Syphilis in pregnancy

Clinical Guideline Presentation v1.0

45 minutes
Towards CPD Hours
Learning objectives

• Recall basic pathophysiology of syphilis in pregnancy and congenital syphilis in the newborn
• Identify recommended screening according to risk assessment
• Identify indications for maternal and neonatal treatment
Aetiology of syphilis

Syphilis is a bacterial infection caused by the spirochaete bacterium *Treponema pallidum* (*T. pallidum*)

Syphilis, and congenital syphilis, are notifiable diseases in Queensland
Transmission

Transmission of syphilis can occur in multiple ways including:

- Direct contact with infectious lesions (chancre)—most commonly through sexual contact
- Vertical transmission—transplacental during pregnancy
- Less commonly through infected blood
- Incubation period is approximately 21 days from contact to the development of a chancre
Identify increased & higher risk groups

Maternal, obstetric and sexual history

Offer screening for sexually transmitted diseases (STIs)

Conduct clinical examination

Dry swab suspicious genital lesions for polymerase chain reaction (PCR)

Request *Syphilis serology* on pathology form
Stages of syphilis

Primary (Infectious)
- Lesions may be solitary or multiple
- Lesions may be painful or painless
- Spontaneously heal within 3–10 weeks without treatment

Secondary (Infectious)
- Follows untreated primary syphilis 4–8 weeks after first lesion
- Rash to palms and soles of feet
- Resolves without treatment in 3–12 weeks

Latent
- Follows untreated secondary stage
- Asymptomatic
- Reactive serology with no clinical manifestations

Tertiary
- Can affect any organ system
- Occurs in one-third of untreated patients
Primary chancre sores & typical rash presentations

Treponema pallidum

Images from the Centre for Disease Control and Prevention (CDC) 2018
### Additional screening

<table>
<thead>
<tr>
<th>Increased risk of syphilis</th>
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<tbody>
<tr>
<td>• Woman or partner(s) identify as Aboriginal and/or Torres Strait Islander</td>
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<tr>
<td>• Adolescent pregnancy</td>
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<td>• STI in the current pregnancy or preceding 12 months</td>
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<tr>
<td>• The woman or her partner(s) have ongoing sexual links in high prevalence countries (e.g. migrants or refugees)</td>
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<table>
<thead>
<tr>
<th>High risk of syphilis</th>
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<tbody>
<tr>
<td>• Sexual contact with an infectious syphilis case</td>
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<tr>
<td>• Woman or her partner(s) identify as Aboriginal and/or Torres Strait Islander AND the woman or her partner(s) reside in declared outbreak area</td>
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<td>• Substance use during pregnancy—particularly (‘ice’)</td>
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<td>• Woman’s partner is a man who has sex with men</td>
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<tr>
<td>• Late, limited or no antenatal care</td>
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<tr>
<td>• Engages in high risk sexual activity</td>
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Antenatal testing

**Universal Risk**
- Routinely screen at first appt (ideally before 10 weeks)
- Repeat screening if risk of exposure during pregnancy
- If suspicious lesions—dry swab PCR and full STI check

**Increased Risk**
- Screen as per universal risk
- Repeat screening
  - At 26–28 weeks
  - Test woman at birth if:
    - No repeat serology after 26 weeks &/or
    - Preterm birth with most recent serology > four weeks before birth

**High Risk**
- Screen as per universal risk
- Repeat screening:
  - Around 20 weeks (16–24 weeks)
  - 26–28 weeks
  - 34–36 weeks
  - At birth (woman)
Maternal treatment

**Infectious syphilis requiring treatment (primary or secondary)**

Benzathine penicillin 1.8 g (2.4 million units) IM as a single dose

**NB:** if syphilis requiring treatment is suspected and there is concern the woman will not re-present for care—presumptively give the recommended treatment

**Late latent or syphilis of unknown duration requiring treatment**

Benzathine penicillin 1.8 g (2.4 million units) IM weekly for three weeks
**Postpartum maternal testing**

Repeat maternal syphilis serology at birth if:

- Syphilis requiring treatment in pregnancy
- **High** risk
- **Increased** risk and
  - NO repeat serology after 26 weeks
  - Pre-term labour with last syphilis serology > four weeks pre-birth
- Following risk assessment

If syphilis requiring treatment, maternal serological follow-up at:

- Three months
- Six months **and**
- 12 months

Discuss with QSSS and expert practitioner if:

- Maternal titre not decreased four-fold within 12 months **OR**
- There is a four-fold increase
Aetiology of congenital syphilis (CS)

Cause: the spirochaete bacterium Treponema pallidum (T. pallidum) crossing the placenta, from the mother who has reactive serology
Babies at risk of CS

Suspect CS in babies born to women who:

• Had syphilis requiring treatment in pregnancy (irrespective of adequacy of treatment)
• Limited or no antenatal care
• Diagnosed with syphilis (any stage) within three months postpartum
Diagnosis of CS

**NB:** Do not delay treatment while waiting for prenatal diagnostic tests

### Prenatal diagnosis
- Ultrasound examination
- Maternal diagnosis

### Diagnosis at birth
- Conduct full clinical examination
- Collect syphilis serology (do not collect blood from umbilical cord)
- Placental histopathology (collect entire fresh placenta for testing)

### Additional diagnostic tests for consideration
- Cerebrospinal fluid (CSF) testing
- Haematology
- Radiography
## Signs and symptoms of CS

60–90% of babies are asymptomatic at birth.

Signs and symptoms are usually subtle and non-specific.

Usually appear by three months of age, most often by 5 weeks.

- Hepatomegaly
- Rhinitis
- Rash
- Generalised lymphadenopathy
- Nonimmune fetal hydrops
- Fever/sepsis
- Failure to move extremities secondary to pain
- Ophthalmologic manifestations
- Gastrointestinal manifestations
# Treatment

NB: If a dose is missed restart the entire treatment regimen

<table>
<thead>
<tr>
<th>Newborn 0–7 days of age</th>
<th>Newborn 8–30 days of age</th>
<th>Newborn more than 30 days of age</th>
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<tbody>
<tr>
<td><strong>Recommended:</strong></td>
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<td><strong>Recommended:</strong></td>
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<tr>
<td>Benzyl penicillin</td>
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<tr>
<td>50 mg/kg IV 12 hourly</td>
<td>Benzyl penicillin 50 mg/kg IV 8 hourly for 10 days</td>
<td>50 mg/kg IV 4–6 hourly for 10 days</td>
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<td>for 10 days</td>
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<td><strong>Alternative:</strong></td>
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<td>Procaine penicillin</td>
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<tr>
<td>Procaine penicillin 50mg/kg IM</td>
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<td>50mg/kg IM daily for 10 days</td>
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Newborn follow up

- Follow-up serology:
  - At three, six and 12 months of age
  - If non-reactive at 12 months, no further testing required

- If follow-up testing is potentially difficult:
  - Aim to repeat testing at least twice in the first six months of life (with at least four weeks between tests)
  - Consider feasibility of testing at routine follow up appointments (e.g. immunisation, infant health checks)

- If initial newborn serology is non-reactive in the reactive mother, follow-up at three and six months

- If serology remains non-reactive at six months, no further testing is required
Case study: Syphilis

• Mary is a 30 year old multigravida. She lives in a syphilis outbreak declared area and identifies as an Aboriginal and Torres Strait Islander woman.

• She returns to the hospital reporting that her baby Alexander, now 12 days of age, was suffering from a white discharge from his nose (resolved at day 5).

• Alexander has developed a rash on his back and feet and cries when he tries to move his legs.

• When you review Mary’s chart you notice that she had non-reactive syphilis serology at her booking-in visit at 26 weeks. She then had a reactive serology test at birth but no treatment or follow up was documented.
### Clinical indicators

**What indicators for syphilis and congenital syphilis do you identify from Mary’s presentation?**

- Mary identifies as an Aboriginal and Torres Strait Islander and resides in a syphilis declared outbreak area
- Late antenatal booking in with no follow-up serology based on risk category
- Reactive syphilis serology antenatally
- Baby Alexander has signs of congenital syphilis (rhinitis, rash and failure to move extremity secondary to pain (pseudoparalysis of Parrot))
- Mary is multigravida – ? risk of previous babies born with syphilis
**What questions might you consider asking Mary?**

- Some of our activities in life can make us at a higher risk for syphilis. Have you ever taken any illegal drugs before? How many sexual partners do you have? Have you ever been treated for an STI?

- Have you, or your partners, ever tested positive to syphilis before?

- Have you, or your partners, ever been treated for syphilis before?

- How many other children do you have? How old are they? Did any of your other children have signs or symptoms of congenital syphilis?
## Testing and treatment

### What tests do you recommend to Mary and baby Alexander?

**Mary:**
- *Syphilis serology* on pathology request form

**Baby Alexander:**
- *Syphilis Serology* pathology request
- Consider CSF test (consult with expert health practitioner)

### What treatment would you recommend?

**Mary:**
- Benzathine penicillin 1.8 gm (2.4 million units) IM as a single dose

**Baby Alexander:**
- Benzyl penicillin 50 mg/kg IV 8 hourly for 10 days

**NB:** all treatment in consultation with an expert practitioner

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Queensland Clinical Guidelines: Syphilis in pregnancy
## Communication

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<tr>
<th>Who will you communicate with?</th>
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<tr>
<td>• Expert health practitioner/s</td>
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<td>• Queensland Syphilis Surveillance Unit</td>
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<tr>
<td>• Discuss contact management with Mary</td>
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<tr>
<td>• Importance of treatment</td>
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<tr>
<td>• Communicate with other health practitioners through documentation in clinical notes</td>
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<tr>
<td>• Aboriginal and/or Torres Strait Islander liaison, as required</td>
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