



Preventing Measles in Health Care Settings

Clinical Presentation

Measles is an acute viral respiratory illness. It is characterized by a prodrome of fever of at least 101°F and the three “C”s - cough, coryza, and conjunctivitis - Koplik spots (tiny red spots with bluish-white centers inside mouth on the lining of the cheek) may appear, followed by a maculopapular rash which appears about 14 days after a person is exposed. The rash spreads from the head to the trunk to the lower extremities (Image 1). Patients are considered to be contagious from 4 days before to 4 days after the rash appears. Of note, sometimes immunocompromised patients do not develop the rash.



Image 1. Baby with measles in 2014. CDC photo library. <https://phil.cdc.gov/Details.aspx?pid=19434>

Transmission and Exposure Definitions

Transmission

*Measles is one of the most contagious of all infectious diseases; approximately 9 out of 10 susceptible persons with close contact to a measles patient will develop measles. The virus is transmitted by direct contact with infectious droplets or by **airborne spread** when an infected person breathes, coughs, or sneezes. The measles virus can live for up to two hours in an airspace where the infected person coughed or sneezed.*

Exposure

For health care facilities, exposure is defined as any susceptible person who was in the same area of the facility [outside of [Airborne Infection Isolation Room](#) (AIIR)] for any length of time, regardless of mask usage. Exposure is not defined by whether or not the patient was masked, but whether proper infection control measures were in place.

Two examples are provided below:

- **Meets exposure definition:** A patient was masked but in the waiting area or walked down a hallway that other patients used.
- **Does not meet exposure definition:** A facility can validate that a patient was masked prior to entry into the facility, taken through a back entrance, escorted through a hallway not shared by other patients and taken directly to a negative air-pressure room, then re-masked and escorted out by the same route.

Follow these steps to minimize the risk of measles transmission:

1. Ask patients with a febrile rash illness about international travel, contact with foreign visitors, transit through an international airport, or possible exposure to a measles patient in the 3 weeks prior to symptom onset. Suspect measles in patients with this type of history. During measles outbreaks, also suspect measles in anyone with either a febrile rash illness OR fever in combination with at least one of the following: cough, coryza, conjunctivitis, or otitis media.
2. Mask patient immediately if measles is suspected. If a surgical mask cannot be tolerated, implement other practical means of containment, e.g. place a blanket loosely over the head of infants or young children if measles is suspected and they are in a waiting room or other common area.
3. If feasible, appropriate and patient privacy can be protected, evaluate suspected measles patients outside, at least 30 feet from others. Once a surgical mask is placed on the patient, ensure a clear path to the exam room and escort the patient into the building. The path should be cleared of patients and susceptible health care workers prior to escorting the patient to the exam room and for 2 hours after the patient leaves.
4. Whenever possible, escort suspected measles patients from a separate entrance that allows them to access an exam room directly, without exposing others.
5. Do not allow suspect measles patients to remain in waiting area or other common areas. Move them immediately to an AIIR. If an AIIR is not available, move the patient to a private room with the door closed and keep the patient masked.
 - If possible, move patient choosing a route that will limit the number of people encountered along the way opting for less used hallway over busy corridors.
 - In the setting of an outbreak, consider stationing a greeter at the healthcare facility entrance to screen for and distribute masks to persons with febrile rash illness OR fever with at least one of the following: cough, coryza, conjunctivitis, or otitis media.
 - Screen those accompanying the suspected measles patient for early symptoms of illness and consider masking.
6. Allow only health care personnel with documentation of 2 doses of MMR vaccine or laboratory evidence of immunity (measles IgG positive) to enter the patient's room. Health care workers with documented 2 doses of MMR are considered immune regardless of any measles IgG testing result
7. All health care personnel entering the room should wear a fit-tested N95 respirator (regardless of immunity status) or a respirator with similar effectiveness in preventing airborne transmission. If N95 or other airborne respirators are unavailable, health care staff should use a facemask.
8. The number of health care workers interacting with the patient should be kept to a minimum.
9. Do not allow susceptible family members or visitors in the patient's room if possible.
10. Close examination room for at least 2 hours after the suspected measles patient leaves.
11. Schedule suspect measles patients at the end of the day if possible.
12. Notify the [local health jurisdiction](#) immediately of any suspect measles patient and arrange for measles testing at the public health laboratory.

13. Notify any location where the patient is being referred of the patient's suspect measles status and do not refer to other locations unless appropriate infection control measures can be implemented at the receiving location.
 - Patient must wear a mask during transport, or use a blanket to loosely cover the heads of infants or young children if a mask is not feasible
14. Instruct suspect measles patient and exposed persons to inform all health care providers of the possibility of measles before entering the health care facility so appropriate infection control precautions can be implemented.
15. Keep a list of all staff and patients in the area during the time the suspect measles patient was in the facility and for 2 hours after they left. If measles is confirmed in the suspect case, exposed people will need to be assessed for immunity.

Additional Resources

Washington State Department of Health Resources

- [Washington State Department of Health Suspect Measles Case Checklist](#)
- [Guidance for Outbreak Measles Testing Through Public Health](#)
- [Measles Public Health Laboratory Specimen Intake Form](#)

CDC Resources

- [Measles information for Healthcare Professionals](#)
- [Manual for the Surveillance of Vaccine Preventable Diseases; Chapter 7: Measles](#)
- [Guideline for Isolation Precaution; Preventing Transmission of Infectious Agents in Healthcare Settings \(2007\)](#)
- [Immunization of Health-Care Personnel: Recommendation of the Advisory Committee on Immunization Practices \(ACIP\)](#)

Minnesota Department of Health Resources

- [Airborne Infectious Disease Management](#)

Questions?

Office of Communicable Disease Epidemiology
206-418-5500 CommDisEpi@doh.wa.gov

Adapted from Minnesota Department of Health
WA DOH Publication Number: 420-251. Updated 2/19.

