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TITLE: Syphilis in Pregnancy and Care of the Baby at Risk – Birth Plan

1. Statement/Purpose

To inform Health Care Practitioners regarding management of pregnant women with positive syphilis serology in Lakes District Health Board (LDHB).

This document includes information for health care providers, and a detailed care plan (appendix 1)

2. Scope

All LDHB staff and midwives within the LDHB caring for pregnant women.

3. Definitions

RPR	Rapid Plasma Regain
ADHB	Auckland District Health Board

4. Standards to Be Met

All pregnant women with positive syphilis serology need to be referred to a Sexual Health Physician.

Appropriate syphilis related birth plan should be in place for women treated for syphilis during current pregnancy.

BACKGROUND

Syphilis is caused by infection with the spirochete bacterium Treponema pallidum subspecies pallidum. It is transmitted by direct contact with an infectious lesion or by vertical transmission (trans-placental passage) during pregnancy. Syphilis is a multi-stage, multi-system disease, which is broadly defined as congenital or acquired.

Acquired syphilis can be broadly divided into primary (ulcer or chancre stage), secondary (systemic dissemination), early latent (within 2 years of acquisition with no symptoms), late latent (> 2 years since acquisition with no symptoms) and tertiary syphilis (symptomatic late syphilis e.g. gummas, cardiovascular involvement and neurological involvement).

Approximately one third of sexual contacts of infectious syphilis will develop the disease (transmission rates of 10–60%).

Transplacental transmission to the fetus can occur from about the 9th to 10th week of gestation and at any stage of maternal disease. The manifestations of congenital infection are influenced by the gestational age, state of maternal syphilis, maternal treatment, and immunological response of the fetus. Fetal abnormalities result from a robust inflammatory response to T. pallidum; thus, they are most pronounced after 20 weeks of gestation since the fetal immunologic response is poorly developed in the first half of pregnancy.

The risk of congenital infection is extremely high in the first four years after maternal acquisition of infection, when spirochetemia is common in the absence of treatment. The risk of congenital infection in term infants is 50% for primary and secondary untreated syphilis, 40% for early latent untreated syphilis, and 10% for late untreated syphilis.

The frequency of vertical transmission increases with increasing gestational age at acquisition of maternal infection.

WHO SHOULD BE TESTED FOR SYPHILIS IN PREGNANCY?

Routine antenatal screening in first trimester.

Pregnant women with signs and symptoms of syphilis.

Rescreen syphilis test at 28-32 weeks in women high risk for acquiring STIs e.g. new diagnosis of chlamydia, new sexual partner, etc.

Women who have not been screened in pregnancy or who deliver a stillborn after 20 weeks of gestation: screen at delivery.

If any syphilis test is positive – please refer to or discuss with the Sexual Health Physician, Lakes District Health Board, Rangiora Clinic, Phone 07 349 7918, Fax 07 349 7945.

TREATMENT

To be decided by the Sexual Health Physician based on staging of syphilis and history of previous treatment and interpretation of syphilis serology. Most women will require penicillin for their syphilis treatment. Penicillin desensitization is recommended for women with a positive skin test who require penicillin therapy. Some women especially with early syphilis in the second half of their pregnancy, who require treatment, may need to be admitted for treatment due to the risk of Jarisch-Herxheimer reaction precipitating uterine contractions, preterm labour, and/or non- reassuring foetal heart rate tracings.

Sexual Health Physician will discuss with Obstetric team if severe Jarish-Herxheimer reaction is predicted.

All women treated for syphilis in pregnancy will require medical obstetric care in the second and third trimesters. The Sexual Health Physician will usually refer these patients to the Antenatal Clinic.

These women also require regular syphilis serology monitoring (sometimes monthly) to ensure treatment was adequate. Sexual Health Physician will arrange this for patients.

DELIVERY

The birth plan for women treated for syphilis in pregnancy will be as per normal procedures with two exceptions

These women and their new-borns require syphilis testing done at birth. Cord blood must not be used for testing. This is to compare mother's syphilis serology and baby's syphilis serology (most likely to be positive) to ascertain if the new-born requires just serology follow up or treatment at birth. Sample from mother to be taken within 4 weeks before or at the same time as that of infant. All of these samples should be sent under the responsibility of the admitting paediatrician.

The placenta must be evaluated for evidence of syphilis under the responsibility of the admitting paediatrician

A PCR swab should be taken from between the membranes. These swabs can be sourced from the laboratory and sent via the lamson.

The placenta should be sent for histology to the local laboratory (*not* to the mortuary for formal post-mortem testing by perinatal pathologists in Auckland)

The placenta can go to the laboratory in formalin. If there is no capacity to do this safely it may go as a fresh specimen.

SAFE HANDLING OF THE PLACENTA FOR HEALTHCARE PROFESSIONALS, WOMEN, AND WHĀNAU.

The placenta and also the amniotic fluid could be infectious. Discussion with a sexual health physician / infectious diseases physician is recommended on a case by case basis to determine if a particular woman's placenta is likely to be infectious.

Gloves should be worn by health care professionals and the woman or her whānau when handling the placenta. The woman and her whānau should be advised to store and transport whenua/placenta in a leakproof container.

CARE FOR NEW BORN

Gloves should be worn for handling babies with suspected congenital syphilis as moist open lesions of skin and mucous membranes, secretions and possibly blood are contagious until 24 hours of penicillin treatment has been complete (ADHB guideline).

All babies born to women with syphilis treated in current pregnancy need to be examined by the Paediatric team before discharge from hospital, if born in hospital.

If home birth is planned then the women's LMC should refer directly to paediatrics, so that the baby can be examined within 24-48 hours of birth.

If mother was adequately treated with penicillin and demonstrated an adequate fall in RPR, these babies require initial examination, and if normal require serology follow up. It would be

prudent to wear gloves to handles these babies until initial serology results rule out need for immediate treatment.

Indications for treatment of babies at birth are usually evident antenatally unless syphilis diagnosis was at or after birth.

Babies usually require further evaluation and treatment in the following situations:

- Maternal syphilis not or inadequately treated.
- Maternal syphilis has been treated but with inadequate follow up or without demonstration of expected fall in RPR titre.
- Syphilis in pregnancy treated with non-penicillin regimen (e.g. erythromycin).
- Syphilis treated within one month prior to delivery.

5. References

http://www.bashhguidelines.org/media/1148/uk-syphilis-guidelines-2015. Last accessed 26/07/2017.

https://www.uptodate.com/contents/syphilis-in-pregnancy. Last accessed 26/07/2017.

http://www.adhb.govt.nz/newborn/Guidelines/Infection/CongenitalInfection. Last accessed 26/07/2017.

Authorised by:	**Dr Massimo Giola, Sexual Health Physician** **Dr Emma Deverall, Obstetrician**
Consulted:	**Dr Sonja Crone, Paediatrician**
Ratified by:	**Obstetric Continuous Quality Improvement Group**

TITLE: Care of the Baby at Risk of Syphilis – Birth Plan

Mother's Details	
Name	
Address	
DOB	
NHI	
Rangiora No.	
Mobile	
Home Phone	
Estimated Date of Delivery	
❑ Mother's consent to record Rangiora number in hospital records.	

Actions
❑ No need to contact on-call paediatric team from syphilis viewpoint.
❑ Contact on-call paediatric team when baby is delivered.
Always send placenta if mother has been treated for syphilis in this pregnancy.

Maternal Syphilis Diagnosis

- ❑ Adequately treated before this pregnancy.
- ❑ Early latent
- ❑ Late Latent
- ❑ Primary
- ❑ Secondary
- ❑ Inadequately treated/treatment not documented.
- ❑ Possibility of re-infection from untreated partner.
- ❑ Not booked

Sexual Health Advice to Paediatricians

- ❑ Infant required no physical examination above routine. No syphilis serology, **OR**
- ❑ Assess infant clinically; if no physical signs of syphilis check 'initial blood tests' (see page 2), **OR**
- ❑ Treat infant at birth after clinical assessment, 'initial blood tests' and 'further tests' (see page 2).

Please discuss all infant blood test results with Paediatric Team.

Sexual Health Physician	
Signed	
Date	

Copies to: Paediatric Consultant — Obstetric Consultant
Midwife — General Practitioner

1. Physical Signs of Early Congenital Syphilis

- Jaundice, anaemia, generalised lymphadenopathy, hepatosplenomegaly, non-immune hydrops, pyrexia, failure to move an extremity (pseudoparalysis of Parrot), low birth weight.
- Skin rash (usually maculo-papular but almost any for of rash is possible); palms and soles may be red, mottled and swollen. Vesicles or bullae may be present.
- Condylomata lata (flat, wart-like plaques in moist areas such as perineum).
- Osteochondritis, periosteitis (elbows, knees, wrists).
- Ulceration of nasal mucosa, rhinitis ('snuffles' usually after the first week of life).

Approximately half of all neonates with congenital syphilis are normal on initial examination.

2. Initial Blood Tests

Paired venous blood samples:
Send a neonatal venous blood sample for serum RPR and treponemal IgM (available from Canterbury Laboratory). Take blood from the neonate, not the umbilical cord.

Send a maternal venous blood sample for serum RPR.

3. Placental studies

These tests help the paediatricians understand the risk of infection in the baby. The placenta is to be sent under the name of the admitting paediatrician. A PCR swab should be taken from between the membranes. These swabs can be sourced from the laboratory and sent via the lamson. The placenta should be sent for histology to the local laboratory (*not* to the mortuary for formal post-mortem testing by perinatal pathologists in Auckland). The placenta can go to the laboratory in formalin. If there is no capacity to do this safely it may go as a fresh specimen.

4. Additional Tests on Infant if Lesions Present (see page 4)

T pallidum polymerase chain reaction (PCR) test – day swab (available from Laboratory or swab for HSV PCR).

5. Further Tests if Treatment Indicated (see below)

- FBC, U+E, LFt, ALT/AST
- HIV antibody
- Lumbar puncture for CSF WCC, VDRL or RPR, TPPA, protein
- Long bone x-rays for osteochondritis and periostitis
- Chest x-ray for cardiomegaly
- Cranial U/S scan
- Ophthalmology assessment for interstitial keratitis
- Audiology for 8th nerve deafness

6. Indications for Further Tests and Treatment

- Mother inadequately treated (Sexual Health consultant will advise, see above).
- Infant has clinical signs consistent with syphilis (Paediatric team will advise).
- Infant's RPR/VDRL titre 4x mother's on two occasions (e.g. mother's RPR 1:4, infant's RPR 1:16). *Sample from mother to be taken no greater than 4 weeks before that of infant.*
- Infant has positive treponemal IgM test together with corroborative history, clinical signs.
- Infant has positive T pallidum PCR test together with corroborative history, clinical signs.

7. Treatment of Newborn

Benzylpenicillin 25 mg/kg 12 hourly IV for 7 days, then 8 hourly or days 8, 9 and 10 (total of 10 days).

8. Infant Follow-up (If Needed)

1. Infants Treated for Syphilis at Birth	**2. Infant Not treated for Syphilis**	**3. Infant Not Treated for Syphilis and RPR and IgM Negative at Birth**
Month 1: ❑ Check RPR and treponemal IgM	Birth: ❑ RPR<4x mother's. IgM negative at birth	Month 3: ❑ Repeat RPR and IgM and discharge if still negative OR ❑ RPR and/or IgM positive, discuss with Paediatric Team
Month 3: ❑ Check RPR and treponemal IgM	Month 3: ❑ Check RPR and treponemal IgM	
Month 6: ❑ Check RPR	Month 6: ❑ Check RPR, if negative discharge, if positive repeat at 12 months	
Month 12: ❑ Check RPR. Discharge if RPR has achieved sustained 4x drop from peak level.	Month 12: ❑ RPR negative, no further follow up OR ❑ RPR still positive, discuss with Paediatric Team *Note: the RPR is usually negative by six months	

Neonatal RPR should be negative by 6 months of age and the TPPA by 18 months of age when they are reactive as a result of passive transfer of maternal antibodies.

9. Siblings for Screening

None	❑				
Name		DOB		Sex	
Name		DOB		Sex	
Name		DOB		Sex	
Name		DOB		Sex	
Name		DOB		Sex	
Name		DOB		Sex	

10. For Sexual Health Medicine Use

DECREASING NEONATAL RISK

- ❑ Treatment completed
- ❑ Treated with penicillin
- ❑ Treatment completed >30 days pre-delivery
- ❑ Late syphilis
- ❑ 4x drop in RPR achieved
- ❑ Final RPR titre <1 in 2 (VDRLI in 1)
- ❑ HIV negative

INCREASING NEONATAL RISK

- ❑ **Partial or no treatment***
- ❑ **Treated with non-penicillin***
- ❑ **Treatment <30 days before delivery***
- ❑ Early syphilis
- ❑ 4x drop in RPR not achieved
- ❑ Final RPR titre >1 in 4 (VDRL >1 in 2)
- ❑ HIV positive

*The presence of any one of the 'bold and asterisk' factors above constitutes inadequate maternal treatment and requires treatment of the infant at birth. Congenital syphilis can still occur despite the absence of any of the three 'bold' factors.