Syphilis infection in pregnancy

The management of syphilis in pregnancy and care of the newborn, 2023

HSC Public Health Agency

Title	Syphilis infection in pregnancy. Northern Ireland guidance on the management of women screened positive for syphilis in pregnancy and care of the newborn, 2023
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Target audience	Obstetricians, midwives, GUM staff, paediatricians, laboratory staff and pharmacy staff. Also contains a link to patient information leaflets.
Guideline contributors	During its development, this guideline was sent for comments to: The Trust antenatal screening coordinators; lead midwives; obstetricians; paediatricians; neonatologists; genito-urinary medicine consultants; consultant virologists and pharmacy leads.
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1.0 Glossary of terms

ANC	Antenatal clinic.
ANSC	Antenatal Screening Co-ordinator. There is an antenatal screening co-ordinator appointed to each of the 5 trusts across Northern Ireland who is responsible for co-ordinating the care of women screened positive for syphilis and their babies.
BASHH	The British Association for Sexual Health and HIV was formed through the merger, in 2003, of the Medical Society for the Study of Venereal Diseases (MSSVD, established 1922) and the Association for Genitourinary Medicine (AGUM, established 1992). The object of BASHH is: • To promote, encourage and improve the study and practice of diagnosing, treating and managing sexually transmitted infections, HIV and other sexual health problems • To innovate and deliver excellent tailored education and training to health care professionals, trainers and trainees in the UK • To determine, monitor and maintain standards of governance in the provision of sexual health and HIV care • To advance public health in relation to sexually transmitted infections, HIV and other sexual health problems • To champion and promote good sexual health and provide education to the public
CBT	Cognitive behavioural therapy is a type of talking therapy which can help people manage their problems by changing the way they think and behave. Women with needle phobias can benefit from this type of therapy.
DGM	Dark ground microscopy is an inexpensive, rapid, sensitive, and specific test, which allows immediate diagnosis and treatment of syphilis.
EDC	Expected date of confinement is a term describing the estimated delivery date for a pregnant woman i.e. 40 weeks gestation. A full-term pregnancy is considered to be between 37 and 42 weeks.
GUM	Genito urinary medicine involves the investigation and management of sexually transmitted infections including syphilis. There are GUM clinics in the five health and social care trusts (HSCT) across Northern Ireland.
HSCT	Health and Social Care Trust. There are 5 HSC Trusts across Northern Ireland who provide integrated health and social care services: Belfast HSC Trust, South Eastern HSC Trust, Western HSC Trust, Southern HSC Trust and Northern HSC Trust.
IDPS	The infectious diseases in pregnancy screening programme in Northern Ireland, involves the screening of pregnant women for HIV, hepatitis B and syphilis infection, and also screening for rubella susceptibility.
IgG	Immunoglobulin G is a type of antibody produced in response to certain viral infections that enter the bloodstream. They target the invading virus providing long term protection against it.
IgM	Immunoglobulin M antibodies (IgM) are our first-line defense against a broad range of infections. They provide general, but short-term, protection against new infections. IgM levels decline as the body starts producing

	more IgG antibodies, which are responsible for long-term protection against pathogens.
Jarisch-Herxheimer reaction	A reaction that can occurs within 24 hours of antibiotic therapy for spirochetal infections, including syphilis. It usually manifests as fever, chills, rigors, nausea and vomiting, headache, tachycardia, hypotension, hyperventilation, flushing, myalgia, and exacerbation of skin lesions. In addition, the pregnant woman may experience uterine contractions (circa 40–65%) which resolve within 24 h. The uterine contractions appear to occur secondary to the development of fever. Fetal heart rate decelerations are also reported occurring in about 40%, concomitant with maternal fever, and resolve within 24 h of maternal penicillin treatment. JHR is an acute, self-limiting condition and it is important to identify JHR and to distinguish it from allergic reactions and sepsis, which can be life-threatening.
MDT	The multidisciplinary team consists of obstetricians, midwives, genital-urinary medicine staff, paediatricians / neonatologists, pharmacists and laboratory staff. They all work together to ensure appropriate management of women screened positive for syphilis and their babies.
MHHR	The maternity hand-held record is a standardised document used by all Trusts across Northern Ireland. It is used to communicate the story of client care. Pregnant women carry their own MHHR between appointments and all care providers are encouraged to update these records.
MTCT	Mother-to-child transmission of syphilis, also called perinatal or vertical transmission, occurs when the bacteria Treponema pallidum is passed from mother to child during fetal development, or at birth, causing congenital syphilis. Congenital syphilis is a severe, disabling and often life-threatening infection seen in infants.
NIBTS	The Northern Ireland Blood Transfusion Service is located in Belfast and provides the laboratory testing for the IDPS programme for women booked prior to twenty weeks gestation.
NIMATS	Northern Ireland Maternity System is a web based, electronic system used regionally to capture demographic and clinical data on pregnant women and their babies. This includes the offer, uptake and results of screening tests such as syphilis.
PCR	Polymerase chain reaction test. The PCR test detects antigens that stimulate an immune response, meaning the body has an active infection.
RPR	The rapid plasma reagin test is a blood test that looks for antibodies to syphilis. In addition to screening, this test is useful in monitoring treatment for syphilis. For this purpose, the level (titre) of antibody is measured. It may also be used to confirm the presence of an active infection when an initial test for Treponemal antibodies is positive.
RVL	The regional virus laboratory is located in the Kelvin Buildings, on the BHSCT Royal Hospitals site and provides laboratory testing for the IDPS programme for women booking at twenty weeks gestation or more. It also provides confirmatory testing for samples screened positive in NIBTS.

STI	Sexually transmitted infection is an infection passed from one person to another through sexual contact.
TPHA	Treponema pallidum Hemagglutination Assay is a treponemal test for the serologic diagnosis of syphilis, a sexually transmitted infection caused by spirochetes, Treponema pallidum. This test detects anti-treponemal antibodies (IgG and IgM antibodies) in serum. TPHA is used by the RVL as a confirmatory test following an initial screen positive result.
VDRL	The venereal disease research laboratory (VDRL) test is designed to assess whether you have syphilis, a sexually transmitted infection (STI)

2.0 Summary of guidelines

2.1 Background

This document has been developed to provide best practice guidance on: screening for syphilis in pregnancy; treatment and management of women confirmed as screen positive for syphilis during pregnancy, and postpartum management of women and their babies.

It is based on the British Association for Sexual Health and HIV (BASHH) guidelines for the management of syphilis in pregnancy.[1]

Practitioners should refer to the full UK National Guidelines, including any updated guidance, for detailed information on clinical management and seek specialist advice as required.

Effective assessment and management of women screened positive for syphilis in pregnancy, and any baby born to a mother screened positive for syphilis, should consist of a multi-disciplinary approach with joint management, involving, obstetrics, midwifery, genito-urinary medicine, paediatrics/neonatology, pharmacy and laboratory services. This requires good information flow between disciplines to facilitate optimal management.

2.2 Key updates from the 2018 guidance

- Glossary of terms added to front of document.
- Section 10.4.1 p22 (previously 4.6.8): The postnatal paediatric service responsibilities have been updated for scenario 3 to reflect the fact that, as per BASHH guidance, if a mother with early syphilis, defined as the primary, secondary and early latent stages of syphilis, is adequately treated in pregnancy >30 days pre-delivery, with no evidence of re-infection or relapse, the baby will not require treatment following delivery unless there is a clinical indication for treatment.[1]
- Appendix 5 p31: A new memo template has been added for the ANSCs to send to the multidisciplinary team (MDT).
- Appendix 6 p32-36: The BASHH “Syphilis Birth Plan” has been converted to a Word document and added to the guidelines. This replaces Appendices 4, 5, 7 and 8 in the previous guidelines.
- Appendix 7 p37 (Appendix 6 in previous guidelines): The flow chart for infant management has been updated to reflect BASHH guidance as above.
- Appendix 8 p38: A new referral letter, for the paediatric team at delivery to send to the consultant paediatrician/neonatologist responsible for infectious diseases on discharge of the baby, has been added.

[1] https://www.bashhguidelines.org/current-guidelines/genital-ulceration/syphilis-2015

- Congenital syphilis forms for testing mother and baby following delivery have been developed and will be accessible through the RVL website.

- The use of TPPA for confirmatory syphilis testing is no longer available and has been replaced by the TPHA test.

2.3 Aims

i) To ensure that all pregnant women in Northern Ireland receive high quality, up to date information on syphilis screening as part of the infectious diseases in pregnancy screening (IDPS) programme, and the effects of syphilis in pregnancy, to enable them to make an informed choice about their screening options.

ii) To identify and treat maternal syphilis early in pregnancy, in order to reduce long term effects on the mother and reduce the risk of mother to child transmission (MTCT) of syphilis.

2.4 Key objectives

2.4.1

To ensure that syphilis infection screening is offered to all pregnant women who:

i) Book for maternity care within a Health and Social Care Trust (HSCT) in Northern Ireland.

ii) Present unbooked to a maternity unit in Northern Ireland, including those presenting in labour or immediately post-delivery, without documented evidence of syphilis screening in the current pregnancy.

2.4.2

To ensure appropriate follow-up and treatment, where necessary, of:

i) Pregnant women identified with syphilis infection.

ii) New-born infants of women identified with syphilis during pregnancy.

iii) Sexual contacts of women identified with syphilis infection.

iv) Untested older siblings.

2.4.3

To ensure that women declining syphilis screening are properly counselled by the Antenatal Screening Co-ordinator (ANSC) and reoffered the test prior to 20 weeks gestation.[4]

Some women may still choose not to be screened for syphilis and it is important that this choice is respected. Reasons for declining should be explored and referral to cognitive behavioral therapy (CBT) can be made for women with severe needle phobia. For women with difficult venous access a referral to anesthetic services might be appropriate.

2.4.4

To ensure that systems are in place to quality assure the screening programme and that the national performance standards are being met.[2]

3.0 Introduction

Syphilis is a sexually transmitted infection caused by the spirochaete bacterium Treponema pallidum. It is a multi-stage, multi-system disease which is broadly defined as acquired or congenital. It can be acquired through direct contact with syphilitic chancres during vaginal, anal or oral sex (horizontal transmission) or it can cross the placenta (vertical transmission) leading to congenital infection, which can occur at any stage of pregnancy.

The risk of vertical transmission is greatest if there is one or more of the following: -

- untreated infection; early disease;
- high VDRL/RPR titres;
- maternal co-infection with HIV; and/or
- where the mother has been re-infected during pregnancy.

Untreated syphilis infection in pregnancy is associated with miscarriage, preterm labour, stillbirth, hydrops fetalis and congenital syphilis. Congenital syphilis is uncommon in the UK, with an average of five cases reported annually in England over the past five years. These cases may have been prevented through early diagnosis and treatment of the mother. The level of risk varies from 70 to 100% in primary syphilis, to 40% in early latent syphilis and 10% in late latent syphilis.[3]

“Around two-thirds of babies with congenital syphilis will be asymptomatic at birth but most will develop symptoms by five weeks of age. Untreated congenital syphilis can result in physical and neurological impairments affecting the child’s bones, teeth, vision and hearing” – see page 17 of the IDPS programme handbook [4]

[2] https://www.gov.uk/government/publications/infectious-diseases-in-pregnancy-screening-programme-standards/infectious-diseases-in-pregnancy-screening-standards-valid-for-data-collected-from-1-april-2018
[3] ISOSS congenital syphilis case review report: 2015 to 2020 - GOV.UK (www.gov.uk)
[4] https://www.gov.uk/government/publications/infectious-diseases-in-pregnancy-screening-programme-laboratory-handbook/infectious-diseases-in-pregnancy-screening-programme-laboratory-handbook

Syphilis infection is staged according to the duration of infection i.e. the time from acquisition of primary infection.

4.0 Stages of syphilis progression

Clinical features of maternal syphilis and congenital syphilis are described in the BASHH guidelines under the clinical features heading.[1]

Without treatment syphilis progresses through four stages:

4.1 Primary syphilis

- The incubation period for primary syphilis is usually 21 days (range 9-90 days).
- Following this the person will become symptomatic, with the development of chancres[1] and are highly infectious at this stage.

4.2 Secondary syphilis

- If primary syphilis is untreated 25% of people will develop secondary syphilis.
- It occurs 4-10 weeks after initial chancre.
- There may be multi-system involvement eg skin rashes, liver, spleen, kidneys and neurological complications [1].
- The person will be symptomatic and highly infectious.

4.3 Latent disease

- Secondary syphilis will resolve spontaneously in 3-12 weeks and the disease enters an asymptomatic latent stage.
- Approximately 25% of people will develop a recurrence of secondary disease during the early latent stage.

4.4 Late (tertiary) disease

- Occurs in approximately one third of untreated patients.
- 20-40 years after the initial infection.
- Divided into gummatous, cardiovascular and neurological complications.

Early syphilis refers to the primary, secondary and early latent stages.

Late Syphilis refers to late latent syphilis or tertiary syphilis.

Symptomatic neurosyphilis can occur in both early and late syphilis.

4.5 Congenital syphilis

- Can occur early (within 2 years of birth).

2/3 of babies will be asymptomatic at birth but will develop signs within 5 weeks.[1]

- Can develop late after 2 years of birth

5.0 Maternity services responsibilities - Offer of the screening test

		Timescale
5.1	All pregnant women in Northern Ireland should be offered and recommended a screening test for syphilis as part of the IDPS programme. This should be offered at their booking visit by the booking midwife or at the earliest available opportunity if presenting later in pregnancy. (NICE guidelines).[5]	Usually between 10 - 13 weeks gestation.
5.2	The leaflet "Protecting you and your baby", or an appropriate translation of this, should be given to all women eligible for screening either by the booking midwife or posted out prior to the booking appointment[6]. Consideration should be given to women with additional needs to ensure that they are given information in an appropriate format.	Prior to the offer of the screening test.
5.3	The booking midwife should inform the woman of the occasional need for a repeat test due to an inconclusive result and of the implications of a confirmed positive test result.	Prior to screening for syphilis.
5.4	The consent form in the Maternity Hand-Held Record (MHHR) should be completed by the booking midwife	Prior to screening for syphilis.
5.5	Women booked for antenatal care at <20 weeks gestation should have their screening test sent to the Northern Ireland blood transfusion service (NIBTS) for testing using the NIBTS antenatal infection screening form.	<20 weeks gestation.
5.6	Women booked for antenatal care at ≥20 weeks gestation, or who present unbooked in labour, should have their screening test sent to the Regional Virus Laboratory (RVL), on the BHSCT Royal Hospitals site, using the "late booker request form".	≥20weeks gestation or presenting unbooked in labour.
5.7	Women declining testing in the antenatal period should be referred via email to the ANSC for expert counselling and formal reoffer of the test.	Following the booking visit.
5.8	The ANSC should review women who decline at a face to face meeting, if possible, and explore the reasons	By 20 weeks gestation.

[5] https://pathways.nice.org.uk/pathways/antenatal-care-for-uncomplicated-pregnancies
[6] https://www.publichealth.hscni.net/publications/protecting-you-and-your-baby-blood-tests-your-first-antenatal-visit

	for her declining. In cases of severe needle phobia, referral for cognitive behavioural therapy (CBT) may help, or for women with poor venous access referral to anaesthetic services may be an option.	
5.9	If a woman reaches delivery without having accepted screening for syphilis, the test should be reoffered and if accepted bloods should be sent using the “late booker form”, following the steps in section 8.4, p17.	In labour/after delivery.
5.10	Maternity units should employ failsafe systems to ensure that a result has been received for every woman screened and that any missing results are followed up, and acted on, in an appropriate and timely manner.	Within 2 weeks of the screening date.
5.11	Samples not meeting the lab specifications (eg wrong name, date of birth) should be repeated. If the woman is > 20 weeks gestation at the time of the repeat sample being taken the sample should be sent to RVL using the “late booker form”.	ASAP following repeat request being received from the laboratory
5.12	Where a woman, who has screened negative for syphilis at booking, but subsequently discloses that her partner has now tested positive for syphilis, or any other sexually transmitted infection (STI), a re-offer of syphilis testing should be made.	At any stage in pregnancy.
5.13	Information should be routinely provided on the availability of sexual health testing by maternity services or GUM services at any point during pregnancy should a woman consider herself to be at risk, or if she changes her sexual partner.	At the booking visit.

6.0 Screening result outcomes

6.1 Screen negative result

A negative screen for syphilis indicates that the woman does not have syphilis infection at the time of the test (negative now).

All women should be provided with information on the availability of sexual health testing at any point during pregnancy should she consider herself to be at risk, or if she changes her sexual partner.

6.2 Initial screen positive result

Specimens screened positive in NIBTS <20 weeks gestation will be referred to the

RVL for confirmatory testing including TPHA, RPR and IgM before being reported.

Late booking samples ≥20 weeks gestation, or samples from unbooked women arriving in labour, which initially screen positive in the RVL will be confirmed by additional TPHA, IgM and RPR testing at the RVL.

6.3 Confirmed screen positive result

When the initial screen positive result has been confirmed, this will be reported as a confirmed screen positive result and can indicate:

- A current syphilis infection.
- A past syphilis infection which was successfully treated.

6.4 Inconclusive result

A result, that has initially screened positive, but has not been confirmed screen positive on confirmatory testing, will be regarded as an inconclusive result and should be repeated, no sooner than 2 weeks after the initial sample, but before 3 weeks, to exclude a recent infection.

7.0 Laboratory services responsibilities

7.1 <20 weeks gestation and tested in NIBTS		Timescale
7.1.1	All antenatal syphilis screening samples both positive and negative, received by NIBTS should be processed and result available as per national standards.	Within 8 working days of receipt of sample.
7.1.2	All syphilis screen positive samples tested in the NIBTS, on women <20 weeks, should be sent to the RVL for confirmation by performing TPHA, IgM and RPR testing.	ASAP and prior to reporting the result to the Trusts.
7.1.3	For results not confirmed positive by RVL i.e. inconclusive results a repeat specimen should be requested by NIBTS not earlier than 2 weeks' time and no later than 3 weeks, with instructions that the sample should be sent directly to RVL for testing. A secure email should be sent to the relevant ANSC and their deputies using the agreed generic email addresses for each Trust (Appendix 1 p27)	Within 8 working days of receipt of sample
7.1.4	For confirmed positive results a secure email should be sent, by NIBTS to the relevant	Within 8 working days of initial

	ANSC and their deputies via the agreed generic email addresses for each Trust. (Appendix 1 p27)	sample being received (standard 4 IDPS standards)[2]
7.2 ≥ 20 weeks gestation and tested in RVL		
7.2.1	Late booking samples ≥20 weeks gestation should be processed by the RVL ASAP.	On receipt of sample – result typically within 2 working days
7.2.2	All late booking syphilis screen positive samples ≥20 weeks gestation, tested in the RVL should be confirmed by performing TPHA, IgM and RPR testing.	ASAP and prior to reporting the result to the Trusts.
7.2.3	For results not confirmed as positive i.e. inconclusive results a repeat sample should be requested by RVL not earlier than 2 weeks' time and no later than 3 weeks. A secure email should be sent to the relevant ANSC and their deputies using the agreed generic email addresses for each Trust (Appendix 1 p27)	Within 8 working days of initial sample being received (standard 4 IDPS standards)[2]
7.2.4	For confirmed positive results a secure email should be sent, by RVL to the relevant ANSC and their deputies via the agreed generic email addresses for each Trust. (Appendix 1 p27)	Within 8 working days of initial sample being received (standard 4 IDPS standards)[2]
7.2.5	Unbooked women presenting in labour should have samples processed urgently, by the RVL and the results communicated immediately to the maternity unit.	Within 4 hours of sample being sent to labs.

8.0 Maternity services responsibilities – following a positive or inconclusive result

8.1 Management of inconclusive results		**Timescale**
8.1.1	The ANSC should arrange a review of the woman, either via telephone or face to face, and advise of the need for a repeat sample. Organise an interpreter, if required. Explain that non-specific reactivity can occur in the syphilis screening test; possibly due to	Within 10 working days of the result receipt.

	antibodies that cross react with the test. This does not confirm syphilis infection but requires the sample be retested no earlier than 2 weeks after the initial sample and no later than 3 weeks.	
8.1.2	Women should be recalled for the repeat sample, which should be sent directly to the RVL using the "late booker request form".	No earlier than 2 weeks and no later than 3 weeks after the initial sample
8.1.3	The result should be communicated to the woman by the ANSC.	As soon as the result is available.
8.1.4	For results confirmed positive on retesting follow section 8.2	

8.2 Antenatal management plan on receipt of confirmed screen positive syphilis result. (see flow chart appendix 2 p28)		**Timescale**
8.2.1	The ANSC or their deputy should arrange an urgent review appointment with themselves or their deputy and an obstetric consultant. An interpreter should be arranged if required.	Within 10 days of receipt of result - Standard 5-IDPS [2]
8.2.2	The ANSC or their deputy should contact Genitourinary Medicine (GUM) services and provisionally arrange an urgent appointment for both mother and partner.	Prior to mother attending the above appointment.
8.2.3	The ANSC or obstetric consultant can explain the diagnosis and give advice about syphilis both verbally and in written format, in the appropriate language and using an interpreter, if necessary.[7]	At initial review appointment in maternity services.
8.2.4	The ANSC should take bloods for confirmatory testing to confirm patient's identity. Send in the "late booker request form". Also send bloods for hepatitis C testing in red or ochre topped bottle on general virology form.	At initial review appointment in maternity services.

[7] http://www.publichealth.hscni.net/publications/syphilis-protecting-your-baby-english-and-11-translations

8.2.5	The ANSC should offer prearranged appointment at GUM and stress the importance of attending this appointment. The woman should be advised to take her MHHR to this appointment.	At initial review appointment in maternity services.
8.2.6	If greater than 24 weeks gestation, the ANSC should arrange for the woman to be admitted for monitoring during the first dose of treatment due to the risk of Jarisch-Herxheimer reaction. They should contact pharmacy to ensure maternal treatment is available prior to admission.	On advice from GUM.
8.2.7	If the woman states that she is unable to attend GUM, the ANSC should inform the obstetric consultant and liaise with GUM consultant regarding further testing and treatment required.	Following initial review appointment in maternity services.
8.2.8	The ANSC or obstetric consultant should complete top section of “Antenatal Obstetric Management Plan” File in the MHHR (Appendix 3, p29)	At initial review appointment in maternity services.
8.2.9	The ANSC or consultant obstetrician should complete and send the referral letter to GUM and insert a copy of this referral in the MHHR. (Appendix 4 p30)	At initial review appointment in maternity services.
8.2.10	The ANSC should send a memo to inform a locally identified paediatrician, named consultant obstetrician, labour ward and ward managers, community midwifery managers and GP of the diagnosis, history, gestation and expected date of confinement (EDC) (Appendix 5, p31).	Following initial GUM feedback.
8.2.11	The ANSC should ensure that the syphilis birth plan is completed by GUM and inserted in the MHHR. (Pages 1, 3 and 5 of Appendix 6 p32-36)	At next review appointment after 28 weeks or at the paediatric review appointment, if appropriate.
8.2.12	The consultant obstetrician should send a referral to a fetal medicine consultant for evaluation of fetal involvement, in cases of early syphilis infection, if 26 weeks has been reached prior to treatment or in cases of suspected re-infection.	At next review appointment after 26 weeks.

8.2.13	If mother has been previously adequately treated for syphilis, as confirmed by GUM, a repeat test for syphilis RPR should be sent by the ANSC later in pregnancy using the “late booker form”.	At 28 weeks gestation.
8.2.14	If required, the ANSC should arrange an antenatal appointment for the mother to see a local paediatrician - see “syphilis birth plan” (Appendix 6 p32-36).	Prior to 36 weeks gestation.
8.2.15	The ANSC should ensure follow-up of all non-attendance at appointments either at GUM or ANC.	ASAP following notification of non-attendance.
8.2.16	The ANSC should send a reminder memo to: the locally identified paediatrician: named consultant obstetrician and ward managers to remind them of the impending delivery and necessary management of the mother and baby. (Appendix 5 p31)	At 36 weeks gestation.

8.3 Intranatal management of women confirmed as screening positive for syphilis		**Timescale**
8.3.1	The ward manager should inform the resident paediatrician, if necessary, as per the “syphilis birth plan” (Appendix 6 p32-36)	When mother is admitted to delivery suite.
8.3.2	The ward manager should inform the paediatrician, if necessary, of the birth of baby – as per the syphilis birth plan.	Once baby is delivered
8.3.3	If indicated, on the birth plan, a **5ml clotted blood** specimen should be sent from the mother to the RVL using the “Congential syphilis request form-MOTHER” which can be accessed from the RVL website.[8] This will be tested for total antibodies RPR, TPHA and IgM. Maternal and baby blood should be sent together using individual forms and both results should be reviewed and interpreted together.	Following delivery.

[8] Documents & Forms | BHSCT Regional Virus Laboratory (hscni.net)

8.3.4	Breastfeeding is not contra-indicated; unless there is an active lesion on the breast.	Once baby is delivered
8.3.5	The placenta should be sent for histology and PCR in cases where the baby requires treatment.	Following delivery of the placenta

8.4 Management plan for women presenting unbooked in labour		**Timescale**
8.4.1	The midwife admitting the woman should offer and recommend syphilis screening as part of the IDPS programme as soon as possible after admission. They should provide written information in the appropriate language and complete the consent form in the MHHR.	Within 1 hour of admission or ASAP.
8.4.2	The midwife should send the blood sample using the “late booker request form”, making sure that contact details are provided on the form for the biomedical scientist (BMS) to phone back with the results.	Within 1 hour of admission or ASAP.
8.4.3	The midwife sending the sample should alert the RVL via telephone, before sending the sample- indicating the urgency of the results. Phone: 028 961 51654 / 51572 Mon-Fri 9am-5.15pm. Out of hours phone: RVH switchboard on 028 90240503 and ask for the microbiology BMS on call.	When blood samples have been obtained.
8.4.4	The midwife sending the sample should organise a taxi (from all units apart from RJMH) to transport the specimen to the RVL and document the time the bloods leave the unit.	ASAP once samples have been taken.
8.4.5	The midwife sending the sample should ensure timely follow up of results either by themselves or whoever they hand over to, if going off duty.	Within 2-4 hours of sending.

8.4.6	If informed of a positive syphilis result by the RVL, the ward manager should inform the consultant obstetrician on call who should inform the woman of her results and consult with GUM services regarding maternal treatment. On-Call GUM consultant in hours phone: 028 961 51034 /51033 /51036 Out of hours phone: 028 9024 0503 for on call GUM consultant via switchboard.	During labour and following delivery.
8.4.7	For clinical virology advice phone: 07889086946 Mon-Fri 9am to 17.30pm. Out of Hours phone: RVH switchboard 028 90240503 and ask for the microbiology BMS on call who will put you in contact with the consultant virologist on call.	During labour and following delivery.
8.4.8	If the woman has an active genital lesion (chancre), or vulvovaginal lesions of secondary syphilis at time of admission in labour, a caesarean section is recommended for delivery.	ASAP following admission in labour.
8.4.9	The ward manager should inform the consultant paediatrician/neonatologist of the woman's positive syphilis result and her impending delivery.	On receipt of positive result
8.4.10	The paediatricians/neonatologists should treat the baby with Benzyl penicillin as per the "syphilis birth plan" (Appendix 6 p 32) and follow the "flow chart for infant management" (Appendix 7 p37)	Following delivery

9.0 Genito-urinary medicine service responsibilities

(refer to Appendix 2, p28)

		Timescale
9.1	The GUM consultant should arrange an urgent appointment for the woman to make a differential diagnosis on the stage of syphilis infection.	ASAP following referral from maternity services.
9.2	They should provide initial treatment and arrange for follow up treatments, if required, as per BASHH	At initial appointment.

	guidelines management plan[1] (preferably with benzathine penicillin G) and give advice on the risks of the treatment (of note this is unlicensed for use in pregnancy and therefore the hospital policy for dealing with unlicensed medications should be followed).	
9.3	The GUM consultant should liaise with maternity services if the mother is greater than 24 weeks gestation and needs to be admitted for observation during initial treatment, due the risk of Jarisch-Herxheimer reaction.	Following Initial assessment.
9.4	The GUM consultant should complete additional sexual health screening tests as required and provide sexual health advice to the woman, including prevention of re-infection and onward transmission.	At initial appointment.
9.5	The GUM consultant should discuss partner notification, identify sexual contacts as per BASHH guidelines.[1] and arrange follow-up of same.	At initial appointment and ASAP for partner follow-up.
9.6	The GUM consultant should make arrangements for the screening of untested older siblings for congenital syphilis; either by GUM services, the GP or paediatric services.	Following initial appointment.
9.7	The GUM consultant should complete the syphilis birth plan in the MHHR (Appendix 6, p32,34+36) and send a copy to the woman's obstetric consultant and ANSC.	Following completion of treatment.
9.8	The GUM consultant should arrange appointments for follow up bloods to be taken, to ensure efficacy of treatment.	After treatment completed.
9.9	The GUM consultant should inform the ANSC via email, of any non-compliance with appointments at GUM or post treatment follow up bloods. The ANSC will inform the obstetrician.	ASAP

10.0 Paediatric service responsibilities

(Refer to “syphilis birth plan” (Appendix 6 p32 and flow chart Appendix 7, p38)

10.1 Antenatal		Timescale
10.1.1	The consultant paediatrician, with responsibility for infectious diseases in the Trust, in liaison with the ANSC, should arrange to see the woman antenatally if necessary, as per “syphilis birth plan” (Appendix 6 p32).	After 28 weeks but prior to 36 weeks gestation, if possible.
10.1.2	The consultant paediatrician should discuss with the mother, the management plan for the baby after delivery, as per “flow chart of infant management plan”. (Appendix 7 p37). They should document their discussion in the MHHR neonatal section.	At the antenatal review visit.
10.2 Postnatal - Scenario 1		**Timescale**
	Mother adequately treated prior to this pregnancy and no change in RPR/VDRL levels in pregnancy: • No infant treatment or follow-up required. • Infant requires no physical examination above routine	Following delivery and prior to discharge.
10.3 Postnatal - Scenario 2		**Timescale**
10.3.1	**Mother adequately treated for syphilis during this pregnancy with low risk of congenital syphilis- Decreasing risk factors (page 5 of Appendix 6): -** • Treatment completed • Treated with benzathine penicillin G. • Treatment completed >30 days prior to delivery. • Late syphilis • 4-fold decrease in RPR achieved. However, “It may take several months to observe a four-fold drop in RPR/VDRL titre and in many	

	pregnancies, labour will occur before this period has elapsed. Moreover, women with late syphilis may have serofast RPR/VDRL titres. Hence, serological cure may not be demonstrable before birth of the neonate." (BASHH guidelines, p11). • Final RPR titre <1 in 2(VDRL1in 1) • HIV negative.	
10.3.2	The paediatrician should refer to the syphilis birth plan for advice from the GUM team regarding infant management.	Prior to assessing the baby
10.3.3	The paediatrician should assess the baby for signs of congenital syphilis (page 2 of Appendix 6)[1] and seek advice from the paediatric/neonatal infectious diseases consultant if there are any signs present.	Following delivery.
10.3.4	The paediatrician should perform "initial blood tests" (page 2 of Appendix 6) and send infant bloods (venous sample - not cord bloods) together with maternal bloods, using the "Congenital Syphilis Request Form INFANT" which can be accessed from the RVL website.[8] This will be tested for total antibodies RPR, TPHA and IgM.	Following delivery.
10.3.5	It is the responsibility of the paediatrician taking the samples to follow up all investigations performed and take appropriate action.	Prior to discharge of the baby
10.3.6	The paediatrician discharging the baby should send a referral letter (Appendix 8, p38) to the consultant paediatrician responsible for infectious diseases within the Trust.	On discharge of the baby
10.3.7	**The consultant paediatrician/neonatologist should review the infant blood results in tandem with those of mother when available, with interpretation of the TPHA results being done.** A fourfold or greater difference in the RPR/VDRL titre, or TPHA titre, from that of the mothers' can be an indication of congenital syphilis. [1] They should refer to page 2 of Appendix 6, for "indications for further tests and treatment" and perform further tests if indicated.	Sample from mother to be taken no more than 4 weeks before that of infant

10.4 Postnatal - Scenario 3		Timescale
10.4.1	**There is a significant risk of congenital syphilis Increasing neonatal risk factors (page 5 of Appendix 6):** • **Inadequate or no treatment of mother. *** • **Treatment with non-penicillin drugs. *** • **Maternal treatment <30 days before delivery. *** • Early syphilis • Maternal 4-fold decrease in RPR not achieved. However, "It may take several months to observe a four-fold drop in RPR/VDRL titre and in many pregnancies, labour will occur before this period has elapsed. Moreover, women with late syphilis may have serofast RPR/VDRL titres. Hence, serological cure may not be demonstrable before birth of the neonate." (BASHH guidelines, p11) • Final RPR >1 in 4 (VDRL>1 in 2). • Mother HIV positive. *** The presence of any one of the 'bold' (asterisk) factors above constitutes inadequate maternal treatment and requires treatment of the infant at birth.**	
10.4.2	The paediatrician should refer to the syphilis birth plan for advice from the GUM team regarding infant management.	Prior to assessing the infant
10.4.3	The paediatrician should assess the baby for signs of congenital syphilis[1] (page 2 of Appendix 6) and seek advice from the paediatric/neonatal infectious diseases consultant if there are any signs present.	Following delivery.
10.4.4	**The paediatrician should perform "initial blood tests" (page 2 of Appendix 6)**: - • Send a venous blood sample (not cord blood and send together with maternal bloods) using the "Congenital Syphilis INFANT" form which can be accessed from the RVL website.[8] This	Following delivery.

	will be tested for total antibodies RPR, TPHA and IgM.	
10.4.5	**The paediatrician should perform additional tests on infant, if lesions present** (page 2 of Appendix 6) 1 T pallidum polymerase chain reaction (PCR) test; and 2 Dark ground microscopy (DGM).	Following delivery
10.4.6	**The paediatrician should perform further tests if treatment is indicated or there are other indications:** (page 2 of Appendix 6, p28) 1 FBC, U+E, LFT, ALT/AST. 2 HIV antibody. 3 Lumbar puncture for CSF WCC, VDRL or RPR, TPPA, protein. 4 Long bone X-rays for osteochondritis and periostitis. 5 Chest X-ray for cardiomegaly. 6 Cranial U/S scan. 7 Ophthalmology assessment for interstitial keratitis. 8 Audiology for sensorineural hearing loss.	After delivery
10.4.7	**Indications for further tests and treatment** (page 2 of Appendix 6) 1 Mother inadequately treated (GUM consultant will advise on treatment history). 2 Infant has clinical signs consistent with syphilis. 3 Infant's RPR/VDRL titre is 4 times the mother's on two occasions (eg mother's RPR 1:4, infant's RPR 1:16). Sample from mother to be taken no more than 4 weeks before that of infant. 4 Infant has positive treponemal IgM test together with corroborative history and clinical signs. 5 Infant has positive dark ground microscopy. 6 Infant has positive T. pallidum PCR test together with corroborative history and clinical signs.	
10.4.8	It is the responsibility of the paediatric team to follow up all investigations performed and take appropriate action.	

10.4.9	**Infant blood results should be considered in tandem with those of mother's when available, with interpretation of the TPHA results being done.** A fourfold of greater difference in the RPR/ VDRL titre, or TPHA titre, from that of the mother's can be an indication of congenital syphilis.	
10.5 Treatment of newborn (page 2 of Appendix 6)		
	Commence treatment for congenital syphilis: - (Should only be given when directed by a senior paediatrician (staff grade or consultant.) • Benzylpenicillin sodium, 25 mg/kg 12 hourly intravenous for 7 days (8 hourly on days 8, 9 and 10.) • Treatment for 10 days in total.	As soon as possible after delivery.
10.6 Infant follow-up		
10.6.1	Send paediatric referral letter (Appendix 8, p38) to the consultant paediatrician responsible for infectious diseases within the Trust.	On discharge.
10.6.2	**Infants treated for syphilis at birth.** Arrange follow-up appointments: - • Months 1 and 3: Request 'syphilis screen + RPR + Treponemal IgM. • Months 6: - Check RPR only. • Month 12: - Check RPR. • Discharge if RPR has achieved sustained 4x drop from peak level.	Prior to discharge.
10.6.3	**Infant not treated for syphilis RPR <4x mother's, IgM negative at birth.** Arrange follow- up appointments: • Month 3: check RPR and treponemal IgM. • Month 6: check RPR- if negative discharge, if positive repeat at 12 months. • Month 12: RPR negative, no further follow-up.	Prior to discharge.

	• Month 12: RPR still positive, discuss with GUM colleagues. (Note: the RPR is usually negative by six *months).*	
10.6.4	**Infants not treated for syphilis and RPR and IgM negative at birth.** Arrange follow- up appointments: • Month 3: repeat RPR and IgM and discharge if still negative. • Month 3: RPR and/or IgM positive, discuss with GUM colleagues.	Prior to discharge.
10.6.5	Establish process for follow-up of DNAs.	Ongoing.

11.0 References

1. British Association of Sexual Health and HIV (BASHH) UK national guidelines on the management of syphilis 2015 update in June 2017. https://www.bashhguidelines.org/current-guidelines/genital-ulceration/syphilis-2015/

2. Screening for infectious diseases in pregnancy. Standards to support the UK Infectious Diseases in Pregnancy Screening Programme. http://infectiousdiseases.screening.nhs.uk/standards

3. ISOSS congenital syphilis case review report: 2015 to 2020 ISOSS congenital syphilis case review report: 2015 to 2020 - GOV.UK (www.gov.uk)

4. Antenatal care. NICE guidance (NG201) Published 19th August 2021 Recommendations | Antenatal care | Guidance | NICE

5. NICE – Who should I test for Hepatitis C? last revised April 2020 Who to screen/test | Diagnosis | Hepatitis C | CKS | NICE

6. Public Health Agency – Protecting you and your baby: Blood tests at your first antenatal visit and translations .Friday , 31st May 2019. Protecting you and your baby: Blood tests at your first antenatal visit and translations | HSC Public Health Agency (hscni.net)

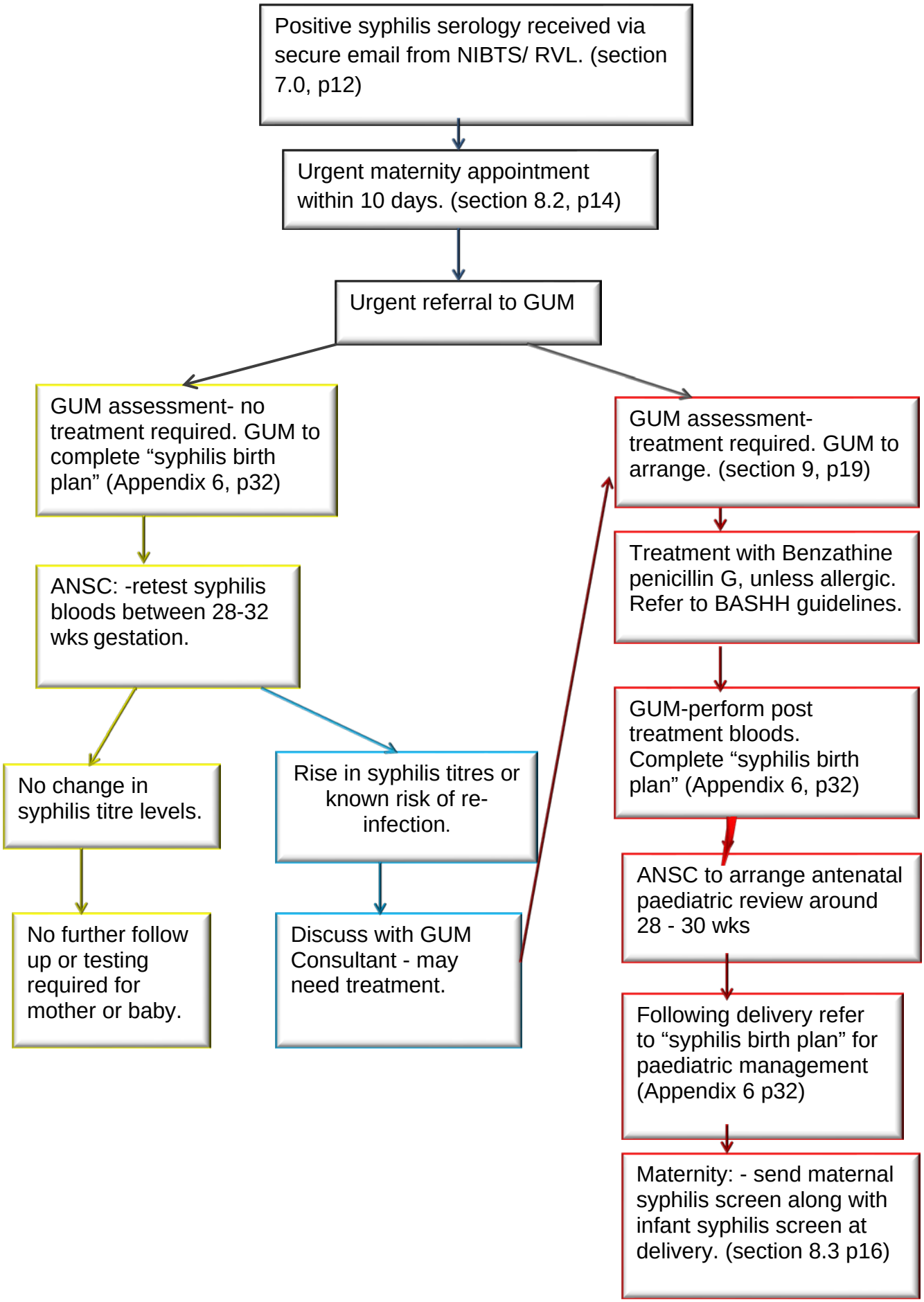
7. Public Health England -NHS Infectious diseases in pregnancy screening programme Laboratory handbook updated 25th May 2022 https://www.gov.uk/government/publications/infectious-diseases-in-pregnancy-screening-programme-laboratory-handbook/infectious-diseases-in-pregnancy-screening-programme-laboratory-handbook

8. Public Health Agency-Syphilis: protecting you and your baby (English and 11 translations) http://www.publichealth.hscni.net/publications/syphilis-protecting-your-baby-english-and-11-translations

Appendix 1: - Trust generic email addresses

Trust	Generic email address
Belfast Trust (BHSCT)	DL-BTUrgentScreenResult@belfasttrust.hscni.net
Northern Trust (NHSCT)	AIS@northerntrust.hscni.net
South Eastern Trust (SEHSCT)	specialist.midwives@setrust.hscni.net
Southern Trust (SHSCT)	antenatal.results@southerntrust.hscni.net
Western trust (WHSCT)	antenatalinfection.screening@westerntrust.hscni.net

Appendix 2: - Management of confirmed screen positive syphilis results.



Appendix 3: - Antenatal obstetric management plan for mother confirmed screen positive for syphilis.

(To be completed by Obstetrician/ ANSC)

ID label	Named Consultant + Hospital	
Gestation: - ☐ weeks EDC: - ☐	History of previous syphilis infection: Yes ☐ No ☐ Previously treated Yes ☐ No ☐ Year: - ☐ Where treated ☐	
Baseline syphilis serology: -	Rapid Plasma Reagin (RPR) titre	
	TPHA	
	T Pallidum EIA IgM	
	T Pallidum antibody (total)	

Previous obstetric history/ other comments:

☐

HIV status: - ☐ Hepatitis B status: - ☐

- Confirmatory bloods taken for syphilis serology: - ☐
- Written information given. ☐
- Referral to GUM date: - ☐

Signed: - ☐ Status: - ☐ Date: - ☐

To be completed at subsequent A/N visits:-

- Attended GUM Yes ☐ No ☐
- Referral to fetal medicine (if >24 wks gest prior to treatment / early infection/ risk of re-infection) Yes ☐ No ☐ Date:- ☐
- Paediatric appointment arranged: - Yes ☐ No ☐

Comment: - ☐

Signed: - ☐ Status: - ☐ Date: - ☐

Appendix 4: - Obstetric referral letter to GUM

(Please file a copy in the maternity hand-held record)

Name: -
Address: -

H+C number: -
DOB: -

Dear Doctor,

_____ is now _____ week's gestation in her _____ pregnancy.

Her EDC is _____

Her antenatal syphilis screening test is positive. (See attached lab report.)

History of previous syphilis infection: Yes ☐ No ☐ Previously treated: Yes ☐ No ☐

Hepatitis B: Pos ☐ Neg ☐ HIV status: Pos ☐ Neg ☐

Interpreter required: Y ☐ N ☐ Language spoken: _____

In order to allow us to provide correct management in pregnancy and to assist the Paediatricians in planning the management of the baby, please can you review her and complete the "syphilis birth plan" (Appendix 6) enclosed and return it via email to the ANSC?

Comment: -

Her next antenatal review appointment is _____ when she will be _____ wks gestation.

Many thanks,

Signed: - _____ Status: - _____ Date: _____

Consultant Obstetrician: _____ Email: _____

ANSC: _____ Email: _____

Appendix 5: - Memo to MDT

To: - Named Consultant Obstetrician: -
Paediatrician: -
Labour ward manager: -
Postnatal ward manager: -
Community midwife manager: -
GP: -

Date: -

Subject: -Woman screened positive for syphilis in pregnancy

Initials: -

Address: -

Hosp No: - H&C: -

GP name and address: -

EDC: - Para: -

Dear team,

The above lady has screened positive for syphilis in pregnancy.

☐ She has a history of syphilis.

☐ She has been previously treated for syphilis in

☐ She has been reviewed by GUM and requires no further treatment.

☐ She has no previous history of syphilis infection.

☐ She has been reviewed by GUM and has been treated with on: - when she was weeks gestation.

Please refer to her syphilis birth plan in her MHHR on admission for infant management.

Comments: -

Regards,

Antenatal screening Co-Ordinator

Trust: -

Tel: -

Appendix 6: - Syphilis birth plan [1]

To Midwife / Obstetric Team

No need to contact on-call paediatric team from syphilis viewpoint ☐

Contact on-call paediatric team when baby is delivered ☐

Send placenta for histology and PCR if treatment indicated for infant ☐

Mother's name: -…… Mother's DOB: -……

Mother's Address: ……

Mother's Hospital number: -…… Mother's GUM number: -

Mother's consent to record GU number in hospital records ☐

Mother's phone numbers: Mobile: -……

Landline: - ……

Estimated date of delivery: -

MATERNAL SYPHILIS DIAGNOSIS:

Adequately treated before this pregnancy ☐

Early latent ☐

Late latent ☐

Other examples:

……Primary ☐

…….. Secondary ☐

……Inadequately treated/ treatment not documented ☐

…….. Possibility of re-infection from untreated partner ☐

……Unbooked ☐

GUM ADVICE TO PAEDIATRICIANS

Infant requires 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 GUM & Paediatric infectious diseases team.
Out of hours, contact the GUM or infectious diseases registrar on call via switchboard

Signed: -…… (GUM Consultant: -…… Date: -……

COPIES (of pages 1–4 only) **TO CONTACTS:** GP gets copy of page 1 only

Delivery suite manager; Neonatal /Paediatric ID consultant; Obstetric consultant; Antenatal screening Co-Ordinator.

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 form 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

INITIAL BLOOD TESTS

Send a venous blood sample for serum RPR and treponemal IgM (take blood from the neonate, not the umbilical cord).

ADDITIONAL TESTS ON INFANT IF LESIONS PRESENT (see page 4)

3 T pallidum polymerase chain reaction (PCR) test
4 Dark ground microscopy (DGM)

FURTHER TESTS IF TREATMENT INDICATED (see below)

1 FBC, U+E, LFT, ALT/AST
2 HIV antibody
3 Lumbar puncture for CSF WCC, VDRL or RPR, TPHA, protein
4 Long bone X-rays for osteochondritis and periostitis
5 Chest X-ray for cardiomegaly
6 Cranial U/S scan
7 Ophthalmology assessment for interstitial keratitis
8 Audiology for 8th nerve deafness

INDICATIONS FOR FURTHER TESTS AND TREATMENT

7 Mother inadequately treated (GUM consultant will advise, see above)
8 Infant has clinical signs consistent with syphilis
9 Infant's RPR/VDRL titre 4x mother's on two occasions (eg 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.
10 Infant has positive treponemal IgM test together with corroborative history, clinical signs. GUM consultant will advise.
11 Infant has positive dark ground microscopy
12 Infant has positive T pallidum PCR test together with corroborative history, clinical signs. GUM consultant will advise.

TREATMENT OF NEWBORN

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

INFANT FOLLOW-UP

Ideally, this should be done in liaison with consultant colleague in genitourinary medicine.

1

Infants treated for syphilis at birth
Months 1 and 3: check RPR and treponemal IgM.

Month 6: check RPR

Month 12: check RPR. Discharge if RPR has achieved sustained 4x drop from peak level.

2

Infant not treated for syphilis
RPR <4 x mother's, IgM negative at birth

Month 3: check RPR and treponemal IgM.

Month 6: check RPR- if negative discharge, if positive repeat at 12 months.

Month 12: RPR negative, no further follow-up.

Month 12: RPR still positive, discuss with GUM colleague.

(Note: the RPR is usually negative by six months).

3

Infant not treated for syphilis and RPR and IgM negative at birth *Month 3:* repeat RPR and IgM and discharge if still negative.

Month 3: RPR and/or IgM positive- discuss with GUM colleague.

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.

SIBLINGS FOR SCREENING

None ☐

Name (s): …… DOB: …… Sex: ……

…… …… ……

…… …… ……

…… …… ……

…… …… ……

GUIDE TO INFANT LABORATORY TESTS

Treponemal IgM

A positive treponemal IgM test is supportive of a diagnosis of congenital syphilis, but must be interpreted in conjunction with the history, clinical signs and results of other syphilis blood tests. A negative IgM test does not exclude infection as the IgM response may be delayed or suppressed.

Rapid plasma reagin (RPR) or Venereal disease research laboratory (VDRL) test

The RPR and VDRL are different versions of the same test and availability will vary between laboratories. Passive trans-placental transfer of maternal IgG antibodies may cause a false positive RPR/VDRL test in the newborn but these usually revert to negative by 6 months. A positive RPR/VDRL test at a titre four-fold or more that of the mother (eg mother 1: 4, infant 1:16) supports a diagnosis of congenital syphilis, and should be repeated. Ideally, maternal and infant tests should be timed as closely as possible and no greater than one month apart.

A neonatal RPR/VDRL titre less than four-fold that of the mother's (eg mother 1:16, infant 1:8) does not exclude congenital syphilis. Please discuss all neonatal test results with GUM and Paediatric ID consultant.

Full blood count

May show non-haemolytic anaemia, leucocytosis or leucopenia, thrombocytopenia, polychromasia, or erythroblastaemia.

Liver function tests/transaminases

Syphilitic hepatitis may cause elevated levels of alkaline phosphatase, AST/ALT, bilirubin.

U+E, creatinine

Syphilis can cause glomerulonephritis resulting in uraemia.

Polymerase chain reaction (PCR) testing

Ulcers, nasal discharge, mucous membrane lesions or moist skin rashes can be swabbed and the sample sent in viral transport medium (to Clinical Virology, Manchester Royal Infirmary) for T pallidum PCR testing.

Dark ground microscopy (DGM)

Ulcers, nasal discharge, mucous membrane lesions or moist skin rashes can be sampled and used to directly visualise T pallidum. However, specimen collection and microscopy require prior training. Microscopy should take place as soon as possible after the specimen is obtained. Call GU Medicine if you wish to perform DGM.

Placenta

The syphilitic placenta may appear macroscopically normal. If the fetus is severely affected by syphilis the placenta may appear paler, larger and thicker than normal. Histology of the placenta and cord (with special staining) may provide evidence of congenital infection.

Radiology

Most bone lesions in congenital syphilis are not clinically apparent. However, osteochondritis, periostitis and osteomyelitis are frequently present, most often in the long bones and ribs. Periostitis of the skull can produce frontal bossing on x-ray.

MATERNAL FACTORS

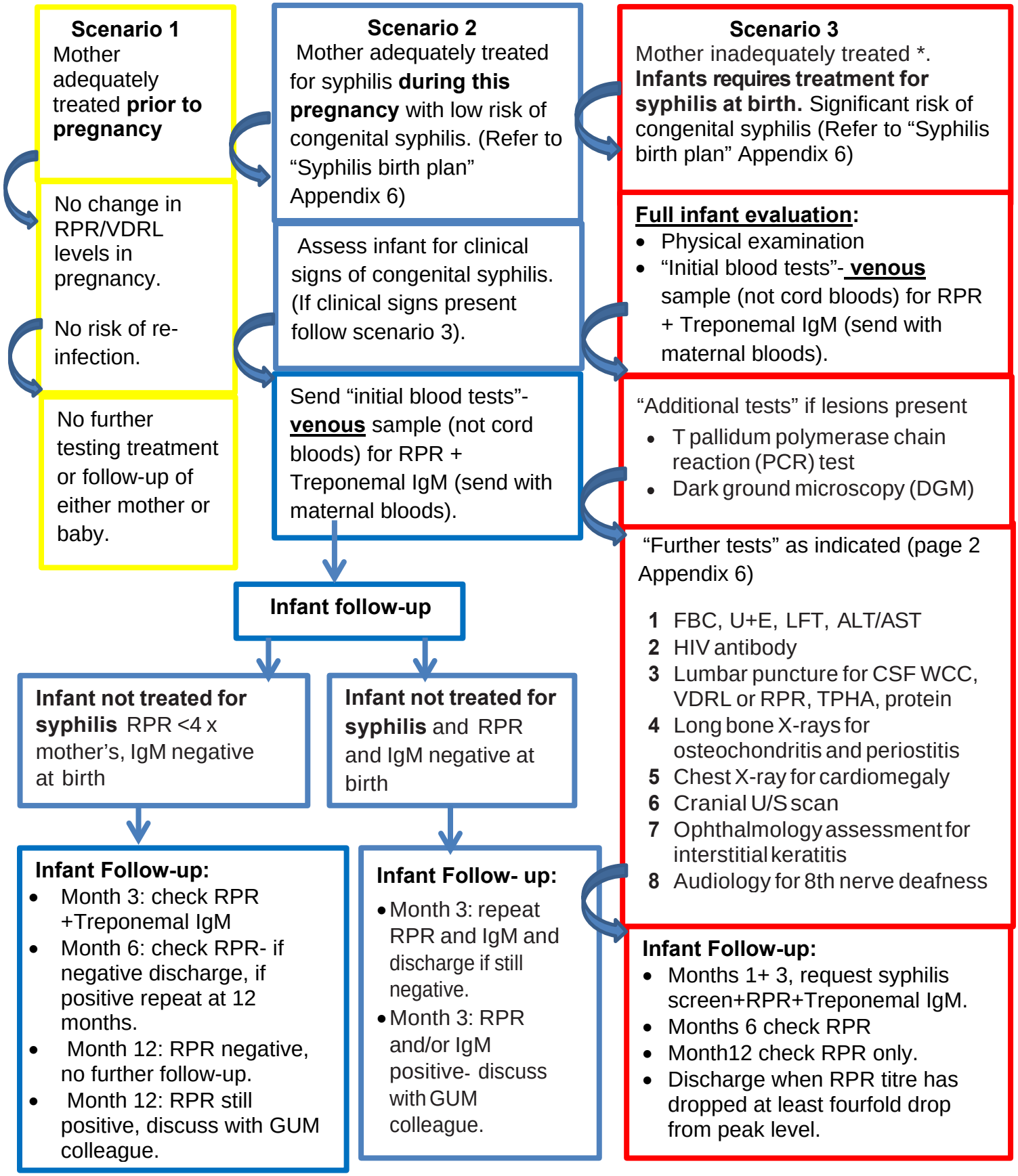
DECREASING NEONATAL RISK		INCREASING NEONATAL RISK	
Treatment completed……	☐	**Partial or no treatment*……**	☐
Treated with penicillin**……**	☐	**Treated with non-penicillin*……**	☐
Treatment completed >30 days pre-delivery……	☐	**Treatment <30 days before delivery*……**	☐
Late syphilis……..	☐	Early syphilis……	☐
4X drop in RPR……...	☐	4x drop in RPR not achieved ……	☐
Final RPR titre< 1in 2 (VDRL 1in 1) ……	☐	Final RPR titre >1 in 4 (VDRL >1 in 2) ……	☐
HIV negative……	☐	HIV positive ……	☐

*** The presence of any one of the 'bold' (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.

Copy pages 1–4 to those on circulation list. Copy pages 1–5 to be retained in GUM notes

Appendix 7: Flow chart of infant management plan.



*partial or no treatment, treated with non-penicillin antibiotic, or treatment <30 days before delivery.

Appendix 8: Paediatric referral letter

Infant name and address: H&C:

Dear Dr

Baby was delivered at on the in

His/her mother is

She tested positive for syphilis in this pregnancy and her baby falls into:

☐ **Scenario 2**: **Low risk of congenital syphilis**

☐ Bloods have been taken from the baby on the and require follow up.

☐ The baby has been assessed clinically and there were no signs of congenital syphilis.

☐ No treatment was required.

☐ The baby will require follow- up: -

- Month 3 for syphilis RPR and TPPA IgM
- Every three months until RPR is negative or has dropped fourfold.

☐ **Scenario 3: Significant risk of congenital syphilis**

☐ Bloods have been taken from the baby on the and require follow up.

☐ The baby has been assessed clinically and there were no signs of congenital syphilis.

☐ The baby has been treated with Benzylpenicillin sodium IV for 10 days.

☐ The baby will require follow-up: -

- Months 1 and 3 for syphilis RPR + TPPA IgM.
- Months 6 and 12 for syphilis RPR only.

Comments:

Signature: Date:

Appendix 9: - Acknowledgements

Thank you to the following people for their contribution towards the development of this guideline.

Name	Role	Trust
Adrian Mairs	Consultant in public health PHA responsible for IDPS programme	PHA
Alison Watt	Consultant virologist RVL	BHSCT
Allison Wilson	ANSC	NHSCT
Aoife McMorrow	Neonatologist	BHSCT
Carol Emmerson	GUM Clinical Lead	BHSCT
Ceri Knobbs	ANSC	WHSCT
Fiona Carey	GUM consultant	SEHSCT
Jenny Gingles	Locum Consultant in public health PHA, responsible for IDPS programme.	PHA
Jenny Henderson	ANSC	SEHSCT
John White	GUM consultant	NHSCT + WHSCT
Julie Lewis	Consultant paediatrician	SHSCT
Kate Maxwell	ANSC	SHSCT
Lynne McFetridge	Consultant paediatrician	NHSCT
Mary Ledwidge	Consultant paediatrician	WHSCT
Melissa Perry	GUM consultant	WHSCT
Nita Saxena	Consultant paediatrician	SEHSCT
Rachel Doherty	Consultant in public health PHA, public health lead for IDPS programme.	PHA
Roberta Carlisle	Antenatal screening coordinator	BHSCT
Say Quah	GUM consultant	BHSCT
Sharon Christie	Consultant for infectious disease paediatrician RBHSC	BHSCT

Susan Feeney	Consultant Virologist RVL	BHSCT

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