Communicable Diseases Case Reporting and Investigation Guidance for Clinicians

Varicella

Report suspect varicella cases

Varicella is a Category II Reportable Disease according to Wisconsin Department of Health Services (DHS)) regulations (DHS 145.04). Within 72 hours, health care providers should report the suspect or confirmed case online through the Wisconsin Electronic Disease Surveillance System (WEDSS), by fax using an Acute and Communicable Disease Case Report (F44151), or by telephone to the local or Tribal health department (LTHD) in which the patient resides.

For after-hours, weekends, and holidays questions, please contact the DHS epidemiologist on call at 800-943-0003 (option 4). To contact the Bureau of Communicable Diseases (BCD) during routine business hours (8 a.m.–4 p.m.), please use the main number 608-267-9003.

Laboratory testing for suspect patient

- **PCR testing *(preferred testing method)*:** PCR is the most useful laboratory test for confirming suspected varicella and herpes zoster. PCR can detect VZV DNA rapidly and sensitively in skin lesions (vesicles, scabs, maculopapular lesions). DPH recommends testing for all cases of varicella due to decreased reliability of clinical diagnosis. The classic maculopapular vesicular rash is seen less frequently and rash in vaccinated patients may alter the clinical presentation and resemble other viral rashes or even bug bites.

Laboratory confirmation of varicella is now routinely recommended. Testing is important to confirm disease, identify breakthrough infection or atypical disease, and confirm outbreaks.

- **Serology and other viral isolation testing:** Serologic methods have limited use for laboratory confirmation of herpes zoster and should only be used when suitable specimens for PCR testing are not available. IgM testing is less sensitive than PCR testing of skin lesions. IgG testing should only be used for immunity testing and sent to a commercial laboratory.

Clinical presentation

Varicella is a highly contagious disease caused by the varicella-zoster (VZV). It usually presents as a generalized pruritic maculopapulovesicular rash. The incubation period is typically 14–16 days after exposure to the virus (range 10–21 days).

- A mild prodrome of fever and malaise may occur 1 to 2 days before rash onset, particularly in adults. In children, the rash is often the first sign of disease.
- Varicella progresses rapidly from macular to papular to vesicular lesions before crusting.
    - Lesions are typically present in all stages of development at the same time.
    - The rash usually appears first on the chest, back, and face, then spreads over the entire body.
    - The rash typically lasts 4–7 days.
    - Vaccinated individuals may only have maculopapular lesions and usually have fewer number of lesions and a shorter duration of illness.
- Breakthrough varicella is often mild, so it can be difficult to make a diagnosis on clinical presentation alone.

Differences in clinical presentation between chickenpox and shingles

Unlike the chickenpox rash, the shingles rash typically appears on one side of the body and does not cross the midline and is usually painful, itchy, or tingly. Shingles can lead to serious complications such as postherpetic neuralgia (PHN).

Communicability

Varicella is more contagious than mumps and rubella and less contagious than measles. The infectious period for varicella is 1–2 days before rash onset until all lesions have crusted, or in vaccinated individuals with only maculopapular lesions, until no new lesions appear within a 24-hour period. Individuals with breakthrough varicella are also contagious.

Complications

The most common chickenpox complications are bacterial infections of the skin and soft tissues in children and pneumonia in adults.

Recommended isolation

Isolate the patient until all lesions have crusted over, usually by the 5th day (counting the day of rash onset as day zero). If the rash is non-vesicular, the patient should remain isolated until no new lesions appear within a 24-hour period.

Proof of immunity to varicella

Evidence of immunity to varicella includes any one of the following:

- Documentation of age-appropriate vaccination (one dose for preschool-aged children and two doses for school-aged children, adolescents, and adults).
- Laboratory evidence of immunity or laboratory confirmation of disease.
- Diagnosis or verification of history of varicella or herpes zoster by a health care provider.
- Birth in the United States before 1980. (This should not be considered evidence of immunity for health care personnel, pregnant women, or people who are immunocompromised.)

Resources

CDC's Manual for the Surveillance of Vaccine-Preventable Diseases, Chapter 17: Varicella

CDC's Clinical Overview of Chickenpox (Varicella)

CDC's Clinical Overview of Shingles (Herpes Zoster)