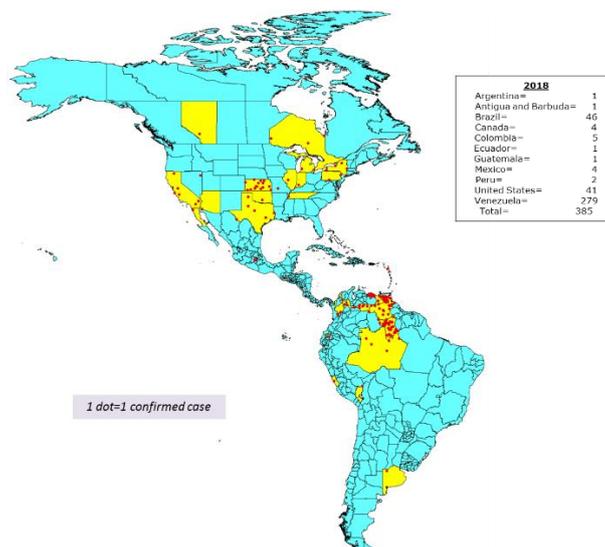


Situation Summary

Since the last Epidemiological Update for measles¹ issued by the Pan American Health Organization / World Health Organization (PAHO/WHO) on 16 March 2018, two additional countries in the Region of the Americas have confirmed measles cases: Argentina (1 case) and Ecuador (1 case). This brings the total number of countries with confirmed measles cases since the beginning of 2018 until epidemiological week (EW) 14 to 11. This figure is higher than in 2017, when four countries reported confirmed measles cases in the Region: Argentina (3 cases), Canada (45), the United States of America (120), and the Bolivarian Republic of Venezuela (727 cases).

Between EW 1 and EW 14 of 2018, confirmed measles cases in the Region were reported in Antigua and Barbuda (1), Argentina (1), Brazil (46), Canada (4), Colombia (5), Ecuador (1), the United States of America (41), Guatemala (1), Mexico (4), Peru (2), and Venezuela (279). **Figure 1.**

Figure 1. Distribution of confirmed measles cases by sub-national level. Region of the Americas, 2018*



Sources: Surveillance country reports sent to the Immunization Unit of PAHO/WHO and by the Ministry of Popular Power for Health of Venezuela.

*Data as of epidemiological week (EW) 14 of 2018

¹ Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 16 March 2018, Washington, D.C.: PAHO/WHO; 2018. Available at: <http://bit.ly/2GBIDBQ>

Suggested citation: Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 6 April 2018, Washington, D.C.: PAHO/WHO; 2018

The following is a summary of the situation in the countries reporting measles cases in 2018.

The reported cases in **Antigua and Barbuda** and in **Guatemala** are both imported cases. The case in Antigua and Barbuda is a 19-year-old unvaccinated female from the United Kingdom, with rash onset on 19 January. The case in Guatemala is a 17-year-old female from Germany with a history of vaccination with two doses and rash onset on 17 January. To date, there have been no additional cases linked to either of these imported cases. The report on these cases is available at <https://bit.ly/2qaZXFE>.²

The confirmed cases of measles in **Canada** and the **United States** are imported or associated with importation, of which 73% were unvaccinated. The highest proportion of cases corresponded to the under-1-year age group and adults between 20 and 49 years old (29%). The identified genotypes are D8, D4, and B3. Twenty cases involved previous travel to one the following countries: Australia, India, Pakistan, Uganda, and the United Kingdom.

In **Argentina**, the confirmed measles case is an 8-month-old female with no travel history and resident of Buenos Aires. Being under 1 year of age, she had not been vaccinated. The onset of rash was on 25 March. The case was confirmed by the Buenos Aires Reference Laboratory by reverse transcription polymerase chain reaction (RT-PCR). Genotyping is pending.

The epidemiological investigation of contacts and search for sources of infection is ongoing.

Actions implemented include:

- Identification and follow-up of contacts.
- Vaccination of susceptible persons.
- Risk communication.

In **Brazil**, an ongoing measles outbreak is in progress, with 316 suspected cases reported (103 in Amazonas State and 213 in Roraima State). Of these cases, 46 have been confirmed (four in Amazonas and 42 in Roraima), including two deaths.

In Amazonas, suspected cases were reported in the municipalities of Anori, Humaitá, Manaus and São Gabriel da Cachoeira. The four confirmed cases are from Manaus, all of them Brazilian, and three are female. One of the confirmed cases was recently vaccinated; the other three were not vaccinated or had no history of vaccination. The rash onset dates were between 15 February and 6 March 2018. Per the laboratory analysis by the Oswald Cruz Foundation (Fiocruz/RJ), the genotype for all four cases is D8; this genotype is identical to that identified in Venezuela in 2017 and in Roraima State in 2018.

In Roraima State, 34 of the 42 confirmed cases are Venezuelan and 8 are Brazilian; 31 of the cases were reported in the municipality of Boa Vista and 11 in Pacaraima. Among the Venezuelan cases, 16 are of Warao indigenous ethnicity. The two reported deaths were among Venezuelan children in Boa Vista. The ages of the confirmed cases ranged between 3 months and 33 years, and 25 of the confirmed cases were male. Nine of the

² Pan American Health Organization / World Health Organization. Epidemiological Update: Measles. 6 February 2018, Washington, D.C. PAHO/WHO; 2018. Available at: <https://bit.ly/2qaZXFE>

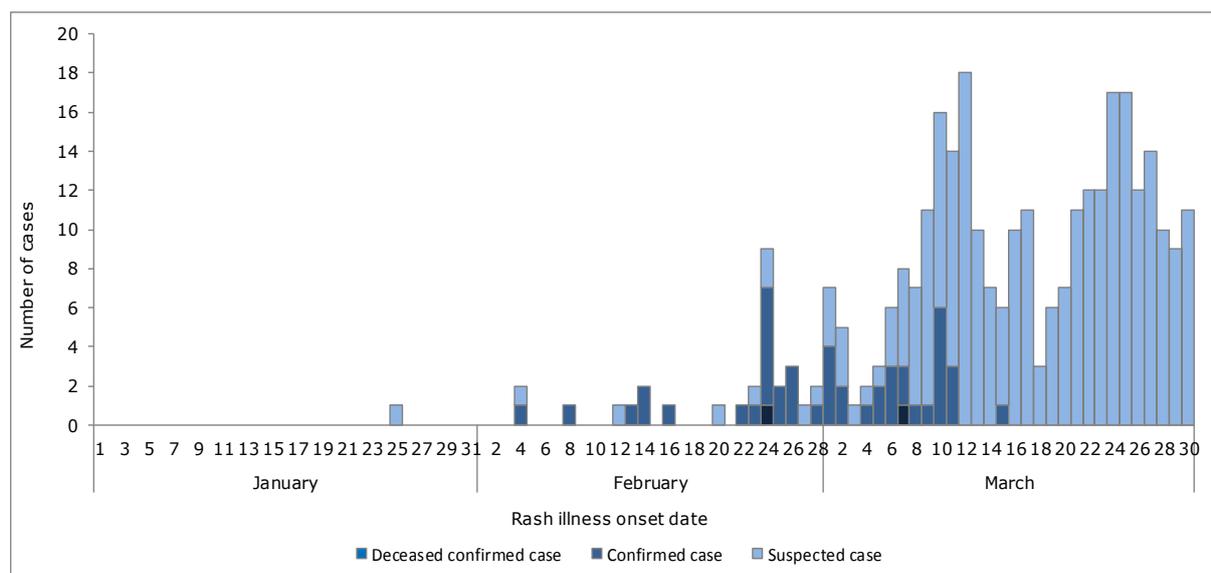
cases had been vaccinated (six during increased vaccination activities and three previously); and four were hospitalized. Per the laboratory analysis conducted by the Oswaldo Cruz Foundation (Fiocruz/RJ), the genotype identified for all of the laboratory-confirmed cases is D8, which is identical to that identified in Venezuela in 2017.

Actions implemented include:

- Vaccination campaign in Roraima and Amazonas states targeting the 6-month-old to 49-year-old population, including Venezuelan immigrants.
- Intensified epidemiological surveillance through active and retrospective institutional case finding, contact tracing, and monitoring of contacts.
- Strengthening of laboratory network.
- Risk communication.
- Training of health care workers in case management.

Figure 2 shows the progression of the outbreak, which shows a growing upward trend. It will be necessary to observe the trend in coming weeks, since results are pending for 194 cases still under investigation.

Figure 2. Reported measles cases by rash onset date. Amazonas and Roraima states, Brazil. 1 January to 30 March 2018



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

In **Colombia**, a total of five confirmed measles cases have been reported in children coming from Venezuela: four from Caracas and one from Miranda State. The age of the confirmed cases ranges between 10 months and 2 years of age; three of them are male. Onset of rash was reported between 8 and 30 March 2018. All of the cases entered Colombia during the communicable period and all were hospitalized; no deaths were reported.

The cases were reported in the municipalities of Arjona (Bolívar Department), Cúcuta (Norte de Santander Department), Medellín (Antioquia Department), Santa Rosa de Cabal (Risaralda Department), and the district of Cartagena.

Laboratory confirmation was conducted by the National Institute of Health through the detection of IgM antibodies for measles in serum and by RT-PCR from a pharyngeal swab and a urine sample. Genotyping of the cases is pending.

Actions implemented include:

- Detection and follow-up of contacts; all are asymptomatic to date.
- Active case finding in institutions and in the community.
- Rapid monitoring of vaccination coverage.
- Vaccination of susceptible persons.
- Risk communication.
- Strengthening of measles-rubella surveillance.

In **Ecuador**, a confirmed measles case was reported in a 5-year-old Venezuelan male with no vaccination history. His rash onset was on 28 March and he traveled from Caracas (Venezuela) to Quito (Ecuador) by land during the incubation period. He entered Ecuador on 27 March via the Rumichaca International Bridge on the border of Colombia; the following day, he had onset of fever, cough, and conjunctivitis.

Laboratory confirmation was conducted by the National Reference Laboratory in Quito (INSPI, Quito) through the detection of IgM antibodies for measles.

Actions implemented include:

- Intensified epidemiological surveillance through active and retrospective institutional case finding, contact tracing, and monitoring of contacts.
- Vaccination of susceptible persons.
- Training of health care workers in case management.
- Risk communication.

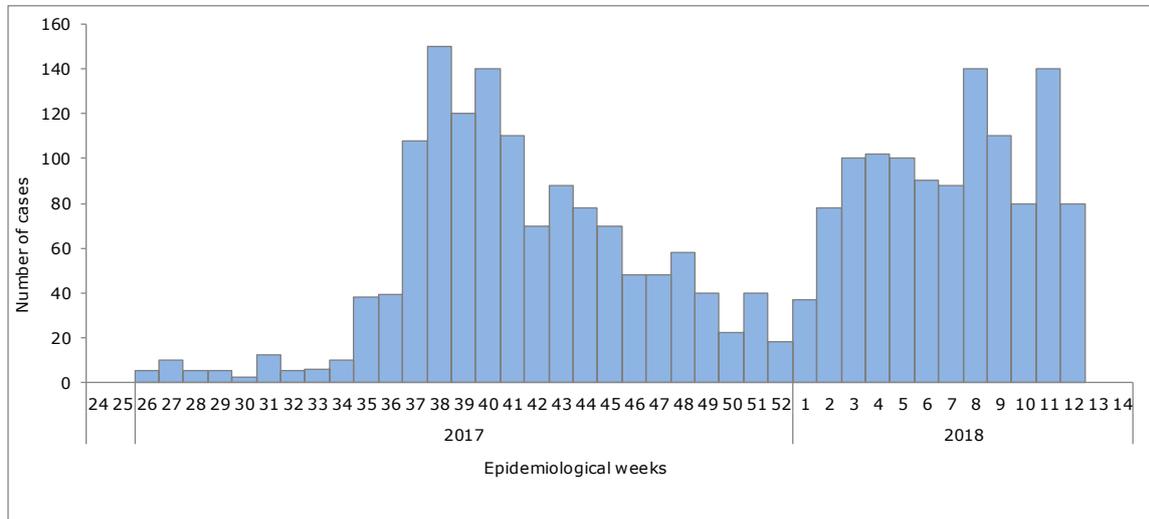
In **Mexico**, four laboratory confirmed measles cases were reported, either imported or associated with importation. The first case was a 38-year-old woman living in Tijuana (Baja California), who was in contact with a confirmed case identified on an international flight. The other three cases were confirmed in Mexico City, with onset of rash between EW 7 and EW 10. These cases are linked: a 39-year-old woman, her child (1 year old), and the child's caregiver (48 years old). The identified genotype in the first case is B3.

In **Peru**, two laboratory measles cases were reported in Peruvian residents without history of travel outside of the country. Both cases were male, 46 and 16 years old, presenting with rash on 24 and 28 February 2018, respectively. No imported or import-related cases that could be the source of infection of the confirmed cases have been identified.

In **Venezuela**, since the first measles case was confirmed in EW 26 of 2017 until EW 12 of 2018, there were 1,006 confirmed cases (757 by laboratory and 249 by epidemiological

link), including two deaths. The highest number of cases was observed in EW 38 and EW 40 of 2017 and between EW 8 and 11 of 2018, as shown in **Figure 3**.

Figure 3. Reported measles cases by EW of rash onset. Venezuela. EW 26 of 2017 to EW 12 of 2018.



Source: Venezuela Ministry of Popular Power for Health. Data reproduced by PAHO/WHO.

About 67% of the confirmed cases were reported in Bolívar (the state with the highest cumulative incidence). Cases were also reported in Apure, Anzoategui, Delta Amacuro, the Capital District, Miranda, Monagas, and Vargas. The most affected age group among the confirmed cases is children under 5 years of age, followed by the 6-15 age group. The spread of the virus to other geographical areas is explained by, among other factors, the high migratory movement of the population due to formal and informal economic activity around mining and commercial activity.

As part of the intervention, a National Rapid Response Plan was designed to interrupt transmission of the virus, including the activation of national, regional, and municipal rapid response teams, implementation of vaccination strategies and activities, epidemiological surveillance, contact tracing, and training of health personnel; supported technically by the national level. The country has provided more than six million doses of measles, mumps, and rubella (MMR) and measles / rubella (MR) vaccines to increase vaccination coverage in children and adolescents to interrupt viral transmission.

Situation in other Regions

In relation to the epidemiological situation of measles in the European Region, the number of cases in 2017 quadrupled compared to those reported in 2016. The disease affected 21,315 people and caused 35 deaths in 2017, after a historical minimum of 5,273 cases in 2016. Seventy-two percent of the cases were reported by three countries: Italy, Romania, and Ukraine.

Countries from other continents (China, Ethiopia, India, Indonesia, Laos, Mongolia, the Philippines, Nigeria, Sri Lanka, Sudan, Thailand, and Viet Nam, among others) also reported outbreaks of measles between 2016 and 2017.

Advice to national authorities

In light of continuous reports of imported measles cases from other regions and ongoing outbreaks in the Americas, PAHO / WHO urges all Member States to:

- **Vaccinate** to maintain homogeneous coverage of 95% with the first and second doses of measles, mumps, rubella (MMR) vaccine in all municipalities. Vaccination Week in the Americas, which begins on 22 April, is an opportunity to step up the vaccination coverage and to establish more homogeneous coverage levels within countries.
- **Vaccinate** at-risk populations (without proof of vaccination or immunity against measles and rubella), such as health workers, people working in tourism and transportation (hotel and catering, airports, taxi drivers, etc.), and international travelers.
- **Maintain** a reserve of measles-rubella (MR) vaccine and syringes for control of imported cases in each country in the Region.
- **Strengthen epidemiological surveillance** of measles for timely detection of all suspected cases of measles in public and private healthcare facilities, and ensure that samples are received by laboratories within five days of being taken.
- Provide a **rapid response** to imported measles cases through the activation of rapid response teams to prevent the re-establishment of endemic transmission. 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).
- **Identify** migratory flows from abroad (arrival of foreigners) and internal flows (movements of population groups) in each country, in order to facilitate access to vaccination services, in accordance with the national immunization schedule.

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3. 29th Pan American Sanitary Conference, 69th Session of the Regional Committee of WHO for the Americas, *Plan of Action for the Sustainability of Measles, Rubella, and Congenital Rubella Syndrome Elimination in the Americas 2018-2023*. Washington, D.C., USA, 25-29 September 2017. Available at: <http://bit.ly/2tsZRx1>

Related links:

- PAHO/WHO. Vaccine-Preventable Diseases: <http://bit.ly/2G8pQwi>