Provider Alert—Measles Testing and Treatment FAQ

Resource updated: February 4, 2019

Q: What are the criteria for testing at the Oregon State Public Health Lab?

A: All patients with:

- Any rash illness with no other explanation for the clinical presentation, **and**
- Known exposure to a person with measles or recent travel to measles endemic areas, **and**
- **No measles vaccination in the prior 45 days.**

Providers should ask about exposure to infected individuals, travel (past month), and MMR vaccine history. This helps public health staff assess level of risk for infection, but providers should not rule-out a suspect diagnosis based on these factors alone. **NOTE: All specimens tested through OSPHL must be approved through your local public health authority prior to submission.**

Q: I have a pediatric patient who has fever, cough, conjunctivitis, and rash. This patient had a first MMR shot 32 days ago. The parents deny visiting any of the places on the public exposure list and deny the child had any contact with anyone with measles. Should we test this patient for measles?

A: This case does not meet criteria for testing at the Oregon State Public Health Lab. Although this patient has symptoms compatible with measles, the patient does not have a known exposure to measles. Additionally, this patient was vaccinated within 45 days of illness onset, which can produce a measles-like rash about 5% of the time, and which is expected to generate first an IgM and then an IgG antibody response. Therefore, when a patient with suspected measles has been vaccinated 6-45 days prior to specimen collection, neither IgM nor IgG antibody responses can distinguish measles disease from the response to vaccination. This would be considered a vaccine-associated case. Vaccine-associated cases are thought to be non-infectious; however, home quarantine is advised just to be safe.

Q: Should PCR testing for measles be performed on exposed individual with prodrome symptoms (i.e. no rash)?

A: In general, no. PCR results are affected by the timing of specimen collection. RNA detection is more likely to be successful when samples are collected on the first day of rash through 3 days following rash onset (can be detected as late as 10 days following rash onset). It is also important to minimize contact of potentially symptomatic individuals with the healthcare system unless individuals are concerned about their symptoms. If a healthcare facility or office receives a call from exposed individuals experiencing possible prodrome symptoms (no rash), they should be advised to seek healthcare if they are concerned about their symptoms and not for testing alone. They should remain in home quarantine and alert the local health department if rash appears or if they plan to seek care related to symptoms. If an exposed individual experiencing possible prodrome symptoms arrives unannounced at a healthcare

setting, they should be safely evaluated for symptoms and an exposure history compatible with measles. The local health department should be consulted to discuss testing logistics.

Q: When should measles IgM be ordered?

A: Please refer to the lab testing guidance posted here (www.bitly.com/news-osphl) for more information on lab testing and specimen collection. Measles IgM is recommended to confirm suspected measles if the rash onset was at least 72 hours earlier. Measles IgM is insensitive earlier in disease.

Measles RT PCR can provide a quick diagnosis earlier in the course of illness but since it is not available commercially, it needs to be approved by state and local public health before sending to the Oregon State Public Health Lab.

Q: Can an asymptomatic patient who was exposed to measles go to a laboratory or healthcare facility to get their blood drawn?

A: It is safe for a patient that was exposed to measles but not showing any signs or symptoms of measles (e.g., fever, cough, coryza, conjunctivitis, and rash) to go to a lab or a healthcare facility to provide a specimen for immune status. Patients with signs of illness should contact their provider or local health department to facilitate evaluation or testing for measles disease.

Q: How can testing for potentially contagious patients be facilitated?

A: Exposed contacts who are symptomatic should call their provider prior to visiting the medical office or prior to going to the laboratory and let the facility know they have been exposed to measles. Providers may contact the local health department to jointly problem-solve evaluation of potentially contagious patients in an environment that does not cause further exposures. Providers should also consider what arrangements should be made in order to see patients safely. This includes but is not limited to getting fit tested for N95 masks and having PAPRs and N95s available for use.

Q: How can measles be prevented after exposure?

A: **Prevention/Vaccination:** Measles is best prevented by 2 doses of MMR or MMRV. In normal circumstances, the first dose is recommended between 12-15 months of age to avoid interference from maternal antibody. The definitive resource on timing of the second dose is the CDC Pink Book, which states:

> *The second dose of MMR may be administered as soon as 4 weeks (28 days) after the first dose. Children who have already received two doses of MMR vaccine at least 4 weeks apart, with the first dose administered no earlier than the first birthday, do not need an additional dose when they enter school.*

Post-exposure prophylaxis with immunoglobulin within 6 days after exposure is recommended for susceptible people who have been exposed to measles. Oregon recommendations are available here. In general, immunoglobulin is recommended, and prioritized, for susceptible individuals at risk for severe disease including;

- Infants under age 12 months (intramuscular IG 0.5 mL/kg, max 15 mL)
- Pregnant women without evidence of immunity (400 mg/kg IVIG)
- Severely immunocompromised persons[1] regardless of vaccination history (400 mg/kg IVIG)

Infants aged 6-12 months and other healthy patients may receive MMR vaccine as post-exposure prophylaxis IF given within 72 hours of exposure. MMR should not be used in pregnant women or severely immunocompromised patients. If MMR vaccine is not administered within 72 hours of exposure as post exposure prophylaxis, MMR vaccine should still be offered at any interval following exposure to the disease in order to offer protection from future exposures.

Q: Who is considered immune to measles?

A: Oregon Health Authority considers persons immune to measles if they have written documentation (records) showing at least **one** of the following:

- Birth before 1957 (but see below)
- Laboratory-confirmed disease
- Laboratory evidence of immunity (protective antibody titers); or
- Documentation of vaccination as follows:
    - Pre-school children: 1 dose
    - Children in grades K–12: 2 doses
    - Women of childbearing age: 1 dose
    - Healthcare personnel born during or after 1957: 2 doses
    - Students at post-high-school educational institutions: 2 doses
    - International travelers
        - ≥12 months of age: 2 doses
        - Children 6–11 months: 1 dose

During an outbreak of measles, healthcare facilities serving the outbreak area should recommend 2 doses of MMR vaccine for unvaccinated personnel, including those born before 1957 who lack laboratory evidence of measles immunity or laboratory confirmation of disease.

Q: Who should be treated with vitamin A?

A: There is no specific antiviral therapy for measles.

Severe measles cases among children, such as those who are hospitalized, should be treated with vitamin A. Vitamin A should be administered immediately on diagnosis and repeated the next day. The recommended age-specific daily doses are:

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[1] "Severely immunocompromised patients" include patients with severe primary immunodeficiency; patients who have received a bone marrow transplant until at least 12 months after finishing all immunosuppressive treatment, or longer in patients who have developed graft-versus-host disease; patients on treatment for ALL within and until at least 6 months after completion of immunosuppressive chemotherapy; and patients with a diagnosis of AIDS or HIV-infected persons with severe immunosuppression defined as CD4 percent <15% (all ages) or CD4 count <200 lymphocytes/mm^3 (aged >5 years) and those who have not received MMR vaccine since receiving effective ART. www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm

- 50,000 IU for infants younger than 6 months of age
- 100,000 IU for infants 6–11 months of age
- 200,000 IU for children 12 months of age and older