

Varicella Outbreak Control Guidelines

Infectious agent

Virus: *Varicella-zoster virus* (VZV), a member of the herpes virus group

Clinical manifestations

Primary infection (chickenpox)

Symptoms

- Prodrome
 - A mild prodrome may precede the onset of a rash.
 - Adults and children may have 1 to 2 days of fever and malaise prior to rash onset, but in children the rash is often the first sign of disease.
- Rash
 - Rash is generalized, pruritic, and rapidly progresses from macules to papules to vesicular lesions before crusting.
 - The rash usually appears first on the scalp, followed by the trunk, and then the extremities, with the highest concentration of lesions on the trunk (centripetal distribution).
 - Lesions also can occur on mucous membranes of the oropharynx, respiratory tract, vagina, conjunctiva, and the cornea.
 - Lesions are usually 1 to 4 mm in diameter. The vesicles are superficial and delicate, and contain clear fluid on an erythematous base.
 - Vesicles may rupture or become purulent before they dry and crust.
 - Successive crops appear over 5 – 6 days, with lesions present in several stages of development.
 - Healthy children usually have 200 – 500 lesions in 2 to 4 successive crops.
- Clinical course
 - In healthy children the course is generally mild, with malaise, pruritus (itching), and fever up to 102 F for 2 to 3 days.
 - Adults may have more severe disease and have a higher incidence of complications. Respiratory and gastrointestinal symptoms are absent.
 - 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 may also have severe, prolonged illness.
 - Recovery from primary varicella infection usually results in lifetime immunity.
 - In otherwise healthy persons, a second occurrence of chickenpox is not common. Immunocompromised persons have a higher risk of reoccurrence.
 - As with other viral diseases, reexposure to natural (wild) varicella may lead to reinfection that boosts antibody titers without causing clinical illness or detectable viremia.

Breakthrough Disease (varicella in vaccinated persons)

Symptoms

- Rash
 - Rash is atypical, often maculopapular, with few or no vesicles.
 - By definition, the rash occurs more than 42 days after vaccination.
 - Disease is usually mild with a shorter duration of illness, less constitutional symptoms, and fewer than 50 skin lesions.
 - Approximately 25% of case-patients may have >50 lesions and clinical features similar to those among unvaccinated persons.

Herpes Zoster (HZ), shingles (recurrent infection)

Symptoms

- Prodrome
 - Two to four days prior to the eruption there may be pain and paresthesia in the segment involved.
- Rash
 - Early in the disease course, erythematous, macropapular lesions appear to evolve into a vesicular rash.
 - The vesicular eruption of zoster generally occurs unilaterally in the distribution of a dermatome supplied by a dorsal root or extramedullary cranial nerve sensory ganglion.
 - Most often, this involves the trunk or the area of the fifth cranial nerve.
 - In a normal host, lesions continue to form over a period of 3 – 5 days, with total disease duration being 10 – 15 days.
 - In immunocompromised persons, zoster may disseminate. This causes generalized skin lesions, and central nervous system, pulmonary, and hepatic involvement.
- Clinical course
 - HZ occurs when latent VZV reactivates and causes recurrent disease.
 - The immunologic mechanism that controls latency of VZV is not well understood. Factors associated with recurrent disease include aging, immunosuppression, intrauterine exposure to VZV, and varicella at a young age (<18 months).
 - The most significant clinical manifestations of HZ are associated with acute neuritis and later, postherpetic neuralgia characterized by pain, which can be severe.
 - If HZ occurs in children, the course is generally benign and not associated with progressive pain or discomfort.
 - In adults, systemic manifestations are mainly those associated with pain.

Complications

Primary Infection/breakthrough

- The risk of complications from varicella varies with age.
 - Complications are infrequent among healthy children.
 - They are much higher in persons >15 years of age and infants <1 year of age.

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- Serious complications have rarely been reported in breakthrough disease among persons who developed <50 lesions.
- Secondary bacterial infections of skin lesions, dehydration, pneumonia, and central nervous system involvement are the most common complications.
- Secondary bacterial infections of skin lesions with staphylococcus or streptococcus are the most common cause of hospitalization and outpatient medical visits.
 - Secondary infection with invasive group A streptococci may cause serious illness and lead to hospitalization or death.
- Pneumonia following varicella is usually viral, but may be bacterial.
 - Secondary bacterial pneumonia is more common in children <1 year of age.
- Central nervous system manifestations of varicella range from aseptic meningitis to encephalitis.
 - Encephalitis is an infrequent complication of varicella and may lead to seizures and coma.
 - Diffuse cerebral involvement is more common in adults than in children.
- Reye syndrome is an unusual complication of varicella and occurs almost exclusively in children who take aspirin during the acute illness.
- Rare complications of varicella include aseptic meningitis, transverse myelitis, Guillain-Barré syndrome, thrombocytopenia, hemorrhagic varicella, purpura fulminans, glomerulonephritis, myocarditis, arthritis, orchitis, uveitis, iritis, and clinical hepatitis.
- Immunocompromised persons have a high risk of serious varicella infection and 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 HIV infection are at increased risk for morbidity from varicella and herpes zoster.
- Death may result from secondary bacterial infections, dehydration, pneumonia, encephalitis and cerebellar ataxia.
 - Most deaths occur in immunologically normal children and adults.
 - Adults account for only 5% of reported cases of varicella, but account for approximately 35% of mortality.
- Perinatal Varicella Infection
 - 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.

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- Congenital Varicella infection
 - Primary varicella infection in the first 20 weeks of gestation is occasionally associated with a variety of abnormalities in the newborn.
 - These include low birth weight, hypoplasia of an extremity, skin scarring, localized muscular atrophy, encephalitis, cortical atrophy, chorioretinitis, and microcephaly.
 - The risk of congenital abnormalities from primary maternal varicella infection during the first trimester appears to be very low (<2%).
 - Intrauterine infection with VZV, particularly after 20 weeks gestation, is associated with zoster at an earlier age. The exact risk is unknown.

Herpes Zoster

- Postherpetic neuralgia is pain in the area of the zoster occurrence which persists after the lesions have resolved.
 - Postherpetic neuralgia may last as long as a year or longer after the episode of zoster.
- Ocular nerve and other organ involvement with zoster can occur, often with severe sequelae.

Incubation period

Primary/breakthrough infection

14 – 16 days (range 10 – 21 days)

Herpes Zoster

Does not apply

Period of communicability

Primary infection

- From 1 – 2 days prior to rash onset until all the lesions are crusted over and until at least 5 days after rash onset.
- Immunocompromised cases should be considered contagious until all lesions have crusted.

Breakthrough disease

- From 1 – 2 days prior to rash onset and until all the lesions are crusted over.
 - Vaccinated persons with <50 lesions were one-third as contagious as unvaccinated persons.
 - Vaccinated persons with ≥50 lesions were just as contagious as unvaccinated persons.

Herpes Zoster

- Persons are infectious during the vesicular stages of rash or until the rash dries and crusts over.

Transmission

Primary infection/breakthrough disease

- Person-to-person from infected respiratory tract secretions,
 - Respiratory contact with airborne droplets, or by
 - Direct contact or inhalation of aerosols from vesicular fluid of skin lesions until lesions are dry and crusted.
 - Secondary attack rates among susceptible family members are as high as 90%.

Herpes Zoster

- Can be spread through direct contact with the rash from a person with active zoster to a person who has never had chickenpox or been vaccinated.
- Localized HZ is approximately one-fifth as infectious as varicella or disseminated HZ, but transmission of VZV has been reported.
 - Rare occurrence of airborne transmission of VZV from HZ case-patients in healthcare settings has been reported.
 - HZ case-patients have also been identified as the index case in outbreaks of varicella.
- Disseminated herpes zoster (defined as appearance of lesions outside the primary or adjacent dermatomes) can also be transmitted through respiratory contact with airborne droplets.
 - Standard plus Airborne Precautions are required with continued contact precautions until the lesions are dry and crusted.

Basic epidemiology

- In temperate areas, varicella has a distinct seasonal fluctuation, with the highest incidence occurring in winter and early spring.
 - In the U. S. incidence is highest between March and May, and lowest between September and November.
 - Less seasonality is reported in tropical areas.
- Varicella outbreaks have been documented in highly vaccinated populations and vaccinated case-patients have acted as index cases in several outbreaks.
- Data from three active varicella surveillance areas indicate that the incidence of varicella, as well as varicella-related hospitalizations, have fallen approximately 85% since licensure of vaccine in 1995.
 - Cases declined most among children aged 1 – 4 years, but cases also declined in all age groups including infants and adults, indicating reduced transmission of the virus.
- Herpes zoster has no seasonal variation and occurs throughout the year.

Case definitions

Varicella, approved by CSTE 2010

Varicella deaths only, approved by CSTE 1998

Varicella outbreak, defined by NCIRD 2008

Herpes Zoster, no CSTE definition

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Clinical case definition

- An illness with acute onset of diffuse (generalized) maculo-papulovesicular rash without other apparent cause.

Laboratory criteria for diagnosis

- Isolation of varicella virus from a clinical specimen, OR
- Varicella antigen detected by direct fluorescent antibody test (DFA) OR
- Varicella-specific nucleic acid detected by polymerase chain reaction (PCR), OR
- Significant rise in serum anti-varicella immunoglobulin G (IgG) antibody level by any standard serologic assay.
- IgM tests are not reliable for routine confirmation or ruling out acute infection, but positive results suggest current or recent VZV infection or reactivation.

Case classification

Probable case

- An acute illness with
 - Diffuse (generalized) maculopapulovesicular rash, AND
 - Lack of laboratory confirmation, AND
 - Lack of epidemiologic linkage to another probable or confirmed case.

Confirmed case

- An acute illness with diffuse (generalized) maculopapulovesicular rash, AND
 - Epidemiologic linkage to another probable or confirmed case, OR
 - Varicella antigen detected by DFA test OR
 - Varicella-specific nucleic acid detected by PCR, OR
 - Significant rise in serum anti-varicella IgG antibody level by any standard serologic assay.
 - Note: Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation.
 - 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 confirmation is recommended for fatal cases and in other special circumstances.

Varicella death case definition and case classification

The following surveillance definitions are proposed by CSTE and use existing public health surveillance definitions for varicella.

Probable case

- A probable case of varicella which contributes directly or indirectly to acute medical complications which result in death.

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Confirmed case

- A confirmed case of varicella which contributes directly or indirectly to acute medical complications which result in death.

Varicella outbreak

- The occurrence of ≥ 5 varicella cases that are related in place and epidemiologically linked.
 - Cases should be considered as part of an outbreak if they occur within at least one incubation period (21 days) of the previous case-patient.
 - Surveillance should continue through two full incubation periods (42 days) after the rash onset of the last identified case-patient to ensure the outbreak has ended.

Testing and diagnosis

- The need for laboratory confirmation has grown because with the decline in varicella disease since the introduction of vaccine, fewer physicians have direct experience with wild type and breakthrough infections. Breakthrough infections are often atypical in appearance and may lack characteristic vesicles.
- The preferred diagnostic tests to confirm varicella infection include virus isolation and identification by methods discussed below.
- Varicella hospitalizations and deaths, as well as other severe or unusual disease, should routinely be laboratory confirmed by methods discussed below.
- Postvaccination situations for which specimens should be tested include:
 - Rash with more than 50 lesions occurring 7 or more days after vaccination to identify vaccine or wild type virus;
 - Suspected secondary transmission of the vaccine virus;
 - Herpes zoster in a vaccinated person; OR
 - Any serious adverse event.
- In an outbreak, it is recommended that three to five cases be laboratory confirmed, regardless of vaccination status.

Laboratory criteria for diagnosis

Viral detection is the laboratory method of choice for confirmation of varicella disease.

Viral specimen

- Direct detection by demonstration of VZV DNA by PCR tests, DFA, or isolation of VZV through viral culture from a clinical specimen.

Serum samples

- Four-fold or greater rise in serum varicella IgG antibody level between acute and convalescent serum by a quantitative serologic assay.

Note: A four-fold rise in IgG antibodies might not occur in vaccinated persons.

- Serologic test results that are positive for varicella-zoster IgM antibody by IgM capture assay.

Note: Testing for **IgM antibody is not recommended** because available methods lack sensitivity and specificity. False-positive IgM results are common in the presence of high IgG levels and IgM negative results do not rule out varicella.

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Specimen collection

Collection for PCR/culture or IgG

- Use a separate kit for each specimen.
- Carefully complete the history form, including the clinical information, test results, provider name and phone number; patient name, DOB and county of residence.
- Contact commercial laboratory regarding instructions for specimen shipment.
- Specimen kits are not routinely available from Wadsworth Center. For questions or special requests, please contact the NYSDOH Bureau of Immunization (518) 473 – 4437 or Wadsworth Center at (518) 474 – 4177.

Specimen source

- For PCR/culture: Clinical specimen from unroofed vesicle.
 - Note: Other specimen sources such as nasopharyngeal secretions, saliva, blood, urine, bronchial washings, and cerebrospinal fluid are considered less desirable sources than vesicular fluid and skin lesions since they are less likely to give positive results.
- For varicella paired IgG: serum.

Procedure

- Varicella Virus PCR/culture
 - Specimens are best collected by unroofing a vesicle, preferably a fresh fluid-filled vesicle, and then rubbing the base of a skin lesion with a polyester swab. Collecting skin lesion specimens from breakthrough cases can be especially challenging because the rash is often maculopapular with few or no vesicles.

A video demonstrating the techniques for collecting various specimen for varicella confirmation, including specimens from breakthrough cases, can be found at <http://www.cdc.gov/shingles/lab-testing/collecting-specimens.html#video>
- Varicella IgG serology
 - Obtain acute-phase specimen within 10 days of onset of symptoms.
 - Obtain convalescent-phase specimen at least 18 days after onset of symptoms or at least 14 days after acute specimen is obtained.

Mailing instructions for Wadsworth Center

- Please consult with the NYSDOH Bureau of Immunization prior to specimen shipment at (518) 473 – 4437.
- Varicella viral specimen, submission by overnight mail.

Note: PCR testing is done weekly by the viral laboratory. Please consult with the NYSDOH Bureau of Immunization prior to submitting specimen.

- Specimens must be delivered Monday – Friday (no weekends, no holidays).
- Put specimen kit into Styrofoam mailing box.
- Include 1 – 2 cold packs to keep specimen refrigerated.

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Overnight delivery should be mailed to:
*Virus Isolation Laboratory
David Axelrod Institute
Wadsworth Center, NYSDOH
120 New Scotland Ave
Albany, NY 12208*

- Varicella IgG serology, submission by overnight mail.

Note: The Wadsworth Center does not routinely provide diagnostic testing for varicella disease. Any paired specimen received by the serology laboratory will be sent to the CDC laboratory for testing.

- Put specimen kit into Styrofoam mailing box.
- Include 1 – 2 cold packs to keep specimen refrigerated.
- Specimens must be delivered Monday – Friday (no weekends, no holidays).

Overnight delivery should be mailed to:
*Diagnostic Immunology
David Axelrod Institute
Wadsworth Center, NYSDOH
120 New Scotland Ave
Albany, NY 12208*

Case investigation

Varicella-related deaths became nationally notifiable on January 1, 1999. Outbreaks of varicella are required to be reported as of 2008. Case based reporting will be required in the near future.

Demographics

- Name
- Address
- DOB/age
- Occupation/Setting
- Race
- Ethnicity
- Gender
- Date reported

Outcome

- Case survived or died
- Date of death

Reporting source

- Date Reported
- Source
- Provider
- County

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Clinical Information

- Rash onset date
- Rash severity measured by number of lesions
 - <50 (can be counted within 30 seconds)
 - 50 – 249
 - 250 – 499
 - ≥500 (confluence of lesions in many skin areas)
- Presence of other symptoms e.g. fever
- Treatment

Complications and/or hospitalizations

- Secondary bacterial infections of skin lesions
- Dehydration
- Pneumonia
- Central nervous system involvement
- Death
- Other

Laboratory results

- Lab name
- Date of specimen
- Type of tests
- Results/Confirmation

Vaccine history

- Type
- Manufacturer
- Number of doses
- Vaccination dates
- Lot number
- Reason if not vaccinated

Epidemiology

- Date investigation started
- Transmission setting
- Travel history
- Contact with known case
- Outbreak related

Line listing

- Create if at least five confirmed or probable cases.

Control measures

- A single primary infection/breakthrough varicella case is a potential source for an outbreak and should trigger intervention measures to prevent an outbreak.
- The circumstances surrounding outbreaks will vary and require modified approaches to meet practical limitations of the outbreak site.

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- Consider sending notification letters to those who have been exposed.
 - Distribution of the notification for a single case should consider the setting and the number of susceptibles that may be affected.
- Review immunization and clinical status of all contacts. Varicella immunity is defined as any of the following:
 - Documentation of age-appropriate vaccination with a varicella vaccine:
 - Preschool-aged children (i.e., aged >12 months): 1 dose.
 - School-aged children, adolescents, and adults: 2 doses.
 - Laboratory evidence of immunity or laboratory confirmation of disease;
 - Birth in the United States before 1980, except for HCP, pregnant women, and immunocompromised persons;
 - Diagnosis or verification of a history of varicella disease by a health-care provider; or
 - Diagnosis or verification of a history of herpes zoster by a health-care provider.
- Vaccinate persons without evidence of immunity.
 - Vaccine administered within 3 days of exposure to rash is most effective in preventing disease ($\geq 90\%$); however, vaccine administered within 5 days of exposure to rash is about 70% effective in preventing disease and 100% effective in modifying disease.
 - Children who are vaccinated with a first or second dose during an outbreak may immediately return to school after vaccination.
 - For outbreaks among pre-school aged children, a second dose of varicella vaccine is recommended to provide optimal protection for these children.
- In a varicella outbreak setting, ongoing exposures are likely and may continue for weeks and even months.
 - To limit disease transmission during an outbreak and to provide protection against subsequent exposures, ACIP recommends that all persons ≥ 12 months of age, without evidence of immunity to varicella, be offered vaccine even if more than 5 days have passed since first exposure to the disease.
- Vaccination with varicella vaccine should be considered as the primary intervention for all nonimmune contacts EXCEPT:
 - Pregnant women.
 - Immunocompromised persons.
 - Those who have recently received blood products.
- Indications for VariZIG
 - In 2012, VariZIG was approved by the FDA for postexposure prophylaxis of varicella for persons at high risk for severe disease who lack evidence of immunity to varicella and for whom varicella vaccine is contraindicated. It was previously available under an IND expanded access protocol.
 - The decision to administer VariZIG depends on whether the patient lacks evidence of immunity to varicella, whether the exposure is likely to result in infection, and whether the patient is at greater risk for varicella complications than the general population.
 - The patient groups recommended by CDC and ACIP to receive VariZIG include the following:
 - Immunocompromised patients without evidence of immunity
 - Newborn infants whose mothers have signs and symptoms of varicella around the time of delivery (i.e., 5 days before to 2 days after)

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- Hospitalized premature infants born at ≥ 28 weeks of gestation whose mothers do not have evidence of immunity to varicella
- Hospitalized premature infants born at < 28 weeks of gestation or who weigh $\leq 1,000$ g at birth, regardless of their mothers' evidence of immunity to varicella
- Pregnant women without evidence of immunity
- CDC recommends administration of VariZIG as soon as possible after exposure to varicella zoster virus and within 10 days.
- For high-risk patients who have additional exposures to varicella-zoster virus ≥ 3 weeks after initial VariZIG administration, another dose of VariZIG should be considered.
- VariZIG is produced by Cangene Corporation (Winnipeg, Canada) and is exclusively distributed by FFF Enterprises (Temecula, California). VariZIG can be ordered at the 24 hour telephone, (800) 843 – 7477 or online at: <http://www.fffenterprises.com/>.
- Complete information on the use of VariZIG can be found at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6228a4.htm>
- Management of persons who develop rash within 42 days after vaccination
 - These persons should be considered as having wild-type VZV unless otherwise demonstrated.
 - Rashes occurring within 42 days of vaccination can be due to either incubating wild-type VZV or the vaccine strain.
 - Transmission of varicella vaccine virus from a healthy person to a susceptible contact is very rare, particularly in the absence of rash in the vaccine recipient.
 - Higher risk for transmission of vaccine virus has been documented from children who have both rash following vaccination and an immunocompromising condition.
 - If vaccine-associated rash is suspected, every effort should be made to determine if the rash is due to vaccine virus or wild-type VZV.
 - The National VZV Laboratory at CDC has the capacity to distinguish between wild-type VZV and the vaccine (Oka/Merck) strain. For further information, please contact the NYSDOH Bureau of Immunization at (518) 473 – 4437.
 - If rash following vaccination occurs in a healthcare worker, or contact of an immunocompromised person, contact with persons without evidence of immunity that are at risk for severe disease and complications should be avoided until all lesions have crusted over or no new lesions appear within a 24 hour period.

Special considerations for residential (including correctional facilities) and health care settings

- Outbreaks in residential institutions can be reduced or prevented if new residents and staff who do not have evidence of immunity are vaccinated before moving in or beginning their employment at the institution.
- Use the varicella immunity guidance above to determine the susceptibles within an organization.
- Exclude or isolate the index case immediately.

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- Depending on the setting, isolation of persons with active disease consists of excluding, furloughing or cohorting persons who are ill and are likely to transmit varicella.
- Vaccinated persons who develop varicella may develop lesions that do not crust (macules and papules only).
- Isolate persons until no new lesions appear within a 24 hour period and/or for at least 5 days until vesicles dry and crust over.
- In residential and healthcare settings, airborne infection isolation (i.e., negative pressure rooms) and contact precautions should be followed for primary varicella, disseminated HZ or localized HZ in an immunocompromised person.
- If no air-flow rooms are available, varicella case-patients should be isolated in closed rooms and have contact with only those who are immune, including family and caregivers.
- HCP and facility staff that have 2 doses of varicella vaccine or meet the definition of immunity should be monitored daily from day 8 – 21 after exposure for development of disease symptoms.
 - Clinically compatible prodromal and varicella symptoms should be evaluated. Persons exhibiting these symptoms should be placed on sick leave immediately.
 - Unvaccinated HCP and staff without evidence of immunity who are exposed to varicella should be furloughed from day 8 to day 21 after exposure unless disease develops then until no longer contagious.
 - Offer varicella vaccine as soon as possible but within 3 – 5 days to persons without evidence of immunity.
 - It is recommended that unvaccinated HCP who are given their first dose of vaccine should also be furloughed as above to insure disease prevention.
 - Please note: Plans for furlough of unvaccinated HCP may be modified on a facility by facility basis. Any modifications must be made in collaboration with the NYSDOH Bureau of Immunization.
 - A second dose of vaccine is indicated 4 weeks after the first dose.
 - Administer vaccine as soon as possible. Varicella vaccine is still indicated >5 days postexposure to provide protection for future exposures.
 - Administer second dose of vaccine to HCP who have received the first dose as long as there has been 4 weeks since the first dose.
 - After vaccination, management is similar to 2 dose vaccine recipients.

Exclusion in the day-care, school, camp or college setting

- As a control measure, *exclusion of under-vaccinated children or adults* in these settings can be considered.
- Persons who develop clinically compatible symptoms of varicella should be excluded immediately and managed as the index cases above.
- Notification of exposure, vaccine recommendations and active surveillance efforts should continue during the occurrence of varicella in that setting.

Control measures for Herpes Zoster

Infection control measures depend on whether the patient with shingles is immunocompetent or immunocompromised, and whether the rash is localized or

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disseminated. In all cases, standard infection control precautions should be followed.

- If the patient is immunocompetent with a:
 - Localized rash, Standard Precautions should be followed.
 - Disseminated rash, Standard Precautions plus Airborne and Contact Precautions should be followed.
- If the patient is immunocompromised with a:
 - Localized rash, Standard Precautions plus Airborne and Contact Precautions should be followed, until disseminated infection is ruled out. Standard Precautions should then be followed.
 - Disseminated rash, Standard Precautions plus Airborne and Contact Precautions should be followed.

Reporting

- Individual cases of varicella are not reportable. Case based reporting is pending regulatory approval.
- Outbreaks and varicella related deaths should be reported to the LHD and the NYSDOH Bureau of Immunization.