

Diphtheria in the Americas - Summary of the situation

Between epidemiological week (EW) 1 and EW 49 of 2017, Brazil, the Dominican Republic, Haiti, and the Bolivarian Republic of Venezuela reported confirmed diphtheria cases. The following is a summary for each country.

In **Brazil**, up to EW 49 of 2017, 14 states reported a total of 42 suspected diphtheria cases, including 4¹ which were confirmed in Acre, Minas Gerais, Roraima, and São Paulo states; 1 by laboratory testing and 3 by clinical criteria. Out of the four cases, 2 were not vaccinated (including the laboratory confirmed case) and 2 had an uncompleted vaccination schedule.

The confirmed cases range between 4 and 51 years of age, and include 3 males and 1 female. There was 1 fatal confirmed case; this is the previously reported laboratory confirmed case imported from Venezuela. There were no secondary cases related to this case nor have there been additional imported cases reported in Brazil.

In the **Dominican Republic**, there were 3 confirmed diphtheria cases reported in the [last diphtheria epidemiological update](#) of 15 November 2017; however, the Ministry of Public Health and Social Assistance has since reported that only one was confirmed for diphtheria as the other two cases were discarded by clinical criteria (1) and by laboratory (1). No fatal case was reported.

In **Haiti**, the outbreak began at the end of 2014 and has continued to occur with a total of 348 probable diphtheria² cases reported up to EW 48 of 2017, including 46 deaths. An increase in cases is observed in the last trimester of 2017 compared to the preceding trimester (**Figure 1**).

Between EW 1 and EW 48 of 2017, 152 probable cases were reported, with a case fatality rate of 10%. Of these cases, 59% are female and 76% are infants under the age of ten. The vaccination history of the probable cases is the following: 11% were vaccinated and 89% did not know or did not have information on their vaccination status. Most of the probable cases (71%) were reported in the departments of Artibonite and Ouest (38% and 33%, respectively); this is similar to what was observed in 2016 with 70% of the cases reported in the same two departments.

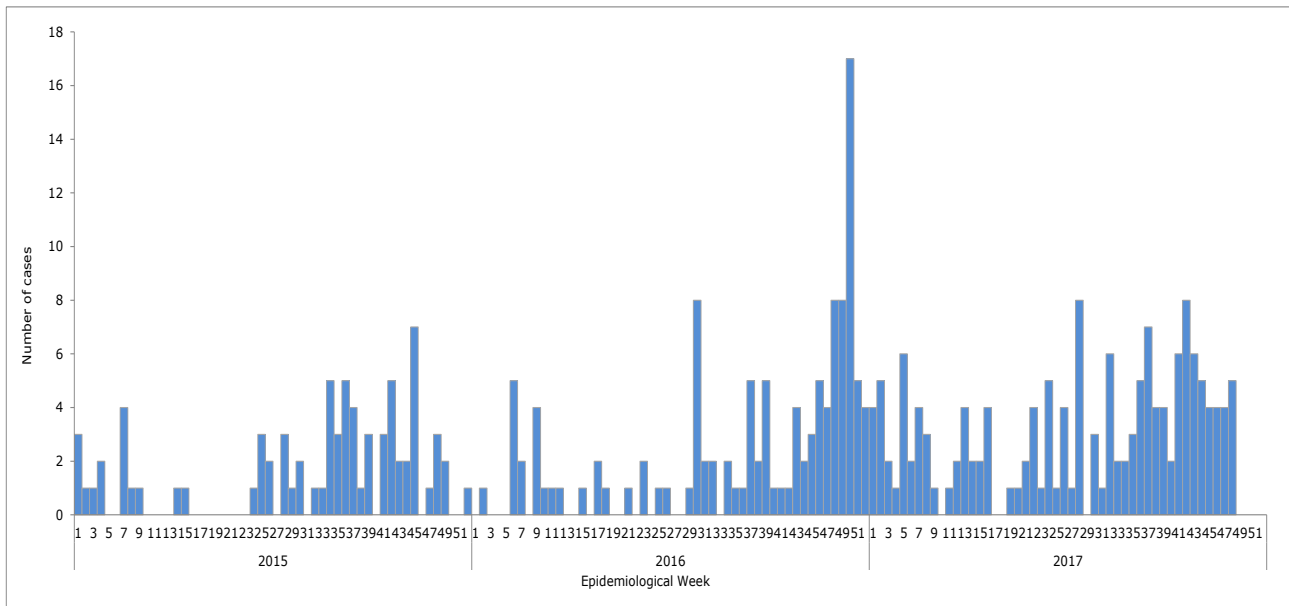
¹ The total number of confirmed cases in this epidemiological update is lower than the number reported in the epidemiological update published on 15 November 2017 because a case previously classified as confirmed by clinical criteria was discarded after laboratory testing.

² According to the Haiti Ministry of Public Health and Population, a probable case is defined as a person, regardless of age, with laryngitis, pharyngitis, or tonsillitis with adherent pseudomembranes on tonsils, pharynx, and/or nostrils in conjunction with neck edema.

Of the 152 probable cases reported in 2017, samples were taken from 141 cases, of which 64 (45%) were laboratory confirmed, 52 were discarded, and 25 remain under investigation. Of the confirmed cases, 81% (52) are from the departments of Artibonite and Ouest.

Epidemiological surveillance is being intensified to detect the population at risk and to implement public health measures, including a vaccination campaign expected to take place in 2018.

Figure 1. Probable diphtheria cases reported by epidemiological week (EW). Haiti, 2014-2017.*



*Up to EW 48

Source: Data provided by the Haiti Minister of Public Health and Population and reproduced by PAHO/WHO.

In **Venezuela**, between EW 28 of 2016 and EW 48 of 2017, a diphtheria outbreak was reported, starting from Sifontes municipality, Bolívar state and spreading to 21 other states in the country. A total of 933 probable diphtheria cases were reported, 324 of which occurred in 2016. From EW 1 to EW 48 of 2017, 609 probable cases of diphtheria were reported (21% case fatality rate), of which 227 were laboratory confirmed (by isolation or polymerase chain reaction).

Among the confirmed cases (198 cases), 14% have a history of vaccination and 56% are female. The most affected individuals are those aged 11 or older, which accounted for 72% of the confirmed cases.

The Venezuela Ministry of People's Power for Health is intensifying vaccination activities in municipalities with cases and a vaccination campaign is planned to begin in early 2018. All federal entities have been alerted and epidemiological surveillance, active case search, follow-up of contacts, diagnostic capacity are being strengthened.

Advice for Member States

The Pan American Health Organization / World Health Organization (PAHO/WHO) advises Member States to continue their efforts to ensure high vaccination coverage, using strategies that allow them to reach the appropriate levels in all their territorial entities. In an outbreak involving adults, the groups most affected and most at risk should be immunized.

PAHO/WHO recommends Member States to strengthen their surveillance systems for early detection of suspected cases, in order to initiate timely treatment of cases and contacts, including the provision of diphtheria antitoxin (DAT).

PAHO/WHO reminds Member States that adequate clinical management is key to reduce complications and mortality. Following is an advice for health authorities on case management.

Clinical management

If diphtheria is strongly suspected, specific treatment with antitoxin and antimicrobial should be initiated immediately. It is not necessary to wait for laboratory results before initiating treatment.

Equine-derived DAT is highly effective and is the gold standard for diphtheria treatment. To reduce complications and mortality, DAT should be administered as soon as possible after disease onset, preferably intravenously in serious cases.

The entire therapeutic dose should be administered in a single dose, immediately after throat swabs have been taken. The amount of antitoxin recommended varies between 20,000 and 100,000 units, with larger amounts recommended for persons with extensive local lesions and with longer interval since onset. The dose is the same for children and adults. Adverse events such as anaphylaxis may occur.

Antimicrobials are necessary to eliminate the organism and prevent spread; however, they are not a substitute for antitoxin treatment.

Management of close contacts

Close contacts include household members and other persons with a history of direct contact with a diphtheria patient, as well as health care staff exposed to the oral or respiratory secretions of a patient.

All close contacts should be clinically assessed for symptoms and signs of diphtheria and kept under daily surveillance for 7 days from the last contact. Adult contacts must avoid contact with children and must not be allowed to handle food until proven not to be carriers.

All the contacts must receive a single dose of benzathine benzylpenicillin intramuscularly (600,000 units for children under 6 years, 1.2 million units for those 6 years or older). If the culture is positive, antimicrobial should be given as outlined above.

References

1. PAHO/WHO. 2016. Number of Vaccine Preventable Disease (VPD) cases in the Americas. Available at: http://ais.paho.org/hip/viz/im_vaccinepreventablediseases.asp
2. A field manual - Communicable disease control in emergencies. Guia de Campo. MA Connolly. WHO/CDS/2005.27. Available at: <http://bit.ly/2kvngpU>
3. Diphtheria vaccine: WHO position paper – August 2017. Available at: <http://bit.ly/2CCN7UW>