



# Infectious Disease SOP—Measles

<b>Original Effective Date:</b> 8/2008	<b>Review / Revision Date:</b> 7/20/17	<b>Environmental Health Procedure:</b> 2017.07.007
---	---	---




**Maintenance Steward:** Epidemiology Supervisor      History:  New  Revised  Archived

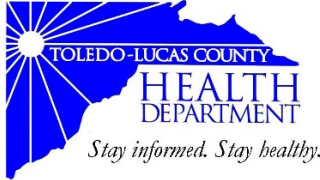
**Organizational Scope:**  
 Full Agency  Administration  Community Services  Environmental Health  Health Services

**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"/>	 <hr/> Medical Director	7-20-17 <hr/> Date
<input checked="" type="checkbox"/>	 <hr/> Health Commissioner	072017 <hr/> Date
<input checked="" type="checkbox"/>	 <hr/> Director of Environmental Health & Community Services	7/20/2017 <hr/> Date



## Infectious Disease SOP—Measles

### 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 measles. 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 measles investigations. Per the Ohio Administrative Code (OAC) 3701-3, measles 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

Measles is caused by the measles virus, an RNA virus with one antigenic type. The infection is described as having a prodromal period with a fever of 103-104°F, coryza, conjunctivitis, cough, and photophobia for 2-4 days, followed by a maculopapular rash on the face which spreads to the trunk and finally to the extremities. Koplik spots may be observed on the buccal mucosa just prior to and on the first day of the rash. These symptoms normally subside in 7-9 days.

Humans are the only natural host of the measles virus. The virus is transmitted by droplet spread or direct contact with nasal or throat secretions of infected persons. The tiny droplets can be suspended in the air for up to two hours or more. The disease is highly communicable, with communicability being greatest from four days before the onset of rash until four days after the onset of rash. The incubation period is 12-17 days, with an average of 14 days before the rash appears.

The most common methods for confirmatory measles testing are IgM antibody and RNA by real-time PCR (RT-PCR). The preferred specimens for virus isolation or RT-PCR are throat and nasopharyngeal swabs. These specimens should be collected at the same time as samples for serologic testing, which is within 3 days of rash onset, but may be successful for up to 10 days post rash.

### V. Case Definition

#### A. Clinical Description

An illness characterized by all of the following:

1. Generalized rash lasting  $\geq 3$  days
2. Temperature  $\geq 101.0^{\circ}\text{F}$  ( $\geq 38.3^{\circ}\text{C}$ )
3. Cough, coryza, or conjunctivitis

**B. Laboratory Criteria for Diagnosis**

1. Positive serologic test for measles immunoglobulin M (IgM) antibody, OR
2. Significant rise in measles antibody level by any standard serologic assay, OR
3. Isolation of measles virus from a clinical specimen, OR
4. Detection of measles-specific nucleic acid by polymerase chain reaction
5. Please notify the ODH VPD Epidemiology Program at 614-995-5599 prior to shipping a specimen to the Ohio Department of Health Laboratory.

**VI. Case Classification**

**A. Probable:**

1. A case that meets the clinical case definition, has non-contributory or no serologic or virologic testing, AND is not epidemiologically linked to a laboratory confirmed case of measles

**B. Confirmed:**

1. An acute febrile illness with laboratory confirmation or epidemiologic linkage to a laboratory confirmed case of measles. In outbreak situations or if there is PCR confirmation, a confirmed case may not need to meet all clinical symptoms.

**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.

*\*\*\*In Ohio, two probable cases that are epidemiologically linked but not serologically confirmed would be considered to be confirmed. However, an attempt should be made to confirm at least one case by culture in each documented chain of transmission. An outbreak is defined as 3 or more cases with at least one laboratory confirmed case that is clustered in space and time. Active surveillance should be maintained for at least two incubation periods (36 days) after the last confirmed case is reported.*

**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 Measles Surveillance Worksheet. Specimens need to be submitted to the ODH using the ODH Microbiology Specimen Submission form (and the Wisconsin State Lab Swab Specimen Submission form if the specimen is obtained using a swab). If submitting to the CDC, the CDC

Human Specimen Submission form should also be filled out and submitted. All of the necessary forms can be found in S:\CSRP\SOGs\Measles.

#### **A. Outbreak Response**

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

#### **B. Public Health Investigation Process**

1. ODRS:
  - a. Check to see if the patient is entered into ODRS. If not, enter the patient into ODRS
2. Investigation
  - a. Case investigation should start as soon as possible following notification.
  - b. Contact the patient's provider and/or hospital to obtain demographic information, symptoms, date of onset of symptoms, pertinent test results, immunization status, immunization dates, disease related complications, and travel history. The reported presence of Koplik spots should be recorded.
    - i. The epidemiologist will determine, in consultation with ODH vaccine preventable disease division, if the laboratory results and/or clinical symptoms indicate a confirmed or probable case.
  - c. Once the provider and/or hospital ICP has been contacted call the patient/parent and complete the interview.
    - i. Provide education from the fact sheet on the IDCM website at <http://www.odh.ohio.gov/pdf/IDCM/cholera.pdf>. This information is also located in S:\CSRP\SOGs\Typhus fever.
      - 1) If no one answers, leave a message requesting a call back.
      - 2) Mail an informational letter requesting a callback.
      - 3) Continue to attempt phone contact with the patient for three more times in the span of 48 hours after the informational letter was sent.
      - 4) After interview is completed, ask the patient/parent whether they would like more information. If they express an interest, ask what the best method to deliver the information would be (e.g. e-mail, mail, etc.)
3. Treatment
  - a. No specific treatment indicated.
4. Isolation/Follow Up Specimens
  - a. Ohio Administrative Code (OAC) 3701-3-13 (D) states: "a person with measles shall be isolated, including exclusion from school or childcare center, for four days following the onset of rash. Contagiousness may be prolonged in patients with altered immunity."
  - b. Hospitalized patients should be placed in airborne isolation precautions for four days after the onset of rash in otherwise healthy individuals and for the duration of the entire illness in immunocompromised patients.
5. Prophylaxis
  - a. Vaccine against measles is available.
  - b. Adults born in 1957 or later should receive at least one dose of MMR vaccine unless they have documentation of vaccination with at least one dose of measles-containing

- vaccine, a history of physician-diagnosed measles, laboratory confirmed measles immunity, or are contraindicated for it.
- c. Children should receive two doses of MMR vaccine with the first dose given at 12-15 months of age and the second dose given at 4-6 years of age (school entry). Measles immunization is required for all children enrolled in daycares and schools in Ohio.
  - d. People traveling out of the country should make sure that they and their travel mates are vaccinated against measles.
6. Contacts (Exclusion)
- a. All contacts should provide proof of a live measles immunization on or after their first birthday or previously physician-diagnosed measles disease.
  - b. In an outbreak situation involving childcare or schools, demonstration of two doses of MMR will be required.
  - c. Contacts that might be susceptible should be immunized with measles vaccine as soon after exposure as possible. Immune globulin (Ig) can prevent or modify measles in a susceptible person if given within 6 days of exposure.
7. 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.
8. 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.
9. 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 CSR office.

### C. Appendices

None

### VIII. Reference/Investigation Forms

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