

Summary of Varicella (Chickenpox) Disease Control Guidelines

Colorado Department of Public Health and Environment (CDPHE)
Communicable Disease Epidemiology Program

Varicella Description

- Highly contagious rash illness.
- Rash is generalized, itchy and rapidly progresses from macules to papules to vesicular lesions before crusting. Several crops of vesicles will develop over a period of 2-4 days with lesions presenting in several stages of development.
- Mild prodrome may precede the rash, which may include a fever.
- Spreads person-to-person by airborne droplets and /or direct contact with nasopharyngeal secretions or vesicular fluid from lesions.
- Incubation period is usually 14-16 days, with a range of 10-21 days.
- Infectious period is 1-2 days (may be as long as 5 days) before rash appears and until all vesicles have formed scabs.
- Breakthrough disease may occur in vaccinated persons.
- Breakthrough disease is typically milder, without a fever and with fewer lesions, which may be maculopapular rather than vesicular.

Varicella Case Definition

Clinical Case Definition

An illness with acute onset of diffuse (generalized) maculopapulovesicular rash without other apparent cause. In vaccinated persons who develop varicella more than 42 days after vaccination (breakthrough disease), the disease is almost always mild with fewer than 50 skin lesions and shorter duration of illness. The rash may also be atypical in appearance (maculopapular with few or no vesicles).

Laboratory Criteria for Diagnosis

- Isolation of varicella-zoster virus (VZV), or
- Positive direct fluorescent antibody (DFA), or
- Positive polymerase chain reaction (PCR), or
- Significant rise in serum varicella immunoglobulin G (IgG) antibody level by any standard serological assay.

Note: Commercial test kits for varicella immunoglobulin M (IgM) antibody are unreliable and not recommended for the diagnosis of acute varicella infection. False positive IgM results are common in the presence of high IgG levels on these tests. Thus, clinical varicella cases with positive IgM tests are classified as probable, unless they are linked to another probable or confirmed case.

Case Classification

Probable: a case that meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to another probable or confirmed case.

Confirmed: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed or probable case.

Note: Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation.

Outbreak Case Definition

Five or more varicella cases clustered in time (e.g., occurring within 21 days of each other) and sharing common space (e.g., school or childcare facility).

Reporting

- Report varicella cases to the state or local health agency within 7 days of diagnosis, a diagnostic lab result or lab results highly correlated with varicella clinical illness.
- Report case in CEDRS or complete varicella report form and fax/mail to CDPHE. Varicella report form is available at: www.cdphe.state.co.us/dc/epidemiology/Varicella.
- Classify case as probable or confirmed.
- If a varicella death occurs call the CDPHE Vaccine Preventable Disease staff at 303-692-2671 or 303-692-2672.
- **Shingles** (herpes zoster) is **not** a reportable disease.

Disease Control Recommendations

*Individual cases of varicella are not required to be investigated **except** when a death occurs. The following guidance is for local public health agencies, which elect to investigate or are consulted about reported cases of varicella.*

1. Varicella cases should be excluded from school, childcare or work and voluntarily isolate themselves at home until all lesions have formed scabs or crusts (usually 5 days after rash onset).
2. Persons having breakthrough varicella disease with a non-vesicular rash should be excluded from school, childcare, or work until their rash is gone.
3. If possible only persons immune to varicella should have contact with the case until lesions have formed scabs or crusts.
4. Hospitalized varicella patients should be in isolation with airborne and contact precautions and only be attended by or visited by persons who are immune to varicella.
5. Two doses of varicella vaccine are routinely recommended for all children without contraindication to varicella vaccination; the first dose should be given at age 12-15 months and the second dose at age 4-6 years.
6. During a varicella outbreak, persons having only 1 dose of varicella vaccine should receive a second dose, provided the appropriate interval has elapsed since the first dose.
7. Recommend varicella vaccination of susceptible contacts age ≥ 12 months if vaccine is not contraindicated. Varicella vaccine administered within 3-5 days of exposure may abort infection or modify the disease.

8. Varicella vaccination of non-immune contacts may be recommended even if the time since exposure is >5 days, to provide protection from future exposure.
9. Educate contacts about varicella symptoms, incubation period, vaccination, and recommend isolating themselves at home if symptoms develop.
10. A form letter to notify parents of varicella in a school or childcare facility is available on the CDPHE varicella web page.
11. Recommendations for students developing rashes from 7-42 days following varicella vaccination are posted on the CDPHE varicella web page.
12. Varicella Zoster Immune Globulin (VZIG) is recommended for post-exposure prophylaxis of susceptible persons who are at high risk for developing severe disease, and for whom varicella vaccine is contraindicated.

Outbreaks

Investigation of varicella outbreaks is dependent upon available resources. Varicella outbreak investigations should be prioritized as follows:

1. Outbreaks involving deaths.
2. Outbreaks involving patients and staff in health-care settings or correctional facilities.
3. Outbreaks associated with severe complications (e.g., pneumonia, encephalitis, hemorrhagic complications or serious infectious complications such as invasive Group A streptococcal infection) and/or hospitalizations.
4. Outbreaks among persons who are immunocompromised due to HIV infection, cancer, or immunosuppressive therapy.
5. Outbreaks involving adolescents and adults.
6. Outbreaks occurring among vaccinated populations.
7. Clusters of varicella reports, which may suggest improper storage and handling of vaccine.
8. Outbreaks involving a large number of cases.

Resources

Varicella chapter of the CDPHE “Communicable Disease Manual” at:
<http://www.cdphe.state.co.us/dc/Epidemiology/Varicella/CDMVaricella.pdf>

CDPHE varicella page at:
<http://www.cdphe.state.co.us/dc/Epidemiology/Varicella/index.html>

CDC’s “Manual for the Surveillance of Vaccine Preventable Diseases” at:
www.cdc.gov/nip/publications/surv-manual/default.htm

CDC’s varicella page at:
<http://www.cdc.gov/vaccines/vpd-vac/varicella/default.htm>

Please contact your CDPHE Regional Epidemiology Consultant or the Communicable Disease Epidemiology Program (303-692-2700) for further guidance.