

Varicella (Chickenpox)

Disease Category: Vaccine-Preventable Disease

Timeframe to follow-up: Same day

<u>Signs and Symptoms</u> ⁶	- Mild fever with other symptoms such as malaise and headache. - Outbreak of rash showing up on the chest, back, and face before spreading to the rest of the body that turns into itchy, fluid-filled blisters that eventually turn into scabs. - A person with chickenpox may have as many as 500 blisters and usually takes about 1 week for all the blisters to become scabs.
<u>Incubation</u> ⁷	Usually 10 to 21 days; range commonly 14-16 days.
<u>Case Classification</u> ^{7,8}	Clinical criteria: - An acute illness with a generalized rash with or without vesicles (maculopapulovesicular or maculopapular rash). Confirmed: - Meets clinical evidence AND confirmatory laboratory evidence, OR - Meets clinical evidence with a generalized rash with vesicles AND confirmatory epidemiologic linkage evidence. Probable: - Meets clinical evidence with a generalized rash with vesicles, OR - Meets clinical evidence with a generalized rash without vesicles AND: - Confirmatory or presumptive epidemiologic linkage evidence, OR - Supportive laboratory evidence OR - Meets healthcare record criteria AND: - Confirmatory or presumptive epidemiologic linkage evidence, OR - Confirmatory or supportive laboratory evidence
<u>Differential Diagnosis</u> ⁹	Dermatological conditions – monkeypox and smallpox. Other differential diagnoses of varicella include vesicular viral exanthems, disseminated herpes simplex virus infection, pityriasis, drug eruptions, bullous insect bite reactions, and scabies.
<u>Treatment</u>	Contact a healthcare provider if you have been exposed to chickenpox or shingles. Treatment may include: - Antiviral medication - At home care For recommendations visit: How to Treat Chickenpox Chickenpox (Varicella) CDC or refer to Red Book chapter on Varicella-Zoster Virus Infections
<u>Duration</u> ⁶	Chickenpox illness usually lasts about 4-7 days.
<u>Exposure</u> ¹⁰	Varicella spreads person-to-person by direct contact with vesicular fluid or by the inhalation of aerosols from vesicular fluid of skin lesions of acute varicella or

	herpes zoster lesions . Transmission may also occur from infected respiratory tract secretions of patients with varicella that might also be aerosolized.
Laboratory Testing ¹¹	Local Health Authority can arrange testing if an outbreak is suspected OR for contacts: • Varicella Zoster Virus (Chicken Pox, Shingles) DNA real-time (TaqMan®) PCR Assay School of Public Health University of Nevada, Reno • Varicella Titer Test in Las Vegas SNOHC • Southern Nevada Health District Test Menu Diagnostic tests for Varicella-Zoster Virus infection include polymerase chain reaction (PCR), direct fluorescent antibody (DFA) and serology testing for immunoglobulin (IG) M and G.
Control of Contacts ^{10,11}	• All contacts should be evaluated to determine the need for postexposure prophylaxis which can include immunization, immune globulin (IG), or chemoprophylaxis. Please refer to Red Book for most up to date recommendations. • Exposed susceptibles eligible for immunization should receive vaccine as soon as possible after exposure to prevent contracting the infection and prevent transmission with potential occurrence of an outbreak. • Quarantine: is the restriction or exclusion of susceptible persons exposed to varicella for the duration of the incubation period following exposure, to prevent transmission should infection develop.
Key areas of focus during investigation	Exposure setting (e.g., school, hospital, household) and potentially exposed contacts, recent travel, immunization status, medical comorbidities that can affect post exposure prophylaxis recommendations.
Public Health Actions	Reports of varicella cases must be made to the Local Health Authority during the regular business hours of the health authority on the first working day following the identification of the case. Local Health Authority to notify Office of State Epidemiology (dpbhepi@health.nv.gov) or call 775-400-0333 for individual cases or if outbreak suspected. For individual confirmed or probable cases: • Confirm diagnosis, if possible • Identify potential exposures • Prepare a case report and submit to the Chief Medical Officer (through OSE) within 7 days after completing the case investigation • Identify potential outbreaks from common sources • Provide education about how to prevent transmission To the best of the local health authority's ability, each step of the investigation should be completed within the same day or in alignment with NAC 441A.
Key Partner Agencies	• Local health authorities • Nevada State Public Health Laboratory (NSPHL) • Southern Nevada Public Health Laboratory (SNPHL)

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VARICELLA

I. DISEASE REPORTING

A. Legal Reporting Requirements

A report to the health authority may be made by telephone; telecopy (in the form prescribed by the health authority); or any form of electronic communication identified by the health authority, following the specified format and procedure.¹

1. *Health Care Providers and Health Care Facilities*

Health Care providers and facilities must notify the health authority where provider is located within the first working day after identifying the case.¹⁻³

2. *Laboratories*

Laboratories must notify the health authority within the first working day after identifying the case.¹ If the lab is located outside of Nevada, notify the Nevada Chief Medical Officer through the Office of State Epidemiology (OSE) within the same timeframe.^{1,4}

3. *Local Health Authority (LHA)*

LHA's must notify the Office of State Epidemiology (OSE) within 7 days after completing the case investigation.⁵

II. THE DISEASE AND ITS EPIDEMIOLOGY^{7,12}

A. Background

Varicella (chickenpox) is a febrile rash illness resulting from primary infection with varicella-zoster virus (VZV). Varicella is generally a mild disease, but severe complications can occur in any age group. Severity is increased among immunocompromised persons, pregnant women, children younger than one year of age, adolescents, and adults particularly those without immunity. After primary infection, VZV remains latent and reactivates in approximately 1 in 3 infected persons during their lifetime, resulting in herpes zoster (shingles). Before the availability of the varicella vaccine in the United States, almost everyone had varicella.

B. Etiologic Agent

Varicella-Zoster virus disease is caused by the Varicella-Zoster virus (VZV), which is a DNA virus a part of the herpesvirus group.

C. Description of Illness

Varicella is caused by varicella-zoster virus (VZV), which is a DNA virus that is a member of the herpesvirus group. Groups at risk for severe varicella include immunocompromised people, pregnant women, and adults without evidence of immunity to varicella, newborns

whose mothers have varicella from 5 days before to 2 days after delivery, and premature babies exposed to varicella or herpes zoster. Varicella is highly contagious, and the virus can spread from person to person by direct contact, inhalation of aerosols from vesicular fluid of skin lesions of acute varicella or zoster; and possibly through infected respiratory secretions that also may be aerosolized.

D. Disease Burden in Nevada

Varicella is present in the United States, including Nevada; however, routine vaccination has significantly reduced its prevalence. In Nevada, there have been a total of 15 cases reported as of April 29, 2026, which corresponds to 0.4 cases per 100,000 people. Most of these cases occurred in March 2026, with the majority concentrated in Washoe County.

See the [Nevada Office of State Epidemiology Communicable Disease Dashboard](#) for Nevada specific data on varicella (under the Communicable Disease, then Vaccine Preventable section).

E. Reservoirs

Varicella-Zoster Virus (VZV), the virus that causes both varicella (chickenpox) and zoster (shingles), is an exclusively human pathogen. No animal or insect source or vector is known to exist.

F. Modes of Transmission

VZV transmission occurs person-to-person by direct contact with vesicular fluid or by inhalation of aerosols from vesicular fluid of skin lesions of acute varicella or zoster. Transmission may also occur from infected respiratory tract secretions of patients with varicella that might also be aerosolized. Skin lesions are considered the major source of transmissible VZV. Transmission of VZV would cause varicella, not zoster, in a VZV-naïve person.

G. Incubation Period

The incubation period for varicella is 14 to 16 days after exposure with a range of 10 to 21 days. The incubation period may be prolonged (e.g., up to 28 days or more) in those who have received postexposure prophylaxis with varicella specific immune globulin.

H. Period of Communicability

The period of communicability extends from 1 to 2 days before the onset of rash until all lesions have formed crusts. To date, the VZV virus has not been isolated from crusted lesions. Vaccinated persons who contract breakthrough varicella may develop lesions that do not crust (macules and papules only). Isolation guidance for these persons is to restrict contact with others until no new lesions appear within a 24-hour period.

Varicella is highly contagious and the secondary attack rates among susceptible household contacts of persons with varicella are between 61% and 100%. Zoster is much less infectious as varicella, i.e., about 1/5 as infectious as varicella.

I. Testing

The Nevada State Public Health Laboratory (NSPHL) tests specimens for Varicella-Zoster Virus. Follow the link ([Varicella Zoster Virus \(Chicken Pox, Shingles\) DNA real-time \(TaqMan®\) PCR Assay | School of Public Health | University of Nevada, Reno](#)) or see below for what is required:

Preferred Specimen:

- Swab taken from the base of unroofed lesion
- Scabs from crusted lesions

Required Specimen Volume:

- 2-4 swabs or scab samples from lesions

Specimen container:

- Screw-cap 15 mL polypropylene tube

Specimen Identification:

- Label container with patient's first name, last name and DOB include date and time of collection and sample source

Special instructions:

- Swabs or scabs dry (no transport medium) in a 15 mL screw top tube

Shipping requirements:

- Ship swabs or scabs dry (no transport medium) room temperature. Ship according to current International Air Transport Association (IATA) regulations.

J. Treatment¹¹

Treatment Options:

- If a child has chickenpox, non-aspirin medications, such as acetaminophen, can be used to help ease the fever. Aspirin medications can increase the risk of Reye syndrome.
- A healthcare provider can advise on treatment options. Antiviral medication is recommended for people with chickenpox who are most likely to develop complications.
- Please refer to Red Book for more information on treatment recommendations.

At home care:

- Calamine lotion and a cool bath with added baking soda, uncooked oatmeal, or colloidal oatmeal may help ease some of the itching.
- Keeping fingernails trimmed short and minimizing scratching can prevent the virus from spreading to others and can help prevent skin infections.
- After scratching a blister, hands must be washed with soap and water for at least 20 seconds.

III. EPIDEMIOLOGIC CASE INVESTIGATION

The public health authority should begin investigating the case of Varicella step by step, within the same day of notification or in alignment with [NAC 441A](#).

A disease investigator from the public health authority will be assigned to investigate the case based on their availability and on the workload distribution among the entire disease investigation team.

A. Step 1: Review relevant information about the disease.

1. *Review scientific information in [Control of Communicable Diseases Manual](#), most recent edition.*
2. *Review Varicella (Chickenpox) most recent case definition [2024 Case Definition / CDC](#).*

B. Step 2: Begin investigating the case.

1. *Contact Reporting Source and/or Reported Case*

Upon receiving an initial case report, review lab test results and available clinical details and epidemiologic factors. Attempt to contact the provider to gather additional clinical information. Then attempt to contact the case (regardless of whether contact was made with the provider). Please make three attempts to contact the case (text and phone calls) on separate days, at different times of the day (morning, afternoon, late afternoon). Document all attempts to contact a reporting source and/or reported case in the “Encounters” tab of EpiTrax. Please use the questions in EpiTrax to gather accurate information about the case. Focus on the key data elements listed below. If PDF CMR is used, the completed PDF version should be attached to the CMR in EpiTrax in the “Notes” tab. The CMR should be completed within 7 days of completing the investigation of the case.⁵

C. Step 3: Identify potential sources of infection^{7,12-13}

A case is considered contagious or infectious 1-2 days before onset of rash until all lesions have crusted, typically 4-7 days after rash onset. For vaccinated cases that have a milder or atypical presentation, they are no longer considered infectious when no new lesions have developed in a 24-hour period. The infectious period may be prolonged to > 7 days for severe cases.

The investigation should focus on exposures to the case in the 1-2 days before rash onset until lesions have crusted over or no new lesions have developed. Ask about immunization status, history of varicella, comorbidities, recent travel, and occupation (e.g., health care worker, work in school setting or daycare).

D. Step 4: Initiate control measures for case and/or for contacts (see Section IV – Section VI below).

E. Step 5: Provide Education and Prevention messaging to the case and/or contacts (see Section VII below).

IV. CONTROL OF CASE^{11,13,14}

1. *Management/Exclusions for Specific Groups or Settings*

All Cases	
Sensitive Occupation	- Healthcare personnel with varicella: exclude from work until all lesions have dried or crusted or if case has non-vesicular lesions exclude from work until no new lesions appear in 24-hour period. - Healthcare personnel with disseminated herpes zoster (shingles) or immunocompromised healthcare personnel with localized herpes zoster until disseminated ruled out, exclude from work until all lesions have dried and crusted. - Healthcare personnel with localized herpes zoster cover all lesions and when feasible exclude from direct care of patients at high risk for severe varicella until all lesions are dried and crusted. If lesions cannot be covered exclude from work until lesions have dried and crusted.
Childcare/School Attendee	Exclude from childcare/school until lesions have dried or crusted over or if case has non-vesicular lesions exclude from work until no new lesions appear in 24-hour period.
Case in a Medical Facility	- Standard, airborne, and contact precautions recommended for patients with varicella until lesions are dried or crusted. - For patients with varicella pneumonia precautions are maintained for duration of illness.
Newborn Infants	Infants with congenital varicella do not require isolation if they do not have active skin lesions.
General Population	Case should be excluded from work or school until all lesions have dried or crusted or if case has non-vesicular lesions exclude from work or school until no new lesions appear in 24-hour period.

2. *Exclusion Notifications*

For most cases, they should be isolated until lesions have dried or crusted or if case has non-vesicular lesions isolate until no new lesions appear in 24-hour period. There may be individual circumstances that warrant consultation with OSE and clinical experts.

V. CONTROL OF CONTACTS^{11,13}

During the case investigation, disease investigators should identify individuals who were exposed to patients with varicella during the infectious period. It is important to notify these contacts and assess their immunity status. For those exposed, recommend appropriate post-exposure prophylaxis following recommendations from CDC and Red Book.

Significant exposure is classified following the criteria below:

- Household-residing in the same household
- Playmate: face-to-face indoor play ≥ 5 minutes (some experts use >1 hour)
- For Healthcare personnel: unprotected entry into source patient room or shared air space or touching vascular fluid from skin lesions without proper PPE. Suggested time frame from 5 minutes up to 1 hour, but preferable to consider 5 minutes as sufficient time for exposure.
- Newborn infant
- Hospital:
 - 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 (Shingles): Contact (e.g., touching or hugging) with a person with disseminated zoster or with uncovered uncrusted lesions

Evidence of Immunity to Varicella

1. Documentation of age-appropriate immunization
 - a. Preschool-aged children (12 months through 3 years) 1 dose
 - b. School-aged children, adolescents and adults: 2 doses
2. Laboratory evidence of immunity or laboratory confirmation of disease
3. Birth in the United States before 1980 (should not be considered evidence of immunity for health care personnel, pregnant people, and immunocompromised people)
4. Diagnosis or verification of a history of varicella or zoster by a healthcare provider

Asymptomatic Contacts

1. For asymptomatic contacts with evidence of immunity to varicella:
 - Exclusion from daily activities is not typically required.
 - Provide education about varicella symptoms.
 - Instruct to monitor daily for symptoms from day 8 to 21 days from last exposure.
 - If symptoms develop, contact should isolate immediately and contact health care provider.
2. For asymptomatic contacts without evidence of immunity to varicella:
 - Provide PEP as indicated. If PEP is provided, may not be required to quarantine and can continue normal daily activities (school, work, childcare).

- Healthcare provider can work with OSE and NSPHL to coordinate testing.
- If contact does not receive PEP when there is no evidence of immunity, contact must quarantine away from others by staying home from school, work, and childcare. This also includes quarantining away from household members if possible.
 - Contacts in quarantine should monitor daily for symptoms from day 8 to 21 days after last exposure. If any symptoms develop, contact needs to immediately isolate and contact healthcare provider. Testing can be coordinated through OSE and NSPHL.

For Healthcare Personnel that are asymptomatic contacts¹³

Healthcare personnel with evidence of immunity to varicella who are exposed

- PEP and work restrictions are not necessary
- Implement daily monitoring for signs and symptoms of varicella from the 8th day after the first exposure through the 21st day after the last exposure

Healthcare personnel without evidence of immunity to varicella who are exposed

- Administer PEP in accordance with CDC and ACIP recommendations
- Exclude from work from the 8th day after the first exposure through the 21st day after the last exposure
- Work restrictions not needed for those who received one dose of varicella vaccine prior to exposure if 2nd dose received within 5 days of exposure
- If varicella-zoster IG is administered for PEP, exclude through 28th day of last exposure

Newborn infants born to persons with varicella or disseminated zoster¹¹

- If infant is clinically stable for discharge during the potential incubation period and has not yet developed varicella, quarantine to complete the 21 day or 28 day (if varicella IG received) period may continue at home after ensuring that all relatives and contacts have evidence of immunity to varicella. If the infant needs to see a healthcare provider during that period, the office should be notified of the need for airborne and contact precautions.

Symptomatic Contacts

Investigate symptomatic contacts in the same manner as a case.

1. If contact is symptomatic, isolate until infectious period is over, or varicella has been ruled out through testing. It is important to investigate evidence of immunity for close contacts as well to further direct for appropriate PEP.

VI. CONTROL OF CARRIERS

A carrier state has not been documented for varicella. Anyone who has had varicella can be a carrier for VZV, which remains dormant and can reactivate. When reactivated it causes

herpes zoster (shingles), and individuals that are not immune to varicella are susceptible to contracting varicella.

VII. MANAGEMENT OF SPECIAL SITUATIONS/OUTBREAK CONTROL

Coordinate with senior epidemiology staff to determine if an outbreak is occurring. If so, notify local health authorities, or the Nevada State Immunization Program as appropriate. Please refer to Red Book for algorithm of management of exposures to varicella-zoster virus.

VIII. PREVENTION¹²

The investigator should reference the most recent disease specific public educational materials from CDC. The [Nevada OSE website](#) also provides information about varicella. Some prevention tips may include:

- The most effective prevention for varicella is the vaccine. There are two live, attenuated VZV-containing vaccines licensed for use in the United States:
 1. Varivax (VAR) which is a single antigen vaccine
 2. MMRV (ProQuad) vaccine which is a combination of measles, mumps, rubella, and the varicella vaccine.
- Avoid contact with individuals who have chickenpox or shingles.
- Practice good hygiene by regular handwashing.
- Monitoring exposure to others who have the illness.
- Recombinant zoster vaccine (RZV) Shingrix Vaccine (Non-live vaccine) given as a 2-dose series has been successfully used for prevention of Herpes zoster. It is recommended for adults aged 50 years and older and for immunocompromised adults aged 19 years and older.

IX. REFERENCES

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X. ACKNOWLEDGEMENTS

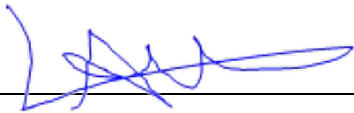
This document was developed based on the content and format of the disease investigation guidelines of several state and local health jurisdictions:

- Oregon Health Authority Investigative Guidelines
- Washington State Department of Health Reporting and Surveillance Guidelines

- Washoe County Health District Epidemiology and Communicable Disease Program Investigation of Communicable Disease Manual

The Nevada Office of State Epidemiology would like to acknowledge the work of these great partners.

XI. UPDATE LOG



Ihsan Azzam, Ph.D., M.D.
Chief Medical Officer

5/22/2026

Chief Medical Officer Approval Date