

MEASLES: What Nurses Need to Know

Measles virus (MeV), also known as Rubeola, is a highly contagious aerosol-transmitted infectious disease. Globally, measles cases rose 30-fold in 2023 compared to 2022. Despite its elimination in the United States in 2000, there remains a serious risk of outbreaks, especially as childhood vaccination rates have recently declined.

How is measles transmitted?

Measles virus is one of the world's most contagious diseases. Ninety percent of non-immune exposed individuals become infected. While two doses of measles, mumps, and rubella (MMR) vaccine are 97 percent effective against measles, immune protection can wane over time.

Measles is transmitted primarily through the air by respiratory aerosols. It can also be transmitted through contact with contaminated surfaces.

The incubation period for measles from exposure to rash onset ranges from 7 to 21 days. Measles is typically infectious from four days before until four days after rash onset; though, some individuals may shed virus for several weeks or months after acute illness.

What are the symptoms of measles?

Measles is characterized by a stepwise increase in fever ($\geq 101^{\circ}\text{F}$) accompanied by cough, coryza, conjunctivitis, and/or Koplik spots (on mucous membranes), followed by a characteristic maculopapular rash. Measles rash usually appears 2 to 4 days after symptom onset and spreads from the face and upper neck to the lower extremities. However, some patients may be infected with the virus without developing a rash or other measles-specific symptoms.

In addition to the above symptoms, measles should be considered for patients with the following epidemiological risk factors, regardless of measles vaccination history:

- Known contact with a measles case or an ill person with fever and a rash
- Contact with an international visitor who arrived in the U.S. within the past 21 days
- Domestic or international travel
- Visited a U.S. venue popular with international visitors such as a large theme park
- Lives in or visited a U.S. community where there are measles cases
- Works in a medical facility

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What protections do nurses and other health care workers need to care for a patient with suspected or confirmed measles?

Nurses and other health care workers are at high risk of occupational exposure to measles during local outbreaks. To protect health care workers from occupational exposures to measles, health care employers should implement a multilayered infection prevention plan that combines prevention measures such as isolation, ventilation, and personal protective equipment (PPE) with vaccination. Relying on vaccination alone is insufficient — infections have been documented in vaccinated health care workers. Important prevention measures include:

- **Patient and Visitor Screening** — Screen patients and visitors before or immediately upon arrival at the facility to ensure prompt identification and diagnosis. Delays in identification of patients with possible measles infections can lead to a high number of exposures.
- **Isolation & Source Control** — Patients with suspected or confirmed measles should be isolated promptly in an airborne infection isolation room (AIIR) and asked to wear a surgical mask or N95 respirator (noting that use of N95 respirators can provide more effective source control).
- **Ventilation** — In addition to isolating measles patients promptly in AIIRs, adequate ventilation is essential to reducing risk of transmission in lobbies, waiting rooms, and other areas of the facility where a measles case could be present before being identified and isolated.
- **Personal Protective Equipment** — A respirator at least as protective as a fit-tested, NIOSH-approved N95 respirator must be worn by any health care worker who enters an AIIR or other area where a possible or confirmed measles patient has been isolated, regardless of the staff's immunity status. Powered air-purifying respirators (PAPRs) provide a higher level and more reliable protection than N95 filtering facepiece respirators.
- **Training and Education** — Training and education should be provided to all staff who might encounter a possible measles patient and should include information on current measles outbreaks, how to recognize possible measles cases, the possibility of breakthrough infections among vaccinated health care workers, and the employer's exposure control plan to prevent measles exposure.
- **Measles Vaccination** — Health care workers without evidence of immunity should receive two doses of MMR vaccine, separated by at least 28 days.
- **Exposure Notification and Contact Tracing** — Employers should conduct contact tracing and immediately notify staff who were potentially exposed. Access to post-exposure prophylaxis, vaccination, or other appropriate follow up should be provided at no cost to employees.
- **Paid Precautionary Medical Removal** — Employers should provide paid precautionary medical removal for any nurse or other health care worker who is removed from the workplace due to occupational exposure to or infection with measles.

NNU is leading the campaign to win a national enforceable OSHA infectious diseases standard to protect nurses and other health care workers from aerosol-transmissible diseases like measles.

For supporting evidence and more information, visit
www.nationalnursesunited.org/measles-what-nurses-need-to-know

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