

South Australian Perinatal Practice Guideline

Syphilis 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 state-wide 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 state-wide 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

Note: The words woman/women/mother/she/her have been used throughout this guideline as most pregnant and birthing people identify with their birth sex. However, for the purpose of this guideline, these terms include people who do not identify as women or mothers, including those with a non-binary identity. All clinicians should ask the pregnant person what their preferred term is and ensure this is communicated to the healthcare team.

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.

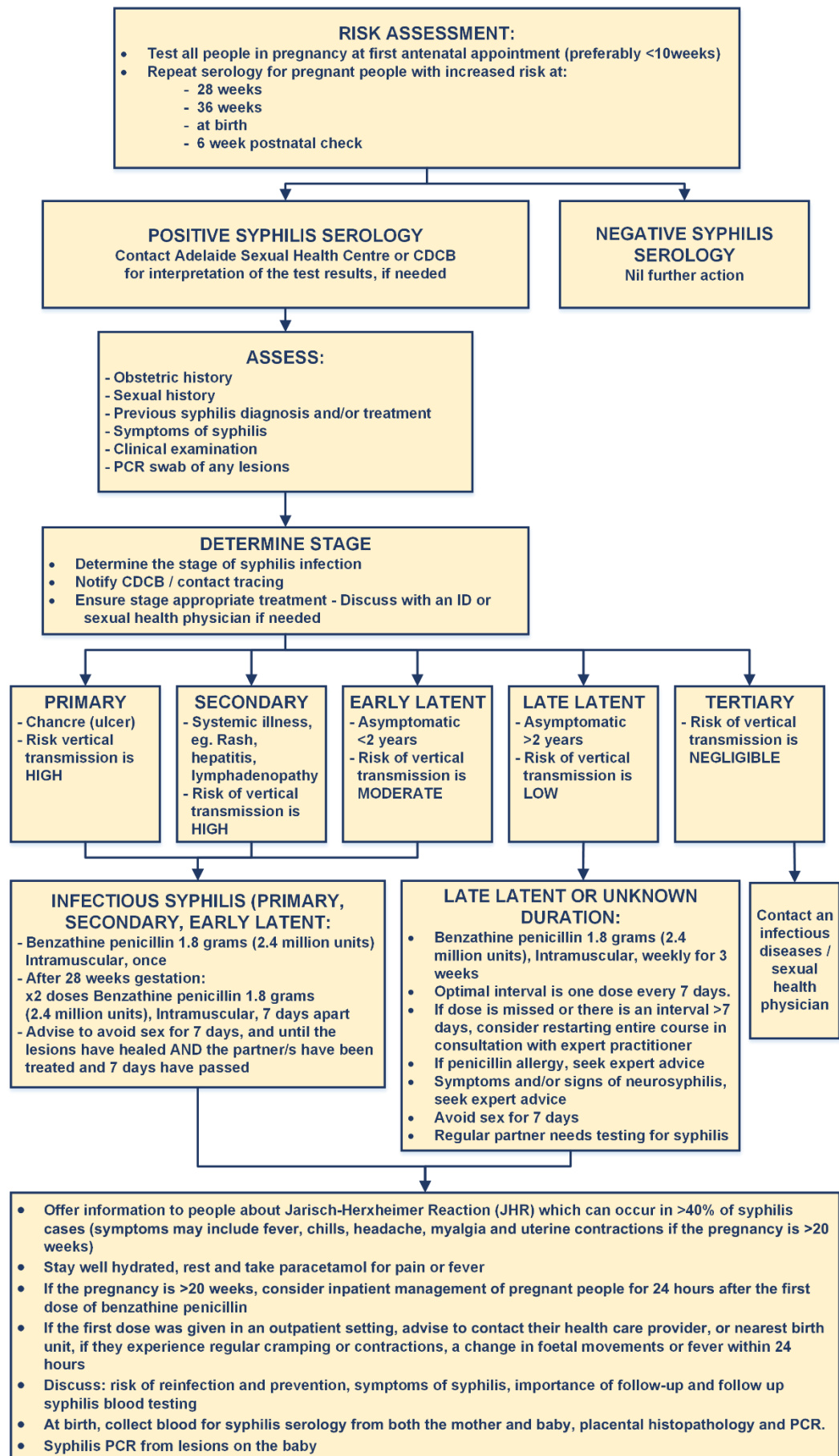
Purpose and Scope of PPG

This guideline provides clinicians with information on screening and management of syphilis during pregnancy, birth and postpartum. It includes recommendations for additional screening in at-risk groups, treatment of syphilis, newborn care and health promotion information.



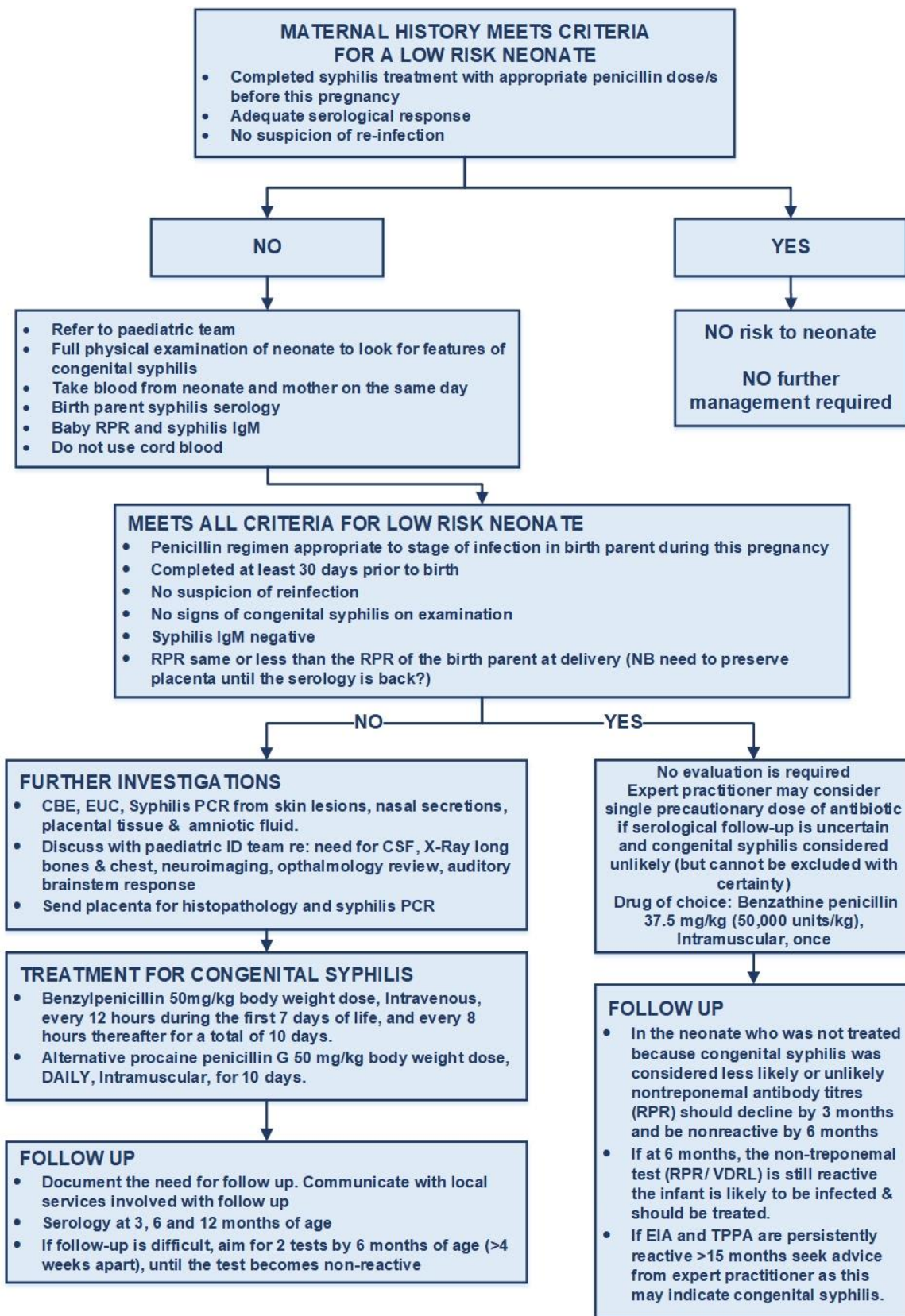
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Flowchart 1 – Management of Syphilis during Pregnancy



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Flowchart 2 – Management of the baby born to a mother with positive syphilis serology



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Summary of Practice Recommendations

- > Untreated syphilis can lead to miscarriage, stillbirth, or congenital infection.
- > Congenital syphilis can be prevented through appropriate antenatal testing and treatment therefore all pregnant women should be screened for syphilis at their first antenatal appointment
- > Additional screening is required if an increased risk of acquiring syphilis is identified, and for Aboriginal people in outbreak areas
- > Syphilis is a notifiable disease
- > Screening for other sexually transmitted infections should be performed in people with positive syphilis serology
- > Once a positive syphilis serology has been confirmed the stage of syphilis needs to be established
- > Treatment of pregnant women AND their contacts should be carried out urgently and in consultation with an expert practitioner (see definitions)
- > Follow up of women who have been treated for syphilis in pregnancy is important to detect reinfection and to ensure optimal assessment and follow up of the baby

Abbreviations

bd	Twice daily
CSF	Cerebro-spinal fluid
CDCB	Communicable Diseases Control Branch
EIA	Enzyme ImmunoAssay
FTA	Fluorescent Treponemal Antibody
g	Gram(s)
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
JHR	Jarisch-Herxheimer Reaction
ID	Infectious Diseases
IM	Intramuscular
IUGR	Intra Uterine Growth Retardation
IV	Intravenous
kg	Kilogram(s)
mg	Milligram(s)
mL	Millilitre(s)
MU	Million Units
PCR	Polymerase Chain Reaction
POCT	Point of Care Testing
PPG	Perinatal practice guideline
RFDS	Royal Flying Doctor Service
RPR	Rapid Plasma Reagent
STI	Sexually transmitted infection
T. Pallidum	Treponema Pallidum
TPPA	Treponema Pallidum Particle Agglutination
VDRL	Venereal Disease Research Laboratory test



Syphilis in Pregnancy

Definitions

Expert practitioner	In this guideline an 'expert practitioner' is a clinician with specialist knowledge and experience in the testing, result interpretation, management and treatment of syphilis in antenatal care settings. May include (but is not limited to) an infectious disease physician, sexual health physician, obstetrician or neonatologist with expertise in the management of syphilis. For Aboriginal women, the inclusion of culturally safe and appropriate support from an Aboriginal health care clinician is needed.
Infectious syphilis	Syphilis of less than two years' duration (includes primary, secondary and early latent stages).
Partner notification	Partner notification is the process of identifying sexual contacts and providing access to advice, testing and treatment. Treatment of infected partners will reduce individual complications from sexually transmitted infections, as well as reducing further sexual transmission. Perinatal service providers need cultural sensitivity, within a non-judgemental environment when planning and providing care for the Aboriginal woman. Aboriginal women may experience 'shame' in this context, given women's business. Sensitivities need to be culturally safe and appropriate and include an Aboriginal healthcare practitioner.
SA Syphilis register	The SA Syphilis Register is a secure, confidential, single state-wide database which aims to include all laboratory-positive syphilis cases diagnosed in Aboriginal and Torres Strait Islander South Australians which meet the syphilis national case definition. The register can also assist with partner notification.
Increased risk of syphilis in pregnancy includes people:	<ul style="list-style-type: none"> > Who identify as Aboriginal and/or Torres Strait Islander origin who reside in, or have travelled from/through, an area of increased prevalence, including syphilis outbreak areas > Whose partners identify as Aboriginal and/or Torres Strait Islander who reside in, or have travelled from/through area of increased prevalence, including syphilis outbreak areas > With a history of STI (current pregnancy or previous 12 months) > Who have had sex with men who have sex with men and women > Who have engaged in sex work > With overseas sexual contacts, especially from countries with high prevalence of STI(s) > With alcohol or substance use, particularly methamphetamine (ice) and/or other injecting drug use > Who are adolescents (Age 10-18) > Who are transgender, non-binary or gender diverse > With late or no antenatal care > With new sexual partner/s since they became pregnant <p>Please see Antenatal screening for specific additional antenatal syphilis screening recommendations for at risk people.</p>



Syphilis

- > Syphilis is a bacterial infection caused by the spirochete bacterium *Treponema pallidum*
- > Untreated syphilis during pregnancy can lead to miscarriage, preterm labour, stillbirth, neonatal death, or congenital syphilis with multi-system manifestations such as deafness, neurologic impairment, and bone deformities
- > Mid-trimester spontaneous miscarriage is the most common outcome of syphilis in pregnancy
- > The risk of trans -placental transmission to the unborn baby is highest in infectious syphilis, with the risk of infection in the unborn baby approaching 100% with primary and secondary syphilis.¹⁹ In established late latent syphilis, vertical transmission occurs in around 10%¹ of cases.
- > There has been a 220% increase in notifications of infectious syphilis in Australian women in the last 5 years²
- > In Australian women, the overall notification rate is 8 per 100,000. In Aboriginal and Torres Strait Islander women the rate is 228 per 100,000²
- > The epidemiology of infectious syphilis among transgender and gender diverse people in Australia is estimated based on a small number of research studies due to the limitations regarding the collection and reporting of sex and gender fields on notification forms. In a recent Australian study of sexual health clinic data, 0.5% of transgender men and 3.1% of transgender women in the sample were positive for infectious syphilis. Another Australian study which asked participants about lifetime diagnoses reported 2.5% of trans, non-binary and gender diverse participants had ever been diagnosed with infectious syphilis
- > There is an ongoing outbreak of infectious syphilis affecting young Aboriginal and Torres Strait Islander people, predominantly aged between 15 and 29 years, living in northern, central, western and southern Australia, referred to as the Multi-Jurisdictional Syphilis Outbreak (MJSO)³:
- > Outbreak areas in SA:
In March 2017 SA declared an infectious syphilis outbreak in the Far North and Western and Eyre regions linked to the MJSO
In January 2019 SA declared the outbreak had spread to Adelaide.³ No new outbreak regions have since been declared in SA (to end of 2021), however the proportion of cases occurring in the Adelaide region has increased over time, with over half of new cases reported in 2021 being from the Adelaide region
- > As of October 2021, in metro Adelaide, infectious syphilis notifications among non-Aboriginal females in SA have tripled when compared to the previous 5year average.

Congenital syphilis

- > In Australia 20 cases of congenital syphilis were notified between 2008 and 2012 and 24 between 2013 and 2017. Of those born between 2013 and 2017 63% were Aboriginal and Torres Strait Islander babies²
- > The notification rate of congenital syphilis in the Aboriginal and Torres Strait Islander population was 26.9 per 100,000 live births in 2017 which is 27 times higher than the non-Aboriginal notification rate of 1 per 100,000²
- > There have been 3 cases of congenital syphilis notified in SA since 2017, and all 3 were Aboriginal babies³
- > In 2020 there were 8 cases of infectious syphilis diagnosed in pregnancy in SA, when systematic recording of cases during pregnancy was initiated (These were a mix of Aboriginal and non-Aboriginal people)
- > At time of writing there have been 3 cases during pregnancy in 2021; all were non-Aboriginal people



Syphilis in Pregnancy

Notification

- > Syphilis (including congenital syphilis) is a nationally notifiable disease
- > Notification must be made to the Communicable Disease Control Branch in South Australia within 3 days of suspecting or confirming a diagnosis of syphilis. Using the orange STI form available at the [CDCB website](#) :
 1. Fax: (08) 7425 6696
 2. Post: CDCB, Reply Paid 6, PO Box 6 Rundle Mall, South Australia 5000
 3. Telephone: 1300 232 272, during business hours - Monday to Friday 8.30 am to 5.00 pm
- > **Ensure Aboriginal women have access to cultural support when discussing lines of reporting. Aboriginal consumer may not accurately understand what this involves and may feel a sense of judgement, shame and fear of losing their baby if the process is unclear. Aboriginal women should be referred to an Aboriginal Health Professional to ensure care and management is culturally appropriate, safe and sensitive**

Transmission

- > Almost all cases of syphilis are acquired through sexual contact with an infected partner/s

Acquired infection

- > In the majority of cases, syphilis is transmitted during sexual activity, by direct contact with lesions (e.g. chancres and condylomata lata) on a person with infective syphilis. These lesions occur mainly on the external genitals; vagina; anus; or in the rectum. Lesions can also occur on lips and in the mouth ^{4,5}
- > Sexual transmission can occur during primary and secondary stages and any time in the first 2 years after infection
- > Rarely, syphilis is transmitted by infected blood (transfusion, sharing injecting equipment), by nonsexual personal contact with infected lesions or by accidental direct inoculation

Vertical (transmission in pregnancy)

- > Vertical transmission can occur at any time during pregnancy, labour and birth. Transmission is possible if pregnancy occurs at any stage of syphilis, up to 8 years after acquisition of infection. Congenital syphilis can occur when the spirochete is transmitted from a woman with untreated syphilis to the fetus

Syphilis can be transmitted vertically, during any stage of pregnancy, labour and birth.

Incubation period

- > 9 to 90 days, with an average of 3 weeks from contact to the development of a chancre ⁶
- > The individual is no longer infectious 7 days after starting appropriate antibiotic treatment

Clinical Features of Syphilis

- > Untreated syphilis passes through distinct symptomatic stages (primary, secondary and tertiary) as well as asymptomatic (latent) stages. While the infection is latent a diagnosis of syphilis can only be made by serology ⁶
- > There are characteristic clinical features for each stage of syphilis (please see below)



Syphilis in Pregnancy

However, syphilis can present with a wide variety of symptoms which can be mild or severe, characteristic or variable, or the infection can be asymptomatic. Syphilis has been called “the great mimic” because the symptoms of syphilis can present like many other diseases ^{6, 7}

Primary stage

- > Characterised by an ulcer(s) otherwise known as a chancre. Chancres are usually single but may be multiple in 30% of cases ^{6, 7, 8}
- > The chancre is typically firm, round, small and maybe painless or painful and appears at the site where direct contact has occurred^{6, 7, 8}
- > The initial chancre may go unnoticed, particularly if hidden in the vagina, mouth or anal region
- > There may be associated non-tender local lymphadenopathy
- > The chancre lasts 3 to 6 weeks (range 1-12 weeks) and heals without treatment ^{6, 7}

Secondary stage

- > Occurs 2 to 8 weeks after resolution of the chancre but may occur any time in the following year if untreated ^{6, 7, 8}
- > Usually characterised by rash and systemic symptoms
- > A non-itchy rash is often present in people with secondary syphilis ^{6, 7, 8}
- > The rash may be subtle or appear as rough red or reddish-brown spots, often on the trunk and palms of the hands and soles of feet
- > Greyish-white, moist plaques or warty lesions may occur in the groin, inner thighs, armpits, umbilicus or under the breasts (condylomata lata) ^{6, 7, 8}
- > Mucosal surfaces such as inside the mouth, throat, genital area, vagina and anus can become red and raw (mucous patches)
- > There may be associated fever, swollen lymph glands, sore throat, patchy alopecia (hair loss), headaches, weight loss, muscle aches and fatigue^{6, 7, 8}
- > Signs and symptoms last about 2 to 6 weeks and will resolve without treatment. Recurrences may occur, usually in the first year and rarely in the second year
- > Without treatment, the infection will become latent and may progress to late stages of disease

Latent stage

Defined as sero-positivity without evidence of disease (asymptomatic)

- > **Early latent stage**
Defined as positive serology with no symptoms and infection acquired within the last 2 years.
- > **Late latent stage**
Defined as asymptomatic infection beyond 2 years' duration. Infectivity is reduced only to vertical transmission or via transfused contaminated blood

Tertiary stage

- > Can develop in up to 40% of untreated individuals ^{6, 7, 8}
- > May occur up to 20-40 years after initial infection
- > May involve the brain and spinal cord (neurosyphilis), heart and blood vessels (cardiovascular syphilis), liver, bones and joints

Neurosyphilis

- > Neurosyphilis can occur at any stage of syphilis infection ^{6, 7, 8}
- > Symptoms of neurosyphilis may include meningitis, cranial nerve palsies, change in vision, change in hearing, difficulty coordinating muscle movements, paralysis, numbness, dementia, psychosis and death



Syphilis in Pregnancy

Diagnosis of Syphilis

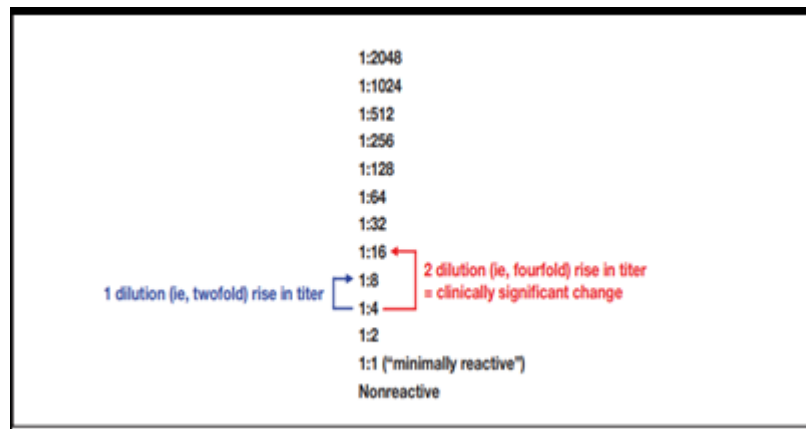
- > Diagnosis of syphilis can be made with swabs (DNA PCR) and blood tests (serology) ^{6,8}
- > When ulcers in primary syphilis, mucosal lesions in secondary syphilis and mucosal or skin lesions on new-born babies are seen, a dry swab for PCR (which can be moistened with saline) can be taken to detect syphilis. A blood test for syphilis serology should also be taken at the same time ^{6,8}
- > When there are no symptoms and signs, (ie latent syphilis), diagnosis occurs from serology. Serology can take up to 3 months to become positive after infection
- > If positive for syphilis, tests for all other STIs, including HIV should be undertaken

Syphilis serology

- > Request “syphilis serology” on the blood form. The lab will screen for syphilis with a Treponemal specific enzyme immunoassay (EIA) screening test ^{6,8}
- > If the EIA is reactive, the lab will automatically confirm with a Treponemal Pallidum TPPA, and rarely Fluorescent Treponemal Antibody (FTA-abs)
- > TPPA: positive result confirms exposure to Treponema pallidum, but does not indicate whether the disease is active, inactive or treated
- > The EIA and TPPA remain reactive for many years even after successful treatment. The lab will not repeat the TPPA once it is positive ^{6,8}
- > The Rapid Plasma Reagent (RPR) is also automatically performed by the lab when screening and confirmatory tests are positive ^{6,8}
- > The RPR is reported as a titre. The RPR is useful in determining disease activity, response to treatment and reinfection
- > False positive tests may occur (syphilis Elisa, RPR/ VDRL) ^{6,8}

For example:

- > EIA reactive, TPPA positive and RPR negative may represent very early infection, latent infection, or treated syphilis
- > EIA reactive, TPPA positive and RPR 1:125 represents active syphilis. After treatment of infectious syphilis an adequate response to treatment would be at least a four-fold drop in titre by 6-12 months. Conversely if the person were to be re infected in the future their RPR will increase by four-fold



Interpretation of syphilis serology

- > Previous syphilis screening results, history of previous treatment and examination findings are important when interpreting the test results
- > For assistance interpreting serology and advice please contact Adelaide Sexual Health Centre on 08 7117 2800 or CDCB 08 7425 7101



Syphilis in Pregnancy

Point of Care Syphilis testing

- > Some Aboriginal Community Controlled Health Services in SA can undertake point of care testing (POCT) for syphilis using the Determine Syphilis TP test. This POCT is a treponemal antibody test. It requires a small drop of blood and a chase buffer and provides a result in 15 minutes⁹
- > If possible, all people having POCT should also have blood taken for syphilis serology. If POCT is positive, serology will help to determine if the infection is active, inactive or treated
- > Blood for serology should be taken before any treatment is commenced, so the RPR titre can be monitored
- > Individual services should/refer to their clinical framework and procedure for syphilis POCT within their own clinics

Clinical evidence of congenital syphilis

Intrauterine ultrasound findings suggestive of congenital syphilis:^{10, 11}

- > Hepatomegaly
- > Placentomegaly
- > Polyhydramnios
- > Ascites
- > Abnormal middle cerebral arterial doppler assessment
- > Fetal hydrops
- > Bent, thickened or shortened fetal long bones

Antenatal screening

- > In South Australia, routine screening for syphilis (treponemal specific enzyme immunoassay) is offered to **all** pregnant women at their first antenatal appointment as part of routine antenatal screening blood tests, as per the *Antenatal Care PPG*, available at www.sahealth.sa.gov.au/perinatal

Due to the change in syphilis epidemiology in SA, the CDCB recommends that increased testing for syphilis is offered at the booking visit, 28 weeks and 36 weeks in all pregnancies.

SA health is exploring the cost versus benefit and universal increased screening is not yet approved.

Currently, we recommend a low threshold for requesting the additional testing.

These recommendations may be updated.

- > At the time of testing, it is important to explain what syphilis is, the symptoms, the risks during pregnancy and the reasons increased testing may be recommended (including information about the current outbreak)
- > **Aboriginal Health Workers or Aboriginal Maternal and Infant Care staff should be included in consultations to provide support to Aboriginal people. Where this service is unavailable, please contact WCHN Aboriginal Health Division (08) 83031622**

Additional screening for people at increased risk of syphilis in pregnancy

- > For screening, we have classified recommendations into people who:
 1. Have an increased risk of STIs (including syphilis)
 2. May be impacted by the defined syphilis outbreak areas

See specific recommendations for each group below.



Syphilis in Pregnancy

1. People at increased risk of STIs (including syphilis) in pregnancy

This includes sexually active persons:

- > Who identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled from/through an area of increased prevalence
- > Whose partners identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled from/through an area of increased prevalence
- > With a history of STI (current pregnancy or previous 12 months)
- > Who have had sex with men who have sex with men and women
- > Who have engaged in sex work
- > With overseas sexual contacts, especially from countries with high prevalence of STI(s)
- > With alcohol or substance use, particularly methamphetamine (ice) and/or other injecting drug use
- > Who are adolescents
- > Who are transgender, non-binary or gender diverse
- > With late or no antenatal care
- > With new sexual partner/s since they became pregnant
 - Consider offering a full STI screen including syphilis serology, chlamydia, gonorrhoea and HIV
 - If there are difficulties taking a detailed history consider offering a full STI check as part of a general health screen.
 - ***This group should be offered an additional syphilis screening at a minimum at:***
 - **28 weeks**
 - **36 weeks**

2. People who may be impacted by the defined syphilis outbreak areas

- > The current Multijurisdictional Syphilis Outbreak increases the risk for Aboriginal people who reside in, or travel through these areas, of acquiring syphilis.
- > At 2022, outbreak areas included Far North, Eyre and Western regions of SA and metropolitan Adelaide. Further information at: <https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/clinical+programs+and+practice+guidelines/infectious+disease+control/syphilis/infectious+syphilis+outbreak+in+sa>
- > Enhanced screening is recommended for pregnant people :
 - Who identify as Aboriginal and/or Torres Strait Islander origin and who reside in, or have travelled through/from an outbreak area
 - Whose partners identify as Aboriginal and/or Torres Strait Islander people who reside in, or have travelled through/from an outbreak area
- > ***The recommendation is for enhanced syphilis screening as follows:***
 - ***First antenatal visit (routine)***
 - **28 weeks**
 - **36 weeks**
 - ***At birth***
 - **6 week post-natal**

The woman should be informed of this recommendation with corresponding documentation in their SA Pregnancy Record

Offer syphilis screening to all women who present in labour with no antenatal care or if investigation results unavailable.

Aboriginal women should be offered or referred to an Aboriginal health professional as soon as practicable to ensure culturally sensitive and appropriate support.



Care of Aboriginal Women

Aboriginal women should be offered a female clinician/practitioner where available to acknowledge the importance of women's business remaining women's business. Where a female clinician is unavailable, the woman should be offered an Aboriginal Healthcare Worker (female) or appropriate female support.

Perinatal service providers need cultural sensitivity within a non-judgemental environment when planning care for the Aboriginal woman. Aboriginal women should be referred to an Aboriginal Health Professional, AMIC Practitioner or Aboriginal Healthcare Worker to support decisions and interpretation of care.

Health literacy will need to be considered in ensuring that care is culturally appropriate for Aboriginal women/consumers – visual/pictorial resources may be used to ensure Aboriginal women, particularly for APY Lands or NT understand in the absence of an interpreter.

The *Minymaku Kutju Tjukurpa: Women's Business Manual* outlines culturally appropriate care for rural and remote Aboriginal women

<https://remotephcmanuals.com.au/document/30938.html?publicationid=#10>

Treatment

- > Once a positive syphilis serology has been confirmed in pregnancy, establish the stage of syphilis (i.e. when the infection occurred) and whether effective treatment has already been given. If effective treatment has been given it is important to monitor treatment response and exclude re-infection
- > For assistance establishing the stage of syphilis please contact the Adelaide Sexual Health Centre on 7117 2800 or CDCB on 7425 7101
- > For assistance with accessing past results or treatments for Aboriginal people, please ask patient consent to contact their GP or Aboriginal Community Controlled Health Service or the SA Syphilis Register on health.sasyphilisregister@sa.gov.au or 1300 232 272
- > Successful management of syphilis in pregnancy depends on early detection and treatment of maternal infection, ideally before 28 weeks of gestation and at least 30 days before birth
- > Women with syphilis of less than 2 years duration and treated with penicillin may develop a Jarisch-Herxheimer reaction. If they are in the second half of pregnancy this may increase the risk of preterm labour and fetal compromise. If a Jarisch-Herxheimer Reaction (JHR) occurs, this may lead to uterine contractions and preterm labour. See Jarisch-Herxheimer Reaction (JHR)
- > It is recommended all women with viable pregnancies receive the first dose of benzathine penicillin G in an inpatient setting where fetal monitoring can occur for at least 24 hours. Thereafter, the remaining benzathine penicillin G doses can be given in an outpatient setting^{16,17}
- > If inpatient management not practical (e.g. in a remote setting) consider:
 1. Outreach follow-up contact in the community (e.g. by phone, text or personal contact)
 2. Fetal heart rate (FHR) auscultation or cardiotocography pre and post administration¹²
 3. Education on signs and symptoms of JHR and when to seek medical help
 4. For remote Aboriginal Communities, contact with Aboriginal Community Controlled Health services may be more appropriate due to location – and will consider the most appropriate method of follow up in this setting

Multidisciplinary management of syphilis during pregnancy

- > Involvement of infectious disease/sexual health physicians, woman's general practitioner or Aboriginal Community Controlled Health Service, midwife and obstetrics team is crucial in treating and managing syphilis during pregnancy.



Syphilis in Pregnancy

- > For Aboriginal women, Aboriginal Healthcare Worker and Aboriginal Maternal Infant Care practitioners, where available, should be offered and/or included in consultations to provide cultural advice and support for Aboriginal women and their families.
- > Timely communication and referral between different teams helps to achieve best outcomes.

Treatment for primary, secondary and early latent syphilis¹²

***Benzathine penicillin - 2.4 million units (1.8g)
intramuscularly as a single treatment dose²⁰***

- > A single treatment dose of intramuscular benzathine penicillin 2.4 million units (1.8g) will cure a person who has had syphilis for less than two years. The 2.4 Million units of penicillin are given as two intramuscular injections of 1.2 Million units- one in each buttock or ventrogluteal region, at the same time (ie not spread over days)^{6, 7, 8}
- > If syphilis is diagnosed in the third trimester, treatment should include a second dose of benzathine penicillin 2.4 million units one week after the first dose^{13, 8}
- > A second dose of benzathine penicillin can also be considered during the second half of the pregnancy (after 20 weeks) if the antenatal ultrasound scan shows evidence congenital syphilis, The second dose of benzathine penicillin 2.4 million units is given one week after the first¹⁴
- > If allergic to penicillin – seek expert advice about allergy delabelling and desensitisation see: Allergy to penicillin⁸
- > Repeat the blood test for syphilis serology on the day that syphilis treatment is commenced. Repeat RPR monthly (and at birth) to confirm falling, negative, low or stationary titre. If titre is not falling, seek advice from an infectious disease or sexual health physician⁸
- > Neurosyphilis, including ocular syphilis, can present in the person in the early stages of syphilis, particularly in secondary syphilis. Seek expert input if any new neurological symptoms, including auricular or ocular symptoms occur
- > See Partner Notification section for management of sexual contacts

Always repeat the RPR test on the day that treatment is commenced to ensure a peak RPR reading is obtained to allow accurate documentation of a post-treatment response.

Jarisch-Herxheimer Reaction (JHR)

- > Explain that up to 40% of people may develop a transient inflammatory reaction known as JHR in the first 24 hours after treatment with large doses of penicillin, especially in early syphilis. JHR onset is usually around 6 hours after the first treatment dose (range 2-24 hours) and lasts several hours. The JHR is thought to be the immune system's response to the rapid killing of spirochetes. Symptoms include fever, chills, headache, myalgias, and exacerbation of cutaneous lesions^{12, 15}
- > During the second half of the pregnancy (after 20 weeks) a JHR may precipitate uterine contractions, decreased fetal movements and cause abnormal fetal heart rate (FHR) tracings. In severely affected pregnancies preterm birth and stillbirth have been reported⁵

Management of JHR

- > Do not delay treatment for syphilis over concerns regarding JHR .
- > Symptomatic management of JHR includes paracetamol 1 gram every 4 to 6 hours (maximum 4 grams in 24 hours) and maintaining hydration, and tocolytics and IV fluids if required



Syphilis in Pregnancy

Treatment for late latent syphilis

***Benzathine penicillin 2.4 million units (1.8g)
intramuscularly weekly for 3 weeks²⁰***

- > Late latent syphilis is syphilis of greater than 2 years' duration, or of indeterminate duration in the absence of evidence of tertiary syphilis
- > Intramuscular injection of benzathine penicillin 2.4 million units once weekly for three doses on days 0, 7, and 14. If presenting more than 24 hours late for a dose consider restarting all 3 doses particularly after 28 weeks. Consult with a sexual health physician
- > Do a blood test for syphilis serology/ RPR on the day of the first dose of benzathine penicillin

Tertiary syphilis

- > Need further expert input
- > Intravenous benzylpenicillin 1.8 g every 4 hours for 15 days. Discuss with infectious diseases physician

Allergy to penicillin

***All people with syphilis in pregnancy should receive treatment with penicillin:
people with penicillin allergy should undergo desensitisation***

- > Penicillin allergy may be assessed against the '**suggested management of patients reporting hypersensitivity to penicillins in whom a beta-lactam antibiotic is the preferred drug**' algorithm, available in the '*Antibiotics in the peripartum period*' PPG at www.sahealth.sa.gov.au/perinatal
- > If a true allergy is ascertained discuss or refer urgently to immunology/ allergy services for further assessment including allergy testing and desensitisation. The evidence for non-penicillin regimens preventing congenital syphilis is weak⁶
- > If desensitisation is not feasible, doxycycline could be used if hypersensitive to penicillin. If necessary, doxycycline may be used during the first 18 weeks of pregnancy (16 weeks post conception). Doxycycline should be avoided after this time due to an association with irreversible teeth discolouration, enamel hypoplasia and inhibition of bone growth in the newborn following maternal use²².
- > Dose: 100 mg orally twice a day for 14 days for primary, secondary and early latent syphilis. 100 mg orally twice a day for 28 days for late latent syphilis
- > If penicillin desensitisation is not feasible and gestation greater than 18 weeks consult with infectious disease physician regarding treatment
- > Repeat RPR monthly (and at birth) to confirm falling, negative, low or serofast titre. If titre rising – repeat treatment as may be due to re-infection
- > Macrolides are not recommended treatments for syphilis⁷

Follow up after treatment

- > Advise the woman to avoid sex (including oral sex) until 7 days after treatment is completed in pregnant woman and partner, and until the skin lesions have healed
- > 4 weeks after treatment – clinical assessment and ensure sexual partner has been treated & no sexual activity while either remained infectious
- > Repeat syphilis serology/ RPR monthly (and at birth) to confirm a falling, negative, low or serofast titre. If the titre is rising or not dropping, repeat treatment may be required. Please consult with infectious diseases/ sexual health physician
- > Take a detailed sexual history and the treatment history of sexual partner/s at every appointment and offer repeat STI screening as required



Syphilis in Pregnancy

- > **All Aboriginal women should be offered cultural support with an Aboriginal Healthcare Worker, or AMIC Practitioner where available in the provision of care, treatment and development of management plans**
- > **Follow up in primary care requires good communication with the pregnant woman GP or Aboriginal Community Controlled Health Service**

Counselling

- > Explain that Syphilis is a notifiable disease. Notification information is available at URL:
<https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/clinical+resources/health+notifications/notifiable+disease+reporting>
- > Successful management of syphilis in pregnancy depends on early detection and treatment of maternal infection, ideally before 28 weeks of gestation and at least 30 days before birth
- > The treatment regimen may vary, depending on the treatment history, treatment during pregnancy, risk of re-infection during pregnancy or presence of persisting high titres despite treatment
- > Explain the risk of congenital syphilis in the newborn
- > Stress the importance of testing any sexual contacts immediately and advise against further sexual contact until 7 days after treatment is completed and contacts have been assessed and treated. Information about partner notification can be found below in Partner notification / Contact management or [here](#)
- > Encourage safe sex practices e.g. use of condoms, and limitation of alcohol and other drugs.

Education

- > Encourage safer sex practices
 1. Use of condoms to reduce the risk of acquiring syphilis and other STIs. Condoms only work if they prevent direct contact with ulcers and other mucosal lesions
 2. Offer condoms to take away and show how to use if necessary
 3. Encourage communication between sexual partners
- > Educate on risks
 1. Increased risk if sexual partner(s) engage in male to male sex
 2. Avoid drug and alcohol use during pregnancy
- > After diagnosis of syphilis in pregnancy
 1. If a pregnant woman or partner is treated for syphilis, advise to abstain from sex for 7 days after both have been treated and until symptoms resolve,
 2. Avoid having sex with untreated partners/ or until 7 days after the partner has received treatment.
 3. Advise to attend follow up blood tests

Postpartum follow-up

- > Clinical assessment and repeat syphilis serology (RPR) at 3, 6, 12 months – Successful treatment is a fourfold drop in the RPR / VDRL titre within 12 months for infectious syphilis and within 18-24 months for late latent syphilis
 - Titres that show a four-fold rise or do not decrease appropriately suggest either treatment failure, re-infection or undiagnosed neurosyphilis. Further treatment in these situations should be planned after seeking advice from an infectious diseases or sexual health physician
- > **Aboriginal women and their family should be consulted in relation to any follow up plans, including appropriate referrals to ongoing care and service providers. Offering cultural support is imperative to ensure follow up arrangements are timely and accurate, for rural and remote communities.**



Breast feeding advice

- > Breastfeeding is recommended as *T. pallidum* is not transmitted in breast milk
- > If there is a chancre present on the breast or axilla, the breastmilk should be discarded until 7 days after treatment and the lesion has healed

Pregnancy outcomes of syphilis infection^{9, 10}

- > Miscarriage
- > Stillbirth
- > Prematurity and low birth weight
- > Perinatal death
- > Born with signs of congenital syphilis
- > Born as a healthy-looking baby, showing clinical signs of congenital syphilis later
- > Healthy non-infected baby if mother adequately treated at least 30 days before birth.
- > Consider syphilis serology in any woman who has had an intrauterine death after 20 weeks gestation.

Congenital Syphilis

Every baby born to a woman who has been treated for syphilis in their current pregnancy should be reviewed by a specialist (paediatrician or infectious diseases specialist) and have comprehensive laboratory testing completed, including:^{17, 7}

- > Paediatric syphilis screen of baby's serum, including a RPR and an IgM (non-treponemal titre should ideally be determined in parallel with the mother's current sample)
- > Syphilis PCR of placental specimen
- > Placental histopathology
- > Most newborns with congenital disease have no clinical signs at the time of birth, signs may not occur for more than 2 years
- > There are two categories:
 - Early (occurring within the first 2 years of life)
 - Late (recognised after 2 or more years after birth)
- > If referred to paediatric team
- > Aboriginal woman should be consulted on the care of the newborn baby in the first instance. Consult with an Aboriginal Healthcare Worker or AMIC Practitioner or the preferred aboriginal health professional.
- > Aboriginal women, family or carer must be consulted about any decisions regarding maternal or neonatal care in the first instance. Culturally appropriate consultation improves outcomes for Aboriginal women, babies and families.

New-born assessment and treatment

1.) No risk of congenital syphilis

Criteria:

- > Adequate treatment for syphilis before the current pregnancy and there is no serological or clinical evidence of reinfection prior to or during the current pregnancy AND
- > The sexual history reveals no risk of re exposure to syphilis since the woman received treatment for syphilis^{13, 17}
- > If unsure re-treat the mother and manage the baby as at a risk of having congenital syphilis (please see below)



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- > There is a documented adequate serological response to treatment (4 fold or 2 titre decline in RPR), or if treated in the late latent stage without a drop in RPR all titres are low and stable no greater than 1:4
- > AND
- > Physical examination of the neonate does not raise suspicion of congenital syphilis
- > Assessment - None
- > Follow up - None

2) Low risk of congenital syphilis

Criteria

- > Meets all the following criteria for a low risk of congenital syphilis neonate ^{13, 17}
- > Mother received penicillin regimen appropriate to stage of syphilis infection during this pregnancy
- > Completed at least 30 days prior to birth
- > No suspicion of reinfection with the history, clinical examination or during serological follow up.
- > No signs of congenital syphilis on examination
- > Syphilis IgM negative in newborn serology
- > RPR in newborn's serology same or less than the mother's RPR at birth
- > Placental syphilis PCR negative and placental histopathology not suggestive of syphilitic changes

Assessment

- > Clinical examination of baby for features of congenital syphilis and serology of the mother and baby on venous blood at birth (not cord blood), to confirm the baby's RPR titre is the same or less than fourfold of the mother's RPR and to confirm negative IgM; placental syphilis PCR negative and histopathology unremarkable

Follow-up

Follow up in primary care requires good communication with the pregnant woman's GP or Aboriginal Community Controlled Health Service.

If the follow up is certain to occur:

- > Repeat baby's syphilis serology every 2-3 months
- > RPR titres should decline by 3 months and be nonreactive by 6 months. If at 6 months, the non-treponemal test (RPR) is still reactive the infant is likely to be infected & should be treated for congenital syphilis¹¹
- > Ensure parents are aware of the results of investigations and implications for future health care
- > Advise parents of the importance of attending follow up appointments
- > If the follow up is uncertain:
- > Consider a precautionary single dose of Benzathine penicillin G 37.5 mg/kg (50, 000 units/kg) IM
- > Only if the 10-day treatment course as per congenital syphilis (see below) is not indicated
- > A single dose is NOT adequate for treatment however may be prescribed by an expert practitioner or paediatric infectious diseases specialist if indicated

3) High risk of congenital syphilis

Criteria

- > The baby is high risk of congenital syphilis if syphilis was diagnosed in pregnancy ^{13, 17} and:



Syphilis in Pregnancy

- No treatment was given or
 - treatment was inadequate, or
 - birth occurred less than 4 weeks after treatment
- Mother was treated with a non-penicillin regimen, or
- There is evidence for risk of reinfection of the mother clinically, serologically or where the sexual history and the re-treatment could not be completed more than 30 days before birth or
- Adequate follow-up of the baby cannot be assured

Assessment: See below

Clinical examination of the baby for features of congenital syphilis

Early signs and symptoms after birth ^{9,10, 15, 17}

- > Usually occur within 3-7 weeks after birth and result from active disseminated fetal infection and the subsequent inflammatory response
- > Hepatomegaly is common and may be associated with splenomegaly. There may be abnormal LFTs / hepatitis, jaundice and cholestasis or, ascites
- > Rhinitis usually presents during first week of life and seldom occurs after the third month. White nasal discharge which may be bloody secondary to nasal ulcerations. The discharge contains high concentrations of spirochetes and is therefore contagious. Nasal discharge is the earliest sign of congenital syphilis and occurs 1-2 weeks before the rash
- > Rash lesions on the skin and / or in the mouth. Intra-epidermal oedema leads to bullae most prominent on the hands and feet. Even in the absence of bulla, desquamation is common & may be generalised. A maculopapular rash consisting of small, initially red or pink spots may progress to large pink macules that fade to a coppery hue, which may be covered by a silvery scale. Condylomata lata affect the mucocutaneous and intertriginous areas
- > Lymphadenopathy which may be generalised Palpable epitrochlear lymphadenopathy is highly suggestive
- > Haematologic disturbances -thrombocytopenia, anaemia (Coomb's negative normochromic, normo or macrocytic with striking reticulocytosis and erythroblastosis), and leucocytosis or leukopenia
- > IUGR. Low birth weight, failure to thrive not explained by alternative diagnosis.
- > Necrotising funisitis – an inflammation of the umbilical cord characterised by spiral stripes of red and blue discolouration resembling a “barber’s pole”. At birth the placenta should be sent for histopathology and PCR
- > Non-immune fetal hydrops
- > Tissue swelling of fingers and/or hands (dactylitis)
- > Inflammation of long bones (osteochondritis, perichondritis). A skeletal survey is required to evaluate infants for congenital syphilis
- > Failure to move limbs secondary to pain caused by bony lesions/ fractures (psuedoparalysis of Parrot)
- > Ophthalmologic manifestations (e.g. loss of eyebrows, chorioretinitis, uveitis, cataracts, glaucoma & chancre of the eyelid)
- > 8th (auditory) nerve damage leading to hearing impairment.
- > Syphilitic nephrotic syndrome
- > Neurological involvement ranges from asymptomatic invasion by *T pallidum* to acute syphilitic leptomeningitis



Syphilis in Pregnancy

Late signs and symptoms^{9,10, 15, 17}

- > Lesions often represent scars from undetected, early congenital lesions or a delayed reaction to on-going inflammation
- > Vasculitis at the time of birth damages tooth buds and results in abnormalities of the permanent teeth (peg-shaped upper incisors, short and notched, poorly developed first lower molars with multiple cusps)
- > Interstitial keratitis may appear as photophobia, pain, or blurred vision first in one eye and then bilaterally, any time between 5 and 20 years of age
- > Eighth nerve deafness is less common (usually in the first decade of life and may be unilateral or bilateral)
- > Facial abnormalities: saddle nose, protuberant mandible
- > Central nervous system involvement: intellectual disability, optic nerve atrophy, seizure disorders
- > Bone or joint involvement: frontal bossing of the skull, saber shins, hypertrophy of the sternoclavicular joints

Laboratory assessment for congenital syphilis

Testing	Diagnosis of Congenital Syphilis
Comparison of mother and baby's serology	<ul style="list-style-type: none"> > In the presence of mother's positive syphilis serology,^{13, 19} relationship between mother and baby's non-treponemal titre can indicate the likelihood of congenital syphilis > Collect serology from woman and baby on same day and ask for testing in parallel > Do not use umbilical cord blood > Venous sample is preferable to a heel prick collection > If baby's RPR titre is \geq four-fold higher than the woman's titre - diagnostic of congenital syphilis > If baby's titre is <four-fold the maternal RPR titre may still indicate congenital syphilis > Baby's syphilis IgM, positive IgM is diagnostic of congenital syphilis¹⁹ (IgM does not cross the placenta therefore IgM is strongly predictive of infection. A negative IgM does not exclude congenital syphilis, discuss with an expert) > With follow up blood testing, an <u>uninfected</u> baby should have a negative RPR within the first 6 months and negative EIA/TPPA within 15 months ^{13, 16, 19}
Syphilis PCR	<ul style="list-style-type: none"> > Collect a dry swab / or send fluid from any mucocutaneous lesions (ulcers, mucosal lesions and any nasal discharge from the baby), placenta, umbilical cord, amniotic fluid, CSF and request a syphilis PCR > A positive PCR in any specimen site is diagnostic of congenital syphilis ¹⁹
Histopathology	<ul style="list-style-type: none"> > Send placenta and umbilical cord for histopathology > Positive placental or umbilical cord histopathology is diagnostic of congenital syphilis¹⁹



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Further investigations of probable/ confirmed cases of congenital syphilis	
Blood investigations	<ul style="list-style-type: none"> > CBE, EUC LFT^{9, 17} > In syphilis typically direct antiglobulin titre (DAT) negative haemolytic anaemia > Non-haemolytic anaemia after the neonatal period > Thrombocytopenia, Leukopenia/ and or leucocytosis > Haemolysis often accompanied by cryoglobulinaemia, immune complex formation and macroglobulaemia (does not respond to therapy and may persist for weeks)
CSF	<ul style="list-style-type: none"> > The CSF should be examined before treatment - Collect CSF > Reactive FTA/RPR > CSF pleocytosis (>20-25 WC/microL) for babies < 1 month^{9, 17} > Elevated CSF protein (term>150 mg/L, preterm> 170 mg/L) > If CSF abnormal repeat CSF syphilis PCR evaluation every 3 months until normal¹¹
Skeletal survey/radiology	<ul style="list-style-type: none"> > Abnormal long bone X-rays: features including osteochondritis, osteitis and periostitis^{9, 17} > Common 70-80% > Widespread involving multiple, symmetrical sites of the long bones > Metaphyseal lucent bands or Metaphyseal serration > Symmetrical localised demineralisation and osseous destruction of proximal tibial metaphysis, > Chest X-ray

Treatment

First line treatment

- > Benzylpenicillin 30 mg/ kg body weight dose IV every 12 hours during the first 7 days of life and every 8 hours thereafter for a total of 10 days²⁰

OR

- > Procaine penicillin G 50mg/ kg IM daily for 10 days^{21, 7}
- > Other management
- > Ophthalmologic assessment
- > Brain stem evoked response audiometry to assess hearing

Discharge and follow up care

- > Liaise with ongoing health care providers as appropriate, including GP, Aboriginal Community Controlled Health Service, RFDS, paediatrician, to coordinate discharge planning and follow up care of woman, baby and sexual partner/s
- > Following treatment for congenital syphilis, all neonates with reactive non-treponemal tests (RPR/) should receive careful follow-up examinations and serological testing every 2-3 months until the test becomes non-reactive or serofast
- > If initial LP showed abnormalities, a follow up LP may be required
- > Ensure parents are aware of the results of investigations and implications for future health care
- > Advise parents of the importance of attending follow up appointments with the paediatric team
- > Review previous serology in previous pregnancies and if necessary, test older siblings for syphilis
- > See Postnatal follow-up of mother and breastfeeding advice



Partner notification / Contact management

- > Treatment of pregnant woman AND their sexual contacts should be carried out urgently and in consultation with an infectious disease / sexual health physician
- > Once a pregnant woman is diagnosed with syphilis or any STI, it is vital that testing and treatment of their sexual partners is properly considered, discussed and supported.
- > Partner/s should be referred to appropriate available services, which may include Adelaide Sexual Health Centre, ShineSA, or primary care services.
- > For some Aboriginal people with transient accommodation and movement, contact tracing can be challenging. Additionally, outbreak areas will have limited ways of contact tracing due to the remoteness and transience. Cultural sensitivity is required in this context and cultural advice and support should be sought, in how to best manage tracing and contacts

Partner Notification

- > At the time of diagnosis, determine all contacts (as per definition below) and emphasize the importance of providing a complete sexual history-Fear of the clinician not maintaining confidentiality is a barrier to identifying contacts. Explain that any information the woman provides will be confidential, but that partners will need to be notified, although this can be done anonymously
- > Options to notify partner/s include:
 - > Notification by health practitioner
 - > Notification by the woman (the woman informs their sexual contact/s)

Enlisting help from CDCB -

- o CDCB will refer all Aboriginal and or Torres Strait Islander cases on to the Syphilis Register for culturally appropriate partner notification
- > and all other cases of infectious syphilis will be referred to the partner notification officer at Adelaide Sexual Health Centre.
- > Anonymous notification
- > Let them know: <https://letthemknow.org.au/>
- > Better to know: <https://www.bettertoknow.org.au/> (for Aboriginal and Torres Strait Islander people)

Contact definition

- > Anyone who has had sex (including oral/anal sex) with a person who has infectious syphilis

Trace back periods

- > If primary syphilis:
 1. Duration of symptoms plus 3 months
- > If secondary syphilis:
 1. Duration of symptoms plus 6 months
 2. If duration uncertain 12 months prior to presentation
- > If early latent or unknown duration:
 1. 12 months prior to presentation
- > Late latent and tertiary syphilis are not infectious to sexual partners, however as date of acquisition may not be known the regular partner needs testing for syphilis.
- > Contacts can be through vertical transmission:
 - > Unborn or newborn baby of a woman requiring treatment for syphilis in pregnancy
 - > Previous babies may need to be tested if vertical transmission in previous pregnancies cannot be excluded due to unknown syphilis duration.



Syphilis in Pregnancy

Contact treatment

- > If exposed to infectious syphilis, recommend empirical treatment regardless of syphilis serology results (serology may take 3 months to become positive after acquisition of syphilis)
 - Benzathine penicillin 2.4 million units (1.8 g) IM once
 - Administer as a divided dose of two injections of 900 mg or 1.2 Million Units each (one in each of the ventrogluteal regions or in the upper outer quadrant of each buttock)
- > Obtain sexual history (including symptoms)
- > Clinical examination for signs of syphilis and other STIs
 - Collect serology for syphilis **on the day of treatment** and other STI tests as indicated
- > Inform contacts of their test results at the earliest opportunity
- > Do not:
 1. Record the name of the index case in the contacts' health record
 2. Disclose the name of the index case to a contact
- > Discuss with contacts:
 1. Infectious nature of the disease
 2. Possibility of infection even in the absence of symptoms or reactive serology
 3. Importance of follow-up and repeat serology testing
 4. Need to abstain from sexual activity for 7 days after treatment or until symptoms (if present) have resolved—whichever is longer
 5. Explain Jarisch-Herxheimer Reaction (JHR)

Useful Links

Australasian Society for Infectious Diseases, Management of Perinatal Infections, available at: <https://www.asid.net.au/documents/item/368>

SA Health Communicable Disease Control Branch Useful internet short links available at: <http://www.sahealth.sa.gov.au/wps/wcm/connect/0d455d80432ea08d83b9f78cd21c605e/SA-Health-CDCB-useful-links-for-GPs-v2.0-cdcb-20171027.pdf?MOD=AJPERES&CACHE=NONE&CONTENTCACHE=NONE>

SA Department of Health – You've got what – syphilis in the A to Z index at URL: www.sahealth.sa.gov.au/youvegotwhat

Centers for Disease Control and Prevention
<http://www.cdc.gov/std/Syphilis/STDFact-Syphilis.htm>

Dermnet NZ
<https://dermnetnz.org/topics/syphilis/>

ASHM (Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine)
Syphilis decision making tool
<https://www.ashm.org.au/resources/sexual-health-resources-list/decision-making-in-syphilis/>
Online syphilis outbreak training- RACGP and ACN approved
<https://www.ashm.org.au/news/launched-syphilis-outbreak-training-website/>

The *Minymaku Kutju Tjukurpa: Women's Business Manual* outlines culturally appropriate care for rural and remote Aboriginal women
<https://remotephmanuals.com.au/document/30938.html?publicationid=#10>



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Acknowledgements

The South Australian Perinatal Practice Guidelines gratefully acknowledge the contribution of clinicians and other stakeholders who participated throughout the guideline development process particularly:

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Document Ownership & History

Developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Contact: HealthCYWHSPerinatalProtocol@sa.gov.au
Endorsed by: SA Health Safety and Quality Strategic Governance Committee
Next review due: 20/05/2027
ISBN number: 978-1-74243-107-9
PDS reference: PPG015
Policy history: Is this a new policy (V1)? **N**
 Does this policy amend or update an existing policy? **Y**
 If so, which version? **V3**
 Does this policy replace another policy with a different title? **N**
 If so, which policy (title)?

Approval Date	Version	Who approved New/Revised Version	Reason for Change
20/05/2022	V4	Domain Custodian, Clinical Governance Safety and Quality	Formal Review in line with scheduled review date
15/06/2018	V3.1	SA Health Safety and Quality Strategic Governance Committee	Review date extended to 5 years following risk assessment. New template. Additional screening during syphilis outbreaks added.
19/12/2014	V3	SA Health Safety and Quality Strategic Governance Committee	Reviewed.
23/09/2013	V2	SA Health Safety and Quality Strategic Governance Committee	Reviewed in line with scheduled review date.
24/05/2011	V1	Maternal and Neonatal Clinical Network	Original approved version.

