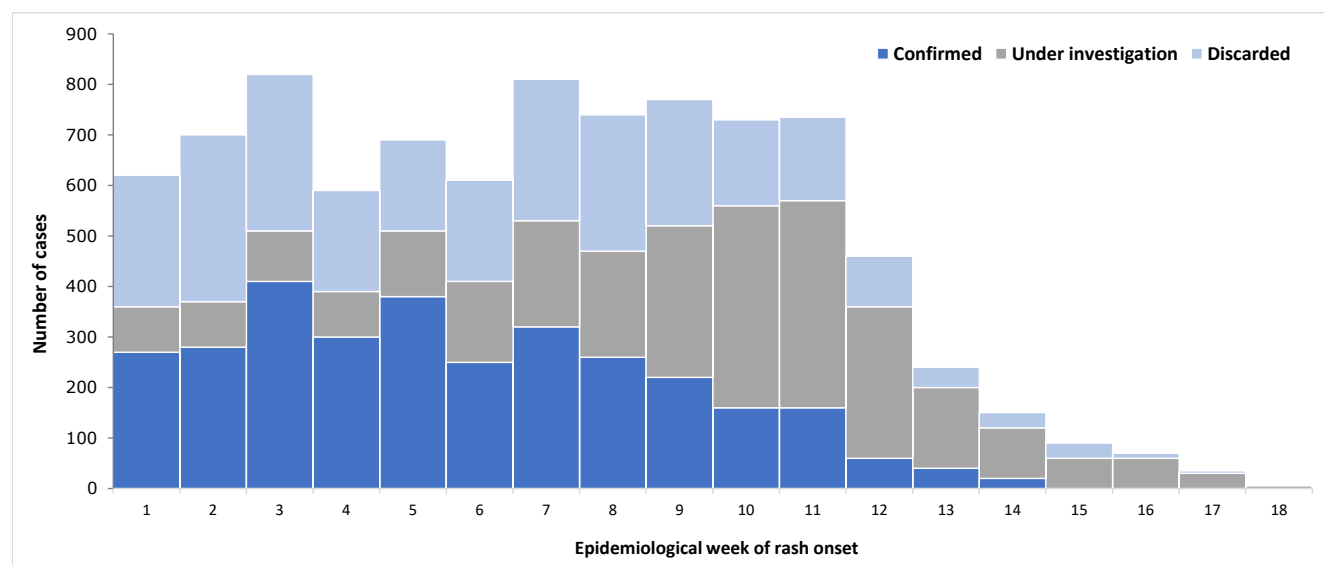
In **Bolivia**, between EW 16 and EW 18 of 2020, 2 confirmed cases of measles were reported. The first case corresponds to a 29-year-old female resident of Santa Cruz de la Sierra city, Santa Cruz Department, who had a history of vaccination and no history of travel. Rash onset was 16 April 2020. The second case corresponds to an 11-month-old female resident of Cotoca Municipality, Santa Cruz Department. This case had no vaccination history and had an epidemiological link with the first confirmed case. Rash onset was 15 April 2020.

Genotyping and lineage results for the two cases are pending.

In **Brazil**, between EW 1 and EW 18 of 2020, a total of 8,976 suspected cases have been reported, of which 3,155 were confirmed (including 4 deaths), 2,811 were discarded, and 3,010 remain under investigation. The predominant genotype and lineage in 2020 continue to be D8, lineage MVs/Gir Somnath.IND/42.16/, which was also circulating in 2019.

Between EW 1 and EW 18 of 2020, there have been an average of 175.3 cases per epidemiological week. Since EW 11, there has been a progressive decline in the number of reported suspected cases (**Figure 2**).

Figure 2. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil. EW 1 to EW 18 of 2020.



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

The 20 federal units with active outbreaks⁵ in 2020 are: Pará with 1,272 confirmed cases, Rio de Janeiro with 874 confirmed cases, São Paulo with 604 confirmed cases, Paraná with 189 confirmed cases, Santa Catarina with 103 confirmed cases, Pernambuco with 32 confirmed cases, Rio Grande do Sul with 31 confirmed cases, Maranhão with 9 confirmed cases, Sergipe with 8 confirmed cases, Minas Gerais with 7 confirmed cases, Alagoas with 5 confirmed cases, Amazonas with 4 confirmed cases, Amapá with 4 confirmed cases, Goiás with 4 confirmed cases, Bahia with 2 confirmed cases, the Federal District with 2 confirmed cases, Rondônia with 2 confirmed cases, Ceará with 1 confirmed case, Mato Grosso do Sul with 1 confirmed case, and Tocantins with 1 confirmed case.

Between EW 26 of 2019 and EW 10 of 2020, the genotype identified in the federal units with active outbreaks has been D8, lineage MVs/Gir Somnath.IND/42.16/.

Among the 3,155 confirmed cases, 2,012 (63.8%) were unvaccinated, 11 (0.3%) were vaccinated with one dose, and 7 (0.2%) were vaccinated with two doses. For 736 cases (23.3%), no information regarding vaccination status was available.

The federal units with the highest cumulative incidence rates of confirmed measles cases in Brazil are: Pará (72.4 cases per 100,000 population), Rio de Janeiro (49.7 cases per 100,000 population), São Paulo (34.4 cases per 100,000 population), and Paraná (10.8 cases per 100,000 population). The following is a summary of the epidemiological situation of these federal units.

In *Pará State*, between EW 1 and EW 18 of 2020, there were 2,148 suspected measles cases reported, of which 1,272 were confirmed (including 2 deaths among under 5-year-olds), 287 were

⁵ Federal units that have reported confirmed cases in the last 90 days.

discarded, and 589 remain under investigation. The highest incidence rates by age group are among 20 to 29-year-olds (440.8 cases per 100,000 population), followed by 15 to 19-year-olds (305.9 cases per 100,000 population) and under 1-year-olds (204.8 cases per 100,000 population). Among the confirmed cases, 869 (68.3%) were unvaccinated, 169 (13.3%) were vaccinated (information regarding the number of doses per person was unavailable). For 234 cases (18.4%), no information regarding vaccination status was available.

In *Rio de Janeiro State*, between EW 1 and EW 18 of 2020, there were 2,598 suspected measles cases reported, of which 874 were confirmed (including 1 death), 401 were discarded, and 1,323 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (99.2 cases per 100,000 population), followed by 15 to 19-year-olds (15.0 cases per 100,000 population), and 1 to 4-year-olds (13.2 cases per 100,000 population). Among the confirmed cases, 598 (68.4%) were unvaccinated, 276 (31.6%) were vaccinated (information regarding the number of doses per person was unavailable).

In *São Paulo State*, between EW 1 and EW 18 of 2020, there were 2,391 suspected measles cases reported, of which 604 were confirmed (including 1 death), 1,305 were discarded, and 482 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (32.6 cases per 100,000 population), followed by 1 to 4-year-olds (4.7 cases per 100,000 population) and 15 to 19-year-olds (3.9 cases per 100,000 population). Among the confirmed cases, 232 (38.4%) were unvaccinated, 250 (41.4%) were vaccinated (information regarding the number of doses per person was unavailable). For 122 cases (20.2%), no information regarding vaccination status was available.

In *Paraná State*, between EW 1 and EW 18 of 2020, there were 573 suspected measles cases reported, of which 189 were confirmed, 49 were discarded, and 335 remain under investigation. The highest incidence rates by age group are among 20 to 29-year-olds (13.4 cases per 100,000 population) followed by under 1-year-olds (13.1 cases per 100,000 population), 1 to 4-year-olds (4.7 cases per 100,000 population), and 15 to 19-year-olds (11.3 cases per 100,000 population). Among the confirmed cases, 177 (93.7%) were unvaccinated, 12 (6.3%) were vaccinated (information regarding the number of doses per person was unavailable).

In **Mexico**, between EW 7 and EW 20 of 2020, a total of 1,741 probable⁶ measles cases have been reported, of which 172 were confirmed, 1,357 were discarded, and 212 remain under investigation.

Of the 172 confirmed cases, 136 were reported in Mexico City, 34 in Mexico State, and 2 in Campeche State. The following is a summary of the epidemiological situation in each locale.

In *Mexico City*, 484 probable cases were reported, of which 136 were laboratory-confirmed and 36 remain under investigation. Confirmed cases have been reported in 14 town halls: Gustavo A. Madero (73 cases), Miguel Hidalgo (17 cases), Iztapalapa (10 cases), Cuajimalpa de Morelos (8 cases), Alvaro Obregon (8 cases), Cuauhtémoc (5 cases), Xochimilco (4 cases), Coyoacán (3 case), Tlahuac (2 cases), Tlalpan (2 cases), Azcapotzalco (1 case), Milpa Alta (1 case), Venustiano Carranza (1 case), and Iztacalco (1 case). Of the 136 confirmed cases in Mexico City, all are Mexican citizens and 59.6% are male. The highest proportion of confirmed cases by age group is among 20 to 29-year-olds (28.7%), followed by 2 to 9-year-olds (16.9%), 30 to 39-year-olds (13.2%),

⁶ Mexico probable measles/rubella case definition: Any person of any age with fever and maculopapular rash, and one or more of the following signs or symptoms: cough, coryza, conjunctivitis, or adenomegaly (retroauricular, occipital, or cervical). Available at: <https://bit.ly/2VgsoBN>

40-year-olds and older (11.8%), under 1-year-olds (11.0%), 1-year-olds (9.6%), and 10 to 19-year-olds (8.8%). Of the confirmed cases in Mexico City, 24 (17.7%) have a proven history of vaccination. The

most recent confirmed case had rash onset on 1 May 2020 and was reported in the Iztapalapa Town hall.

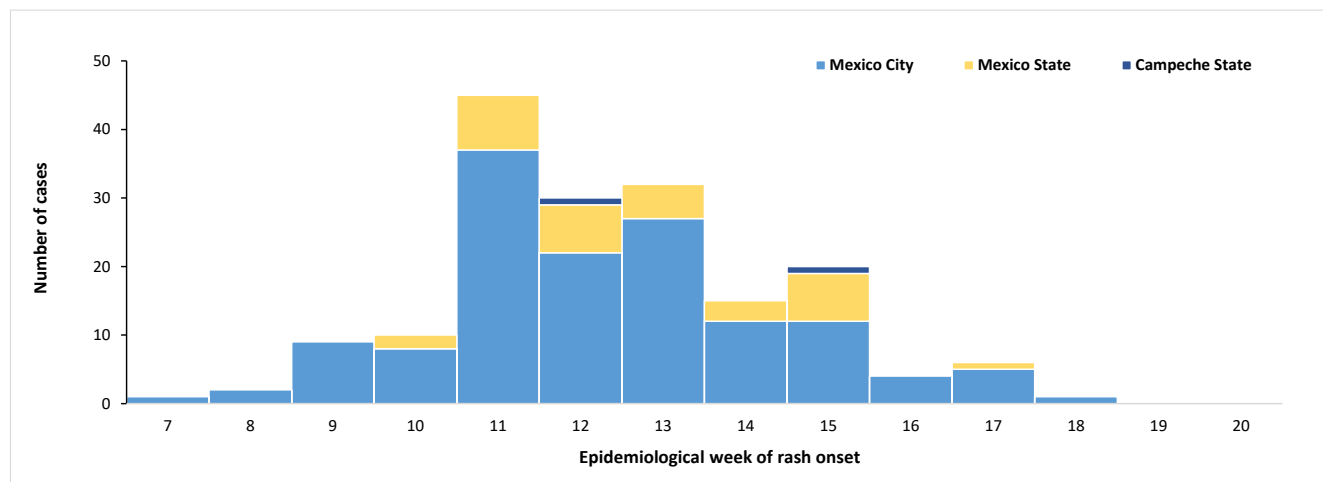
In *Mexico State*, 196 probable cases were reported, of which 34 were laboratory-confirmed and 46 remain under investigation. Confirmed cases were reported in 11 municipalities of Mexico State: Ecatepec de Morelos (11 cases), Tlalnepantla de Baz (9 cases), Nezahualcóyotl (4 cases), Tecámac (2 cases), Toluca (2 cases), Atizapán de Zaragoza (1 case), Chimalhuacán (1 case), Zinacantepec (1 case), Naucalpan (1 case), Zumpango (1 case), and Cuautitlán (1 case). Of the 34 confirmed cases, all are Mexican citizens and 50% are male. The highest proportion of confirmed cases by age group is among 2 to 9-year-olds (20.6%) followed by 1-year-olds (17.6%), 30 to 39-year-olds (14.7%), 20 to 29-year-olds (14.7%), under 1-year-olds (11.8%), 10 to 19-year-olds (11.8%), and 40-year-olds and older (8.8%). Of the confirmed cases, 20.6% have a proven history of vaccination. The most recent confirmed case in the State of Mexico had rash onset on 20 April and was reported in Nezahualcóyotl Municipality.

In *Campeche State*, 8 probable cases were reported, of which 2 were confirmed and 5 remain under investigation. The first case was reported in the last PAHO/WHO Epidemiological Update on Measles⁷. The second confirmed case is an 8-month-old female resident of Miguel Colorado community, Champoton Municipality, with no vaccination history. Rash onset was 10 April 2020.

In Mexico, the ages of the confirmed measles cases range from 3 months to 67 years-old, and 57% of the cases are male. Rash onset dates of the confirmed cases in Mexico were between 12 February and 1 May 2020 (**Figure 3**).

Analyses conducted by the National Reference Laboratory (InDRE) have identified genotype D8, lineage Mvs/GirSomnath.IND/42.16/, for 60 of the confirmed cases.

Figure 3. Confirmed measles cases by epidemiological week (EW) of rash onset. Mexico. EW 7 to EW 20 of 2020.



Source: Data published by the Mexico Department of Health and reproduced by PAHO/WHO.

⁷ PAHO/WHO Epidemiological Update: Measles. 17 April 2020, Washington, D.C.: PAHO/WHO; 2020, Available at: <https://bit.ly/2XztfqZ>

Advice to national authorities

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> with the support of the in consultation with the members of the PAHO/WHO Technical Advisory Group (TAG) for vaccine-preventable diseases (VPD), and aligned with the recommendations of the 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, institutions with a captive population and transportation (hospitals, airports, jails, hostels, border crossings, 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, rash, cough, coryza and conjunctivitis) and epidemiological link, in order to not delay the response actions.
- 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 months⁸ 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 Measles⁹.

⁸ 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.

⁹ 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. **Argentina** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
2. **Bolivia** 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. **Mexico** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email.
5. PAHO/WHO. Measles, Rubella, and Congenital Rubella Syndrome Surveillance in the Americas, Weekly Bulletin. Vol. 26, No. 18. Available at: <https://bit.ly/2B8O1MU>
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>

Related link:

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