

Varicella

Healthcare Provider Information

West Virginia Department of Health and Human Resources Information for Healthcare Providers on Varicella Exposure Management

Disease Information

Causative agent: Varicella Zoster Virus is a member of the herpes family.

Incubation Period: 10-21 days, most commonly 14-16 days

Infectious Period: 1-2 days before rash onset until all of the lesions have formed crusts which is usually 5 days after rash onset.

Transmission: Humans are the only source of infection for varicella. Varicella spreads via person-to-person transmission by the airborne route or direct contact with patients with vesicular varicella zoster virus lesions. Transmission from infected respiratory tract secretions is possible but probably less common than from skin vesicles.

Varicella in children: The clinical course in healthy children is generally mild, with malaise, pruritus (itching), and temperature up to 102°F for 2 to 3 days. Complications from varicella are infrequent among healthy children however, are more likely to occur in children less than 1 year of age.

Varicella in adolescents and adults: Adults may have more severe disease and have higher incidence of complications. Complications are more likely to occur in persons over 15 years old.

Varicella in immunocompromised person: Immunocompromised persons have a high risk of disseminated disease. These persons may have multiple organ system involvement, and the disease may become fulminant and hemorrhagic. The most frequent complications in immunocompromised persons are pneumonia and encephalitis. Children with lymphoma and leukemia may develop a severe progressive form of varicella characterized by high fever, extensive vesicular eruption, and high complication rates. Children infected with human immunodeficiency virus (HIV) also may have severe, prolonged illness.

Varicella in pregnancy: The onset of maternal varicella from 5 days before to 2 days after delivery may result in overwhelming infection of the neonate and a fatality rate as high as 30%. This severe disease is believed to result from fetal exposure to varicella virus without the benefit of passive maternal antibody. Infants born to mothers with onset of maternal varicella 5 days or more prior to delivery usually have a benign course, presumably due to passive transfer of maternal antibody across the placenta. Primary maternal varicella infection in the first 20 weeks of gestation is occasionally associated with abnormalities in the newborn, including low birth weight, hypoplasia of an extremity, skin scarring, localized muscular atrophy, encephalitis, cortical atrophy, chorioretinitis, and microcephaly. The risk of these appear to be very low, less than 2%.

Division of Infectious Disease Epidemiology

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The Advisory Committee on Immunization Practices Revised Criteria for Evidence of Immunity to Varicella which includes the following:

1. Documentation of age-appropriate vaccination with a varicella vaccine
 - a. Preschool-aged children 12 months of age or older: one dose
 - b. School-aged children, adolescents, and adults: two doses
2. Laboratory evidence of immunity or laboratory confirmation of prior disease.
3. Born in the United States before 1980, except health-care workers, pregnant women, and immunocompromised individuals. These individuals need to meet one of the other criteria.
4. A healthcare diagnosis of chickenpox or history of chickenpox.
5. Diagnosis or verification of a history of herpes zoster by a health-care provider.

For people reporting a history of or presenting with atypical and/or mild case, assessment by a physician or their designee is recommended and one of the following should be sought:

1. An epidemiologic link to a typical varicella case or
2. Evidence of laboratory confirmation.

When such documentation is lacking, people should not be considered as having a valid history of disease because other diseases may mimic mild atypical varicella.

Reporting Varicella in West Virginia: Healthcare providers, school nurses, etc. should report varicella cases to their respective local health department weekly. When 3 or more cases of varicella occur, an outbreak should be suspected. Report this outbreak immediately by phone to your local health department or West Virginia Division of Infectious Disease at 304-558-5358.

Deaths due to varicella are reportable within 1 week to your local health department.

Varicella-Zoster Immune Globulin (VariZIG):

Table 1- Types of Exposure to Varicella or Zoster:

Type of Contact	Description
Household	Residing in the same household
Playmate	Face-to-face indoor play ≥5 minutes (some experts use >1 hour)
<i>Hospital Setting</i> Varicella	In same 2 to 4 bedroom or adjacent beds in a large ward, face-to-face contact with an infectious staff member or patient, or visit by a person deemed contagious
Zoster	Intimate contact (e.g., touching or hugging) with a person deemed contagious
Newborn Infant	Onset of Varicella in the mother 5 days or less before or within 48 hours after delivery; VariZig or IGIV is not indicated if the mother has zoster.

Management of Varicella Exposure and Post Exposure Immunization:

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Healthy individuals- Varicella vaccine should be administered to healthy people without evidence of immunity who are 12 months or older. If there are no contraindications, adults should be vaccinated as soon as possible, preferably within 3-5 days after varicella or herpes zoster exposure. During a varicella outbreak, persons who do not have adequate evidence of immunity should receive their first or second dose as appropriate. Isolation guidance for healthy persons infected with varicella is to isolate patient until no new lesions appear within a 24-hour period or until lesions have crusted. Immunocompromised patients with varicella are probably contagious during the entire period new lesions are appearing. Exclude exposed susceptible individuals who may be in contact with persons at high risk of serious complications (e.g., health-care workers, family members of immunocompromised persons) for the duration of the period of communicability which is 8 to 21 days after exposure. Additionally, in outbreaks among preschool-aged children, 2-dose vaccination is recommended for optimal protection, and children vaccinated with 1 dose should receive their second dose provided 3 months have elapsed since the first dose. West Virginia Division of Immunization Services may provide varicella containing vaccines for outbreak control when the resources are available. Please contact your local health department immediately once an outbreak or cluster of varicella is suspected. Prophylactic administration of oral acyclovir beginning 7 days after exposure also may prevent or attenuate varicella in healthy children.

Chemoprophylaxis: If VariZIG or IGIV are not available, some experts recommend prophylaxis with acyclovir or valacyclovir beginning 7 to 10 days after exposure and continuing for 7 days for healthy children and/or immunocompromised patients without evidence of immunity who have been exposed to varicella or herpes zoster. Even though no studies have been performed for adults or immunocompromised people on the use of acyclovir after exposure, clinical experiences support the use.

Healthcare Exposure: If an inadvertent exposure occurs in the hospital to an infected person by a patient, health care professional, or visitor, the following control measures are recommended:

- Health care professionals, patients, and visitors who have been exposed and who lack evidence of immunity to varicella should be identified.
- Varicella immunization is recommended for people without evidence of immunity, provided there are no contraindications to vaccine use.
- VariZIG should be administered to appropriate candidates. If VariZIG is not available, IGIV should be considered as an alternative.
- All exposed patients without evidence of immunity should be discharged as soon as possible
- All exposed patients without evidence of immunity who cannot be discharged should be placed in isolation from day 8 to day 21 after exposure to the index patient. For people who received VariZIG or IGIV, isolation should continue until day 28 because the incubation period could be prolonged ≥ 1 week.

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- Health care professionals who have received 2 doses of vaccine and who are exposed to VZV should be monitored daily during days 8 through 21 after exposure through the employee health program or by infection-control practitioner to determine clinical status. They should be placed on sick leave immediately if symptoms such as fever, headache, other constitutional symptoms, or any atypical skin lesions occur.
- Health care professionals who have received only 1 dose of vaccine and who are exposed to VZV should receive the second dose with single-antigen varicella vaccine within 3 to 5 days of exposure, provided 4 weeks have elapsed after the first dose.
- Immunized health care professionals who develop breakthrough infection should be considered infectious.
- Patients in a health care setting who are diagnosed with varicella should be kept in a negative airflow room.
- Airborne precautions should be followed when caring for these individuals. Contact precautions also should be followed when there is a risk of coming in contact with patient's lesions.
- Healthcare providers should follow proper hand hygiene protocols.

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