

Evaluating a suspect measles patient presenting with rash



START HERE

Needs ALL 3:

- Fever¹
- Generalized, maculopapular rash
- No vesicular lesions / vesicles²

Yes

No

Measles unlikely. If vesicular rash, consider varicella or alternative cause of rash.

Epidemiologic risk for measles in the 21 days before rash?
ANY of the following:

- International travel in last 21 days
- Domestic travel in last 21 days to, or residence in, an area with known measles transmission
- Known exposure to measles

Yes

Suspect measles. Immediately contact NMDOH to discuss testing options (1-833-796-8773).

No

Measles clinical criteria?⁴

- Fever¹ and rash AND
- Cough, runny nose, OR conjunctivitis

Yes

Received MMR vaccine in the last 21 days?

Yes

Measles unlikely. If measles still suspected, Contact NMDOH for guidance (1-833-796-8773).

Likely a reaction to MMR vaccination⁴

No

Prior measles vaccination?

- Age ≤ 4 years: 1 dose MMR*
- Age > 4 years: 2+ doses MMR

No

Yes

Measles uncommon among people with age-appropriate vaccination. Measles can occur among vaccinated people, but generally during intense exposure (e.g., daycare or household exposure).

If measles suspected based on clinical presentation or severity of illness, contact NMDOH for guidance (1-833-796-8773).

*or other measles-containing vaccine

Notes

1. Either a measured or patient/family-reported fever is adequate; fever may not be measured at the time of healthcare evaluation due to normal fluctuation or to use of antipyretics (e.g., ibuprofen).
2. A vesicular rash is not consistent with measles, and should prompt consideration for other causes of rash (e.g., varicella/chickenpox)
3. Measles clinical criteria (per CSTE* case definition) include ALL of the following:
 - Generalized maculopapular rash
 - Fever
 - Cough, coryza (runny nose), or conjunctivitis (also known as the “3 C’s”)
4. Up to 5% of MMR recipients will get a short-lived, mild febrile rash. This is more common with the first dose of MMR. People who experience this vaccine reaction are not contagious to others around them. If a person has received MMR within 21 days before rash onset, but also has epidemiologic risk for measles, then specialized testing may be required and should be discussed with local or state public health authorities.

*CSTE: Council of State and Territorial Epidemiologists: <https://ndc.services.cdc.gov/case-definitions/measles-2013/>

Testing Recommendations

- ❑ Immediately contact NMDOH at 1-833-796-8773 to report a suspect measles case and arrange testing
- ❑ Collect a nasopharyngeal (NP) or oropharyngeal/throat (OP) swab for measles* RT-PCR
 - Use a commercial swab product designed for the collection of NP/throat specimens or flocked polyester swabs. Cotton swabs are not acceptable.
 - Swabs should be placed in 2ml of standard viral transport medium and should not be allowed to dry out.
 - Ream the swab around the rim of the tube to retain cells and fluid in the tube. The swab should be broken off and left in the tube.
 - Immediately after collection, throat and nasopharyngeal swab specimens can be refrigerated at 2-8°C for up to 72 hours. After 72 hours, these specimens should be frozen at -20°C or lower and shipped on dry ice. Collect a nasopharyngeal (NP) or oropharyngeal/throat (OP) swab for measles* RT-PCR
- ❑ Complete the [test request form](#)
- ❑ Ship depending on facility location and existing lab courier arrangements.

*Measles virus is also referred to as “rubeola” in some lab orders, not to be confused with rubella virus

Measles Characteristics

- Classic symptoms
 - Fever (up to 105°F) + generalized maculopapular rash + one of the “3 C’s”
 - 3 C’s: Cough, coryza (runny nose), conjunctivitis
 - Clues to measles:
 - Prodrome of fever and at least 1 of 3 C’s often starts 2–4 days before rash
 - Rash starts on head or face and spreads downwards
 - Fever continues through onset of rash, often peaking around the time when the rash starts
- Measles is rare in vaccinated people, especially with 2 prior doses of MMR
 - 1 dose generally provides 93% protection, and 2 doses provides 97% protection from measles infection

Other common causes of febrile rash in children

- **Parvovirus B-19 (“Fifth Disease”)**
 - Classic “slapped cheek” rash
 - More common in school-aged children than infants
- **Human Herpesvirus 6 (HHV-6, “Sixth Disease”, “Roseola”)**
 - Common cause of febrile rash in infants
 - Rash commonly starts on trunk (measles rash starts on face/hairline)
 - Fever often resolves before start of rash (measles fever peaks around time of rash onset)
- **Enteroviruses**
 - Common cause of Hand/Foot/Mouth, rash can involve palms/soles which are generally spared in measles
 - Rash can be urticarial, which is not typical for measles
- **Varicella (Chickenpox)**
 - Rash is generalized, itchy and progresses rapidly from macular to papular to vesicular lesions before crusting.
 - Lesions are typically present at different stages of development at the same time
 - Patients may also develop fever and malaise 1-2 days before rash onset



“Slapped Cheek” rash



HFM