

### Diphtheria in the Americas - Summary of the situation

In 2019, Haiti and the Bolivarian Republic of Venezuela have reported confirmed cases. In 2018, there were three countries in the Region of the Americas (Colombia, Haiti, and Venezuela) that reported confirmed cases of diphtheria.

The following is a summary of the updated epidemiological situation reported by Haiti and Venezuela.

In **Haiti**, between epidemiological week (EW) 32 of 2014 and EW 36 of 2019, there were 933 probable cases<sup>1</sup> reported, including 116 deaths; of the total cases, 287 were confirmed (278 laboratory-confirmed and 9 by epidemiological link) (**Table 1**).

**Table 1.** Probable and confirmed cases of diphtheria reported in Haiti, 2014-2019 (until EW 36 of 2019)<sup>2</sup>.

Year	Probable cases	Confirmed cases*	Deaths**	Case-fatality rate** (%)
2014	18	4	2	50%
2015	77	31	7	23%
2016	118	57	22	39%
2017	194	73	6	8%
2018	375	105	14	13%
2019	151	17	5	29%
<b>Total</b>	<b>933</b>	<b>287</b>	<b>56</b>	<b>20%</b>

\*Confirmed by laboratory criteria or epidemiological link

\*\*Among confirmed cases

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

The number of probable cases reported between EW 1 and EW 36 of 2019 (151 cases) is higher than the numbers reported during the same period in 2017 (99 cases) but lower than reported during the same period in 2018 (269 cases).

In 2019, among the 151 probable cases, 17 cases and 5 deaths were laboratory-confirmed. The case-fatality rate among cases confirmed by laboratory or epidemiological link was 23% in 2015, 39% in 2016, 8% in 2017, 13% in 2018, and 29% as of EW 36 in 2019.

<sup>1</sup> Per the Haiti MSPP, a probable case is defined as any person, of any age, that presents with laryngitis, pharyngitis, or tonsillitis with false adherent membranes in the tonsils, pharynx and / or nasal pits, associated with edema of the neck.

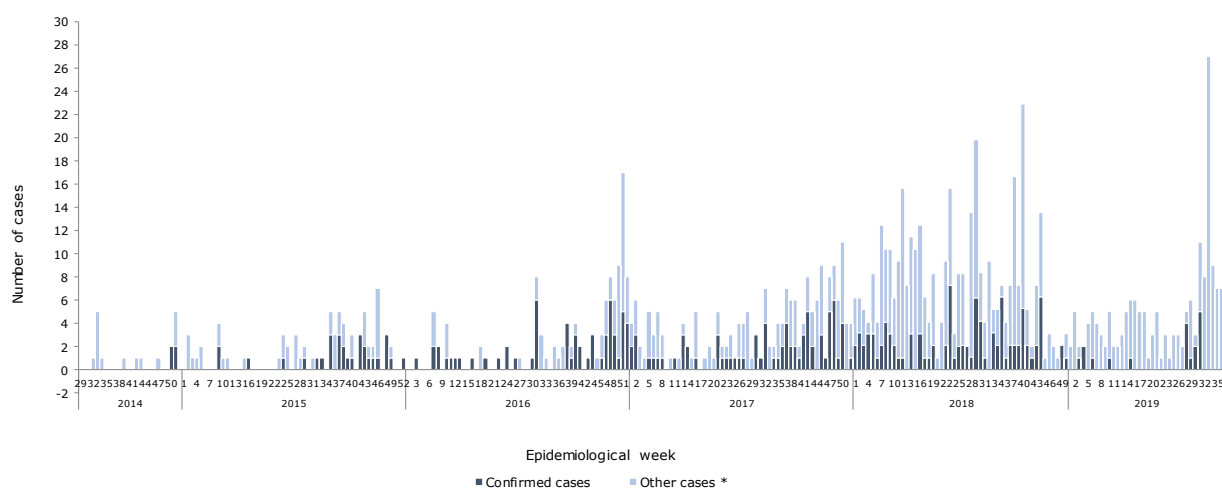
<sup>2</sup> Preliminary data subject to change based on retrospective investigation.

**Suggested citation:** Pan American Health Organization / World Health Organization. Epidemiological Update: Diphtheria. 18 October 2019, Washington, D.C.: PAHO/WHO; 2019

Among confirmed cases in 2019, the highest incidence rates are among 6 to 14-year-olds followed by 1 to 5-year-olds. The five fatal cases occurred among 1 to 5-year-olds.

In 2019, the highest cumulative incidence rates of probable cases have been reported in the communes of Dondon (50.5 cases per 100,000 population) in Nord Department, Cerca Carvajal (26.5 cases per 100,000 population) in Centre Department, Thiotte (14.2 cases per 100,000 population) in Sud Est Department, and Arnaud (9.4 cases per 100,000 population) in Nippes Department.

**Figure 1.** Distribution of reported diphtheria cases by epidemiological week of symptom onset, Haiti, EW 32 of 2014 to EW 36 of 2019.



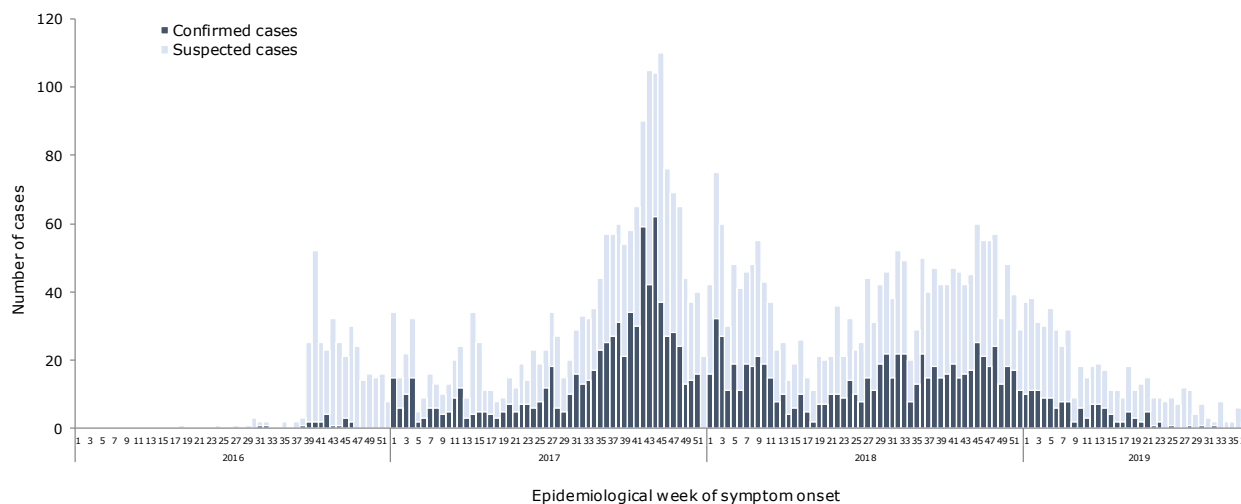
\*Other cases refer to all cases with negative laboratory results, those for which test results are pending, or those for which viable samples were not available.

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

In **Venezuela**, the diphtheria outbreak that began in July 2016 remains ongoing (**Figure 2**). Since the beginning of the outbreak and as of EW 38 of 2019, a total of 2,979 suspected cases have been reported (324 cases in 2016, 1,040 in 2017, 1,208 in 2018, and 407 in 2019); of the total, 1,733 have been confirmed (575 by laboratory and 1,158 by clinical criteria or epidemiological link). A total of 287 deaths have been reported (17 in 2016, 103 in 2017, 151 in 2018, and 16 in 2019). In 2019, the overall case-fatality rate is 11.2%, and the highest age-specific case-fatality rates are among 5 to 9-year-olds (50%), followed by 40 to 49-year-olds (38%) and 10 to 15-year-olds (27%).<sup>3</sup>

<sup>3</sup> Case-fatality rates by age group provided in this PAHO/WHO Epidemiological Update differ from previous PAHO/WHO Epidemiological Updates, due to adjustments made by the Venezuela Ministry of Popular Power for Health.

**Figure 2.** Distribution of suspected and confirmed diphtheria cases by epidemiological week of symptom onset. Venezuela, EW 28 of 2016 to EW 38 of 2019.



**Source:** Data from the Venezuela Ministry of Popular Power for Health and reproduced by PAHO/WHO

In 2018, 22 federal entities and 99 municipalities reported confirmed cases. As of EW 38 of 2019, 9 federal entities, 10 municipalities, and 14 parishes have been affected. Thus, vaccination and control activities continue to be implemented.

Cases have been reported among all age groups. The incidence rates by age group is as follows: 4 cases per 100,000 population among persons aged less than 15 years; 3 cases per 100,000 population among 15 to 40-year-olds; and 1 case per 100,000 population among persons over 40-years-old.

## Advice for Member States

The Pan American Health Organization / World Health Organization (PAHO/WHO) reiterates to Member States the recommendations to continue their efforts to ensure vaccination coverage over 95% with the primary series (3 doses) and booster doses (3 doses). This vaccination scheme will provide protection throughout adolescence and adulthood (up to 39 years and possibly beyond). Booster doses of diphtheria vaccine should be given in combination with tetanus toxoid, using the same schedule and age-appropriate vaccine formulations, namely diphtheria, tetanus, and pertussis (DPT) for children aged 1 to 7-years old, and diphtheria toxoid (Td) for children over 7-years old, adolescents, and adults.

PAHO/WHO stresses that the most at-risk populations are unvaccinated children under 5 years of age, schoolchildren, healthcare workers, military service personnel, inmate communities, and persons who, due to the nature of their occupation, are in contact with a large number of persons on a daily basis.

Although travelers do not have a special risk for diphtheria infection, it is recommended that national authorities remind travelers going to areas with diphtheria outbreaks to be properly vaccinated prior to travel in accordance with the national vaccination scheme established in

each country. If more than five years have passed since their last dose, a booster dose is recommended.

PAHO/WHO recommends that Member States strengthen their surveillance systems and their capacity of laboratory diagnosis through culture, ELEK test, and Polymerase Chain Reaction (PCR) for diphtheria toxin (tox) gene.

PAHO/WHO recommends maintaining a supply of diphtheria antitoxin.

Vaccination is key to preventing cases and outbreaks, and adequate clinical management reduces complications and mortality.

## Sources of information

1. **Haiti** Ministère de la Santé Publique et de la Population (MSPP) report received by PAHO/WHO via email communication.
2. **Venezuela** International Health Regulations (IHR) National Focal Point (NFP) report received by PAHO/WHO via email communication.

## References

1. Diphtheria vaccine: WHO position paper – August 2017. Available at: <http://bit.ly/2CCN7UW>
2. Final report of the 3rd Ad-Hoc Meeting of the Technical Advisory Group (TAG). Ad-hoc Virtual Meeting, March 19, 2018. Available at: <https://bit.ly/2wsLelk>