

# MEASLES

## MDHHS Measles Outbreak Guidance: Screening and Specimen Collection

Clinicians should be vigilant for the possibility of additional measles cases in Southeast Michigan and are advised to take the following steps in assessing patients with possible measles.

### Clinical Features of Measles:

- The measles prodrome starts 3-4 days before the rash. The prodrome is characterized by a fever ( $>101^{\circ}\text{F}$ ) and by the “3 C’s”: cough, coryza (runny nose), and conjunctivitis. Towards the end of the prodrome, tiny white (Koplik) spots may appear inside the cheeks. Photophobia is common.
- Following the prodrome, a maculopapular rash typically begins on the forehead or hairline and spreads downward to the neck, trunk, and upper and lower extremities (palms and soles rarely involved). The rash usually appears about 14 days after a person is exposed.
- Please note that immunocompromised patients may not develop a rash and those with a previous history of measles infection or vaccination may have a modified disease presentation characterized by milder symptoms and a longer incubation period (17-21 days).



**If you suspect that a patient has measles, ACT QUICKLY!**

Promptly **ISOLATE** the patient to avoid transmission:

- Immediately provide a surgical mask to patient and support person(s).
- For additional control measures, please see page 2 for guidance.

Immediately **REPORT** the suspected measles case to your Local Health Department (LHD):

- Measles is highly contagious. Health Care Providers (HCP) should **immediately** report any possible case of measles to the LHD of the patient's residence. For LHD contact information, visit: [www.malph.org/resources/directory](http://www.malph.org/resources/directory).

### OBTAIN LAB SPECIMENS for testing:

- **PLEASE DO NOT SEND PATIENTS TO LABORATORY OUTREACH LOCATIONS FOR SPECIMEN COLLECTION. THIS PUTS OTHERS AT RISK!**
  - For measles specimen collection instructions, including transport, please see attachment.
- Collect throat swab for PCR.
  - Place swab in viral transport media (see page 2 for example).
  - Keep cold or frozen.
- **Only if your staff can collect blood:**
  - Collect 2-3mL of whole blood (1 red top or red/black serum separator tube).
  - Spin down and separate serum if possible.
- Specimens **WILL NOT be tested unless they have been approved**. Call your LHD for testing approval. To find your LHD, visit: [www.malph.org/resources/directory](http://www.malph.org/resources/directory).

- At this time (during the outbreak), please do not submit urine specimens for testing.
- **Labeling Specimens:**
  - Label specimen tubes with patient name, unique identifier, date of collection.
  - Fill out test requisition ([www.michigan.gov/documents/DCH-0583TEST\\_REQUEST\\_7587\\_7.pdf](http://www.michigan.gov/documents/DCH-0583TEST_REQUEST_7587_7.pdf))
  - **NOTE:** Patient name and unique identifier on test requisition **must exactly match** patient name and unique identifier on specimen.

### Control Measures:

- Do not allow suspect measles patients to remain in waiting area or other common areas.
- Place patient in a negative pressure (airborne isolation) room. If a negative pressure room is not available, put in a private room with the door closed and keep the patient masked.
- Support person(s) should continue wearing a surgical mask, and HCP should use an N-95 respirator (regardless of immunity status).
- Close examination room for at least 2 hours after the suspected measles patient leaves.
- Regardless of setting, immediately review evidence of measles immunity in all exposed staff.

### Example of BD Universal Viral Transport System:



### Attachments:

“Measles Specimen Collection Instructions”

“Measles Specimen Collection Checklist”

### Resources:

MDHHS, “Key Facts about Measles,”

[www.michigan.gov/documents/mdch/KeyFacts\\_Measles\\_392862\\_7.pdf](http://www.michigan.gov/documents/mdch/KeyFacts_Measles_392862_7.pdf)

MDHHS, “Measles Investigation Guidelines,”

[www.michigan.gov/documents/mdch/Measles\\_388976\\_7.pdf](http://www.michigan.gov/documents/mdch/Measles_388976_7.pdf)

MDHHS, “2019 Michigan Measles Outbreak Information,”

[www.michigan.gov/measlesoutbreak](http://www.michigan.gov/measlesoutbreak)

CDC and the Healthcare Infection Control Practices Advisory Committee, 2007, “Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings”

[www.cdc.gov/infectioncontrol/guidelines/isolation/index.html](http://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html)

IAC, “Measles: Questions and Answers Information About the Disease and Vaccines,”

[www.immunize.org/catg.d/p4209.pdf](http://www.immunize.org/catg.d/p4209.pdf)

## Measles Specimen Collection Instructions:

IF MEASLES IS SUSPECTED, CONTACT YOUR LOCAL HEALTH DEPARTMENT  
TO DISCUSS CASE AND OBTAIN APPROVAL FOR TESTING!

### Measles Testing at Michigan Bureau of Laboratories:

The MDHHS Bureau of Laboratories (BOL) performs PCR on throat and nasopharyngeal specimens and measles IgM antibodies on serum. To request testing a DCH-0583 test requisition form must be completed ([www.michigan.gov/documents/DCH-0583TEST\\_REQUEST\\_7587\\_7.pdf](http://www.michigan.gov/documents/DCH-0583TEST_REQUEST_7587_7.pdf)).

- Measles PCR is not on the test form. Please write in measles PCR in the “other” box under virology section of the form.
- All positive PCR specimens will also be forwarded to Wisconsin State Laboratory of Hygiene (WSLH) for genotyping.

### Testing is Conducted:

- Monday, Wednesday, Friday (if urgent and approved, specimen may be tested outside specified days)
- Must arrive to the State Lab by 9am
- Results will be provided to counties by end of day

### Specimen Type:

**Throat or NP Swabs are the approved specimens for the State Laboratory**

**Specimen type for IgM serology: 1 mL serum**

Store specimens at refrigerated temperatures and ship on frozen cold packs. If specimen is held >24 hours before shipping, freezing is recommended (if freezer is available).

**Specimen type for PCR:** Non-cotton tip with a non-wood shaft eluted in 3 mL viral transport medium in a plastic container.

### Common Swab Brands:

Copan 159C Polyester Swab sterile  
FLOQSwabs Copan flocced Swabs

### Common Viral Transport Media:

(sometimes called M4 sometimes called universal transport media)

Remel microtest M4RT Transport for the transport of viruses and chlamydia



### Packaging for Courier Delivery:

Request shipping unit 45 at [www.michigan.gov/documents/dch-0568\\_7396\\_7.pdf](http://www.michigan.gov/documents/dch-0568_7396_7.pdf)

1. Primary container (NP or throat swab placed in viral transport media or a serum sample).
  - a. Ensure cap is securely tightened.
  - b. Use Parafilm cap to prevent leakage.
  - c. Must be labeled properly with patient's first and last name and another unique patient identifier.

2. Place absorbent material around primary container (enough to be able to drink up all the fluid if the whole container spilled out).
3. Place primary container (with absorbent material) in secondary bag and seal.
4. Keep serum and swab specimens refrigerated until ready to send to the state laboratory. Specimens must be transported at refrigerated temperatures (or on cold packs).
5. When ready to send to the state laboratory, place test requisition on outside of secondary container.
  - a. Some secondary container bags have a separate outer pouch for the test requisition.
  - b. Do **NOT** place the test requisition in the same bag as the specimen.
6. Please make sure outside container is labeled "Refrigerate upon receipt."
7. Place secondary container in outside container (many times it is a cooler in the courier car).

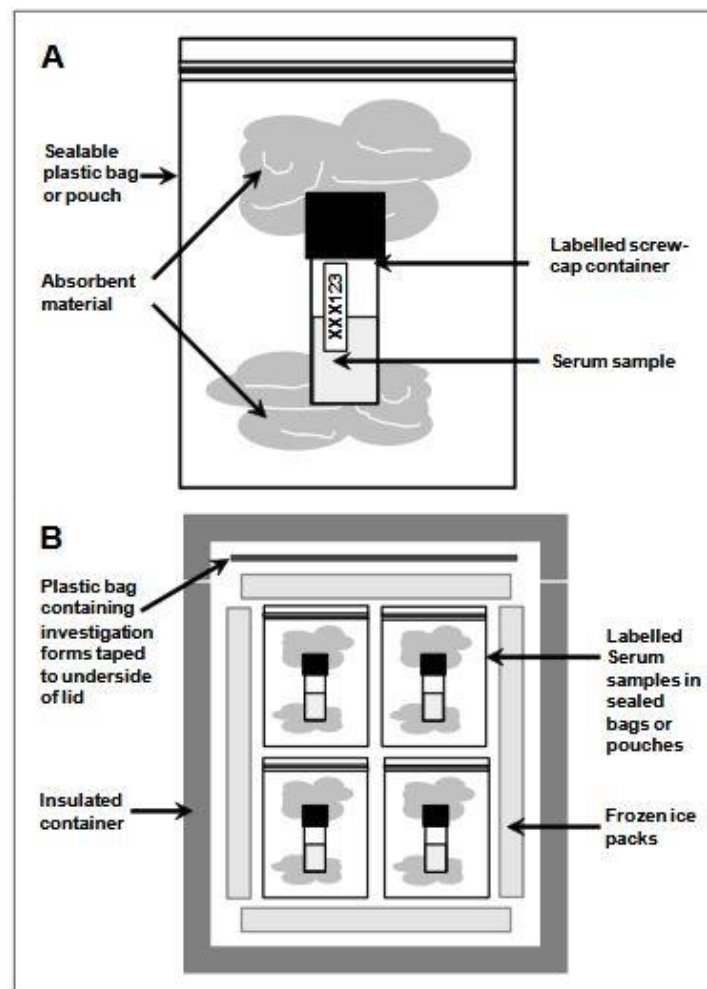
For Category B shipping and packaging instructions via FedEx or UPS or US Postal Service:

[www.michigan.gov/mdhhs/0,5885,7-339-71551\\_2945\\_5103\\_5278-14793--,00.html](http://www.michigan.gov/mdhhs/0,5885,7-339-71551_2945_5103_5278-14793--,00.html)

Questions for packaging and shipping can be referred to Shannon Sharp at the MI-BOL  
[sharps1@michigan.gov](mailto:sharps1@michigan.gov)

All other questions can be referred to Dr. Diana Riner Bureau of Laboratories Virology Section Manager  
[rinerd@michigan.gov](mailto:rinerd@michigan.gov) 517-335-8099 or cell 517-230-7828

Figure 12. Packaging of serum samples.  
 A - individual samples in a sealed bag or pouch.  
 B - multiple samples in an insulated container.



[https://www.who.int/ihr/elibrary/manual\\_diagn\\_lab\\_mea\\_rub\\_en.pdf](https://www.who.int/ihr/elibrary/manual_diagn_lab_mea_rub_en.pdf)

Revised: 4/29/2019

# Measles Specimen Collection Checklist

Please complete the following checklist and submit with your lab specimen and requisition.

- ☐ Received Local Health Department approval for testing (to find your LHD, see [www.malph.org/resources/directory](http://www.malph.org/resources/directory)).

Patient name & unique identifier (e.g., DOB, MDSS investigation #):

- ☐ Patient name & unique identifier match exactly what's on the requisition form
- ☐ Specimen is labeled with patient's name

Date of collection: \_\_\_\_\_

Epidemiology Link: \_\_\_\_\_

Patient is exhibiting the following symptoms:

- ☐ Fever (highest recorded: \_\_\_\_\_)
- ☐ Cough
- ☐ Coryza (runny nose)
- ☐ Conjunctivitis
- ☐ Koplik Spots (clustered white spots on the inside of the cheeks)
- ☐ Full-body rash

Requisition form:

- ☐ DCH-0583 test requisition form completed (can be found at: [www.michigan.gov/documents/DCH-0583TEST\\_REQUEST\\_7587\\_7.pdf](http://www.michigan.gov/documents/DCH-0583TEST_REQUEST_7587_7.pdf))

\*Please note measles PCR is not on the test form. Please write in measles PCR in the "other" box under virology section of the form.

Contact Info of Person Submitting This Form:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Email: \_\_\_\_\_

Questions?

Questions for packaging and shipping can be referred to Shannon Sharp at the MI-BOL [sharps1@michigan.gov](mailto:sharps1@michigan.gov).

All other questions can be referred to Dr. Diana Riner Bureau of Laboratories Virology Section Manager [rinerd@michigan.gov](mailto:rinerd@michigan.gov) 517-335-8099 or cell 517-230-7828.