

Varicella (Chickenpox) Investigation Guideline

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Varicella (Chickenpox)

Disease Management and Investigative Guidelines

CASE DEFINITION - Varicella (CDC 1999)

A. Clinical Description for Public Health Surveillance:

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

B. Laboratory Criteria for Case Classification:

- Laboratory confirmation of varicella cases is not routinely recommended but is recommended for fatal cases and in other special circumstances.
- Confirmatory tests include:
 - Isolation of varicella virus from a clinical specimen, or
 - Direct fluorescent antibody (DFA), or
 - Polymerase chain reaction (PCR), or
 - Significant rise in serum varicella immunoglobulin G (IgG) antibody level by any standard serologic assay

C. Case Classification:

- **Confirmed:** A case that is laboratory confirmed or a case that meets the clinical case definition and is epidemiologically linked to a probable or confirmed case.
- **Probable:** A case that meets the clinical case definition but is not laboratory confirmed or epidemiologically linked to a probable or confirmed case.

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

CASE DEFINITION – Varicella Death, Only (CDC 1998)

- **Confirmed:** A confirmed case of varicella which contributes directly or indirectly to acute medical complications which result in death.
 - **Probable:** A probable case of varicella which contributes directly or indirectly to acute medical complications which result in death.
-

A. Laboratory Testing:

- Collection: Two laboratory kits are available. Use Viral Transport Media (VTM) for culture or yellow topped blood tubes for serology.
- Specimen: Vesicle scrapings (culture) or blood (serology).
- Remarks: Specimens are not required to be sent to the State Public Health Laboratory (KDHEL); but they are equipped to test for varicella if requested. A Kansas Varicella Reporting form must be faxed to 1-877-427-7318 prior to every case being tested at the state laboratory.
- For additional information and/or questions concerning isolate collection, sample transport and laboratory kits call (785) 296-1620 or refer to online guidance at www.kdheks.gov/labs/packaging_and_shipping.html or

B. Bioterrorism Potential: None, but varicella (chickenpox) is part of the differential diagnosis when investigating a potential smallpox case.

C. Outbreak Definition:

- Five or more cases in a specific setting that are epidemiologically linked.

INVESTIGATOR RESPONSIBILITIES

A. Investigation Related Tasks and Activities:

Note: Investigational activities should begin as soon as possible. Control measures must be initiated \leq 24 hours of initial report.

- 1) Confirm diagnosis with appropriate medical provider or reporter * of case.
* Cases do not need to be diagnosed by a physician. Reports of varicella are accepted from parents, nurses, school staff and others.
 - Before contacting the patient, discuss what the patient has been told about his/her evaluation for disease.
 - Obtain information that supports clinical findings in case definition and information on the date of service or onset date of the symptoms.
 - Obtain information on any laboratory tests performed and results.
 - Routine laboratory testing is not recommended, but it is necessary for cases of death and may be needed in special circumstances.
 - If patient hospitalized, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
- 2) Conduct case investigation to identify potential source of infection.
- 3) Conduct contact investigation to locate additional cases and/or contacts.
 - Determine if case is involved in a high-risk occupation or if another special situation is involved (e.g. daycare provider or attendee, school attendee, direct patient care provider, institutionalized, pregnancy etc.).
 - Identify susceptible contacts (i.e., unimmunized children and staff) so effective prophylactic measures can be taken.
- 4) Identify whether the source of infection may be of major public health concern, such as an under-immunized population within the community.
- 5) Initiate control and prevention measures to prevent spread of disease.
 - Provide education that includes basic information about the disease and complications and ways to prevent transmission of illness
 - Provide or assure that appropriate prophylactic measures were received by susceptible contacts
 - If needed, work with appropriate administrative personnel to initiate work and/or school restrictions for high-risk cases and/or contacts (i.e., school or daycare provider/attendee, direct patient care provider).
 - Follow-up with case(s) and contacts to assure compliance with work and/or school restrictions
 - For case(s) identified in a school or healthcare setting, initiate active surveillance for a period of 21 days after the last confirmed or probable case was reported.

- 6) Report all confirmed, probable and suspect cases to the KDHE Office of Surveillance and Epidemiology at KDHE using established methods.

B. Notifications:

- 1) Report all cases by telephone to the Local Health Officer, the local on-call epidemiologist and KDHE (1-877-427-7317) within 4 hours of initial report.
- 2) As appropriate, use the notification letter and the disease fact sheet to notify the case, contacts and other individuals or groups.

EPIDEMIOLOGY

Chickenpox has a worldwide distribution with increased prevalence noted in temperate climates. It occurs year round with the most frequent incidence in the winter and early spring. Most U.S. cases of varicella occur in children < 12 years of age. Recent changes in the distribution of disease are due to an increasing proportion of children receiving vaccination. As vaccine coverage increases and the incidence of wild-type varicella decreases, a higher proportion of varicella cases occur in immunized people as breakthrough disease. CDC's active surveillance sites report breakthrough disease at an increased percentage of all cases, from 4% in 1995 versus approximately 25% in 2000. Do not confuse this as an increasing rate of breakthrough disease or as evidence of vaccine failure. In areas with high vaccine coverage, the rate of disease has decreased by approximately 85% from 1995 to 2004 as a result of the varicella vaccine.

DISEASE OVERVIEW

A. Agent:

Varicella-zoster virus is a member of the herpesvirus family.

B. Clinical Description:

Mild **prodrome** may precede the onset of a rash, with adults experiencing 1 to 2 days of fever and malaise. In children, rash is often the first sign of disease.

The **rash** is generalized, pruritic, and rapidly progresses from macules to papules to vesicular lesions that are 1 to 4 mm in diameter. The rash usually appears first on the scalp, followed by the trunk and then the extremities, with the highest concentration on the trunk (centripetal distribution). Lesions can occur on the mucous membranes of the oropharynx, respiratory tract, vagina, conjunctiva and cornea. The vesicles are superficial and delicate, with clear fluid on an erythematous base. Vesicles rupture or become purulent before they dry and crust. Successive crops appear over several days, with lesions present in several stages of development. Healthy, susceptible children usually have 200-500 lesions in 2 to 4 successive crops.

The **clinical course** in healthy children is generally mild, with malaise, pruritus (itching) and fever up to 102° F for 2 to 3 days but no respiratory or gastrointestinal symptoms. Adults may experience more severe illness. Complications do vary with age occurring most frequently with immunocompromised persons, pregnant women and adults. Complications are infrequent among healthy children, but do occur more frequently with those

over 15 years of age and infants younger than 1 year of age. The most common complications of varicella are secondary bacterial infection of skin lesions by *Staphylococcus* or *Streptococcus spp.*, dehydration, pneumonia and central nervous system involvement. The overall case-fatality rate in the United States is 2/100,000 but rises to 30/100,000 in adults. Neonates developing varicella between ages 5-10 days, and those whose mothers develop the disease between 5 days prior or within 2 days after delivery are at increased risk of developing severe generalized varicella with a fatality rate of up to 30%. Immunocompromised persons have a high risk of disseminated disease.

C. Reservoirs: Humans.

D. Mode(s) of Transmission:

Transmission occurs by direct person-to-person contact from infected respiratory tract secretions. Transmission may also occur by respiratory contact with airborne droplets or by direct contact or inhalation of aerosols from vesicular fluid or skin lesions of acute varicella or zoster. While highly contagious, varicella is less contagious than measles, but more so than mumps and rubella. Secondary attack rates among susceptible household contacts of persons with varicella are as high as 90%.

E. Incubation Period:

The incubation period is usually 14-16 days after exposure with a range of 10-21 days. The incubation period may be prolonged for as long as 28 days in those who were administered varicella zoster immune globulin (VZIG).

F. Period of Communicability:

The period of communicability is 1 to 2 days before rash onset up until lesions have formed crusts, usually within 5 days. Transmission has occurred 5 days before onset, and it may also be prolonged in an immunocompromised case.

G. Susceptibility and Resistance:

Infection confers long-term immunity and secondary attacks are rare. However, viral infection remains latent and disease may recur years later as herpes zoster in a proportion of older adults and occasionally in children. A second occurrence of chickenpox is not common, but it can happen particularly in immunocompromised persons.

Note: A varicella-like rash in a vaccinated person occurring < 7 or > 42 days after vaccination is a wild-type virus and a rash 7- 42 days post-vaccination may be due to either wild- or vaccine-type virus. Disease caused by vaccine can only be confirmed by strain differential testing involving PCR analysis.

Transmission of vaccine-type virus to contacts is extremely rare and has never been documented from a vaccinated person without a vaccine rash.

Breakthrough disease with wild-type virus > 42 days after vaccination is a milder disease with a shorter duration of illness. Breakthrough disease with ≤ 50 skin lesions is less contagious than varicella in unvaccinated persons with ≥ 50 lesions. Breakthrough varicella with >50 lesions may be just as contagious as varicella in unvaccinated persons.

H. Treatment (American Academy of Pediatrics, 2006 Red Book):

Antiviral drugs have a limited window of opportunity to affect the outcome of varicella infection. Oral acyclovir is not recommended for routine use in otherwise healthy children. Administration within 24 hours of the onset of rash results in only a modest decrease in symptoms. Oral Acyclovir should be considered for otherwise healthy people at increased risk for moderate to severe varicella, including: those > 12 years of age, those with chronic skin or pulmonary disorders, those receiving chronic salicylate therapy or short, intermittent or aerosolized corticosteroids or in secondary household cases in which the disease usually is more severe than in the primary case.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Standard investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
- 3) Collection of clinical and vaccine status data:
 - Pre-existing medical conditions
 - Medications
 - Dates of rash onset and duration
 - Other symptoms and date(s) of onset
 - Hospitalizations
 - Complications and outcomes
 - History of varicella disease or vaccine
 - For vaccine: number doses, dates, type, manufacturer, lot number
 - If not vaccinated, reason
- 4) Determination of risk factors and transmission settings
- 5) Investigation of epi-links among cases (cluster, household, co-workers, etc).

Standard investigation **includes** completion of the General Investigation Form and Varicella Supplemental Form. Further investigative activity should include:

A. Case Investigation - Identify Potential Source of Infection:

Focus within the incubation period of 10-21 days prior to rash onset and on potential sources of infection:

- Exposure to others with rash-like illness in or outside of household (i.e., neighbors, schoolmates). Obtain dates of exposure, relationship to case, transmission setting, and name with date of birth of possible sources.
- Examination of epi-links. With name and date of birth of possible sources search for previous reports filed with state. Note the state investigation ID number for cases previously reported. Cases not previously reported should be investigated as a suspect case and reported.
- Out-of-state travel up to 3 weeks prior to onset. Obtain dates, locations and modes of transportation.
- Associated with childcare, school, residential facility or institution. Obtain dates and locations.

B. Contact Investigation – Identify Exposed Individuals / Populations:

- Examine the case's association with childcare, school, residential facilities or institutions. Obtain dates and locations.
- Consider the case's occupation and other activities, especially involvement in childcare or direct patient care. Obtain dates and locations.
- Consider the following types of contacts during the investigation of those individuals in need of quarantine and/or antibiotic prophylaxis, they include:
 - General contacts: Household, close contacts of a case.
 - Daycare contacts: All direct caregivers and room/classmates of case.
 - School contacts: Close personal contacts, educators and classmates.
 - Work contacts: Coworkers sharing the same workspace of a case.
 - Healthcare workers: All direct caregivers of a case.
- Create a line listing of primary contacts.
- Collect information on each primary contact's immune status.
 - Contacts with a positive disease history can be considered immune.
 - Contacts with a single dose of varicella vaccine are considered immune, but a second dose should be recommended.
 - Contacts with negative or unknown history are assumed susceptible
- Follow-up with susceptible contacts as indicated in Contact Management.
- Any symptomatic contacts are considered a confirmed case based on epi-link; investigate and report to the state; initiate any work, school, or daycare restrictions.

C. Isolation, Work and Daycare Restrictions

- K.A.R 28-1-6 for Chickenpox (varicella):
 - Each infected person shall remain in isolation for 6 days after the first crop of vesicles appears or until the lesions are crusted, whichever comes first.
 - Each susceptible contact of an infected person in a school, child care facility or family day care home shall be vaccinated within 24 hours of notification to the secretary or excluded from the school, child care facility, or family day care home until 21 days after the onset of the last reported illness in the school, child care facility or family day care home.
- Varicella cases should be excluded from school, daycare or work and voluntarily remain in isolation at home for 6 days after the first crop of vesicles appears or until the lesions are crusted, whichever comes first.
- Susceptible varicella contacts who are students or staff and who are not immunized should be excluded from school 21 days after the last case.
- Hospitalized cases should be placed in isolation with airborne and contact precautions and be attended by or visited only by persons who are immune to varicella until all of the case's vesicles have formed scabs.
- **Note:** For the management of herpes zoster case-patients as potential sources for varicella refer to the Managing Special Situations Section.

D. Case Management, Including Follow-up of cases:

- Follow-up is indicated to assure compliance with control measures (i.e., voluntary isolation) and work, school or daycare restrictions.
 - Case isolation inside a household is not usually feasible but cases should still refrain from contact outside of the household 6 days after the first crop of vesicles appears or until the lesions are crusted.
- If necessary, reference the Kansas Community Containment Toolbox for templates concerning isolation measures.

E. Contact Management, Including Protection of Contacts:

- Prophylaxis with active and/or passive immunization strategies:
 - Strategies to use vaccine for active immunization of a significant number of contacts or to use VZIG for passive immunization should be made with the assistance of the local medical officer and the State Immunization Program, with coordination through the Office of Surveillance and Epidemiology.
 - Active immunization (Varicella Vaccine): All susceptible adults and children should be considered for varicella vaccination.
 - May help prevent or modify disease progression if given with 3-5 days of exposure.
 - Administer varicella vaccine to susceptible contact(s) age ≥ 12 months of age, unless vaccine is contraindicated.
 - Non-immune contacts that are unable to receive varicella vaccine within 3-5 days of exposure should isolate themselves at home.
 - Varicella vaccination of non-immune childcare or school contacts may be recommended even if the time since exposure is > 5 days, to provide protection from future exposure, especially if there is ongoing transmission in that setting.
 - Passive immunization using varicella zoster immune globulin (VZIG):
 - May help prevent or modify disease progression if given ≤ 96 hours after exposure.
 - Patients without evidence of immunity to varicella who are at high risk for severe disease and complications, who have been exposed to varicella, and from whom informed consent has been obtained, are eligible to receive VZIG as an Investigational New Drug (IND) Application Product under an expanded access protocol. The patient groups recommended by ACIP to receive VZIG include the following:
 - 1) Susceptible pregnant women, after consultation with OB/GYN;
 - 2) Newborn infant of a mother who had onset of varicella within 5 days before delivery or within 2 days after delivery;
 - 3) Hospitalized premature infant (>28 week gestation) whose mother has no history of chickenpox or serologic evidence of immunity;
 - 4) Hospitalized premature infants (<28 week gestation or $<1\ 000$ g), regardless of maternal history;
 - 5) Immunocompromised, susceptible patients.
 - Since VZIG may prolong the incubation period by ≥ 1 week, persons

receiving VZIG are followed-up 28 days after exposure.

Note: The VZIG product used in U.S. is VairZIG. It can be obtained 24 hours a day from the sole authorized U.S. distributor (FFF Enterprises) at 1-800-843-7477 or at <http://www.fffenterprises.com> (as of June 2007).

- Provide education to susceptible contacts on the benefits of vaccination, incubation period and symptoms of disease and precautions to take if symptoms develop.
- All contacts should be followed for signs and symptoms of varicella after 21 days from last exposure date.
- Follow-up of susceptible contacts that have been excluded from daycare, school, or work is indicated, to determine compliance of control measures and to determine if they have become infected

F. Environmental Measures:

- Disinfect all items that have been soiled with discharges of nose, throat and lesions of a case.

G. Education:

To help prevent complications associated with varicella disease instruct cases and/or their caregivers to:

- Keep fingernails short and control scratching of lesions.
- Alert cases to possible complications: viral pneumonia, encephalitis, secondary infections, and Reye syndrome.
- Children with varicella should not receive aspirin or medication containing salicylate, which is associated with development of Reye syndrome.

MANAGING SPECIAL SITUATIONS

A. Outbreak Investigation:

- Notify KDHE immediately, 1-877-427-7317.

B. School Worker or Attendee, including day-care facilities:

- Coordinate activities with school nurse and school administration.
- Identify potential contacts and obtain information on history of varicella or vaccination status for varicella.
- With local health officer and state Immunization Program to develop strategies for immunization of susceptible contacts.
- Initiate any work or school restrictions for case and susceptible contacts.
- Follow-up with contacts 21 days after last exposure.
- Reference K.A.R. 28-1-20 for immunization requirements for the current school year; on-line at: <http://www.kdheks.gov/immunize/schoolInfo.htm>

C. Health Care Setting:

- **Health Care Workers (HCP) – MMWR 2007**
 - Routine testing for varicella immunity after 2 vaccine doses is not recommended.

- Health Care Providers (HCP) who have received 2 doses of vaccine and who are exposed should be monitored daily during days 10-21 after exposure to determine clinical status.
 - HCP should report fever, headache, or other constitutional symptoms and atypical skin lesions immediately.
 - HCP should be placed on sick leave immediately if symptoms occur.
- HCP who have received 1 dose of vaccine and are exposed should receive the 2nd dose of single-antigen varicella vaccine within 3-5 days after exposure to rash. After vaccination, management is similar to that of 2-dose vaccine recipients.
- Unvaccinated, exposed HCP with no other evidence of immunity are furloughed during the potentially infective period of days 10-21 after last exposure. Post-exposure vaccinations should be administered as soon as possible.
- **Patients (American Academy of Pediatrics, 2006 Red Book):**
 - VariZIG should be administered to appropriate candidates. If VariZIG is not available, IGIV is recommended.
 - Discharge all exposed susceptible patients as soon as possible.
 - All exposed susceptible patients who cannot be discharged should be placed in isolation from day 10 to 21 after exposure to the index patient. For those who received VariZIG, isolation should continue until day 28.

D. Herpes zoster (HZ) case-patients as potential sources of varicella:

- **School settings.**
 - Immunocompetent persons with HZ can remain at school as long as the lesions are completely covered. Stress personal hygiene with the washing of hands after lesions are touched and the avoidance of close contact with others. If the lesions cannot be completely covered or close contact avoided, children and staff should be excluded from the school setting until lesions have crusted over.
 - If a person has disseminated HZ, he or she should be excluded from school until lesions have crusted over (similar to the management of varicella case-patients).
- **Residential institution and healthcare settings.**
 - For immunocompetent residents or patients with localized HZ, lesions should be completely covered and contact precautions should be followed.
 - For immunocompromised persons with HZ or persons with disseminated HZ, the management is similar to that of varicella case-patients.
 - For healthcare personnel who develop HZ, lesions should be completely covered with a taped dressing and, in addition to standard contact precautions, the healthcare worker should be removed from direct care of patients at high risk of severe complications from varicella. A healthcare worker with disseminated HZ should be excluded from work until lesions have crusted over.

DATA MANAGEMENT AND REPORTING TO THE KDHE

- A. Organize, collect and report data with the “General Investigation Form(s)” and “Varicella Supplemental Form.”
- B. Report data electronically via KS-EDSS or by fax, include:
- At a minimum, data collected during the investigation that helps to confirm or classify a case. (For epi-linked cases, please include the KS-EDSS investigation ID of the related case.)
 - All information collected on the General Investigation and supplemental forms.
 - All varicella death investigations require the completion of the Varicella Death Investigation Worksheet which is part of the “Varicella Supplemental Form.”

Note: Two probable cases that are epi-linked are reported as confirmed cases.

ADDITIONAL INFORMATION / REFERENCES

- A. **Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.
- B. **Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.
- C. **Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: http://www.cdc.gov/ncphi/diss/ndss/casedef/case_definitions.htm
- D. **Quarantine and Isolation:** Kansas Community Containment Isolation/ Quarantine Toolbox Section III, Guidelines and Sample Legal Orders <http://www.waldcenter.org/Quarantine%20and%20Isolation%20Information%20for%20Health%20Officers.pdf>
- E. **Kansas Regulations/Statutes Related to Infectious Disease:** <http://www.kdheks.gov/epi/regulations.htm>
- F. **Prevention of Varicella.** Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR June 22, 2007 / 56(RR04); 1-40. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5604a1.htm>
- G. **Strategies for the Control and Investigation of Varicella Outbreaks 2008.** (CDC): <http://www.cdc.gov/vaccines/vpd-vac/varicella/outbreaks/manual.htm>
- H. **Pink Book:** Epidemiology and Prevention of Vaccine-Preventable Diseases. Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>
- I. **Manual for the Surveillance of Vaccine-Preventable Diseases:** Available at: <http://www.cdc.gov/vaccines/pubs/surv-manual/default.htm> .
- J. **Additional Information (CDC):** <http://www.cdc.gov/health/default.htm>

Kansas Disease Investigation Guidelines

General Investigation Form

Investigation Information		
Case Type: <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	Disease Name: _____	
Classification: <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	KS-EDSS Investigation ID: _____	
Outbreak: <input type="checkbox"/> Yes <input type="checkbox"/> No	Outbreak Name: _____	Outbreak #: _____
Onset Date: _____	Diagnosis Date: _____	Report Date: _____
Assigned to (Investigator): _____	Patient Died: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
Name Type: <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Sex: <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
Race: <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
Hispanic / Latino Ethnicity: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Date of Birth: _____	Age: _____	Age Unit: <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Work / Occupation or School / Grade		
Worksites / School: _____		
Occupations / Grade: _____		
Travel History		
1st	Destination: _____	Depart Date: _____ Return Date: _____
2nd	Destination: _____	Depart Date: _____ Return Date: _____
3rd	Destination: _____	Depart Date: _____ Return Date: _____
4th	Destination: _____	Depart Date: _____ Return Date: _____

Supplemental Laboratory Report Form

Lab Reports

Laboratory Name: _____

Lab Report Date: _____

Ordering Provider Name: _____

Phone: _____

Facility: _____

Specimen Accession Number: _____

Specimen Collection Date: _____

Organism Name: _____

Organism Species: _____

Organism Serogroup: _____

Organism Serotype: _____

PFGE Results

Pattern 1 KS: _____

Other State: _____

CDC: _____

Pattern 2 KS: _____

Other State: _____

CDC: _____

Pattern 3 KS: _____

Other State: _____

CDC: _____

Additional Results Information

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

Supplemental Contact Form

Contacts

Last: _____ **First:** _____ **Middle:** _____

Street: _____ **City/State:** _____ **Zip:** _____

Evening Phone #: _____ **Daytime Phone #:** _____ **E-mail:** _____

Sex: Failure to Report Female Male Other Transexual Unknown

Race: American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Unknown

Hispanic / Latino Ethnicity: Yes No

Date of Birth: _____ **Age:** _____ **Age Unit:** Days Weeks Months Years

Worksites / School: _____

Occupations / Grade: _____

Exposure Information

Contact Type: Household Sexual Other: _____ **Partner / Cluster Code:** _____

Date of First Exposure: _____ **Date of Last Exposure:** _____ **Frequency:** _____

Nature of Exposure: _____ **Comments:** _____

Testing and Treatment Information

Clinic Code: _____ **Examination Date:** _____

Examination Test: _____ **Examination Result:** _____

Prophylaxis/empiric treatment date: _____ **Drug / Dosage:** _____

Provider (Name / Facility): _____

Disposition and Diagnosis Information

Initiation Date: _____ **Disposition Date:** _____ **Disposition:** _____

Diagnosis: _____ **Referral Type:** Patient Provider **Post-test Counseled :** Yes No

Currently Assigned To: _____ **Follow-up Date:** _____

Risk Factors

Pregnant: Yes No **If Yes, # of Weeks:** _____

Risk factors for complications in contact: None Pregnant Woman HIV Seropositive Unimmunized Index case is a super-spreader

Child younger than 5 Age > 65 Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

Varicella Supplemental Form

Use Also For Varicella Death Investigation

Kansas Department of Health and Environment

Epidemiologic Case History

* indicates required fields

Case Type* <i>Human Case Non Human Case</i>	Classification* <i>Confirmed Not a Case Probable Suspect Deleted Unknown</i>
Supplemental Form Status <i>Not Done Form Complete Form in Progress Form Approved Form Sent to CDC</i>	
Report Date* <small>mm/dd/yyyy</small>	

Date Investigation Started <small>mm/dd/yyyy</small>
--

Patient Demographic Information

* indicates required fields

Last Name*	First Name*	Middle Name	Name Type*	Age
Age Unit <i>Days Weeks Months Years</i>		Date of Birth <small>mm/dd/yyyy</small>		

Race* <small>(Check all that apply)</small>				
<i>American Indian or Alaska Native</i>	<i>Asian</i>	<i>Black or African American</i>		
<i>Native Hawaiian or Other Pacific Islander</i>	<i>White</i>	<i>Unknown</i>		

Ethnicity* <i>Hispanic or Latino Not Hispanic or Latino Unknown</i>

Sex* <i>Failure to Report Female Male Other Transsexual Unknown</i>
--

Street Address			
City	County	State	Zip

Evening Phone <small>###-###-####</small>	Daytime Phone <small>###-###-####</small>
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Occupation

Person Providing Report

Name of Reporting Facility*

Clinical Data

Any Rash? <i>Yes No Unknown</i>	Rash Onset Date <small>mm/dd/yyyy</small>	Rash Duration <small>0-30 Days; 99=Unknown</small>	Rash Type <i>Generalized Localized/dermatomal Unknown</i>
Immunocompromised? <i>Yes No Unknown</i>			
Lesion Severity <i>Mild (few scattered lesions on the body) Moderate (number of lesions between mild and severe)</i> <i>Severe (lesions numerous enough to almost touch, or normal skin is difficult to see between lesions)</i>			
Fever? <i>Yes No Unknown</i>	If Recorded, Highest Measured Temperature		Fever Duration <small>0-30 Days; 99=Unknown</small>

Complications

Pneumonia? <i>Yes No Unknown</i>	Encephalitis? <i>Yes No Unknown</i>	Cerebellar Ataxia? <i>Yes No Unknown</i>	Skin Infection? <i>Yes No Unknown</i>
Other Secondary Infection? <i>Yes No Unknown</i>	Thrombocytopenia? <i>Yes No Unknown</i>	Other Complications? <i>Yes No Unknown</i>	If Yes, Please Specify
Death <i>Yes No Unknown</i>		If Death, Date <small>mm/dd/yyyy</small>	

Vaccine History

Vaccinated? <small>(Received varicella-containing vaccine?)</small> <i>Yes No Unknown</i>	Number of doses received ON or AFTER 1st birthday		
Vaccination Date <small>mm/dd/yyyy</small>	Vaccine Type <small>Select One</small>	Vaccine Manufacturer <small>Select One</small>	Lot Number

If Not Vaccinated, What was The Reason?		
<i>Religious Exemption</i>	<i>Medical Contraindication</i>	<i>Philosophical Objection</i>
<i>Lab Evidence of Previous Disease</i>	<i>MD Diagnosis of Previous Disease</i>	<i>Under Age For Vaccination</i>
<i>Parental Refusal</i>	<i>Other, Specify _____</i>	<i>Unknown</i>

Epidemiologic Information

Epi-linked to Another Confirmed or Probable Case? <i>Yes No Unknown</i>	Case ID of epi-linked case
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Pregnant Women

If the case was female, was she pregnant? <i>Yes No Unknown</i>			
Number of Trimester at Onset of Illness <i>First Second Third</i>	OR	Number of Gestation Weeks at Onset of Illness <small>(1=1 Week, 2=2 Weeks, 3=3 Weeks, Etc.-continuing up to 45 weeks)</small>	
Prior Evidence of Serological Immunity? <i>Yes No Unknown</i>	If Yes, Year of Test <small>(YYYY)</small>	OR	Age of Patient at Time of Test <small>(0-50; 99-Unknown)</small>

Pregnant Women cont.

Was Previous Varicella Serologically Confirmed? <i>Yes No Unknown</i>	If Yes, Year of Disease (YYYY)	OR	Age of Patient at Time of Disease (0-50; 99-Unknown)
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Varicella Death Investigation Worksheet

Past Medical History

History of Previous Varicella? <i>Yes No Unknown</i>	If Yes, Age When Ill
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Varicella Vaccine History? <i>Vaccinated Not Vaccinated Unknown</i>

If Ever Vaccinated, Date 1 (Varicella containing vaccine) <small>mm/dd/yyyy</small>	If Ever Vaccinated, Date 2 (Varicella containing vaccine) <small>mm/dd/yyyy</small>
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If Not Vaccinated, Was there a Contraindication to Vaccination? <i>Yes No Unknown</i>	If Yes, specify:
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Pre-existing Condition? <i>Yes No Unknown</i>	If Yes, Pre-existing Condition <small>(Check All that Apply)</small> <i>Asthma</i> <i>Cancer (Specify) _____</i> <i>Chronic Dermatologic Disorder (Specify) _____</i> <i>Chronic Lung Disease (Specify) _____</i> <i>Chronic Renal Failure</i> <i>Diabetes Mellitus</i> <i>HIV+/AIDS</i> <i>Immune Deficiency (Type) _____</i> <i>Pregnancy</i> <i>Transplant Recipient (Organ) _____</i> <i>Tuberculosis</i> <i>Other Autoimmune Disease (e.g. Lupus, Rheumatoid Arthritis) (Specify) _____</i> <i>Other (Specify) _____</i>
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For Children <1 Year Old, Did Their Mother Have a History of Previous Varicella? <i>Yes No Unknown</i>

Did the Decedent Take Any Drugs Listed In This Section During The Month Prior to Rash Onset? <i>Yes No Unknown</i>
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If Yes, <small>(Check all that apply)</small> <i>Steroids, Systemic (Specify name and dose) _____</i> <i>Steroids, Inhaled</i> <i>Aspirin</i> <i>Chemotherapy</i> <i>Immunosuppressants</i>

Illness Prior to Death

Rash Onset <small>mm/dd/yyyy</small>	Was patient hospitalized? <i>Yes No Unknown</i>	Date admitted <small>mm/dd/yyyy - If Obtainable, Please Attach a Copy of the Hospital Discharge Summary</small>
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Complications

Secondary Infection? <i>Yes No Unknown</i>	If Yes, Secondary Infection <small>(Check all that apply)</small> <i>Strep (Specify Below) Staph Mixed Other (Specify) _____</i>
--	---

If Strep From Above, Specify
Group A Beta-hemolytic Other Type _____ Unknown Type

If Secondary Infection, Indicate Type
(Check all that apply)

<i>Chancroid</i>	<i>Chlamydia</i>	<i>Abscess</i>
<i>Gonorrhea (uncomplicated)</i>	<i>Cellulitis</i>	<i>Resistant Gonorrhea</i>
<i>Impetigo/Infected Skin Lesions</i>	<i>Non-Gonococcal Urethritis</i>	<i>Lymphadenitis</i>
<i>Mucopurulent Cervicitis</i>	<i>Necrotizing Fasciitis</i>	<i>Pelvic Inflammatory Disease (Syndrome)</i>
<i>Osteomyelitis</i>	<i>Granuloma Inguinale</i>	<i>Sepsis/Septicemia</i>
<i>Lymphogranuloma Venereum</i>	<i>Septic Arthritis</i>	<i>Primary Syphilis</i>
<i>Toxic Shock Syndrome</i>	<i>Secondary Syphilis</i>	<i>Other (Specify) _____</i>
<i>Early Latent Syphilis</i>	<i>Latent Syphilis, Unknown Duration</i>	<i>Late Latent Syphilis</i>
<i>Late Syphilis with Symptomatic Manifestations</i>	<i>NeuroSyphilis</i>	<i>Congenital Syphilis</i>
<i>Genital Warts</i>	<i>Herpes</i>	<i>HIV</i>
<i>AIDS (Syndrome)</i>		

Pneumonia/Pneumonitis? <i>Yes No Unknown</i>	If Yes, Etiology If Known:
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Neurologic Complications? <i>Yes No Unknown</i>	If Neurologic Complications, What Type <small>(Check all that apply)</small> <i>Cerebellar Ataxia Encephalitis Other (Specify) _____</i>
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Did the patient have Reye Syndrome? <i>Yes No Unknown</i>	Did the patient have Congenital Varicella Syndrome? <i>Yes No Unknown</i>	Other Complications? <i>Yes No Unknown</i>
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If Yes, specify:

Treatment-Medications

Select Medication Taken	Medication	Dose	Date Started:	Duration Days
<small>Y=Yes</small>		<small>mg_day</small>	<small>mm/dd/yyyy</small>	
	Acyclovir Oral			
	Acyclovir IV			
	Famciclovir			
	Valacyclovir			

Select Other Medications Taken
(Check all that apply)

Aspirin Non-Steroidal Anti-inflammatory Drugs (e.g. ibuprofen)
Varicella Zoster Immune Globulin (VZIG) Other (Specify) _____

If Varicella Zoster Immune Globulin, Date Administered <small>mm/dd/yyyy</small>	Dose (U's)
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Source Data

Source <i>Close Contact With Person With Known or Suspected Infection, 10-21 Days Before Rash Onset</i> <i>Unknown</i>	Source Had <i>Shingles Varicella Unknown</i>	Age of Source <small>999=UNK</small>
Age Unit <i>Days Weeks Months Years</i>	Varicella Vaccine History of Source <i>Source Vaccinated Source Not Vaccinated</i>	
If Not Vaccinated, Source had Contraindication to Vaccination? <i>Yes No Unknown</i>	Specify	
For Transmission Within The Home <i>Transmission From Family Member by Adoption Transmission From Family Member Biologically Related</i>		

Date: _____

Dear Parent / Caregiver:

There are _____ children/students attending _____ who have chickenpox, also known as varicella. Although, this is usually not a serious illness, it causes children to miss school, childcare or preschool while they have a rash. In addition, parents miss work to stay home to care for their children. In some children chickenpox may cause more serious illness leading to hospitalization and may even result in death.

A vaccine that can prevent chickenpox (varicella vaccine) is available and has been shown to be safe for persons 12 months of age or older. This vaccine is recommended for anyone who has not had chickenpox. If varicella vaccine is given within three days of exposure to chickenpox, and possibly up to five days, it may prevent chickenpox or reduce the severity of disease. At least, one dose of varicella vaccine is required for school entry in Kansas for all children through grade 9. Kindergarten entry requires two doses. This requirement is waived if a child has history of prior varicella disease that was diagnosed by a physician.

We recommend you contact your child's healthcare provider as soon as possible to obtain varicella vaccine for your child if he/she has not had chickenpox disease or has not been vaccinated with varicella vaccine. Please contact your local health department about vaccination if your child does not have a health care provider. Adults having contact with children/students attending _____ who have not had chickenpox, should consider receiving varicella vaccine.

If your child develops chickenpox, he/she should not attend childcare or school until the rash has crusted over. Please notify school/childcare personnel that your child has chickenpox.

An information sheet about chickenpox and the varicella vaccine is included for your information.

Thank you for your cooperation.

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

Public Health Fact Sheet

Varicella (Chickenpox)

What is chickenpox?

Chickenpox is a highly contagious disease caused by the varicella virus, a type of herpes virus.

What are the symptoms?

Early symptoms include a sudden onset of a mild fever and feeling tired and weak. An itchy, blistering rash then appears, usually starting on the chest, back or abdomen and spreading to the face, arms and legs. In severe cases, the blisters appear on all parts of the body, including the scalp and lining of the mouth, throat and eyelids. The blisters do not appear at the same time and tend to develop in “crops” that take from 1 to 4 days to form, break, and crust over. Mild or unapparent infections occasionally occur in children. The disease is usually more serious in adults than in children.

How is chickenpox spread?

Chickenpox spreads by direct contact with infected people, contact with objects freshly soiled by the fluid from chickenpox blisters or airborne droplets from coughs and sneezes of infected people. A person with chickenpox is contagious 1-2 days before the rash appears and until all the blisters have formed scabs (usually about 5 days). Contagiousness may be prolonged in people with impaired immunity.

Who gets chickenpox?

Anyone who has never had chickenpox and has never been vaccinated can get chickenpox. Occasionally, people that have been vaccinated may still get chickenpox if exposed, but the disease is usually much milder and goes away sooner. Babies younger than 12 months old, because they are too young to be vaccinated may also get chickenpox.

How is chickenpox treated?

Consult with a doctor early if you suspect you or a household member has chickenpox. The disease is usually mild in children but sometimes complications can occur, including: bacterial infections of the skin and soft tissues in children and pneumonia in adults. Chickenpox may be particularly severe in newborns, pregnant women, and can be fatal for those with weakened immune systems. Acyclovir, an anti-viral medication, may be used as a treatment for chickenpox. However, because chickenpox tends to be mild in healthy children, most physicians do not believe that it is necessary to prescribe this medication.

This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention's Health and Safety topic fact sheets.

How can you prevent chickenpox?

An initial dose of chickenpox vaccine is recommended at 12-18 months of age and a total of two doses, given at a minimum of 4 weeks apart, are recommended for all children who have had no history of chickenpox illness. State regulations require two doses for kindergarten entry and one dose for children in grades 1-9 unless there is history of varicella disease documented by a licensed physician.

Are there any other health regulations for people with chickenpox?

Local health or schools officials will exclude infected children from school and childcare until all of the blisters are crusted and scabbed or until six days after the first crop of blisters occur, whichever comes first. Children who have not had chickenpox or the vaccination may have 24 hours to receive vaccine or also be excluded from school or childcare from days 10-21 following exposure to a case of chickenpox.

Where can I get more information?

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section at (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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