

Situation Summary in the Region of the Americas

Several factors have contributed to the outbreaks of measles and diphtheria in the Region of the Americas, including lack of compliance of vaccination coverage. Moreover, the onset of the COVID-19 pandemic has decreased the demand for vaccination services, followed by the impact on the vaccination coverages and the postponement of vaccination campaigns.

The following is a summary of the epidemiological situation of measles and diphtheria in 2020, as of epidemiological week (EW) 53.

Measles

In 2020, between epidemiological week (EW) 1 and EW 53, 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). In 2020, a total of 97% of the cases were reported in Brazil and 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.

The following is the epidemiological situation for measles for Brazil and United States where new confirmed cases of measles have been reported since the prior PAHO/WHO Epidemiological Update on Measles published on 16 November 2020.

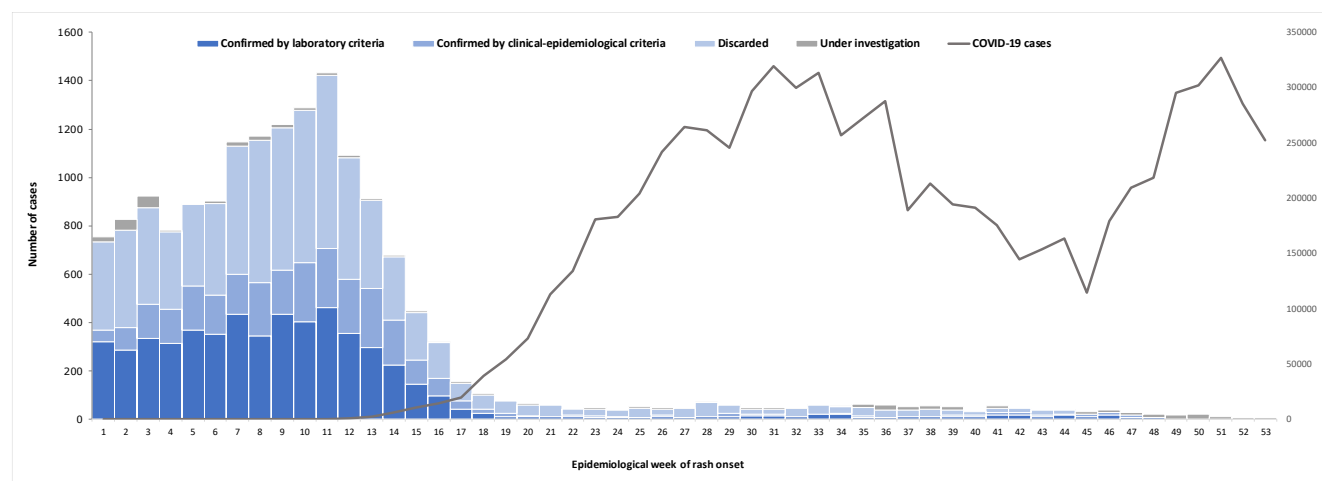
In **Brazil**, between EW 1 and EW 53 of 2020, a total of 16,836 suspected cases have been reported, of which 8,448 (50%) were confirmed, including 10 deaths, 7,975 were discarded, and 413 remain under investigation. During the same period, a total of 21 federal units (including Federal District) reported cases of measles and the federal units still reporting ongoing outbreaks² are: Pará, Rio de Janeiro, São Paulo y Amapá.

In 2020, between EW 1 and EW 11 of 2020, there have been an average of 1,039 cases per epidemiological week. Since EW 11, there has been a progressive decline in the number of reported suspected cases that coincides with the onset of the COVID-19 pandemic and the prioritization of public health actions in that context. During the last 6 weeks of 2020 (EW 48 to EW 53), there have been an average of 30 cases per epidemiological week (**Figure 2**).

¹ PAHO/WHO Epidemiological Update: Measles. 16 November 2020, Washington, D.C.: PAHO/WHO; 2020. Available at: <https://bit.ly/3tff2A6>

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

Figure 2. Reported cases of measles by epidemiological week (EW) of rash onset. Brazil and COVID-19 cases. EW 1 to EW 53 of 2020.



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

Among the 8,448 confirmed cases, 4,892 (58%) were unvaccinated, 1,744 (21%) were vaccinated. For 2,106 cases (21%), no information regarding vaccination status was available.

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), and

The 4 federal units with ongoing outbreaks³ in 2020 are: Pará with 5,385 confirmed cases including 8 deaths, Rio de Janeiro with 1,348 confirmed cases including 1 death, São Paulo with 867 confirmed cases including 1 death, and Amapá with 191 confirmed cases

Between EW 26 of 2019 and EW 53 of 2020, the main genotype identified in the federal units with active outbreaks has been D8, lineage MVs/Gir Somnath.IND/42.16/. The genotypes MVi/Hulu Langat.MYS/26.11/, MVi/Delhi.IND/01.14/06, and MVs/Istanbul.TUR/28.18/ were also identified in les proportion. Among the confirmed cases reported in 2020, only the genotype D8, lineage MVs/Gir Somnath.IND/42.16/. was identified.

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

In *Pará State*, between EW 1 and EW 53 of 2020, a total of 8,318 suspected cases of measles were reported, of which 5,385 were confirmed (including 8 deaths), 2,927 were discarded, and 6 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (738 cases per 100,000 population), followed by 15 to 19-year-olds (180 cases per 100,000 population) and 20 to 29-year-olds (145 cases per 100,000 population). Among the confirmed cases, 3,739 (70%) were unvaccinated, 673 (12%) were vaccinated (information regarding the number of doses per person was unavailable). For 966 cases (18%), no information regarding vaccination status was

³ Federal units that have reported confirmed cases in the last 90 days.

available. The most recent confirmed case had rash onset on 11 December 2020 and was reported in Bagre Municipality.

In *Rio de Janeiro State*, between EW 1 and EW 53 of 2020, a total of 2,830 suspected cases of measles were reported, of which 1,348 were confirmed (including 1 death), 1,431 were discarded, and 51 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (130 cases per 100,000 population) followed by 15 to 19-year-olds (24 cases per 100,000 population) and 1 to 4-year-olds (20 cases per 100,000 population). Among the confirmed cases, 496 (37%) were unvaccinated, 513 (38%) were vaccinated (information regarding the number of doses per person was unavailable). For 339 cases (25%), no information regarding vaccination status was available. The most recent confirmed case had rash onset on 10 November 2020 and was reported in Rio de Janeiro Municipality.

In *São Paulo State*, between EW 1 and EW 53 of 2020, a total of 2,835 suspected cases of measles were reported, of which 867 were confirmed (including 1 death), 1,888 were discarded, and 80 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (46 cases per 100,000 population), followed by 1 to 4-year-olds (7 cases per 100,000 population), and 15 to 19-year-olds (5 cases per 100,000 population). Among the confirmed cases, 284 (33%) were unvaccinated, 378 (44%) were vaccinated (information regarding the number of doses per person was unavailable). For 205 cases (24%), no information regarding vaccination status was available. The most recent confirmed case had rash onset on 7 December 2020 and was reported in São Paulo Municipality.

In *Amapá State*, between EW 1 and EW 53 of 2020, a total of 430 suspected cases of measles were reported, of which 191 were confirmed, 151 were discarded, and 88 remain under investigation. The highest incidence rates by age group are among under 1-year-olds (430 cases per 100,000 population), followed by 1 to 4-year-olds (121 cases per 100,000 population), and 5 to 9-year-olds (34 cases per 100,000 population). Among the confirmed cases, 80 (42%) were unvaccinated, 8 (4%) were vaccinated (information regarding the number of doses per person was unavailable). For 103 cases (54%), no information regarding vaccination status was available. The most recent confirmed case had rash onset on 20 December 2020 and was reported in Macapá Municipality.

In the **United States**, between 1 January and 30 November 2020, a total of 13 confirmed cases of measles were reported in 8 states.

This information is regularly updated on the United States Centers for Disease Control and Prevention (CDC) website, available at: <https://bit.ly/2Nza14C>

Diphtheria

In 2020, between EW 1 and EW 53, a total of 5 countries reported 80 confirmed cases of diphtheria, including 21 deaths in the Region of the Americas: Brazil (2 confirmed cases), the Dominican Republic (3 confirmed cases, including 2 deaths), Haiti (66 confirmed cases, including 16 deaths), Peru (4 confirmed cases, including one death) and the Bolivarian Republic of Venezuela (5 confirmed cases, including 2 deaths).

The following is the epidemiological situation for diphtheria for Haiti where new confirmed cases have been reported since the prior PAHO/WHO Epidemiological Update on Diphtheria published on 17 November 2020⁴.

In **Haiti**, between EW 32 of 2014 and EW 53 of 2020, there were 1,171 suspected cases⁵ of diphtheria reported, including 78 deaths; of the total cases, 388 were confirmed (374 laboratory-confirmed and 14 by epidemiological link) (**Table 1, Figure 2**).

The number of suspected cases reported between EW 1 and EW 53 of 2020 (194 cases) is lower than the number reported during the same period in both 2018 (375 cases) and 2019 (195 cases) (**Table 1**). Considering the long duration that the disease has been transmitted within the country, diphtheria is considered endemic in Haiti.

In 2020, among the 194 suspected cases, 66 cases including 16 deaths were confirmed. Of the 66 confirmed cases, 61 cases were laboratory-confirmed and 5 by epidemiological link. The case-fatality rates among confirmed cases were 23% in 2015, 39% in 2016, 8% in 2017, 13% in 2018, 22% in 2019, and 24% in 2020.

Table 1. Suspected and confirmed cases of diphtheria reported in Haiti, 2014-2020⁶.

Year	Suspected cases	Confirmed cases*	Confirmed Deaths**	Case-fatality rate** (%)
2014	18	4	2	50%
2015	77	31	7	23%
2016	118	54	21	39%
2017	194	73	6	8%
2018	375	105	14	13%
2019	195	55	12	22%
2020	194	66	16	24%
Total	1,171	388	78	20%

* Confirmed by laboratory criteria or epidemiological link

** Among confirmed cases

Source : Haiti Ministère de la Santé Publique et de la Population (MSPP)

Between EW 1 and EW 53 of 2020, among the 66 confirmed cases, 56% were among 6 to 14-year-olds and 23% among 1 to 5-year-olds. Regarding deaths, 9 were among 6 to 14-year-olds, 4 were among 1 to 5-year-olds and 3 among 15-year-olds and older.

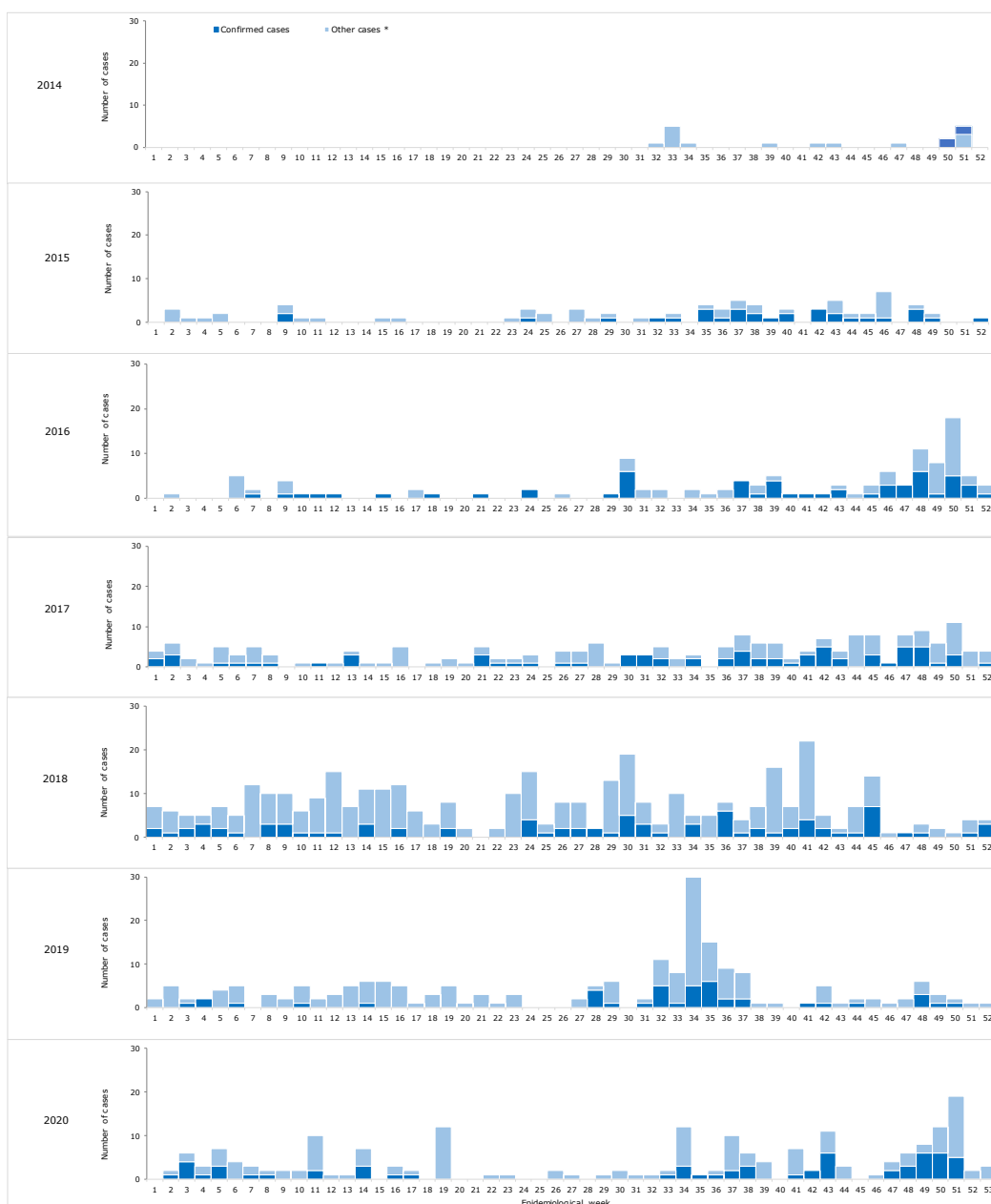
⁴ Pan American Health Organization / World Health Organization. Epidemiological Update: Diphtheria. 17 November 2020, Washington, D.C.: PAHO/WHO; 2020. Available at: <https://bit.ly/3c4fcDw>

⁵ According to a change in the case definition per the Haiti Ministère de la Santé Publique et de la Population (MSPP), a suspected case is defined as any person, of any age, that presents with laryngitis, pharyngitis, or tonsillitis with adherent pseudo-membranes in the tonsils, pharynx and / or nasal pits, associated with edema of the neck.

⁶ Preliminary data subject to change based on retrospective investigation.

In 2020, the highest cumulative incidence rates of suspected cases have been reported in the communes of Mont Organisé (70 cases per 100,000 population), Terrier-Rouge (23 cases per 100,000 population) and Trou du Nord (18 cases per 100,000 population) in the Nord Est Department; and Pignon (58 cases per 100,000 population) and Port-Margot (14 cases per 100,000 population) in the Nord Department.

Figure 2. Distribution of reported diphtheria cases by epidemiological week (EW) of symptom onset and year. Haiti, EW 32 of 2014 to EW 53 of 2020.



*'Other cases' refers to all cases with negative laboratory results, those for which test results are pending, or those for which viable samples were not available.

Source : Haiti Ministère de la Santé Publique et de la Population (MSPP). Data reproduced by PAHO/WHO.

The vaccination schedule in Haiti includes 3 doses in under 1-year-olds, and 1 booster, which are administered between 12 and 23 months of age.

The country does not have a national vaccination policy for health personnel.

The country does not meet the 95% goal established in the regional immunization action plan, 15% of the country's communes reported $\geq 95\%$ coverage in 2019 and 34% of the municipalities reported $\geq 95\%$ coverage in 2020 until September.

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).

PAHO/WHO reminds Member States of the current guidelines published in the 16 November 2020 PAHO/WHO *Epidemiological Update on Measles*, available at: <https://bit.ly/3tfF2A6>; as well as the published guidelines published in the 17 November 2020 PAHO/WHO *Epidemiological Update on Diphtheria*, available at: <https://bit.ly/3cafcDw>.

PAHO / WHO recommends strengthening surveillance systems and laboratory diagnostic capacity for diphtheria. Laboratory diagnosis is made by culture of the microorganism in selective media, biochemical tests and the Elek test that confirms the production of diphtheria toxin. The Polymerase Chain Reaction (PCR) detects the presence of the diphtheria toxin gene (tox) and is useful to identify the presence of the bacteria, especially in specimens that have had difficulties in obtaining, handling, or transporting or in cases that have started antimicrobial treatment prior to collection of specimen.

PAHO / WHO recommends performing the Elek test to confirm the production of the toxin, mainly in sporadic cases and in countries with active outbreaks that report cases in new locations or that reported cases with no direct epidemiological link with a confirmed case.

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