

Diphtheria (*Corynebacterium diphtheriae*)

2019 Case Definition

CSTE Position Statement(s)

18-ID-03

Clinical Criteria

Upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx **OR**

Infection of a non-respiratory anatomical site (e.g., skin, wound, conjunctiva, ear, genital mucosa)

Laboratory Criteria for Diagnosis

Confirmatory laboratory evidence:

- Isolation of *C. diphtheriae* from any site **AND**
- Confirmation of toxin-production by Elek test or by another validated test capable of confirming toxin-production

Supportive laboratory evidence:

- Histopathologic diagnosis

Epidemiologic Linkage

Epidemiologic linkage requires direct contact with a laboratory-confirmed case of diphtheria.

Criteria to Distinguish a New Case from an Existing Case

Individuals without evidence of clinical criteria as described by the diphtheria surveillance case definition but for whom toxin-producing *Corynebacterium diphtheriae* is confirmed via laboratory testing (isolation and toxigenicity testing by modified Elek test or other validated test capable of confirming toxin-production) should not be classified as cases. These individuals are considered carriers of the bacteria and are not reportable.

Case Classification

Suspected

In the absence of a more likely diagnosis, an upper respiratory tract illness with each of the following:

- an adherent membrane of the nose, pharynx, tonsils, or larynx **AND**
- absence of laboratory confirmation **AND**
- lack of epidemiologic linkage to a laboratory-confirmed case of diphtheria.

OR

Histopathologic diagnosis

Confirmed

An upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx and any of the following:

- isolation of toxin-producing *Corynebacterium diphtheriae* from the nose or throat **OR**
- epidemiologic linkage to a laboratory-confirmed case of diphtheria.

OR

An infection at a non-respiratory anatomical site (e.g., skin, wound, conjunctiva, ear, genital mucosa) with

- isolation of toxin-producing *C. diphtheriae* from that site.

Case Classification Comments

- Cases of laboratory-confirmed, non-toxin-producing *C. diphtheriae* (respiratory or non-respiratory) should not be reported by state or local health departments to CDC as diphtheria cases.
- Negative laboratory results may be sufficient to rule-out a diagnosis of diphtheria; however, clinicians should carefully consider all lab results in the context of the patient's vaccination status, antimicrobial treatment, and other risk factors.
- PCR (polymerase chain reaction) and MALDI-TOF (matrix assisted laser desorption/ionization-time of flight mass spectrometry) diagnostics for *C. diphtheriae*, when used alone, do not confirm toxin production. These tests, when used, should always be combined with a test that confirms toxin production, such as the Elek test.