

Diphtheria Outbreak Toolbox

Updated: June 2019



Key reference documents

- [Diphtheria: Surveillance standards for vaccine-preventable diseases](#) (Geneva: World Health Organization; 2018).
- [Diphtheria health topic page](#) (Geneva: World Health Organization).



Case definitions

WHO suggested outbreak case definition

Suspected case:

- any person with an illness of upper respiratory tract with:
 - pharyngitis, nasopharyngitis, tonsillitis or laryngitis; **and**
 - adherent pseudomembrane of the pharynx, tonsils, larynx and/or nose.¹

Confirmed case:

- a suspected case with *Corynebacterium spp.* isolated by culture **and** positive Elek test for toxin production;
- once the epidemic is confirmed, a suspected case with positive polymerase chain reaction (PCR) for toxin gene;²
- a suspected case with an epidemiological link³ with a laboratory-confirmed case.

Discarded case/non-case:

- a suspected case with:
 - negative culture for *Corynebacterium spp.*; **or**
 - isolation of non-toxigenic *Corynebacterium spp.* (negative Elek test); **or**
 - negative PCR for toxin (*tox*) gene.

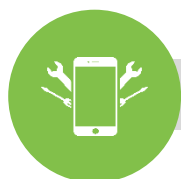
¹ A diphtheria pseudomembrane is an exudate that is greyish, thick, firmly adherent and patchy to confluent. Dislodging the pseudomembrane is likely to cause profuse bleeding. Some countries may choose to expand the suspected case definition to include suspect cases without a pseudomembrane.

² PCR is normally considered a complementary tool to the gold standard of culture and Elek testing.

³ Epidemiological link: Intimate respiratory or physical contact within the 14 days prior to onset of sore throat.

WHO surveillance case definition

- Diphtheria: Surveillance standards for vaccine-preventable diseases (Geneva: World Health Organization; 2018 (pp. 4–5)).



Data collection tools

- Case investigation form(s): Example of Diphtheria notification and investigation form. In: Control of diphtheria, pertussis, tetanus, *Haemophilus influenzae* type B, and hepatitis B: field guide. Washington (DC): Pan American Health Organization; 2005: Annex 2 (Scientific and Technical Publication, No. 604; <http://iris.paho.org/xmlui/handle/123456789/46726>).
- Line lists: Not available.
- Electronic tools: Not available.



Laboratory confirmation

- Diphtheria: Surveillance standards for vaccine-preventable diseases (Geneva: World Health Organization; 2018).
- Diphtheria laboratory manual (in preparation).



Other resources

- Diphtheria: Clinical management of respiratory diphtheria (Geneva: World Health Organization; 2018).
- Control of diphtheria, pertussis, tetanus, *Haemophilus influenzae* type B, and hepatitis B: field guide (Washington (DC): Pan American Health Organization, 2005).