

Notification Timeline:

From Lab/Practitioner to Public Health: Within 48 hours.

From Public Health to Ministry of Health: Immediate for known outbreaks. Individual cases are not reportable to the Ministry.

Public Health Follow-up Timeline: Less than 48 hours for prenatal and neonatal cases and contacts.

Information**Table 1: Case Definition (Public Health Agency of Canada, 2008)**

| | |
|-----------------------|--|
| Confirmed case | <p>Clinical evidence of illness¹ and laboratory confirmation of infection:</p> <ul style="list-style-type: none"> • isolation or direct antigen detection of varicella-zoster virus (VZV) from an appropriate clinical specimen <p>OR</p> <ul style="list-style-type: none"> • detection of VZV DNA <p>OR</p> <ul style="list-style-type: none"> • seroconversion or a significant rise (e.g., fourfold or greater) by any standard serologic assay in varicella-zoster IgG titre between acute and convalescent sera <p>OR</p> <ul style="list-style-type: none"> • positive serologic test for varicella-zoster IgM antibody <p>OR</p> <ul style="list-style-type: none"> • clinical evidence of illness¹ in a person with an epidemiologic link to a laboratory-confirmed case of chickenpox or VZV infection. |
| Probable Case | <p>Clinical evidence of illness¹ in the absence of laboratory confirmation or epidemiologic link to a laboratory confirmed case.</p> |

¹Clinical illness is characterized by a rash with rapid evolution of macules to papules, vesicles, and crusts; all stages are simultaneously present; lesions are superficial and may appear in crops.

*Refer to [Specimen Collection and Transport](#) for details on appropriate clinical specimens.

Causative Agent

Human herpesvirus3 (alpha); member of VZV (Heymann, 2015).

Symptoms

Varicella may or may not begin with a prodromal period. The prodromal period, when present, is characterized by fever, malaise and upper respiratory tract infection followed by the characteristic lesions. The lesions appear in successive crops over the first 2-5 days of the rash and tend to develop on the trunk and face, with progression to the extremities. They progress rapidly from macules to papules, vesicles and crusts, all stages are simultaneously present; lesions are superficial, distribution is centrifugal. Ulcerated lesions may also be present on mucous membranes including the oropharynx, upper respiratory tract, conjunctiva and rectal and vaginal mucosa. In adults, these symptoms may be more severe (Mandell, Bennett & Dolin, 2000).

Complications

Varicella is generally considered a mild infection; however, 5-10% of otherwise healthy children may develop complications that may be fatal. Complications may include pneumonia, secondary bacterial infections, soft tissue infections, bacteraemia, septicemia, septic arthritis, necrotizing fasciitis, toxic shock-like syndrome, thrombocytopenia, cerebellar ataxia, encephalitis and hepatitis (American Academy of Pediatrics, 2015; Heymann, 2015).

Primary varicella is a more severe disease in adults, with a case fatality rate 10 to 30 times higher than in children. Moreover, in both adults and children, the majority who die of varicella have no identifiable risk factor for severe disease (Health Canada, 1999).

Neonates who develop varicella at 5-10 days are at increased risk for severe generalized varicella. The case-fatality rate for neonates whose mother developed varicella five days before delivery to within two days following delivery and who did not receive Varicella- Zoster Immune Globulin (Varig) or antiviral therapy can reach 30% (Heymann, 2015).

Incubation Period

Usually 14-16 days but it can be as early as 10 days or as late as 21 days (Heymann, 2015).

Reservoir/Source

Humans.

Mode of Transmission

- Direct or indirect contact of oral or nasal mucous membranes with respiratory secretions or vesicular fluid.
- Inhalation of airborne virus.
- Indirect transmission may occur through contact with respiratory secretions or discharge from lesions on freshly soiled linens or towels.
- Transmission of vaccine virus is rare (Public Health Agency of Canada, 2006).
- Transmission can occur from direct contact with fluids from localized shingles lesions but is rare if the lesions are covered. Disseminated zoster can be transmitted by airborne route. (Household transmission rates have been noted to be approximately 15% [Stankus, Dlugopolski & Packer, 2000]).
- In utero infection through transplacental passage during maternal infection.

Risk Groups/Risk Factors

- Neonates born to non-immune mothers.
- Newborns of mothers who develop varicella between five days prior to delivery and 48 hours after the delivery.
- Infants.
- Adolescents (American Academy of Pediatrics, 2015).
- Individuals with chronic cutaneous/pulmonary disorder (American Academy of Pediatrics, 2015).
- Pregnant women who have never had varicella vaccine, varicella disease or shingles.
- Immunocompromised individuals.
- Cancer patients, especially lymphoid tissue, with or without steroid therapy.

Period of Communicability

- From one to two days before onset of rash and continuing until all lesions are crusted, approximately five days (Heymann, 2015; American Academy of Pediatrics, 2015).
- In immuno-competent individuals most virus replication has stopped by 72 hours after onset of the rash. The time may be longer in immunocompromised individuals (Mandell et al., 2000).

Specimen Collection and Transport

- Swabs from the base of a freshly de-roofed lesion for culture and direct fluorescent antibody (DFA) or polymerase chain reaction (PCR).
- Cerebrospinal fluid (CSF) for culture or PCR.
- Blood for serology.

Methods of Control/Role of Investigator

Prevention and Education

Refer to the [Respiratory and Direct Contact Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

Immunization

Immunize infants, children, and adults according to the recommended schedules in the Saskatchewan Immunization Manual.¹

Education

- Education should be provided regarding respiratory etiquette, hand hygiene and other measures to prevent transmission.
- Educate the public about the disease and the need for active immunization. Immunization information fact sheets can be used to guide discussion.

Management

I. Case

History

- Assess risk factors and exposure history. The source of infection could be a case of varicella or herpes zoster (rarely unless disseminated).
- Identify contacts (refer to [contact definition](#)).

Immunization

Assess immunization history.

¹ <http://www.ehealthsask.ca/services/manuals/Pages/SIM.aspx>.

Education

- Practicing good hand hygiene.
- Not sharing personal items such as drinking glasses, eating utensils, or towels.
- Respiratory etiquette.
- Cases should avoid contact with high risk individuals who have not yet been exposed.

Treatment/Supportive Therapy

- Supportive therapy as indicated.
- Treatment with antivirals has a limited window of opportunity to affect the outcome of varicella-zoster infection. Acyclovir therapy initiated within 24 hours after onset of the rash is effective in accelerating skin lesion healing and can be used for generally healthy population (at increased risk of moderate to severe varicella) as soon as possible after rash onset (Public Health Agency of Canada, 2006).

Exclusion

- Cases should not be cared for by susceptible persons.
- Children with chickenpox may remain in school/daycare as long as they are feeling well enough to take part in normal activities (Canadian Pediatric Society, 2016).
 - Exclusion for five days after the appearance of the rash should still be considered when the child has severe illness or is going into a new setting where the classmates have not already been exposed.
- In health care facilities, the appropriate infection control measures should be implemented because of the risk of serious varicella in susceptible immunocompromised individuals. Refer to [Health Facility Control Measures](#).
- Air travel is not recommended until lesions are crusted.
- Swimming in public pools is not recommended until lesions have healed and crusts are no longer present (Alberta Health and Wellness, 2008).

Referrals

Not applicable.

II. Contacts/Contact Investigation

Identify [susceptible contacts](#) with [significant exposure](#) (see Contact Definition).

Table 2: Contact Definition

| | |
|--|---|
| Contact | Anyone who shared the same airspace with a case during the infectious period (48 hours before to five days after onset of rash). |
| Significant Exposure ² (Public Health Agency of Canada, 2016 and 2013) | <p><u>Varicella</u></p> <ul style="list-style-type: none"> • Continuous household contact (living in the same dwelling) with a person with varicella. • Close contact with an infectious person, such as close indoor contact (e.g., in the same room) or face-to-face contact³. • Being in the same hospital room for >1 hour, or >15 minutes of face-to-face contact, with a patient with varicella. • Touching the lesions of a person with active varicella. <p><u>Zoster</u></p> <ul style="list-style-type: none"> • Touching a zoster rash, exposed lesion or vesicle fluid or articles freshly soiled by discharges from vesicles; • Contact with an individual who has disseminated zoster; • Contact with articles freshly soiled by mucous membrane secretions of a person with disseminated zoster; or • Exposure to an immunocompromised person with localized zoster anywhere on the body because their viral shedding may be greater. |

² Verbal history of infection is not acceptable following a significant exposure to varicella in individuals at [high risk for varicella complications](#) and cannot be accepted as evidence of immunity

³ Experts differ in their opinion about the duration of contact; some suggest five minutes and others up to one hour, but do agree that it does not include transitory contact (Centers for Disease Control and Prevention, 2016)

| | |
|------------------------------------|---|
| <p>Susceptible Contacts</p> | <ul style="list-style-type: none"> • Newborns of mothers who develop varicella between five days prior to delivery and 48 hours (two days) after delivery. • Hematopoietic stem cell transplant (HSCT) recipients regardless of pre-transplant varicella immune status or history of varicella disease or vaccination. • Immunocompromised individuals. • Hospitalized patients, especially premature infants. <ul style="list-style-type: none"> ➢ Preterm infants \geq 28 weeks gestation whose mother lacks a reliable history of chickenpox or serologic immunity (American Academy of Pediatrics, 2009). ➢ Preterm infants $<$ 28 weeks gestation or birth weight of 1,000 g or less, regardless of the maternal history of chickenpox or serostatus (American Academy of Pediatrics, 2009). • Pregnant women who do not have documentation of immunity to varicella (routine prenatal screening includes varicella immunity). • Healthy individuals who (Public Health Agency of Canada, 2015): <ul style="list-style-type: none"> ➢ Do not report having a health care provider diagnosed or self-diagnosed history of varicella or zoster prior to implementation of a one dose varicella program⁴ ➢ Do not have documented evidence of immunization with two doses of varicella containing vaccine, or ➢ Do not have previous laboratory evidence of immunity⁵ to varicella. |
|------------------------------------|---|

⁴ One-dose varicella program was implemented in Saskatchewan on January 1, 2005

⁵ Laboratory testing should be conducted only once in a lifetime. If a person has been found to be seropositive, it is not necessary to test again.

Education

- Close contacts of confirmed cases should be educated about varicella and its [signs and symptoms](#).
- They should also be advised that varicella is communicable to others long before the rash appears.
- Adult contacts (including pregnant women), and any individual with immunocompromising conditions, should be advised to see a physician if early signs and symptoms appear.
- Household contacts of confirmed and probable cases should avoid contact with susceptible/high risk groups/individuals during the incubation period.

History

- Assess risk factors.
- History of vaccination.
- History of varicella disease and/or shingles.

Preventive Measures

Immunize individuals as per the Saskatchewan Immunization Manual⁶.

Prophylaxis Immunization

Although varicella vaccine has been shown to be effective in preventing or reducing the severity of the disease if given to susceptible individuals within 72 hours and no longer than five days after exposure, Saskatchewan Ministry of Health, at this time, does not routinely provide publicly funded immunization for contacts of chickenpox. The exception is children who fall into the target group who have not yet been immunized, and who do not have contraindications to immunization.

Immune Globulin Prophylaxis

Susceptible individuals at higher risk for severe disease (see list below), should be evaluated immediately for administration of Varlg. The National Advisory Committee for Immunization (NACI) (2016) recommends:

- For optimum benefit, Varlg should be administered as soon as possible (ideally within 96 hours) following first exposure.

⁶ <http://www.ehealthsask.ca/services/manuals/Pages/SIM.aspx>

- In instances of prolonged exposures, where the exact timing of transmission may be unknown, it may be used within 96 hours of the most recent exposure.
- If more than 96 hours but less than 10 days have elapsed since the last exposure, the susceptible high-risk individuals' clinician may determine that Varlg would be useful to attenuate (rather than prevent) disease. The benefit of administering Varlg after 96 hours is uncertain.

Dosage: 125 units/10 kg of body weight, to a maximum of 625 units IM. Refer to [Appendix D – Publicly Funded Medications for Chemoprophylaxis/Treatment](#) for information on how to access Varlg from Canadian Blood Services.

NACI recommends Varlg for the following susceptible **high-risk groups** after exposure to VZV (Public Health Agency of Canada, 2016):

1. Susceptible pregnant women.
2. Newborn infants of mothers who have varicella that began during the five days before to 48 hours after delivery.
3. Selected neonates in neonatal or pediatric intensive care units for the management of significant varicella exposure in consultation with the infectious diseases/infection control specialist.
4. Susceptible immunocompromised individuals, including (including those with HIV with CD4 cell count < 200 × 10⁶/L or CD4 percentage < 15%) and HSCT recipients regardless of pre-transplant varicella immune status or history of varicella disease or vaccination.

Testing

Adolescents and adults who have a negative or uncertain past history of varicella and no documentation of vaccination should have serologic tests to establish susceptibility, since as many as 70 to 95% of such individuals have immunity to varicella. However, delays in obtaining test results should not delay appropriate post-exposure varicella management (Public Health Agency of Canada, 2006).

Chemoprophylaxis

Clinicians may want to consult with specialists to determine if and when acyclovir should be used for specific contacts in circumstances where the timeframe for Varlg has elapsed.

Acyclovir is generally not recommended for immunocompetent contacts.

Treatment

Antiviral drugs such as acyclovir appear useful in preventing or modifying varicella in exposed individuals if given within a week of exposure.

Exclusion

Susceptible caregivers, including healthcare workers (HCWs) exposed to chickenpox should be excluded from contact with high-risk patients from 8-21 days after exposure. Extend to 28 days if Varlg was given as it may prolong the incubation period if it is unable to fully protect against infection in the susceptible person who received it (Health Canada, 2002).

III. Environment

Prevent the spread of infection by using a household cleaner to wash any articles soiled with fluid from chickenpox blisters. Keep the infected person away from others who have not had chickenpox.

Health Facilities Control Measures

- HCWs should have proof of immunity or previous immunization assessed upon employment. Refer to the Saskatchewan Immunization Manual⁷ – Chapter 7: Immunization of Special Populations, Section 3.2 Health Care Workers and other relevant Saskatchewan Ministry of Health policies/memos.
- A suspected or confirmed case of varicella occurring within a facility must be reported immediately to the local public health office and to infection control.
- Strict enforcement of infection control practices (routine practices as well as contact and airborne precautions) should be taken for a minimum of five days and until all lesions are crusted (Health Canada, 2002 and Health Canada, 1999).
- Immunocompromised cases should be isolated with contact and airborne precautions for the duration of their illness which can be up to a week (American Academy of Pediatrics, 2015).
- Provide varicella vaccine or Varlg to susceptible contacts as described in contact management.

⁷ <http://www.ehealthsask.ca/services/manuals/Pages/SIM.aspx>.

- Susceptible contacts who are HCWs should be excluded from working with high-risk susceptible patients during the potential period of communicability (from eight days, after first exposure to 21 days from last exposure to an infectious client) or to day 28 for those who received immune globulin as it may prolong the incubation period (Public Health Agency of Canada, 2006).
- Health care facilities may, after consultation with the Medical Health Officer (MHO), provide HCWs immunization and other follow up. HCWs must be instructed to call public health if they develop any signs or symptoms suggestive of varicella.
- HCWs who are symptomatic should be excluded from work until all lesions are dry and crusted and no new lesions are forming.
- Occupational Health (OH) should not exclude HCWs with a localized, postimmunization varicella-like rash that can be covered with an occlusive dressing.
- OH should exclude HCWs with a postimmunization varicella-like rash if the rash cannot be covered and if the HCWs are involved in the care of high-risk patients, (e.g., immunocompromised and newborn patients) for the duration of the rash.
- OH should inform Infection Control as soon as possible of a suspected or confirmed case.

Epidemic Measures

- Follow as per case and contact management.
- The use of varicella vaccine may be considered in the management of outbreaks in consultation with Saskatchewan Ministry of Health.

Revisions

| Date | Change |
|-------------|---|
| March 2016 | Updated recommendations on use of Varlg based on NACI Statement 2015. |
| March 2017 | Updated definition of susceptible individuals based on NACI Statement (2015) and included contact to zoster under significant exposure definition as per PHAC (2015). References reaffirmed or updated as necessary. |

References

- Alberta Health and Wellness. (2014). *Public health notifiable disease management guidelines: Varicella (chickenpox)*. Retrieved May, 2017 from <http://www.health.alberta.ca/professionals/notifiable-diseases-guide.html>.
- American Academy of Pediatrics. (2015). *Red book: 2015 Report of the Committee on Infectious Diseases* (30th ed.). Elk Grove Village, IL: Author.
- Canadian Pediatric Society (2016). School and daycare exclusion policies for chickenpox: A rational approach. Retrieved April, 2017 from <http://www.cps.ca/documents/position/exclusion-policies-for-chickenpox>
- Centers for Disease Control and Prevention. (2016). Strategies for the Control and Investigation of Varicella Outbreaks 2008. *National Center for Immunization and Respiratory Diseases*. Retrieved April 2017 from <https://www.cdc.gov/chickenpox/outbreaks/manual.html>
- Centers for Disease Control and Prevention. Prevention of varicella: Recommendations of the advisory committee on immunization practices. *Morbidity and Mortality Weekly Report (MMWR)*, 56RR-4, June 2007.
- Feigin, R. & Cherry, J. (Eds.). (1998). *Textbook of pediatric infectious diseases, Vol. 2*, (4th ed.). Australia: Elsevier.
- Health Canada. (1998). Infection control guidelines: Hand washing, cleaning, disinfection and sterilization in health care. *Canada Communicable Disease Report (CCDR)*, 24S8, December 1998. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/98pdf/cdr24s8e.pdf>.
- Health Canada. (1999). Infection control guidelines: Routine practices and additional precautions for preventing the transmission of infection in health care. *Canada Communicable Disease Report (CCDR)*, 25S4, July 1999. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/99pdf/cdr25s4e.pdf>.
-
-

Health Canada. (1999). Proceedings of the national varicella consensus conference, May 1999. *Canada Communicable Disease Report (CCDR)*, 25S5, August 1999. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/99pdf/cdr25s5e.pdf>.

Health Canada. (2002). Infection control guidelines: Prevention and control of occupational infections in health care. *Canada Communicable Disease Report (CCDR)*, 28S1, March 2002. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02pdf/28s1e.pdf>.

Heymann, D. L. (Ed.). (2015). *Control of communicable diseases manual* (20th ed.). Washington, DC: American Public Health Association.

Mandell, G. L., Bennett, J. E., & Dolin, R. (Eds.). (2000). *Mandell, Douglas, and Bennett's principles and practice of infectious diseases* (5th ed.). Philadelphia, PA: Churchill Livingstone.

Public Health Agency of Canada. (2016). Varicella (Chickenpox) vaccine. *Canadian immunization guide* (7th ed.). Ottawa, Canada: Public Works and Government Services Canada.

Public Health Agency of Canada. (2013). Passive immunizing agents. *Canadian immunization guide* (7th ed.). Ottawa, Canada: Public Works and Government Services Canada.

Public Health Agency of Canada. (2006). VariZIG™ as the varicella zoster immune globulin for the prevention of varicella in at-risk patients. *Canada Communicable Disease Report (CCDR)*, 32 ACS-8, October 2006. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06vol32/acs-08/index-eng.php>.

Public Health Agency of Canada. (2008). Case definitions for communicable diseases under national surveillance. *Canada Communicable Disease Report (CCDR)*, 35S2, November 2009. Retrieved March, 2014 from <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/Varicel-eng.php>.

Public Health Agency of Canada. (2015). Updated recommendations for the use of varicella zoster immune globulin (VarIg) for the prevention of varicella in at risk patients. *An Advisory Committee Statement National Advisory Committee on Immunization*.

Public Health Agency of Canada. (2015). Varicella proof of immunity – 2015 Update. *An Advisory Committee Statement National Advisory Committee on Immunization*. Retrieved from <https://www.canada.ca/en/public-health/services/publications/healthy-living/varicella-proof-immunity-2015-update.html>

Stankus, S. J., Dlugopolski, M., & Packer, D. (2000). Management of herpes zoster (shingles) and postherpetic neuralgia. *American Family Physicians*. Retrieved March, 2014 from <http://www.aafp.org/afp/20000415/2437.html>.

Varicella Data Collection Worksheet

Panorama QA complete: Yes No
 Initials: _____

Please complete all sections.

Panorama Client ID: _____
 Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

| | | |
|--|---|--|
| Last Name: | First Name: and Middle Name: | Alternate Name (Goes by): |
| DOB: YYYY / MM / DD Age: _____ | Health Card Province: _____ Health Card Number (PHN): _____ | Preferred Communication Method: (specify - i.e. home phone, text): Email Address: <input type="checkbox"/> Work <input type="checkbox"/> Personal |
| Phone #: <input type="checkbox"/> Primary Home: <input type="checkbox"/> Mobile contact: <input type="checkbox"/> Workplace: | | |
| Place of Employment/School: | Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other <input type="checkbox"/> Unknown | |
| Alternate Contact: _____ Relationship: _____ Alt. Contact phone: _____ | Address Type: <input type="checkbox"/> No fixed <input type="checkbox"/> Postal Address <input type="checkbox"/> Primary Home <input type="checkbox"/> Temporary <input type="checkbox"/> Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home): Address at time of infection if not the same: | |

B) INVESTIGATION INFORMATION

LHN-> SUBJECT SUMMARY-> RESPIRATORY & DIRECT CONTACT ENCOUNTER GROUP->CREATE INVESTIGATION

| Disease Summary Classification: | Date | Classification: | Date | LAB TEST INFORMATION: |
|---|----------------|---|----------------|--------------------------|
| CASE | | CONTACT | | Date specimen collected: |
| <input type="checkbox"/> Confirmed | YYYY / MM / DD | <input type="checkbox"/> Contact | YYYY / MM / DD | YYYY / MM / DD |
| <input type="checkbox"/> Does Not Meet Case Definition | YYYY / MM / DD | <input type="checkbox"/> Not a Contact | YYYY / MM / DD | |
| <input type="checkbox"/> Person Under Investigation | YYYY / MM / DD | <input type="checkbox"/> Person Under Investigation | YYYY / MM / DD | |
| <input type="checkbox"/> Probable | YYYY / MM / DD | | | |
| <input type="checkbox"/> Suspect | YYYY / MM / DD | | | |
| Disposition: | | | | |
| FOLLOW UP: | | | | |
| <input type="checkbox"/> In progress | YYYY / MM / DD | <input type="checkbox"/> Complete | YYYY / MM / DD | |
| <input type="checkbox"/> Incomplete - Declined | YYYY / MM / DD | <input type="checkbox"/> Not required | YYYY / MM / DD | |
| <input type="checkbox"/> Incomplete - Lost contact | YYYY / MM / DD | <input type="checkbox"/> Referred - Out of province | YYYY / MM / DD | |
| <input type="checkbox"/> Incomplete - Unable to locate | YYYY / MM / DD | (specify where) | | |
| REPORTING NOTIFICATION | | Location: | | |
| Name of Attending Physician or Nurse: | | | | |
| Physician/Nurse Phone number: | | Date Received (Public Health): YYYY / MM / DD | | |
| Type of Reporting Source: <input type="checkbox"/> Health Care Facility <input type="checkbox"/> Lab Report <input type="checkbox"/> Nurse Practitioner <input type="checkbox"/> Physician <input type="checkbox"/> Other _____ | | | | |

C) DISEASE EVENT HISTORY

INVESTIGATION->DISEASE SUMMARY (UPDATE)->DISEASE EVENT HISTORY

| |
|---|
| Site / Presentation: <input type="checkbox"/> Severe <input type="checkbox"/> Neonatal <input type="checkbox"/> Case with high risk contacts |
| Staging: <input type="checkbox"/> Acute <input type="checkbox"/> Reactivation |

Varicella Data Collection Worksheet

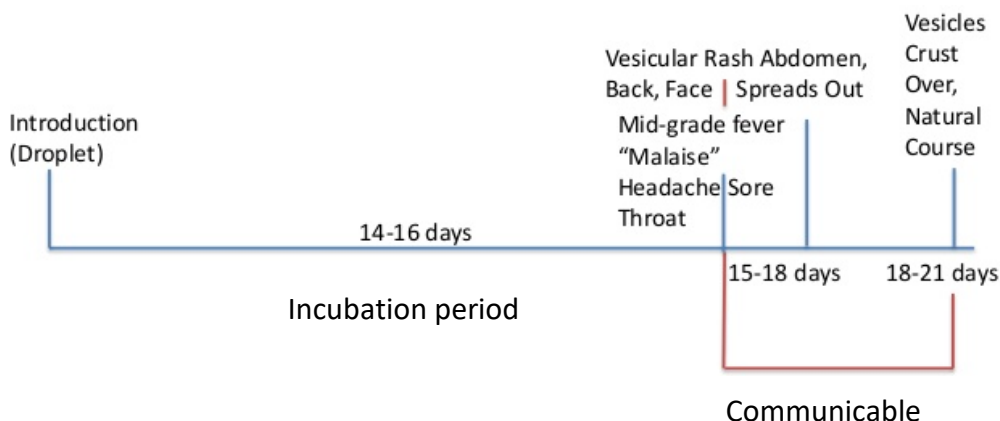
Please complete all sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

D) SIGNS & SYMPTOMS *(Bold text = part of case definition)*

LHN-> INVESTIGATION->SIGNS & SYMPTOMS

| Description | Yes | Date of onset | Date of recovery | Description | Yes | Date of onset | Date of recovery |
|--|-----|---------------|------------------|--|-----|---------------|------------------|
| Fever | | | YYYY / MMM / DD | Rash - crusted lesions or scabs | | | YYYY / MMM / DD |
| Lesion - less than 50 lesions (Mild) | | | YYYY / MMM / DD | Rash - herpes zoster (shingles) | | | YYYY / MMM / DD |
| Lesion - 50 to 249 lesions (Mild - moderate) | | | YYYY / MMM / DD | Rash - itchy | | | YYYY / MMM / DD |
| Lesion - 250 to 499 lesions (Moderate) | | | YYYY / MMM / DD | Rash - macules, papules, and vesicles | | | YYYY / MMM / DD |
| Lesion - 500 or more lesions (Severe) | | | YYYY / MMM / DD | Rash - painful | | | YYYY / MMM / DD |
| Lesions - conjunctiva | | | YYYY / MMM / DD | Rash - ulcerated lesions | | | YYYY / MMM / DD |
| Lesions - mucous membrane - ulcerated | | | YYYY / MMM / DD | Rash - unilateral red painful blisters | | | YYYY / MMM / DD |
| Malaise | | | YYYY / MMM / DD | Infection - upper respiratory tract | | | YYYY / MMM / DD |
| Other Signs & Symptoms if applicable | | | | | | | |



E) INCUBATION AND COMMUNICABILITY

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

| | |
|--|--|
| Incubation for Case (period for acquisition): | |
| Earliest Possible Exposure Date: YYYY / MM / DD | Latest Possible Exposure Date: YYYY / MM / DD |
| <i>Exposure Calculation details:</i> | |
| Communicability for Case (period for transmission): | |
| Earliest Possible Communicability Date: YYYY / MM / DD | Latest Possible Communicability Date: YYYY / MM / DD |
| <i>Communicability Calculation Details:</i> | |

F) RISK FACTORS (RF followed by + impact the Immunization Forecaster)

LHN-> SUBJECT->RISK FACTORS

| DESCRIPTION | YES | N – No NA – not asked U - Unknown | DESCRIPTION | YES | N – No NA – not asked U - Unknown |
|---|----------------------|---|--|----------------|---|
| Contact to a known case (Add'l Info) | YYYY / MM / DD AE | | Special Population - Pregnancy | YYYY / MM / DD | |
| Immunocompromised - Related to underlying disease or treatment | | | Travel - Outside of Canada (specify) | | |
| Occupation - Health Care Worker - IOM Risk Factor | TE | | Travel - Outside of Saskatchewan, but within Canada (specify) | | |
| Special Population - Infant born to an infected mother | YYYY / MM / DD | | | | |

Varicella Data Collection Worksheet

Please complete all sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

G) IMMUNIZATION HISTORY INTERPRETATION SUMMARY

LHN -> INVESTIGATION-> IMMUNIZATION HISTORY INTERPRETATION SUMMARY

| | |
|---|--|
| Interpretation Date: YYYY / MM / DD | |
| Interpretation of Disease Immunity: | <input type="checkbox"/> IOM - Fully immunized (for age) <input type="checkbox"/> IOM - Partially immunized |
| <input type="checkbox"/> IOM – Unimmunized <input type="checkbox"/> IOM - Unclear immunization history | Valid doses received: ____ Doses needed: ____ |
| Reason: | <input type="checkbox"/> IOM - Interpretation of history by investigator |

H) TREATMENT

LHN -> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

| |
|---|
| Medication (<i>Panorama = Other Meds</i>): _____ |
| Prescribed by: _____ Started on: YYYY / MM / DD |

I) INTERVENTION

LHN -> INVESTIGATION->TREATMENT & INTERVENTIONS->INTERVENTION SUMMARY

| | |
|---|---|
| Intervention Type and Sub Type: | |
| Assessment: <input type="checkbox"/> Assessed for contacts (especially pregnant or < 1 year of age) YYYY / MM / DD Investigator name | Immunization: <input type="checkbox"/> Eligible immunizations recommended YYYY / MM / DD <input type="checkbox"/> Disease-specific immunization recommended YYYY / MM / DD <input type="checkbox"/> Disease-specific immunization given YYYY / MM / DD Investigator name |
| Other Investigation Findings: | |
| <input type="checkbox"/> Investigator Notes <input type="checkbox"/> See Document Management | |
| Communication: <input type="checkbox"/> Other communication (see Investigator Notes) YYYY / MM / DD Investigator name <input type="checkbox"/> Letter (See Document Management) YYYY / MM / DD Investigator name | Referral: <input type="checkbox"/> Other (specify) _____ YYYY / MM / DD Investigator name |
| General: Investigator name <input type="checkbox"/> Disease-Info/Prev-Control YYYY/ MM / DD <input type="checkbox"/> Disease-Info/Prev-Cont/Assess'd for Contacts YYYY/ MM / DD | Testing: <input type="checkbox"/> Laboratory testing recommended YYYY / MM / DD Investigator name |
| Education/counseling: Investigator name <input type="checkbox"/> Prevention/Control measures YYYY / MM / DD <input type="checkbox"/> Disease information provided YYYY / MM / DD | |
| Exclusion: Investigator name <input type="checkbox"/> Daycare YYYY / MM / DD <input type="checkbox"/> Preschool YYYY / MM / DD <input type="checkbox"/> School YYYY / MM / DD <input type="checkbox"/> Work YYYY / MM / DD | |

| Date | Intervention subtype | Comments | Next follow-up Date | Initials |
|------------|----------------------|----------|---------------------|----------|
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |
| YYYY/MM/DD | | | YYYY/MM/DD | |

Varicella Data Collection Worksheet

Please complete all sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

J) OUTCOMES

LHN-> INVESTIGATION-> OUTCOMES

| | | | | | |
|---|----------------|---|----------------|--|----------------|
| <input type="checkbox"/> Not yet recovered/recovering | YYYY / MM / DD | <input type="checkbox"/> ICU/intensive medical care | YYYY / MM / DD | <input type="checkbox"/> Hospitalization | YYYY / MM / DD |
| <input type="checkbox"/> Recovered | YYYY / MM / DD | <input type="checkbox"/> Intubation /ventilation | YYYY / MM / DD | <input type="checkbox"/> Unknown | YYYY / MM / DD |
| <input type="checkbox"/> Fatal | YYYY / MM / DD | <input type="checkbox"/> Other _____ | YYYY / MM / DD | | |

Cause of Death: (if Fatal was selected) _____

K) Transmission Events

LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> QUICK ENTRY

| Transmission Event ID | Exposure Name | Setting type | Date/Time | # of contacts |
|-----------------------|------------------------------------|---|--|---------------|
| | | <input type="checkbox"/> Congregate/Communal living <input type="checkbox"/> Health Care setting <input type="checkbox"/> Household Exposure | | |
| | | <input type="checkbox"/> Congregate/Communal living <input type="checkbox"/> Health Care setting <input type="checkbox"/> Household Exposure | | |
| | | <input type="checkbox"/> Congregate/Communal living <input type="checkbox"/> Health Care setting <input type="checkbox"/> Household Exposure | | |
| | varicella Contacts – Inv ID# _____ | <input type="checkbox"/> Multiple Settings | YYYY / MM / DD to YYYY / MM / DD | |

L) TOTAL NUMBER OF CONTACTS

M) LHN -> INVESTIGATION-> EXPOSURE SUMMARY -> TRANSMISSION EVENT SUMMARY -> TE HYPERLINK -> UNKNOWN/ANONYMOUS CONTACTS

Anonymous contacts: _____ (total number of individuals [including groups that do not require 1:1 follow-up])

| | | |
|------------------------------|--|---|
| Initial Report completed by: | | Date initial report completed: YYYY / MMM / DD |
|------------------------------|--|---|