

## Measles Frequently Asked Questions (Ctrl + Click on Topic of Interest)

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### Measles FAQs: CLINICAL DISEASE & TRANSMISSION

#### What happens when someone is infected with measles virus?

Measles is an acute viral respiratory illness. It is characterized by a prodrome of fever (as high as 105°F) and malaise, cough, coryza, and conjunctivitis -the three “C”s -, a pathognomonic enanthema (Koplik spots) followed by a maculopapular rash. The rash usually appears about 14 days after a person is exposed. The rash spreads from the head to the trunk to the lower extremities.

#### How is measles virus spread?

The virus is transmitted by direct contact with infectious droplets or by airborne spread when an infected person breathes, coughs, or sneezes. Measles virus can remain infectious in the air for up to two hours after an infected person leaves an area.

#### Is measles really contagious?

Measles is one of *the most contagious* of all infectious diseases; up to 9 out of 10 susceptible persons with close contact to a measles patient will develop measles.

#### When can an infected person spread measles virus to others?

Patients are considered to be contagious from 4 days before to 4 days after the rash appears.

#### What are some complications of measles infection?

Common complications from measles include otitis media, bronchopneumonia, laryngotracheobronchitis, and diarrhea. Even in previously healthy children, measles can cause serious illness requiring hospitalization.

- One out of every 1,000 measles cases will develop acute encephalitis, which often results in permanent brain damage.
- One or two out of every 1,000 children who become infected with measles will die from respiratory and neurologic complications.
- Subacute sclerosing panencephalitis (SSPE) is a rare, but fatal degenerative disease of the central nervous system characterized by behavioral and intellectual deterioration and seizures that generally develop 7 to 10 years after measles infection.

### Who's at higher risk for developing these complications?

People at high risk for severe illness and complications from measles include:

- Infants and children aged <5 years
- Adults aged >20 years
- Pregnant women
- People with compromised immune systems, such as from leukemia and HIV infection

## Measles FAQs: Diagnosis

### When should I suspect measles in a patient?

The Tennessee Department of Health has provided an excellent algorithm to determine if a patient may have measles. You should use the clinical picture, immunization history and other risk factors such as known exposure to a case of measles to assess. The full algorithm may be found [HERE](#).

### What should I do if I have a patient with suspected measles?

There are several important steps you should follow in this situation:

- Mask the patient
- Place patient in Airborne Precautions in a negative pressure room with the door shut. For clinics with a suspected case, place a surgical mask on the patient at the point of entry (i.e. greeter's desk, reception desk). **Do not put patient in the waiting room.** Immediately bring patient to a room. Place patient in a room, leave mask on the patient, and close the door. Faculty/staff entering the room wear an N-95 respirator.
- Notify Infection Prevention immediately using the on-call pager 835-1205.
- IP and the Hospital Epidemiologist will notify the Tennessee Department of Health.

### What tests/specimens should be sent to test for measles?

Importantly – **Department of Infection Prevention approval is REQUIRED in order for the following tests to be sent!** The following tests are necessary to diagnosis an acute case of measles:

- Measles-specific IgM antibody (serum test)
- Measles RNA by real-time polymerase chain reaction (RT-PCR) from a nasopharyngeal specimen (on viral transport medium).

Healthcare providers should obtain both a serum sample and a nasopharyngeal swab from patients suspected to have measles at first contact with them.

### The TN Department of Health algorithm says nasopharyngeal or pharyngeal specimen is accepted, but Epic says nasal pharyngeal only. Which should we use?

We recommend using the nasopharyngeal specimen as per EPIC.

## Measles FAQs: ISOLATION

### What precautions are in place to protect the doctors and nurses treating a patient with suspected or confirmed measles?

- Place a surgical mask on the patient IMMEDIATELY

- Place patient in Airborne Precautions
- Make sure anyone entering the room (regardless of measles immunity) wears a fit-tested N-95 respirator or PAPR
- Place in a negative pressure room (if none available, place in regular patient room and contact Infection Prevention).

**My clinic or area has not been required to have annual N95 fit-testing, yet we might encounter a suspect measles patient. What should we do?**

We are working with our colleagues in VEHS and Occupational Health to assess where we need to broaden the fit-testing requirements. You should hear from us soon as to whether additional testing is required.

**Are there any special cleaning requirements for the room where a suspected or confirmed measles patient as resided?**

Usual isolation room cleaning is fine, but the room must remain vacant for 2 hours after patient has left the room. After waiting 2 hours, may proceed with room cleaning protocol for isolation patient.

## Measles FAQs: Immunity and Vaccination

### Who is considered immune to measles?

- For the **general patient population**:

Acceptable presumptive evidence of immunity against measles includes at least one of the following:

- written documentation of adequate vaccination:
  - **one or more doses** of a measles-containing vaccine (e.g. MMR) administered on or after the first birthday for preschool-age children and adults not at high risk
- laboratory evidence of immunity
- laboratory confirmation of measles
- birth before 1957

**Healthcare providers should not accept verbal reports of vaccination without written documentation as presumptive evidence of immunity.**

- For those at **high-risk (including college students, healthcare personnel, and international travelers)**:

Acceptable presumptive evidence of immunity against measles includes at least one of the following:

- written documentation of adequate vaccination:
  - **two doses** of measles-containing vaccine for school-age children and adults at high risk, including college students, healthcare personnel, and international travelers
- laboratory evidence of immunity

- laboratory confirmation of measles
- birth before 1957

**How will I know if I am immune or if I need another vaccine dose?**

VUMC Occupational Health will be notifying all faculty and staff of their current status. In general, you will fall into 1 of 3 groups:

- Individuals who have evidence of immunity (as above) will receive notice that they are up to date and nothing further needs to be done at this time.
- Individuals born before 1957 – while typically considered immune, the CDC is encouraging documentation of immunity for this subset of healthcare workers. They will receive notice that they can have a lab drawn to check their immune status and be vaccinated if need be.
- Individuals who are compliant with the immunization policy but only have 1 MMR on file -  
- until approx. 3-4 years ago, compliance with measles vaccination requirement included either 2 MMR vaccines during childhood \*or\* 1 MMR after age 18. When the policy was changed in response to the Disneyland measles outbreak (to no longer include only 1 adult MMR as a method of compliance for healthcare workers), those hired by VUMC prior to the change were grandfathered into compliance. Therefore, we have a subset of employees who are compliant with the measles requirement with only 1 MMR on record. These individuals will be offered a second vaccination to complete their series.

**Measles RESOURCES:**

- Infection Prevention Website: <https://www.mc.vanderbilt.edu/root/vumc.php?site=infectioncontrol>
- CDC website at <https://www.cdc.gov/measles/hcp/index.html>
- Measles outbreaks or healthcare facilities:  
<https://nam05.safelinks.protection.outlook.com/?url=http%3A%2F%2Fwww.cdc.gov%2Fvaccines%2Fpubs%2Fsurv-manual%2Fchpt07-measles.pdf&data=02%7C01%7Ctom.talbot%40vumc.org%7Cd841f89424da4f2081c908d6c4e4f729%7Cef57503014244ed8b83c12c533d879ab%7C0%7C0%7C636912885005953363&sdata=JM%2BwKAmudkH7qyfHQFC18WRb7vWO32sdqKTOMvoAeBs%3D&reserved=0>
- Hospital Epidemiologist on-call pager: 615-835-8826.
- Infection Prevention: 615-936-0725 or on-call pager 615-835-1205