



# Infectious Disease SOP—Diphtheria

<b>Original Effective Date:</b> 8/2008	<b>Review / Revision Date:</b> 7/20/17	<b>Environmental Health Procedure:</b> 2017.07.005
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**Maintenance Steward:** Epidemiology Supervisor      **History:**  New  Revised  Archived

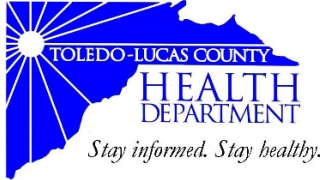
**Organizational Scope:**  
 Full Agency  Administration  Community Services  Environmental Health  Health Services

**Frequency of Review:**  
 Annually  Biennially  5 Years  As Needed  Other:

**Location:**  
 S-Drive: S: → Users → Common → Policies & Procedures  
 Website: [www.lucascountyhealth.com/employee-login/](http://www.lucascountyhealth.com/employee-login/)  
 Hardcopy: Environmental Health and Community Services Director's Office  
 Archived Version(s): S:\CSRP\SOGs\Archives

**Requisite Signatures**

<input checked="" type="checkbox"/>	 _____ Medical Director	<u>7-20-17</u> Date
<input checked="" type="checkbox"/>	 _____ Health Commissioner	<u>7/20/17</u> Date
<input checked="" type="checkbox"/>	 _____ Director of Environmental Health & Community Services	<u>7/20/2017</u> Date



## Infectious Disease SOP—Diphtheria

### I. Policy

It is the policy of the Toledo-Lucas County Health Department (TLCHD) to adhere to all state, federal, and local statutes governing the management and case investigation of individual communicable disease cases and outbreaks within Lucas County.

### II. Scope

This standard procedure applies to the Infectious Disease Program when investigating one case of diphtheria. When an outbreak occurs, call ODH ORBIT. In an outbreak, refer to the “Epi and Surveillance OB Procedure.”

### III. Purpose

This procedure/process establishes guidelines for diphtheria investigations. Per the Ohio Administrative Code (OAC) 3701-3, diphtheria is a Class A disease and must be reported immediately via telephone according to 3701-3-02, 3701-3-03, 3701-3-04, and 3701-3-05 of the Administrative Code.

### IV. Background

*Corynebacterium diphtheriae* is responsible for the diphtheria illness. Diphtheria is often described according to the site of membrane involvement. Respiratory Diphtheria has a gradual onset and is characterized by a membrane that appears within 2-3 days of illness over the mucus membrane of the tonsils, pharynx, larynx, or nares, and which can extend into the trachea. The membrane is firm, fleshy, grey, and adherent, and bleeds following attempts to remove or dislodge it. Tonsillar and pharyngeal Diphtheria is characterized by a whitish-grey or bluish-white membrane that forms in the throat and can cover one or both tonsils, uvula, soft palate, and pharyngeal wall. Finally, laryngeal Diphtheria is generally an extension of pharyngeal infection and results in increased obstruction of the airway. In some instances, the membrane can also extend downward and involves the tracheobronchial tree.

Initial diagnoses of Diphtheria should be made on clinical findings since delay in the therapy process poses a serious risk to patients. Cultures are taken from the nasopharynx and the throat using a flexible (alginate) swab once the lesions have been cleansed with sterile, normal saline and crusted material is removed. Contact the CDC Immunization Program at 614-466-4643 for specimen coordination with the CDC laboratory.

Humans are the only known source for Diphtheria. The disease is transmitted through contact with infected individuals or carriers. Bacteria are spread person-to-person through oral or respiratory droplets by coughing, sneezing, or even talking. The communicability of the disease varies, but is usually two weeks or less and seldom more than four weeks. Although rare, chronic Diphtheria

carriers can exist, who can shed the organism for six months or more. The incubation is 2-5 days, but may range from 1-10 days.

## V. Case Definition

### A. Clinical Description

Diphtheria is an upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx.

### B. Laboratory Criteria for Diagnosis

1. Isolation of *Corynebacterium diphtheriae* from the nose or throat, OR
2. Histopathologic diagnosis of Diphtheria.

## VI. Case Classification

### A. Probable:

1. A clinically compatible case that is not laboratory confirmed AND is not epidemiologically linked to a laboratory-confirmed case.

### B. Confirmed:

1. A clinically compatible case that is either laboratory confirmed OR epidemiologically linked to a laboratory-confirmed case.

### C. Not a case:

1. This status is not generally used when reporting a case, but may be used to reclassify a report if investigation revealed it was not a case.

*Comment: Cutaneous Diphtheria should NOT be reported. Respiratory disease caused by non-toxicogenic C. diphtheriae should be reported as Diphtheria.*

## VII. Procedure

The procedure/process of the Infectious Disease Program is to ensure that all cases are investigated in the same format.

When a report is received, a member of the ID team will complete an interview of the contact using the CDC Diphtheria Surveillance Worksheet, which can be found in S:\CSRP\SOGs\Diphtheria.

### A. Outbreak Response:

1. Call ODH ORBIT at 614-995-5599 for guidance

### B. Public Health Investigation Process

1. Investigation
  - a. Watch for any suspect cases in the same geographic area among those who are inadequately immunized.
2. Treatment

- a. Antitoxin should be given immediately, preferably intravenously, after testing to rule out hypersensitivity. Dosage depends on duration of symptoms, area of involvement, and severity of disease.
  - b. Penicillin and erythromycin are effective against the organism, but should be administered only after cultures are taken, in conjunction with, but not as a substitute for antitoxin.
3. Isolation/Follow Up Specimens
- a. Ohio Administrative Code (OAC) 3701-3-13 (I) states: “a person with Diphtheria shall be isolated until two cultures, from both nose and throat, and additionally, in the case of cutaneous Diphtheria, a culture from skin lesions, are negative for Diphtheria bacilli.
  - b. Cultures should be taken not less than 24 hours apart and not less than 24 hours after cessation of antimicrobial therapy. If culturing is unavailable or impractical, isolation may end after fourteen days of effective antimicrobial therapy.
4. Prophylaxis
- a. Children should be vaccinated against Diphtheria with the DTaP vaccine at 2,4,6, and 15-18 months of age, and between 4-6 years of age.
  - b. Adults with uncertain histories of a complete primary vaccination series with DTaP should begin or complete a primary vaccination series.
  - c. Older children and adults who have completed the primary vaccination series should receive Td boosters every 10 years to maintain immunity.
  - d. One life-time dose of Tdap is recommended for people 11 years and older as one of these boosters to provide protection against pertussis. Pregnancy is an exception to the one-dose recommendation. Please see the Centers for Disease Control and Prevention (CDC) website for the most current ACIP recommendations: <http://www.cdc.gov/vaccines/>.
  - e. Ohio School Requirement: All children entering school must have received a minimum of four doses of the DTaP vaccination series with a minimum of 4 doses if the last dose was received after the fourth birthday. A Tdap booster dose is required prior to entry to 7th grade.
5. Contacts (Exclusion)
- a. Intimate and household contacts need to be identified IMMEDIATELY. Others with direct exposure history should be identified, such as healthcare staff exposed to the patient’s nasopharyngeal secretions and children cared for by the infected individual.
  - b. Regardless of their immunization status, contacts should be:
    - i. Under surveillance for 7 days for evidence of the disease
    - ii. Cultured for *C. Diphtheriae*
    - iii. Given antimicrobial prophylaxis with either oral erythromycin for 10 days or a single intramuscular injection of penicillin G.
    - iv. Given a booster disease of DTaP, DT, Td, or Tdap if previously immunized, as age appropriate.
6. Notification
- a. Notify TLCHD contacts immediately after investigation with patient (in sequential order)
    - i. Supervisor of Epidemiology

- ii. Director of Community Services and Environmental Health
    - iii. Medical Director
    - iv. Health Commissioner
  - b. Public health recommendations and interventions will be shared with the public by the PIO or to specific individuals within 6 hours of identification of the agent as determined by ODH and supervisory staff at the local health department. An OPHCS alert will be distributed within 12 hours of a positive test result as determined by supervisory local health department staff and ODH.
- 7. Documentation
  - a. Enter information into ODRS as it is obtained.
  - b. Include a note documenting investigation, education, and intervention.
 

*Sample: Spoke with mother by phone on [date]. EDUCATION: Reviewed disease facts, transmission, and symptoms. DISEASE COURSE: Client has history of [medical conditions] and started [symptoms] on [date]. Started [treatment] on [date]. HOUSEHOLD: HH contacts include [relationships]. All are [asymptomatic/symptomatic] [Include information about sensitive settings for HH contacts]. OCCUPATION: [job] TRAVEL HISTORY: [Include information about travel history within the past 2-3 weeks]. MAILING: Mailed fact sheet and cover letter to home address.*
  - c. Include a note for each occupation, activity, or other notification and any actions taken.
- 8. Closing a case
  - a. Ensure that all available information is entered into ODRS before closing. Close case and print record. Staple with investigation sheet and any related documents and file in the appropriate file drawer for the current year located in the CSRP office.

**C. Appendices**

None

**VIII. Reference/Investigation Forms**

- A. Diphtheria Disease Factsheet is located in S:\CSRP\SOGs\Diphtheria.
- B. For additional information, please refer to the ODH IDCM at: <http://www.odh.ohio.gov/pdf/IDCM/diphth.pdf>

**IX. Maintenance**

**A. Review**

- 1. The Infectious Disease standard operating procedures are to be reviewed every other year or as needed to ensure compliance with both agency and accreditation standards.
- 2. If guidance/recommendations from the Centers for Disease Control, Ohio Department of Health or law changes regarding this infectious disease, TLCHD will follow the most up-to-date guidance and adjust the SOP(s) as needed.

## **B. Revision**

1. All changes made to this SOP are to be noted on the **Record of Change**. Substantial changes will require renewed signatures from all applicable parties. This includes changes to the intent, scope, procedures, or policy statement.
2. Changes in style, format, grammar or minor error correction will not require renewed signatures but must be indicated on the Record of Change.

**Record of Change**  
(Required for all procedures)

Date of Change	Changes Made By	Changes Made/Notes	Approved By