

South Australian Perinatal Practice Guideline

Genital Herpes Simplex (HSV) Infection in Pregnancy

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:

The Aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the Aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant woman. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



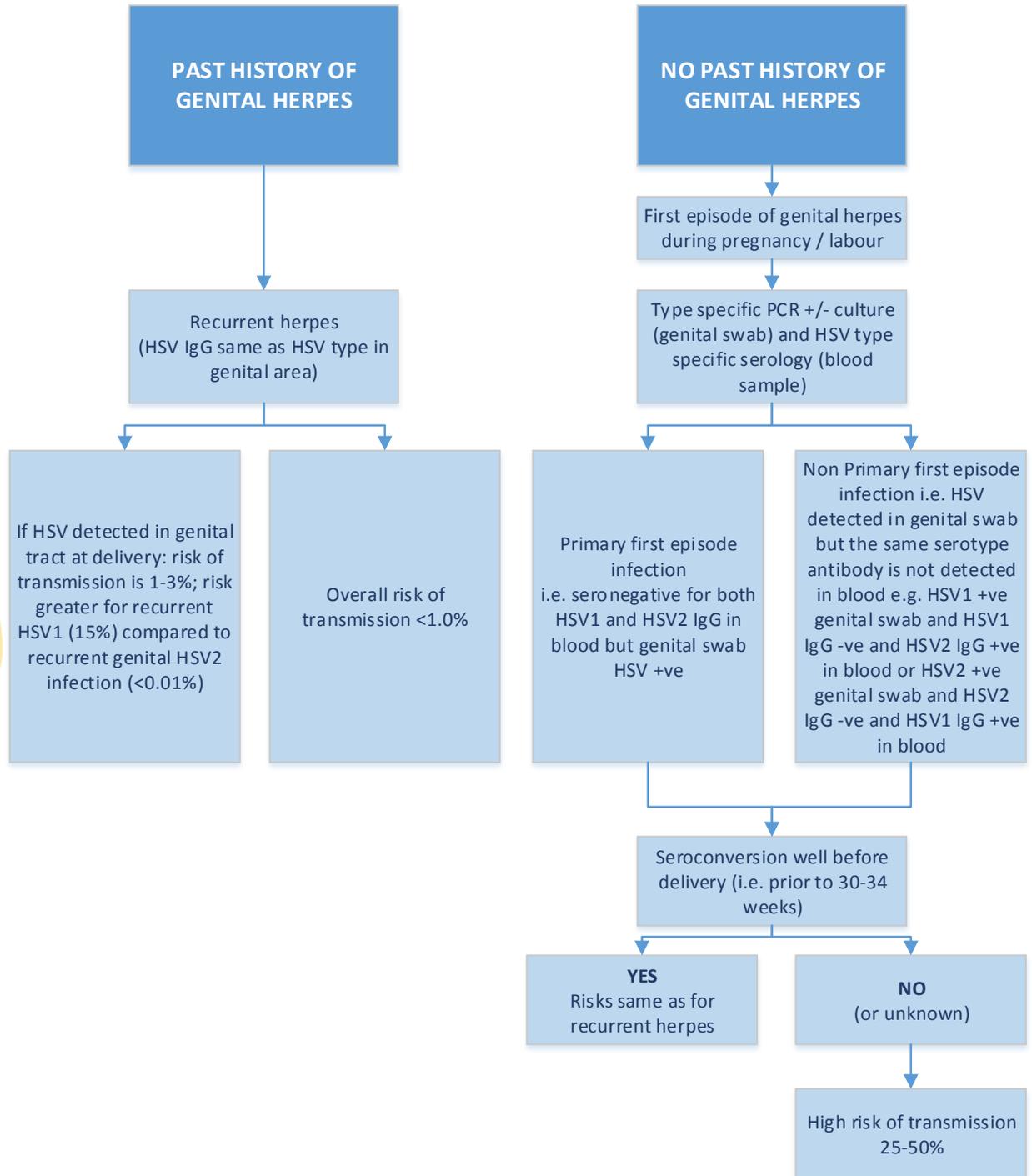
Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectfully manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of Perinatal Practice Guideline (PPG)

The purpose of this guideline is to give clinicians information on the diagnosis and management of women with genital herpes simplex virus (HSV) infection during pregnancy, labour and birth. It includes subsequent care of their neonate(s).

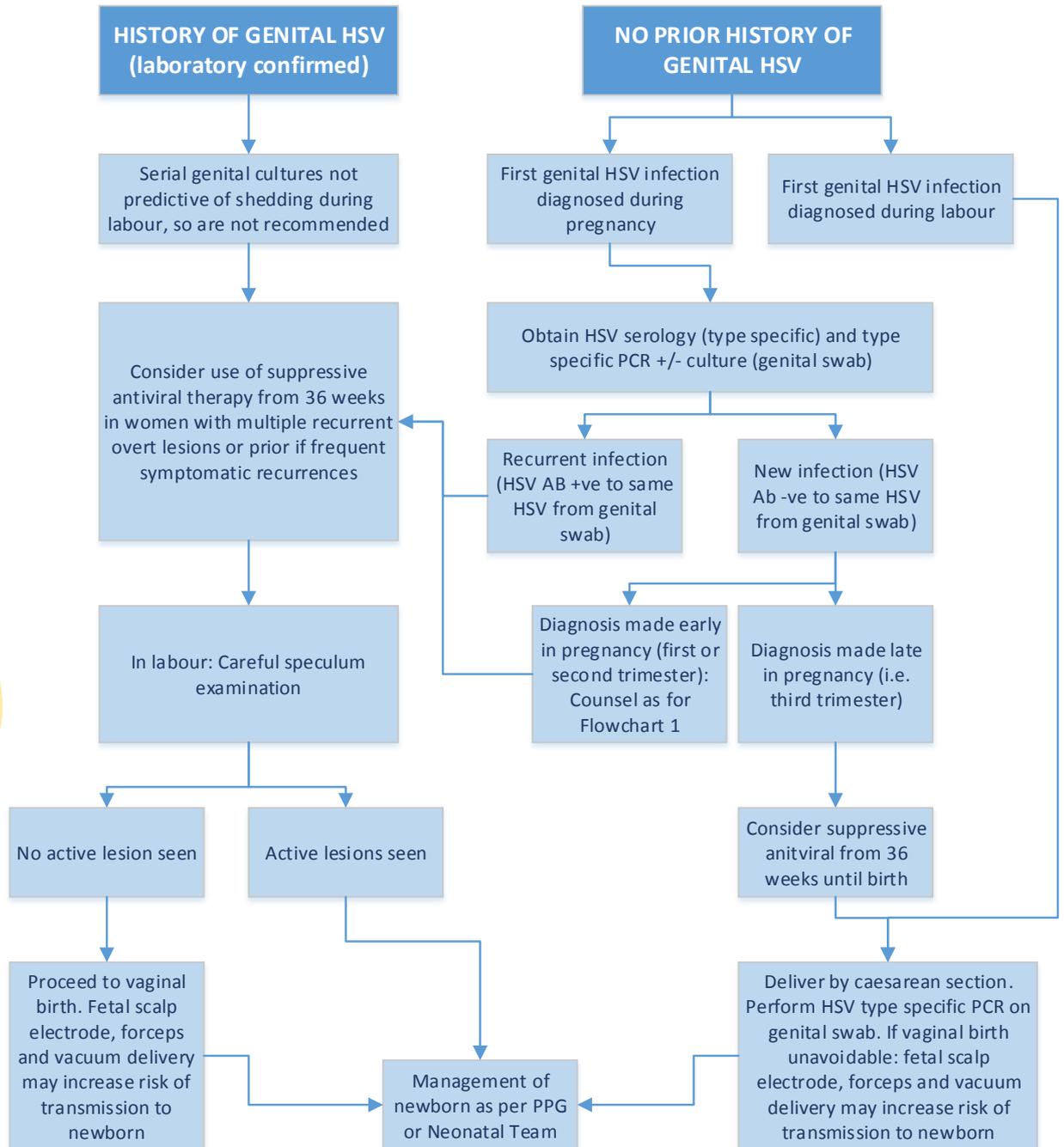
Genital Herpes Simplex (HSV) Infection in Pregnancy

Flowchart 1: HSV in Pregnancy: Risk of Vertical Transmission²



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Flowchart 2: Management of Genital HSV in Pregnancy²



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Summary of Practice Recommendations

- Most genital HSV infections (primary, non-primary, recurrent) are asymptomatic
- Obtain serology for HSV-1 and HSV-2 and also HSV PCR typing from the genital tract for diagnosis
- Consider use of suppressive antiviral treatment from 36 weeks onwards for women with recurrent lesions²
- Women with HSV acquisition in the first or second trimester should have treatment as per 'first episode' followed by suppressive antiviral treatment from 36 weeks until birth. If no active lesions at the time of birth, vaginal birth should be anticipated
- Women with recurrent HSV infection should have vaginal birth as an option even in the presence of active lesions (1-3% transmission to neonate)
- Caesarean section reduces risk of HSV transmission in women shedding HSV at the time of birth
- Caesarean section should be the recommended mode of birth for all women developing first episode genital herpes in the third trimester
- Avoid fetal scalp electrode and fetal blood sampling during labour
- Neonatal management is dependent on risk of transmission and whether symptoms are present or not
- Refer to Neonatal Medication Guideline 'aciclovir' at www.sahealth.sa.gov.au/neonatal for treatment regimens

Abbreviations

%	Percent
<	Less than
>	Greater than
≤	Less than or equal to
ASID	Australasian society for infectious diseases
CNS	Central nervous system
CSF	Cerebro-spinal fluid
DNA	Deoxyribonucleic acid
e.g.	For example
et al.	And others
HSV	Herpes simplex virus
HSV - 1	Herpes simplex virus type 1
HSV - 2	Herpes simplex virus type 2
kg	Kilogram/s
mg	Milligram/s
PCR	Polymerase chain reaction
PPROM	Preterm prelabour rupture of the membranes
SA	South Australia
SOGC	The Society of Obstetricians and Gynaecologists of Canada
V	Five



Genital Herpes Simplex (HSV) Infection in Pregnancy

Definitions

Genital Herpes Simplex Virus	Genital herpes is caused by the herpes simplex virus either type 1 or 2 (HSV-1 or HSV-2) ¹ After infection, the herpes simplex virus (HSV) travels along the nerves connected to the affected area and lies dormant within nerve ganglia. The virus can reactivate later and travel along the nerve to the skin surface on or near the genitals causing a recurrence of tender fluid filled vesicles containing numerous virus
Past history of genital herpes	Confirmed from HSV IgG serology (may be HSV-1 or HSV-2) and is consistent with the HSV type (either HSV-1 or HSV-2) by polymerase chain reaction (PCR) isolated from the genital tract
Primary first episode	Seronegative for both HSV-1 IgG and HSV-2 IgG with positive HSV (either type 1 or 2) PCR isolated from the genital tract. This provides evidence of first exposure to HSV (either type 1 or 2).
Non-primary first episode	Previous confirmed exposure to one type of HSV (by either HSV-1 IgG or HSV-2 IgG) and this is not consistent with HSV PCR type isolated from the genital tract in the peripartum period (e.g. confirmed HSV-1 IgG positive by serology with a first presentation of HSV-2 on PCR from the genital tract)

Literature Review

HSV may be prominent during pregnancy due to relative maternal immunosuppression in pregnancy.¹

Most genital HSV infections (primary, non-primary, recurrent) are asymptomatic, i.e. most mothers of infants with neonatal HSV disease were previously unaware of their own infection.²

Primary infection in the first trimester is associated with an increased risk of early miscarriage. Continuation of the pregnancy does not lead to congenital abnormalities.¹

85% of neonatal HSV infections are acquired perinatally. Maternal HSV infection at the time of a vaginal birth may lead to severe neonatal disease due to ascending infection after rupture of membranes.²

Intrauterine infection accounts for less than 5 % of reported cases.²

Caesarean section reduces risk of HSV transmission in women shedding HSV at the time of birth, particularly in women with primary infections who are HSV type specific antibody negative.²

HSV-1 genital infection is less likely to recur than genital HSV-2.

Antenatal management



Aboriginal women should be consulted about any decisions in the first instance. If requested, an Aboriginal Health Professional should be consulted.



Women who identify as Aboriginal have a recognised increased risk.

Infection Precautions

Practice standard precautions

Past history of genital herpes

Serial genital cultures are not predictive of shedding during labour, so are not recommended.

If not already done, obtain serology for HSV-1 and HSV-2 and also HSV PCR typing from the genital tract. Consider use of suppressive antiviral treatment (see [Table 1](#) below) from 36 weeks onwards for women with recurrent lesions.²



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First episode of genital herpes during pregnancy

If not already done, obtain serology for HSV-1 and HSV-2 and also HSV PCR typing from the genital tract.

Both primary (HSV IgG negative for both HSV types 1 and 2) and non-primary first episodes diagnosed in the first or second trimester are treated as per 'First episode' in [Table 1](#).

First and second trimester acquisition of HSV (types 1 or 2)

RCOG recommend that following first or second trimester acquisition of HSV, suppression from 36 weeks of gestation as per [Table 1](#) below should be commenced³.

Providing that labour and/or birth does not ensue within the next 6 weeks, the pregnancy should be managed expectantly and vaginal birth (at viability) anticipated.³

Third trimester acquisition

If a late diagnosis is made (in the third trimester) treat as per 'First episode', followed by 'Suppressive treatment' (see [Table 1](#)) until birth.³

Seroconversion may take between 4 to 12 weeks with HSV-1 or HSV-2.²

If seroconversion has not occurred or is unknown and the woman proceeds to preterm birth or preterm prelabour rupture of the membranes (PPROM), assume a high risk of HSV transmission to the newborn of 25 to 50%.²

Caesarean section should be the recommended mode of birth for all women developing first episode genital herpes in the third trimester, particularly those developing symptoms within 6 weeks of expected birth. The risk of neonatal transmission of HSV is very high.³

Advise the woman with active genital herpes that, if spontaneous rupture of the membranes occurs, caesarean section should be performed as soon as possible, preferably within 4 hours.

Recurrent genital herpes during pregnancy

Treat recurrent episode(s) (refer to [Table 1](#) for antiviral agents and dosing).

Commence suppressive treatment from 36 weeks until birth for women who have multiple recurrent lesions.³

Vaginal birth should be anticipated in the absence of other obstetric indications for caesarean section.³

Table 1: Recommended treatment options for herpes simplex virus

Indication	Aciclovir	OR Valaciclovir
Treatment of first episode	400 mg orally three times a day for 5 days	500 mg orally twice a day for 5 days
Treatment of recurrent episode(s)	400 mg orally three times a day for 5 days	500 mg orally twice a day for 3 days
Suppression treatment	400 mg orally three times a day until birth	500 mg orally twice a day until birth



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Genital herpes in preterm prelabour rupture of the membranes (PPROM)

First episode (primary) of genital herpes with PPRM

There is limited evidence to inform best obstetric practice when PPRM is complicated by primary HSV infection.

Management should be guided by a multidisciplinary team discussion involving the obstetricians, neonatologists and infectious diseases consultants and will depend on the gestation when PPRM occurred.

Immediate birth

Anticipated benefits of caesarean section remain.

Initial conservative management

- Recommend initial intravenous aciclovir 5 mg/kg every 8 hours in the initial assessment period (24 to 48 hours), then review regarding intravenous versus oral treatment as per 'First episode' in [Table 1](#).
- Prophylactic corticosteroids should be considered to reduce the implications of preterm delivery (see 'Preterm prelabour rupture of the membranes' in the A to Z index at www.sahealth.sa.gov.au/perinatal).
- If birth is indicated within 6 weeks of the primary infection, caesarean section birth may still offer some benefit despite the prolonged rupture of membranes

Recurrent genital herpes with PPRM

When PPRM is encountered in the presence of recurrent genital herpes lesions, the risk of neonatal transmission is very small and may be outweighed by the morbidity and mortality associated with preterm birth.

In the case of PPRM before 34 weeks there is evidence to suggest that expectant management is appropriate, with initial oral antiviral treatment as per 'Treatment of recurrent episodes' in Table 1. Consider further treatment with oral antiviral treatment as per 'Suppression treatment' in [Table 1](#).

After 34 weeks gestation, manage according to SA Perinatal Practice Guideline 'Preterm prelabour rupture of the membranes' in the A to Z index at www.sahealth.sa.gov.au/perinatal.

Intrapartum management

Ensure the hospital of choice is equipped with facilities for caesarean section.

Management of a woman with genital herpes at the onset of labour will be based on clinical assessment as time will not permit confirmatory laboratory testing.

Avoid fetal scalp electrode, fetal blood sampling.

If there is an obstetric indication to expedite birth in second stage, an operative birth (instrumental or vacuum extraction) may be the safest mode; however, there is a small risk of transmission of HSV to the baby.

Recurrent genital HSV infection²

- The overall risk of transmission is <1%.
- If HSV is detected in the genital tract at birth, risk of transmission is 1-3%
- The risk is greater for recurrent HSV type 1 (15%) compared to the recurrent HSV type 2 (0.01%)



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Perform a careful speculum examination in early labour

No active lesions seen

Suitable for vaginal birth

Active lesions seen

ASID state “Caesarean section reduces risk of HSV transmission in women shedding HSV at the time of birth, but does not provide complete protection against neonatal HSV disease”

RCOG state “vaginal delivery should be offered to women with recurrent genital herpes lesions at the onset of labour. A caesarean section delivery can be considered but the risk to mother and future pregnancies should be balanced against the small risk of neonatal transmission of HSV with recurrent disease (1-3% for vaginal delivery)”

Primary genital HSV lesions at onset of labour

Caesarean birth

A caesarean section should be recommended to all women presenting with a primary episode of genital herpes lesions either at the start of labour OR if they have had a primary lesion within 6 weeks of the expected date of birth.

There is some evidence to suggest that the benefit of caesarean section reduces if the membranes have been ruptured for more than 4 hours.^{3,7} However, there may be some benefit in performing a caesarean section beyond 4 hours of rupture of the membranes.

Vaginal birth

Where caesarean section is not feasible, give intravenous aciclovir (5 mg per kg every 8 hours) until birth. However it is unknown whether this will reduce the risk of neonatal HSV infection (risk of perinatal transmission 25-50%).

Postpartum care of the neonate

Asymptomatic infant and low risk of infection

Recurrent antenatal maternal infection or primary infection with seroconversion before labour and birth (6 or more weeks before birth):

- Normal postnatal care of the baby

24 hours after birth

- Collect surface swabs (eye, throat, umbilicus and rectum) and send for HSV 1 and 2 PCR
- Collect urine for HSV 1 and 2 PCR
- Observe for any clinical signs of infection as described below in '[clinical signs of HSV disease](#)'

Asymptomatic infant and high risk of infection

Primary maternal HSV infection close to birth or baby born through birth canal with active maternal HSV disease and no previous history of genital HSV:

- Care of the infant at high risk of contracting neonatal HSV disease should ideally take place in a hospital with at least Level 5 facilities. Where this does not occur (e.g. either undiagnosed HSV infection or unplanned birth in rural area), direct consultation with the Neonatal team in a level 6 facility or the Infectious Diseases Department at either the Women's and Children's Hospital or Flinders Medical Centre is required.
- Standard and contact precautions and nurse in a single room



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At birth

- Paediatrician / neonatologist at birth
- Complete examination of the baby for clinical signs of HSV (see "[Symptomatic Infant](#)")
- Transfer to neonatal care
- Collect urine for HSV 1 and 2 PCR
- Complete blood picture (low platelets)
- Liver function test
- Coagulation profile
- HSV PCR on blood
- Lumbar puncture (CSF biochemistry, cell count, HSV PCR and bacteria culture)

Treatment

- Commence intravenous aciclovir - see Neonatal Medication Guideline 'aciclovir' at www.sahealth.sa.gov.au/neonatal.
- For pre-emptive treatment (high risk asymptomatic infant without laboratory confirmed infection), 10 days IV aciclovir is recommended.

24 hours after birth

- Collect surface swabs (eye, throat, umbilicus and rectum) and send for HSV 1 and 2 PCR.

Symptomatic infant with clinical signs of HSV disease

- Vesicular skin lesions or atypical pustular or bullous lesions, especially on the presenting fetal part. An ulcer or ulcers involving the buccal mucosa. Corneal ulcer / conjunctivitis/ keratitis
- Seizures
- Unexplained fever or sepsis with negative blood cultures and not responding to antibiotics
- Low platelets
- Elevated liver enzymes
- Disseminated intravascular coagulation
- Respiratory distress (24 hours after birth)

Treatment

Intravenous aciclovir treatment - see Neonatal Medication Guideline 'aciclovir' at www.sahealth.sa.gov.au/neonatal.

- For HSV infection confined to skin, eye and mouth, continue IV aciclovir for 14 days
- For encephalitis or disseminated disease, continue IV aciclovir for 21 days

Management if clinical signs of HSV evident

Repeat lumbar puncture (cerebrospinal fluid analysis, viral culture, HSV PCR)

- May need to be repeated after 72 hours in circumstances of clinical signs of central nervous system disease with initial negative HSV PCR result
- Repeat near completion of treatment to confirm clearance of viral DNA. If HSV PCR remains positive, extend treatment duration or consider alternative antiviral agent e.g. Foscarnet



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Follow up

Monitor baby for signs of recurrence, eye disease, hearing impairment or central nervous system sequelae.

There is little data to guide management of recurrences after neonatal HSV disease.

CSF examination including HSV PCR and empiric IV aciclovir (see Neonatal Medication Guideline 'aciclovir' at www.sahealth.sa.gov.au/neonatal) is recommended for:

- cutaneous recurrences in infants < 3 months of age, OR
- recurrences after previous neonatal encephalitis at any age, OR
- re-presentation with neurological signs +/- fever at any age



Aboriginal women should be referred to the Aboriginal Health Professional

Oral Aciclovir Prophylaxis to Prevent CNS Sequelae

Oral treatment should not be recommended for therapeutic or pre-emptive treatment of HSV in the neonate. The role of oral valaciclovir has not been evaluated in this context.

Neonatal HSV CNS disease +/- disseminated infection

Oral aciclovir recommended for all infants with HSV encephalitis – see Neonatal Medication Guideline 'aciclovir' at www.sahealth.sa.gov.au/neonatal.

Skin eye mouth or disseminated infection without CNS involvement

Some experts also use oral aciclovir to suppress troublesome cutaneous recurrences after skin, eye, mouth disease or to reduce early reactivation after all forms of disease in any infant; or in very preterm infants, but not routinely recommended as not shown to alter neurological outcome.



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Useful website

SA Health: You've got what – 'Genital herpes: symptoms, treatment and prevention' in the A to Z index at www.sahealth.sa.gov.au/YouveGotWhat



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Acknowledgements

The 'Management of Perinatal Infections' guideline for Herpes simplex virus by the Australasian Society for Infectious Diseases 2014, has been used to inform this practice guideline. Available at URL: <http://www.asid.net.au/resources/clinical-guidelines>

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Write Group Members

Dr Brett Ritchie
Allison Rogers
Dr Paul Goldwater
Dr Charlotte Bell
Catherine Leggett
Luke Grzeskowiak

Other major contributors

SAPPG Workgroup (until 2016)

SAPPG Management Group Members

Sonia Angus
Dr Kris Bascomb
Lyn Bastian
Dr Elizabeth Beare
Elizabeth Bennett
Dr Feisal Chenia
John Coombas
Dr Vanessa Ellison
Jackie Kitschke
Dr Kritesh Kumar
Catherine Leggett
Dr Anupam Parange
Rebecca Smith
A/Prof Chris Wilkinson



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Developed by:	SA Maternal, Neonatal & Gynaecology Community of Practice
Contact:	HealthCYWHSPerinatalProtocol@sa.gov.au
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