# Measles Guidance

## Identification, Testing and Infection Prevention

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## Purpose

This guidance is intended to provide infection prevention guidelines for patients with suspected or confirmed measles (Rubeola).

## Identification

Consider measles in patients presenting with febrile rash illness and clinically compatible symptoms listed below, especially in unvaccinated individuals with recent travel internationally or to locations in the U.S. with cases or outbreaks, or exposure to others with febrile rash illness. See Suspected Measles Algorithm.

**Symptoms**

- Fever (as high as 104-105°F)
- Malaise
- Cough
- Coryza (runny nose)
- Conjunctivitis
- Maculopapular rash, spreads from head to trunk to extremities, occurs 3-7 days following symptom onset
- Koplik spots (small spots with white or bluish-white centers on an erythematous base) may be present on the buccal mucosa

**Measles rash**


*See CDC Photos of Measles for additional photos

**Travel Considerations**

Current measles data on cases and outbreaks:

- U.S. Measles Cases and Outbreaks | CDC
- Global Measles Outbreaks | CDC

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## Notification

Notify Infection Prevention and Public Health for all suspected or confirmed measles cases

**Contact Infection Prevention:**

- Infection Prevention

**Public Health**

- Iowa: CADE (Center for Acute Disease Epidemiology) at:
  - (515) 242-5935 during business hours OR
  - (515) 323-4360 after business hours
- Illinois: Local public health department
  - If unable to reach the local health department, call IEMA (IL Emergency Management Agency) at (217) 782-7860 to reach someone at IDPH.
- Wisconsin: Local public health department

## Measles Testing

Testing should be performed for any suspect measles cases. Detection of measles-specific IgM antibody in serum and measles RNA in a respiratory specimen are the most common methods.

- Throat swabs are preferred for PCR testing, nasal/nasopharyngeal swabs or washes are acceptable but not preferred.
  - Throat swabs should be collected as soon as possible after rash onset. A throat swab should not be collected any more than 9 days from rash onset as testing will not be valid.
- Urine samples may also contain virus, and when feasible or directed to do so, collecting both respiratory and urine samples can increase the likelihood of detecting measles virus.

**If testing to be performed by state laboratory:**
Use supplies recommended by state lab and follow state lab processes for collection and submission of specimen(s).

- **Iowa:**
  - Iowa CADE will direct testing through the Iowa State Hygienic Lab (SHL)
  - Specimen collection and testing information can be found at: IA HHS Measles
- **Wisconsin:**
  - Local public health will direct testing through the Wisconsin State Laboratory of Hygiene (WSLH)
  - Specimen collection and testing information can be found on page 5 of: WI DHS Measles
  - Lab order to be placed: MISLAB (LAB2607) and include comment “Measles to WSLH”

**If NOT sending to a state laboratory:**
Use ordering information, supplies and process outlined below for collection and submission of specimen(s).
**Note: NOT applicable to Meriter*

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- **Lab Order**
  - Place order for Measles PCR
    - MISCLM (LAB2608) – Mayo code: MEASR
    - Source: Throat
  - Place order for Measles virus antibody IgM and IgG
    - MISCLM (LAB2608) – Mayo code: ROGM
    - Source: Blood
- **Sample Collection**
  - Throat Swab
    - Supplies Needed
      - Swab: BBL culture swab
      - Media: Viral transport media
    - Specimen Collection
      - Swab tonsillar areas and posterior nasopharynx
      - Use tongue blade to depress tongue to prevent contamination of swab with saliva
      - Place swab into 2-3 ml of transport media
  - Blood specimen
    - Supplies Needed
      - Serum: Gold SST (preferred) or Red (acceptable)
    - Specimen Collection
      - Follow standard blood specimen collection procedures

## Infection Prevention for Suspected or Confirmed Cases

**Patient Care**

- Healthcare workers (HCW) without presumptive evidence of immunity should ***NOT*** provide care for suspected or confirmed cases if immune caregivers are available.
  - Presumptive evidence of immunity for HCW defined per UPH MMR vaccination policy
- Mask patient with an isolation mask, if tolerated, as soon as possible. Do not leave patient in a waiting room or common area.
  - Public areas, such as waiting rooms, should be closed off for 2 hours after the suspected or confirmed measles patient left the area.

**Patient Placement**

- Place patient into a negative pressure room (airborne infection isolation room or AIIR)
- If a negative air pressure room is unavailable:
  - Place patient in a private room with door closed
  - Patient should continue to wear a mask, if tolerated
  - Transfer patient to a negative pressure room as soon as possible

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**Isolation Precautions and PPE**

- Care for patient using Airborne Precautions
- PPE to be worn by all who enter the room include:
  - Fit-tested N95 respirator
    Or
  - PAPR (Powered Air Purifying Respirator)
- Airborne Precautions should be used through 4 days after onset of rash (with onset of rash being day zero) or for the duration of illness in immunocompromised patients
  - Contact Infection Prevention prior to discontinuing precautions

**Patient Transport**

- Limit patient movement/transport outside of room to essential purposes, such as diagnostic and therapeutic procedures that cannot be performed in the patient's room
  - Procedures should occur in a negative air pressure room or scheduled at the end of the day, if possible
- If the patient is transported out of the room:
  - Patient should wear an isolation mask as source control unless medically contraindicated or unable to tolerate
    - Transportation barriers or hospital bed covers may be used for patients unable to wear a mask during transport
  - Healthcare worker should continue to wear a N95 respirator or PAPR during transport
  - Use a transportation route and process that includes minimal contact with persons not essential for the patient's care
  - Notify the receiving department of Airborne Precautions prior to transfer

**Environment and Waste Management**

- Environmental cleaning
  - Routinely clean and disinfect environmental surfaces in the patient care environment following normal processes
- Patient-care equipment
  - When possible, provide dedicated noncritical patient-care equipment (e.g., blood pressure cuff).
  - Clean all patient-care equipment between each patient use.
    - Follow all manufacturer's directions for use of disinfectants and apply the product for the correct contact time.
- Waste management
  - Contain and dispose of contaminated waste (e.g., dressings) in accordance with standard practice.
- Room turnover
  - Following discharge or transfer of patient from the room, **99.9% clearance** of potential airborne contaminants, based on air exchanges per hour (ACH) as shown in the table below, **should be achieved prior to:**

- Entry by team members not wearing N95 or PAPRs
- New patients placed in the room

| Example Room Type | Probable air ACH for room type (based on local design) | Minutes to achieve 99.9% clearance based on ACH |
|---|---|---|
| Standard patient or exam room | 4 | 104 |
| | 6 | 69 |
| Negative pressure room | 12 | 35 |
| Procedure room | 15 | 28 |
| Operating room | 20 | 21 |

**Outpatient Clinics**

Guidance for providing care to suspected or confirmed cases in an outpatient clinic can be found at:

- UPH Outpatient Clinic Measles Checklist

## Infection Prevention for Patients Exposed to Measles

**Patients *without* evidence of immunity and severely immunocompromised patients regardless of immune status:**

- Care for as a patient with suspected or confirmed measles for 21 days after the last exposure regardless of post-exposure prophylaxis
  - Extend to 28 days if immunoglobulin (IG) is administered
- Administer post-exposure prophylaxis according to immune status
- Guidance on evidence of immunity and recommended post-exposure prophylaxis can be found at:
  - Measles Vaccine Recommendations | Measles (Rubeola) | CDC
  - Controlling Spread of Measles | Iowa Health & Human Services
  - PEP Measles Exposures
- Notify Public Health so appropriate follow-up can occur
- **Patients *with* evidence of immunity who are not severely immunocompromised** do not need to be cared for as patients with suspected measles and no post-exposure prophylaxis is indicated

## Visitor Management

- Visitors who are not immune to measles should not enter the patient's room
- Limit visitors to those that are necessary for the patient's wellbeing
- Visitors should be offered N95 respirators, though fit-testing is not performed

## Patient Discharge

**Patient handoff**

- If a patient is being discharged or transferred to another healthcare facility, notify the receiving facility of the patient's suspected or confirmed measles status and that Airborne Precautions are being used.

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- Notify ambulance/transportation service in advance of discharge about the patient's suspected or confirmed measles status and that respiratory protection is indicated.

## Employee Exposures

**Exposure definition for HCW in healthcare settings:**

- HCW spending any time while unprotected (i.e., not wearing a fit-tested N95 respirator or PAPR):
  - In a shared air space at the same time as an infectious measles patient
  - In an air space without a defined rate of ACH vacated by an infectious measles patient within the prior 2 hours
  - In an air space with a defined rate of ACH vacated by an infectious measles patient, prior to the time required to achieve 99.9% clearance of airborne contaminants
- Notification of HCW who may have been exposed to measles will be initiated following identification of a confirmed cases.

**Management of exposed HCW:**

- Exposed HCW ***with*** presumptive evidence of immunity to measles:
  - Postexposure prophylaxis is not necessary
  - Work restrictions are not necessary
  - Perform daily monitoring for signs and symptoms of measles for 21 days after the last exposure; previously vaccinated individuals may have a modified disease presentation
- Exposed HCW ***without*** presumptive evidence of immunity to measles:
  - Post-exposure prophylaxis may be indicated according to CDC recommendations for healthcare personnel
  - Exclude from work
    - From the 5th day after the first exposure until the 21st day after the last exposure, regardless of receipt of postexposure prophylaxis
  - HCP who received the first dose of MMR vaccine prior to exposure may remain at work and should receive the second dose of MMR vaccine, at least 28 days after the first dose.
  - Perform daily monitoring for signs and symptoms of measles infection for 21 days after the last exposure.

**For any questions, please contact Infection Prevention**

*If indicated, localized outbreaks and/or public health recommendations may result in guidance changes.*

**Visit Infection Prevention Resources on the Hub for additional information**

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## References

Association for Professionals in Infection Control and Epidemiology. Playbook: Measles. Updated March 1, 2025. Available at: https://apic.org/measles/

Centers for Disease Control and Prevention. Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings. Updated April 12, 2024. Available at: https://www.cdc.gov/infection-control/hcp/measles/?CDC_AAref_Val=https://www.cdc.gov/infectioncontrol/guidelines/measles/index.html

## Summary of Changes

**Changes as of:**

**03/2024**

- New guidance document

**3/4/2025**

- Added links to additional example pictures and outpatient checklist

**3/11/2025**

- Added guidance for care of patients exposed to measles