

# Guidelines for Prevention and Management of Varicella in Healthcare Settings

## Transmission of Varicella-Zoster Virus

Varicella-zoster virus (VZV) is spread by direct contact and inhalation of aerosols from vesicles or respiratory secretions. Nosocomial transmission of VZV is well recognized. Sources for nosocomial exposures have included patients, healthcare personnel (HCP), and visitors with either varicella (chickenpox) or herpes zoster (shingles).

## Management of Patients with Varicella (Chickenpox)

- Mask patient and accompanying family members as soon as VZV infection is suspected.
- Immediately remove patient from waiting rooms and other public areas and place them in a negative air-flow room, if available.
  - If a negative air-flow room is unavailable, place the patient in a private room with the door closed.
- Follow standard, airborne, and contact precautions until lesions are dry and crusted.
- In immunocompromised patients with varicella pneumonia, precautions should be maintained for the full duration of illness.
- Patients with varicella should be cared for by staff with documented evidence of immunity to varicella.

## Management of Patients with Herpes Zoster (Shingles)

Infection control measures depend on whether the patient with herpes zoster (HZ) is immunocompetent or immunocompromised and on whether the rash is localized or disseminated (defined as appearance of lesions outside the primary or adjacent dermatomes). In all cases, standard infection control precautions should be followed in addition to the transmission-based precautions in the table below.

	<b>Localized HZ</b>	<b>Disseminated HZ</b>
<b>Immunocompetent Patient</b>	Completely cover lesions and follow standard precautions until lesions are dry and crusted.	Airborne and contact precautions until all lesions are dry and crusted.
<b>Immunocompromised Patient</b>	Airborne and contact precautions until disseminated infection is ruled out. After dissemination is ruled out, completely cover lesions and follow standard precautions until lesions are dry and crusted.	Airborne and contact precautions until all lesions are dry and crusted.

## Management of Patient Exposures in Healthcare Settings

Evaluate evidence of immunity to varicella-zoster in all persons with significant exposures and offer postexposure prophylaxis if indicated. Exposed inpatients without evidence of immunity should be placed on airborne precautions from the 8<sup>th</sup> day after their first exposure through the 21<sup>st</sup> day after their last exposure (or through the 28<sup>th</sup> day if they are given varicella-zoster immune globulin [VariZIG]). Patients do not need to remain hospitalized for isolation purposes alone; they can be discharged as soon as the reason for hospitalization has resolved.

### Identification of patients exposed to varicella (chickenpox)

Exposure to varicella is defined as close contact with an infectious person, such as close indoor contact (e.g., in the same room) or face-to-face contact. Experts differ regarding the minimum duration of contact necessary to be considered a true exposure; some suggest 5 minutes, and others up to 1 hour. All agree that brief transitory contact should not be considered an exposure. Healthcare personnel wearing appropriate personal protective equipment are not considered exposed.

In hospital settings, significant exposures include:

- Being in the same 2–4 bed hospital room, or being in adjacent beds in a large open ward
- Face-to-face contact with an infectious person

In outpatient settings, facilities should consider potential exposures to other patients in waiting rooms and to facility staff members prior to diagnosis.

Contact CDPH to discuss prioritization of potentially exposed patients in large rooms.

### Identification of patients exposed to herpes zoster (shingles)

For localized HZ, exposures include direct contact with zoster lesions (e.g., touching, hugging, changing bandages). For disseminated HZ, use the same exposure criteria as varicella.

### Evidence of immunity includes any one of the following:

- Written documentation of age-appropriate vaccination with varicella vaccine
  - Children age 12 months to 4 years: 1 dose of varicella vaccine
  - Children age 4+ years and adults: 2 doses of varicella vaccine
- Laboratory evidence of immunity<sup>§</sup> or laboratory confirmation of previous disease
- Diagnosis or verification of a history of varicella or HZ by a healthcare provider\*
- Birth in the United States before 1980<sup>†</sup>

<sup>§</sup> Individuals exposed to VZV with unknown evidence of immunity to varicella may have serologic screening conducted prior to vaccination. VZV IgG starts to be detectable after rash onset, so a positive IgG in an asymptomatic, exposed person is a good indication of prior disease.

\* Healthcare providers should refer to [CDC's Verifying history of varicella](#) guidance when verifying history of disease in patients.

<sup>†</sup> Birth before 1980 is not considered evidence of immunity for healthcare personnel, pregnant, or immunocompromised persons due to their high risk of severe disease.

### **Postexposure prophylaxis for individuals without evidence of immunity**

- Immunocompetent individuals 12 months and older without contraindications for varicella vaccine should be offered varicella vaccine as soon as possible, ideally within 5 days of exposure.
  - Vaccination within 3 to 5 days of exposure might prevent infection or modify the disease if infection occurs.
  - Vaccination >5 days postexposure should still be given because it induces protection against subsequent exposures if the current exposure does not cause infection.
- The following individuals at high risk of severe disease who have contraindications for vaccination should receive VariZIG as soon as possible, ideally within 4 days, but as late as 10 days postexposure.
  - Immunocompromised persons without evidence of immunity (including those who are undergoing immunosuppressive therapy, have malignant disease, or are immunodeficient)
  - Pregnant people without evidence of immunity
  - Neonates whose mothers have signs and symptoms of varicella around the time of delivery (i.e., 5 days before to 2 days after)
  - Premature infants born at  $\geq 28$  weeks to varicella-susceptible mothers
  - Premature infants born at <28 weeks gestation or weighing  $\leq 1000$  gm (regardless of maternal immune status)
- VariZIG is commercially available from a number of distributors (list here: <https://www.varizig.com/uspage.html>).
  - If VariZIG is not available within the PEP window, immune globulin intravenous (IGIV) can be considered as an alternative.
  - If both VariZIG and IGIV are not available, a 7-day course of oral acyclovir or valacyclovir beginning 7 days after exposure can be considered. Published data on the benefit of acyclovir as postexposure prophylaxis among immunocompromised people are limited.
- Postexposure prophylaxis is not indicated for healthy infants younger than age 12 months.

### **Management of HCP with VZV Exposure or Illness Due to VZV**

For additional guidance on postexposure management of HCP and management of HCP with illness due to VZV, including exclusion criteria, see [Clinical Guidelines for Management of Healthcare Personnel Exposed to Varicella](#).

### **Reporting Varicella in Chicago**

All cases of primary varicella (chickenpox) must be reported to CDPH within 24 hours through Illinois' National Electronic Disease Surveillance System (I-NEDSS). Cases of shingles do not need to be reported. Healthcare facilities without access to I-NEDSS may report by using the online case report form: <https://redcap.link/ChicagoVPDReport> or by calling (312) 743-9000, Monday–Friday between 8:30am–4:30pm. During after hours, weekends, and holidays, call 311 and ask for the communicable disease physician on-call.