



Neonatal Herpes Simplex

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The following chapter is adapted with permission from Alberta Health, for additional guidance related to the management of congenital or neonatal herpes simplex see Alberta Public Health Notifiable Disease Management Guidelines: [Neonatal Herpes Simplex Infection](#).

1. CASE DEFINITION

Confirmed Case

- Laboratory confirmation of infection with or without clinical illness* in a neonate:
 - Virus isolation from an appropriate clinical specimen (CSF, skin, or other tissue)

OR

 - Detection of viral nucleic acids in CSF using molecular diagnostic techniques, when available

Probable Case

- Clinical illness in a neonate born to a female with primary or active herpes simplex virus (HSV) infection during pregnancy:
 - Presence of anti-HSV IgM antibodies in mother's serum

OR

 - Evidence of seroconversion in mother (i.e., fourfold or greater increase in anti-HSV IgG titre) by any standard serologic assay

OR

 - Isolation of virus by culture or detection of viral antigen by direct fluorescent antibody (DFA) testing from active lesions



* Clinical illness can be of three different syndromes: skin, visceral, and central nervous system infections. Dermatologic manifestations are often a late manifestation or might not occur at all.

2. DIAGNOSIS

- Herpes simplex virus (HSV) isolation is by culture from the oropharynx, nasopharynx, stool, blood buffy coat, urine, CSF, fluid from skin lesions or other tissues.
- Diagnosis is difficult in the absence of skin lesions.
- When skin lesions are present, direct immunofluorescence and enzyme immunoassays for Herpes Simplex Virus are valuable.
- Newborns exposed (mother has active lesions at the time of delivery) to HSV infection during labour and vaginal delivery should have HSV cultures performed 48 hours after birth.
 - In some cases, weekly surveillance cultures for 4-6 weeks may be recommended to detect active viral replication.
- Newborns whose mothers have active herpetic lesions at the time of delivery and are born by cesarean section should be carefully observed and cultured 48 hours after birth.

3. REPORTING

Health Care Professionals

- Confirmed or probable cases are to be reported to the Office of the Chief Public Health Officer (OCPHO) by telephone (867) 920-8646, fax (867) 873-0442, or email within **7 days** after diagnosis is made or opinion is formed, **AND**
- Complete and fax the [NWT Case Investigation Report Form](#) to the OCPHO within **7 days** after diagnosis is made or the opinion is formed

Laboratories

- All laboratories shall fax positive results to the OCPHO within **7 days** of lab confirmation

4. OVERVIEW

Causative Agent

- Herpes simplex virus (HSV) types 1 and 2 are the agents responsible for causing disease.
- HSV-2 causes 75% of neonatal HSV infections.

Clinical Presentation and Major Complications

For information around Neonatal Herpes see Alberta Public Health Notifiable Disease Management Guidelines: [Neonatal Herpes Simplex Infection](#).

Transmission

- Maternal infection is generally classified as primary (newly acquired) or recurrent.
 - Newly acquired infections include,



- First episode primary in which the mother is seronegative for HSV types 1 and 2 at the onset of the infection or
- First episode nonprimary in which the mother has antibodies to one virus type and a new infection with the other virus type.
- Infants who are born to mothers with a first episode primary genital infection at the time of delivery are at the greatest risk of acquiring HSV
- A recurrent infection occurs when the mother has pre-existing antibodies to the same virus type as isolated from the mother's genital tract.
- Neonatal HSV infections are rare in the NWT.
- Pregnant women with active genital lesions (especially primary lesions) are the most common source of infection to the fetus or newborn.
- Transmission occurs most commonly during birth and less commonly in utero, or in the postpartum period.
- The risk of infection to an infant born vaginally to a mother with recurrent infection is much lower than a newly acquired infection.
- Neonates with HSV infection should be isolated while in hospital and managed with contact precautions.
- Transmission of HSV from a caregiver to a neonate is rare.

Incubation Period

- Varies from 2-12 days
- In newborns the infection may be present at birth or occur as late as 4 weeks postpartum.

Clinical Guidance

- For patient specific clinical management consult your local healthcare professional, paediatrician, or infectious disease specialist.

5. PUBLIC HEALTH MEASURES

Case Management

- Determine history of HSV infection in the mother or caregiver.
- Clinically assess the mother for primary or recurrent genital herpes infection, especially late in pregnancy or close to time of delivery.
- In addition to routine practices, neonates with HSV infection should be isolated while in hospital and managed with contact precautions.
 - Newborns whose mothers had active lesions at the time of delivery should be carefully observed and have HSV cultures performed 48 hours after birth following both vaginal delivery and cesarean section.
- Depending on the ability of the family to observe the infant at home and the availability of follow-up care and clinical assessment in hospital observation time may be extended.
 - If the newborn is monitored at home, educate the parents to observe carefully for any rash or other symptoms.



Contact Management

- No public health interventions are required for contacts.

Prevention

- Educate members of the public on the use of condoms.
 - Use of latex condoms may decrease the risk of acquiring genital herpes infection during pregnancy.
- Educate members of the public about the risk of transmission with oral sex.
- Prenatal evaluation of pregnant women regarding their and/or their partner's past or current signs or symptoms consistent with HSV infection.
- Oral acyclovir given in the late third trimester should be considered for high-risk women with gestational HSV infection.
 - This may prevent recurrent genital HSV infection thus preventing the need for a cesarean section and reducing the risk of neonatal transmission of the HSV.
- Use of a scalp electrode on an infant during labour is NOT recommended in women suspected of having HSV infection.
- If active lesions are present at the onset of labour, cesarean section may be performed although this practice and recommendation varies.
 - Cesarean section does not eliminate but reduces the risk of HSV infection in newborns by 86%.
- Pregnant women with recurrent genital herpes should undergo specialist evaluation for consideration of suppressive antiviral therapy.
- Counsel pregnant women with a previous HSV infection about the risk of recurrence and that transmission may occur to the baby even if they are asymptomatic.
- Pregnant women with a previous HSV infection should inform their healthcare provider that they have a history of herpes.

6. PUBLIC & HEALTH PROFESSIONAL EDUCATION

- Alberta Health Notifiable Disease Management Guidelines: [Neonatal Herpes Simplex Infection](#)
- Canadian Paediatric Society Position Statement: [Prevention and management of neonatal herpes simplex virus infection](#)
- Public Health Agency of Canada: [Sexual Health and Sexually Transmitted Infections](#)
- Public Health Agency of Canada: [Canadian Guidelines on Sexually Transmitted Infections](#) Sections 6.4 and 5.4
- Government of Canada Pathogen Safety Data Sheet: [Pathogen Safety Data Sheets: Infectious Substances – Herpes simplex virus - Canada.ca](#)
- Centers for Disease Control and Prevention: STDs in Women and Children: [Sexually Transmitted Diseases \(STDs\)](#)
- World Health Organization: [Herpes simplex virus](#)



7. EPIDEMIOLOGY

- Neonatal Herpes Simplex Virus (HSV) occurs worldwide and the estimated incidence ranges from 1/3,000 to 20,000 live births.
- Neonatal HSV is not prevalent in NWT;
- For more information on the epidemiology of congenital or neonatal herpes simplex in the NWT see: [Epidemiological Summary of Communicable Diseases HSS Professionals](#)

8. REFERENCES

Information from this chapter came from Alberta Health's Public Health Notifiable Disease Management Guidelines: [Neonatal Herpes Simplex Infection](#).