



# Discussion of Respiratory Protection Recommendations for Measles, Varicella, and Disseminated Zoster

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# Outline

- **Background**
- **Current Recommendations**
- **Discussion**

**Background**

# Background: Measles

- **Airborne precautions recommended for management in healthcare settings**
  - Transmitted primarily through the air via small particle aerosols
  - Most contagious of vaccine preventable diseases
- **Healthcare personnel should have presumptive evidence of immunity to measles**
  - Published and unpublished reports of HCP with presumptive evidence of immunity developing measles after exposures in healthcare settings, during outbreaks

# Background: Varicella Zoster Virus

- **Contact and Airborne Precautions are recommended for management of varicella (chicken pox) and disseminated zoster in healthcare settings**
  - Transmitted by direct contact with infectious droplets or secretions or airborne spread
  - Highly contagious
- **Healthcare personnel should have evidence of immunity to varicella**
  - One report of HCP with evidence of immunity developing varicella after exposure in a healthcare setting

# Current Recommendations

# *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)*

## ■ **V.D. Airborne Precautions**

- V.D.4.b. No recommendation is made regarding the use of PPE by healthcare personnel who are presumed to be immune to measles (rubeola) or varicella-zoster based on history of disease, vaccine, or serologic testing when caring for an individual with known or suspected measles, chickenpox or disseminated zoster, due to difficulties in establishing definite immunity. Unresolved issue
- V.D.4.c. No recommendation is made regarding the type of personal protective equipment (i.e., surgical mask or respiratory protection with a N95 or higher respirator) to be worn by susceptible healthcare personnel who must have contact with patients with known or suspected measles, chickenpox or disseminated herpes zoster. Unresolved issue

# Infection Control Practices for Measles, Varicella, and Disseminated Zoster May Vary

- **Anecdotes**

- Some facilities have indicated that neither susceptible HCP nor those with (presumptive) evidence of immunity to measles, varicella, or disseminated zoster are wearing a facemask or respirator when entering the room of patients with known or suspected infections in airborne precautions

- ***Guideline for Isolation Precautions 2007***

- “No recommendation...” for face protection for HCP or type of face protection for susceptible HCP may be interpreted as indicating a facemask or respirator isn’t recommended



# Measles Respiratory Protection Recommendation Updates

- **Updated by CDC in 2011 in *Immunization of Healthcare Personnel: Recommendations of ACIP***
  - Regardless of presumptive immunity status, all staff entering the room should use respiratory protection...(i.e., use of an N95 respirator...)
    - Because of the possibility, albeit low (~1%), of measles vaccine failure in HCP exposed to infected patients, all HCP should observe airborne precautions in caring for patients with measles.
- **Updated in the 2019 *Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings***
  - HCP should use respiratory protection (i.e., a respirator) that is at least as protective as a fit-tested, NIOSH-certified disposable N95 filtering facepiece respirator, regardless of presumptive evidence of immunity, upon entry to the room or care area of a patient with known or suspected measles

# Background: Varicella and Disseminated Zoster Respiratory Protection Recommendations

- **No *Guideline for Isolation Precautions 2007* updates**

# Literature Review

- **Conducted a systematic literature review**
  - to address if wearing respiratory protection compared to a facemask or nothing prevents transmission from patients in an AIIR to HCP.
  - 1 case series related to measles identified
    - Confidence in evidence = very low
  - No reports for varicella or disseminated zoster identified

# *Guideline for Isolation Precautions 2007*

## ▪ **Appendix A**

- Measles
  - Refers to *Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings (2019)*
- Varicella
  - Airborne Infection Control Precautions
    - No recommendation for face protection for immune HCW;
    - No recommendation for type of face protection for susceptible HCWs, i.e., mask or respirator

# Guideline for Isolation Precautions 2007, Appendix A (2019)

Measles (rubeola)	Airborne + Standard	4 days after onset of rash; duration of illness in immune compromised	<p><b>⚠️ Interim Measles Infection Control [July 2019]</b>            See <a href="https://www.cdc.gov/infectioncontrol/guidelines/measles">Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings</a>            (https://www.cdc.gov/infectioncontrol/guidelines/measles)</p> <p>Susceptible healthcare personnel (HCP) should not enter room if immune care providers are available; regardless of presumptive evidence of immunity, HCP should use respiratory protection that is at least as protective as a fit-tested, NIOSH-certified N95 respirator upon entry into the patient's room or care area. For exposed susceptibles, postexposure vaccine within 72 hours or immune globulin within 6 days when available [17, 1032, 1034]. Place exposed susceptible patients on Airborne Precautions and exclude susceptible healthcare personnel.</p>
Varicella Zoster	Airborne + Contact + Standard	Until lesions dry and crusted	<p>Susceptible HCWs should not enter room if immune caregivers are available; no recommendation for face protection of immune HCWs; no recommendation for type of protection (i.e., surgical mask or respirator) for susceptible HCWs.</p> <p>In immunocompromised host with varicella pneumonia, prolong duration of precautions for duration of illness.</p>

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# Discussion

# Thank you!

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

