

The Northern Ireland Antenatal Syphilis Screening Programme.

Guidelines on the Detection and Management of Syphilis Infection in Pregnancy

Professional Guidance and Responsibilities

November 2007
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GUIDELINES on DETECTION and MANAGEMENT of SYPHILIS INFECTION in PREGNANCY

1. BACKGROUND

This guideline has been developed to advise health care professionals on the treatment and management of syphilis infection in pregnant women and their babies. The incidence of syphilis infection in women in Northern Ireland has increased considerably in the past decade.

The guideline was developed at the request of the Department of Health and Social Service's Regional Antenatal Infections Screening Group. A working group (Appendix 1) which had representation from obstetrics, genito-urinary medicine, neonatology, paediatric infectious diseases, microbiology and midwifery developed the guidance. The guideline is based on the British Association of Sexual Health and HIV syphilis guidelines¹ and the latest evidence for the management of syphilis in pregnant women and the newborn^{2,3}.

The Department of Health, Social Services and Public Safety in Northern Ireland has overarching standards for the delivery of safe, quality care in the HPSS. The care of all women and their babies should meet with the 'Quality Standards for Health and Social Care'. The standards aim to ensure that safe and effective care, and accessible, flexible and responsive services are provided as laid out in the Quality Standards document and that women infected with syphilis receive the appropriate treatment and management to reduce to a minimum the risk of congenital syphilis, stillbirth or premature labour.

Effective assessment and management of syphilis in pregnancy and any baby born with congenital syphilis should be an interdisciplinary approach with joint management involving obstetricians, genito-urinary medicine specialists, neonatologists and paediatric infectious disease specialists.

This guideline has been copied to the Regional Quality and Improvement Authority (RQIA) for use when reviewing the clinical and social care governance of this type of service.

2. AIM

The aim of antenatal screening is to detect and treat maternal syphilis as early as possible in order to minimise the risk of syphilis related illness to the mother, syphilis infection in the fetus and prevent stillbirth, premature delivery and congenital syphilis in the newborn.

3. INTRODUCTION

Syphilis is a complex systemic disease and may be classified as acquired or congenital. Vertical transmission rates vary depending on the stage of syphilis infection in the mother. In pregnant women with untreated early syphilis, 70-100% of infants will be infected, with stillbirths occurring in up to one-third of cases. Infection in pregnancy can cause intrauterine growth retardation, stillbirth, hydrops fetalis, or premature delivery. Babies born with congenital syphilis can have early manifestation of the disease (within the first 2 years of life) or late manifestation (after 2 years of life) including stigmata of congenital syphilis.

3. KEY POINTS IN THE DIAGNOSIS AND MANAGEMENT

- Syphilis in pregnancy should be managed as clinically urgent. All women with a confirmed positive TPPA/VDRL/EIA should have urgent referral to GUM services as they are at immediate and ongoing risk of late miscarriage/stillbirth or congenital syphilis.
- All pregnant women should be offered screening for syphilis. Screening should take place early in the pregnancy at the booking visit. Women who present after 20 weeks gestation should be offered a syphilis screening test as soon as possible. Women who may be at risk of infection should be re-screened at 24 and 36 weeks.
- The priority is to give timely and adequate treatment to the woman and prevent infection of the fetus. Effective treatment of the infected mother early in pregnancy can prevent congenital syphilis. Although treatment cures the infection, if given after 16 weeks gestation, it may not prevent the stigmata of congenital syphilis.
- Laboratories with an initial reactive syphilis test should seek urgent confirmation to ensure that treatment, if required, is provided for the mother as soon as possible.
- Urgent referral must be made to GUM services for assessment, treatment, sexual health advice and contact tracing any confirmed VDRL, TPHA, EIA positive woman.
- Maternity Units should consider and treat, where necessary at point of contact, any mother at risk of not attending GUM services.
- In order to ensure the efficacy of treatment given to the mother and baby there must be follow up bloods taken following completion of the treatment course.
- Referral to a fetal medicine consultant for evaluation of fetal involvement and monitoring for fetal distress during treatment is recommended after 24 weeks gestation.
- All babies born to syphilis positive mothers should be assessed for infection and also referred to paediatric infectious disease consultants.

4. GENERAL GUIDANCE

- a) Not all positive EIA, TPPA and/or positive VDRL results mean a syphilis diagnosis but due to the risk of late miscarriage, stillbirth or congenital syphilis all confirmed positive results must have urgent referral to and review at Genito-Urinary Medicine (GUM) services. Referral should be done initially by phone and followed up by letter.
- b) Women with a history of treated infection should still be referred to GUM though further treatment may not be required.
- c) There is a false negative rate in primary syphilis serology of 20-30%. If staff have concerns they should discuss these with GUM.
- d) Information for women can be downloaded from the HPA web site www.hpa.org.uk ; and from www.patient.uk and www.nhsdirect.nhs.uk.
- e) A flow chart (Appendix 2) summarises the management of the mother.
- f) Once seen by the GUM consultant a Proforma (appendix 5) will be sent by them to the woman's obstetric consultant detailing the treatment and follow up care. This should be inserted into the woman's obstetric notes and be referred to at each antenatal appointment.
- g) GUM should be responsible for completing a sexually transmitted infection and Hepatitis C screen on the woman, contact tracing, arranging referral to paediatric infectious diseases for testing of other children and informing the woman's GP.

7. TESTING AND REPORTING

- a) Local laboratories should have urgent confirmation of presumptive positive results by the Department of Microbiology, Kelvin, Royal Group Hospitals Trust (RGHT). A VDRL titre should be included with the confirmatory tests to assist diagnosis of stage of syphilis.
- b) Samples for confirmation should be labelled 'URGENT pregnancy sample' and sent with the antenatal number and gestation details on the form.
- c) If a VDRL/TPPA/EIA is confirmed positive then the woman's consultant obstetrician and local lead midwife should be urgently informed by the confirmatory laboratory to facilitate immediate action to enable early assessment and treatment of the woman.
- d) Local laboratories and Maternity Units should have an agreed reporting pathway for positive results to ensure that syphilis infections are dealt with in a timely appropriate manner.
- e) Laboratories should provide written guidance on the hard copy and recommend referral to GUM services. GUM should take the second sample of blood from the woman unless otherwise agreed with the woman's obstetric consultant. GUM should inform the lab of their special clinic number for the woman to ensure that test results are matched up.

8. TREATMENT

- a) Treatment should be in consultation with GUM and per their instructions.
- b) Treatment is individualised depending on the stage of infection. This can only be determined by expert interpretation of results therefore it has not been included in these general guidelines.
- c) GUM should organise treatment, including provision of drugs, for the woman and follow up the treatment to ensure it is completed.
- d) There is a risk of Jarisch-Herxheimer reaction to treatment with some stages of syphilis infection and this may lead to fetal distress and premature labour in pregnant women. There are instances (high VDRL) when women should be admitted for the first 72 hours of treatment. GUM should advise when this is required. Admission is more likely to be required in the second half of pregnancy.

9. FOLLOW UP BLOODS

- a) Follow up bloods are to check efficacy of treatment and should be carried out at 1, 2, 3 and 6 months post treatment. This should be done by GUM services unless there is a specific arrangement with GUM, the woman and her obstetric consultant.
- b) Follow up blood specimens should be sent in a 5ml specimen bottle for clotted blood and using a microbiology form to Department of Microbiology, Kelvin Building, Royal Group Hospital Trusts (RGHT), Belfast.
- c) Obstetricians should check with the woman at each antenatal visit that she has kept her follow up appointments with GUM. If a woman misses a follow up appointment and her treatment has not been effective then there is still a risk of stillbirth and/or congenital syphilis.
- d) Should a woman fail to keep her follow up appointment at GUM then GUM should contact and liaise with the Maternity Unit for follow up.

10. PAEDIATRICS

- a) All women should see the local paediatrician and be referred to a Paediatric Infectious Disease Consultant in Royal Belfast Hospital for Sick Children (RBHSC) prior to delivery.
- b) Treatment for the baby should follow the Paediatric Protocol (appendix 4). Advice can be sought from the paediatric infectious disease consultants, Royal Belfast Hospital for Sick Children RBHSC) if required.

- c) The drug treatment for the baby should be ordered when the mother is diagnosed and held in the maternity unit for her delivery.
- d) If there is difficulty in obtaining treatment for the baby then the GUM pharmacist in RGHT pharmacy can be contacted for further advice.

11. DELIVERY

- a) The woman's syphilis titre should be checked at delivery, blood should be sent to Dept of Microbiology, Kelvin Building, Royal Group Hospitals Trust, Belfast; using a 5ml clotted blood and microbiology form.
- b) If the woman has an active genital lesion (chancre) at time of birth Caesarean Section is recommended.
- c) The paediatrician should examine the baby at delivery for signs/symptoms of congenital syphilis and follow the Paediatric Protocol (appendix 3). Advice can be sought from Dr S Christie or Dr P Jackson (paediatric infectious disease consultants RBHSC) if required.
- d) Cord blood should not be used (UK and ACDC guidelines) when checking the baby's titre at delivery (see Paediatric Protocol, appendix 3).

12. POSTNATAL

- a) Breastfeeding is not contra-indicated unless there is an active lesion on the breast.
- b) The Paediatric Protocol (appendix 3) for treatment should be followed.
- c) Prior to discharge a six week follow up appointment for the baby to see the infectious disease paediatrician, Dr S Christie, Royal Belfast Hospital for Sick Children should be made (see contact details).
- d) The woman should have a six month post treatment follow up blood test appointment with GUM for if not already done.

13. CONTACT DETAILS

<u>Genito-Urinary Medicine</u> GUM reception	90634050
Dr Say Quah GUM (secretary)	90634817
On call GUM consultant	90240503

<u>Paediatric Infectious Diseases Consultants</u>	
Dr Sharon Christie RBHSC (secretary)	90635607
Dr Paul Jackson RBHSC (secretary)	90634763
On call paediatric consultant	90240503

<u>Pharmacy RGHT</u>	
GUM pharmacist	90635443
On call pharmacist	90240503

14. REFERENCES

¹UK National Guidelines on the Management of Early Syphilis. 2002.
[http://www.bashh.org/guidelines/2002/early\\$final0502.pdf](http://www.bashh.org/guidelines/2002/early$final0502.pdf)

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Syphilis in pregnancy and the neonatal period

A Doroshenko, J Sherrard, A J Pollard. International Journal of STD & AIDS. London: Apr 2006. Vol. 17, Iss. 4; pg. 221, 9 pgs

³ *Sexually Transmitted Infections* 76:73-79 (2000)
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15. INFORMATION RESOURCES

British Association of Sexual Health and HIV.
www.bashh.org

Screening for infectious diseases in pregnancy. Standards to support the UK antenatal screening programme.

<http://www.dh.gov.uk/assetRoot/04/09/20/49/04092049.pdf>

BASHH UK National guidelines on the management of Syphilis 2007 Draft 3

<http://www.bashh.org/guidelines/draft/SyphilisGuideline2007Draft.pdf>

Guidelines for effective syphilis treatment in Europe WHO 2003 given in appendix 6 'Review of current evidence and comparison of guidelines for effective treatment of syphilis in Europe'.

<http://www.euro.who.int/document/e81699.pdf>

16. GLOSSARY OF TERMS

Screening test	initial syphilis screening test in local laboratory.
Presumptive positive	initial positive result on screening test but not confirmed by further testing of initial sample in confirmatory laboratory.
Confirmed positive	further independent testing in confirmatory laboratory on initial screening sample. Result confirms initial positive test result.
Confirmatory blood	second blood sample taken to confirm patient's identity – sample not to be confused with confirmed positive result.

Membership of the Guideline Development Group

Dr Say Quah (chair)

Consultant, Genito-urinary medicine Royal Group Hospitals

Dr Ann Hamilton

Consultant obstetrician, Ulster Hospital Maternity Unit

Dr Richard Tubman

Consultant neonatologist, Royal Jubilee Maternity Hospital

Dr Sharon Christie

Consultant paediatrician in infectious diseases, Royal Belfast Hospital for Sick Children

Dr Grace Ong

Consultant microbiologist, Belfast Links Laboratory

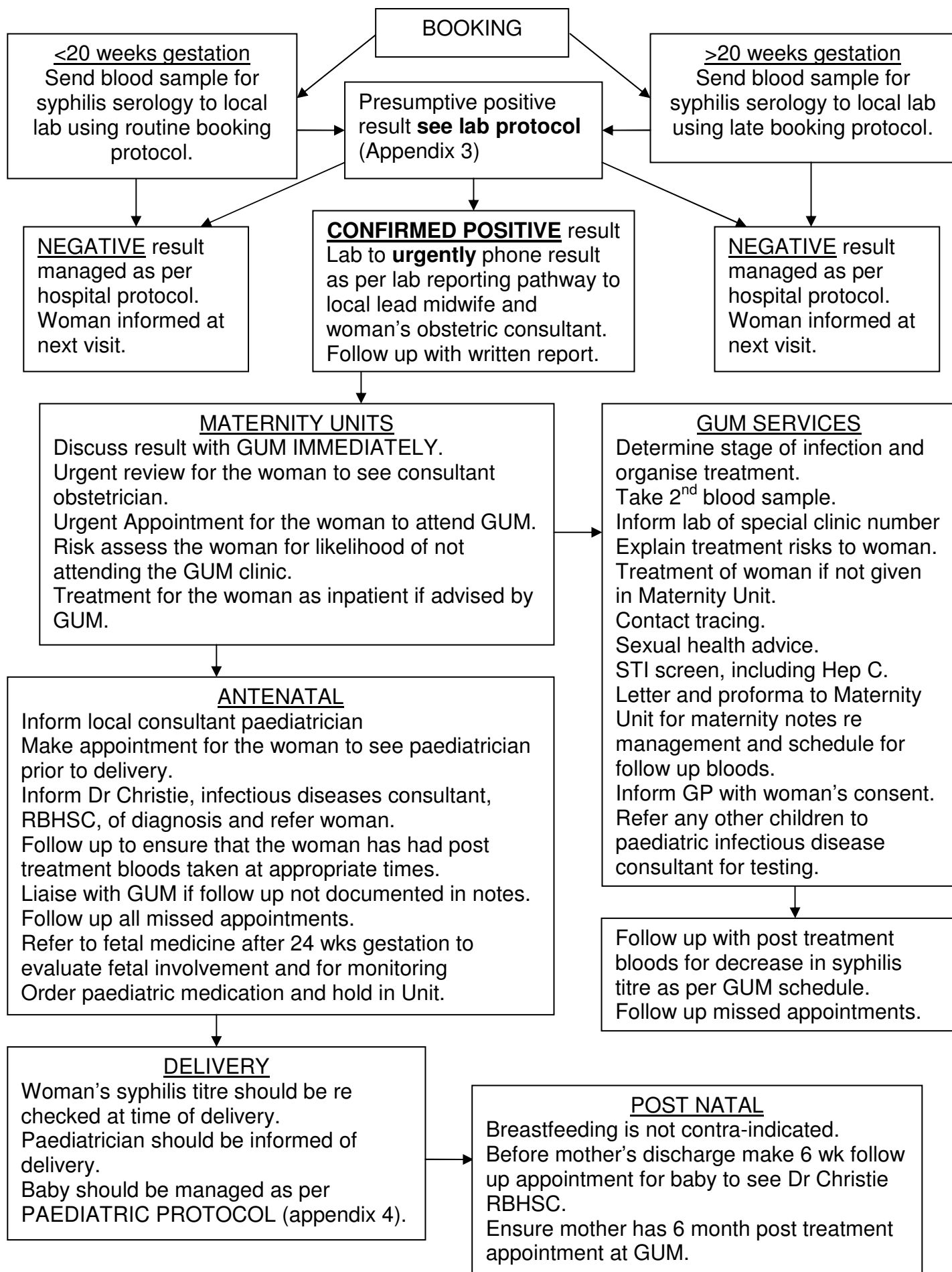
Mrs Nora McClenaghan

Antenatal screening coordinator, United Hospitals

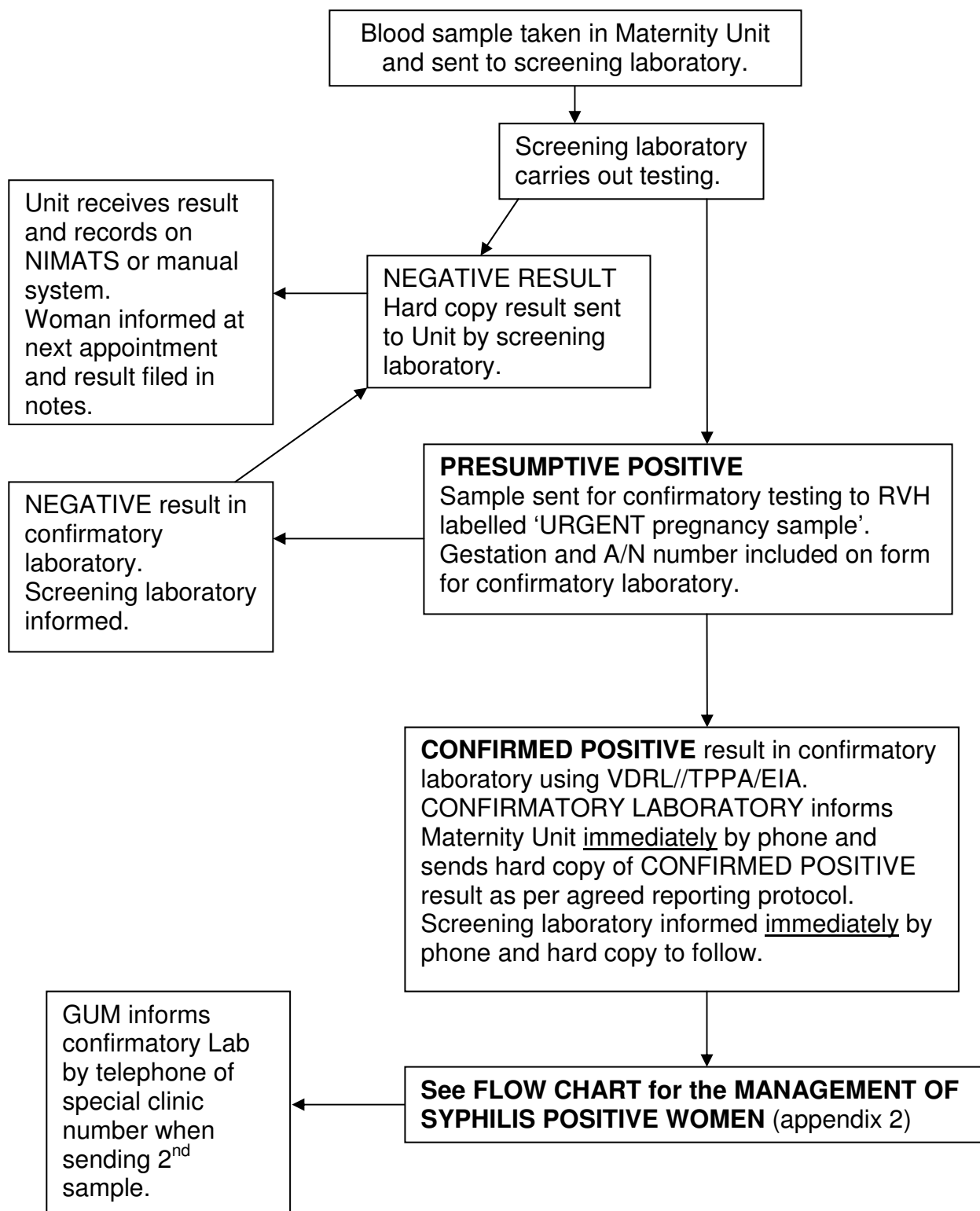
Ms Jackie McGeagh

Regional antenatal and newborn screening coordinator, Department of Health and Social Services

FLOW CHART FOR THE MANAGEMENT OF SYPHILIS POSITIVE WOMEN



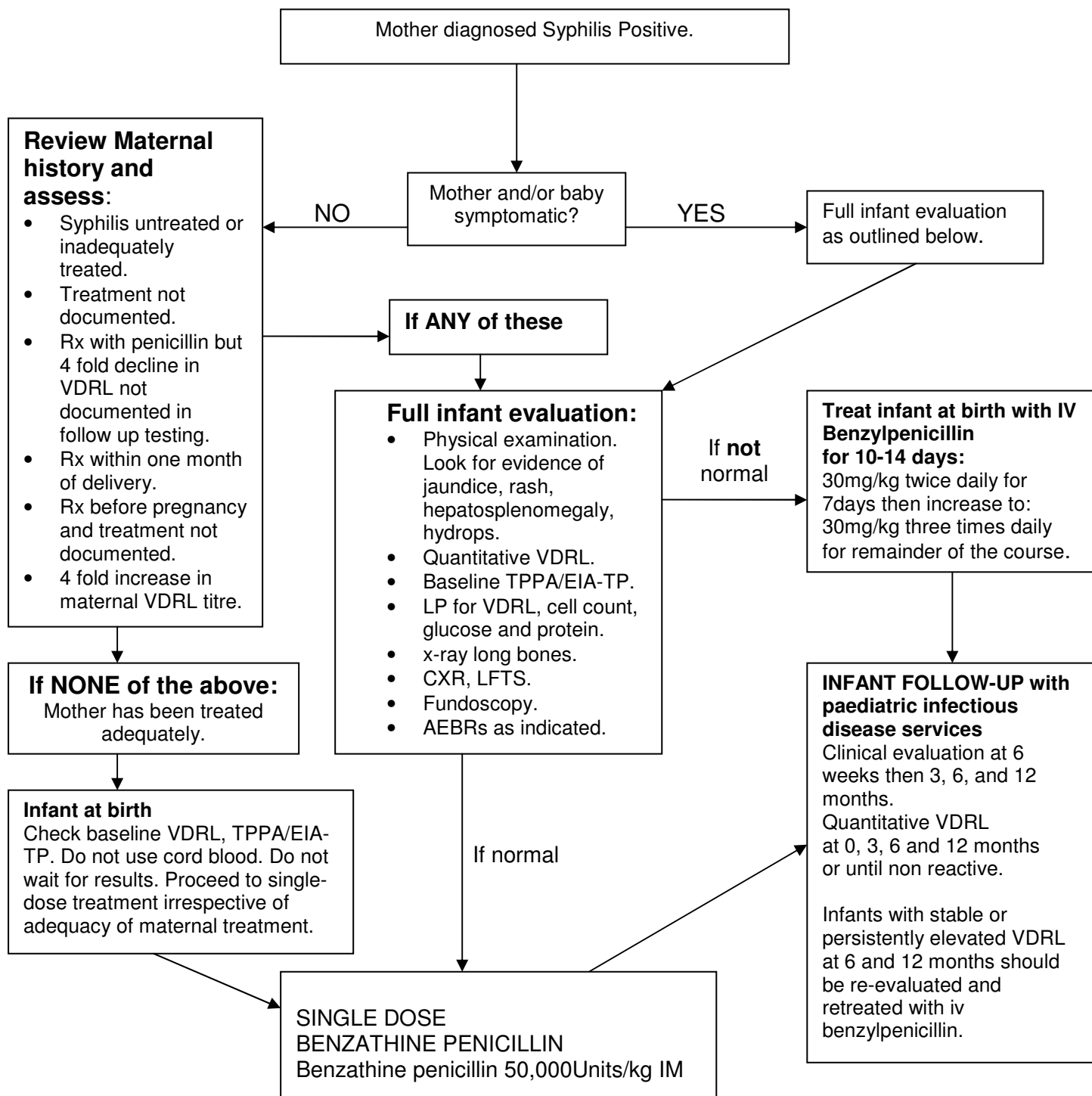
LABORATORY PROTOCOL FOR ANTENATAL SYPHILIS TESTING



Suggested reporting for confirmed positive (written on result):

Results are confirmed positive. This may indicate infection with syphilis. Please refer to GUM urgently. Laboratory requires 2nd blood sample for confirmation of patient identity.

PAEDIATRIC PROTOCOL



Used and adapted with the kind permission of Dr Karina Butler, Our Lady's Children's Hospital, Crumlin, Dublin

Additional notes: Always check and document maternal HIV/hepatitis B and C status. Ascertain whether mother has been screened for other STIs such as Chlamydia. Assess need for screening of siblings.

TO REFERRING OBSTETRICIAN

Dear Doctor,

We plan to review this patient for follow up syphilis serology after the treatment ends and according to the schedule below. These serological results are **ESSENTIAL** to the planning of neonatal management. Please check at each antenatal visit that the woman has re-attended the GUM clinic for all follow-ups. If patient has not re-attended GUM clinic – please check serology as scheduled and forward a copy of result to the GUM clinic. (NOTE – Titre must be checked, sample should be sent to Dept of Microbiology, Kelvin Building, Royal Group Hospitals Trust using Regional Virology Laboratory form).

We will write to you again with each of the patient’s serology results, if taken at GUM clinic, to enable you to complete this form.

Please refer woman to

i) Local paediatrician Date.....

ii) Dr Christie, RBHSC Date.....
Paediatric infectious disease consultant

Based on these follow up blood results, the paediatrician will advise on the management of the neonate according to the local protocol. Please do not hesitate to contact the GUM clinic for further advice.

Yours sincerely,

Name: _____ Date: _____

Signature: _____

Please date and sign when TREATMENT COMPLETED:

DATE of final treatment..... SIGNATURE.....

SCHEDULE FOR POST TREATMENT BLOODS

Date for post treatment bloods	Sign when done	VDRL or RPR titre	TPPA titre	Treponema EIA IgM
1 MONTH _/_/___				
2 MONTHS _/_/___				
3 MONTHS _/_/___				
AT 6 MONTHS _/_/___				
AT DELIVERY _/_/___				

The **ROYAL**
HOSPITALS

PHARMACY DEPARTMENT
Royal Victoria Hospital, Belfast, BT12 6BA
Tel.: (028) 90635443
Fax: (028) 90 248030
E-mail: anthony.mccourt@royalhospitals.n-i.nhs.uk

Department of Genito-Urinary Medicine

Benzathine- Benzylpenicillin 2.4 mega unit injection

Supplier: IDIS World Medicines product code: EXT012

- **8 ml Water for Injection** added into injection vial to give a solution containing 300,000 units/ml Benzathine benzylpenicillin
- Use immediately

Congenital Syphilis dosage as per WHO European Guidelines 2003:

50 000 units/ kg Benzathine benzylpenicillin IM single dose

Dose (units/kg) = Patient weight (kg) X 50,000units

Volume to give (ml) =
$$\frac{\text{Dose}}{300,000}$$

Example: 2 kg infant Dose = 2 x 50,000 = 100,000 units

Volume to inject =
$$\frac{100,000}{300,000} = 0.3 \text{ ml}$$

Reference:

- Review of Current Evidence and Comparison of Guidelines for Effective Syphilis Treatment in Europe **World Health Organization 2003** <http://www.euro.who.int/document/e81699.pdf> .

**ANTENATAL SYPHILIS INFECTION SCREENING
PROGRAMME**

KEY OBJECTIVES

- 1 To offer testing for syphilis infection to all pregnant women who:
 - i) 'book' for maternity care with an HPSS Trust;
 - ii) present unbooked to an HPSS Trust for maternity care, including those presenting in labour or immediately post-delivery, without documented evidence of syphilis testing in the current pregnancy.

- 2 To provide appropriate follow-up and treatment, where necessary, of:
 - i) pregnant women/mothers identified with syphilis infection;
 - ii) newborn infants of women identified with syphilis during pregnancy;
 - iii) sexual contacts of women identified with syphilis infection.
 - iv) other children of women identified with syphilis infection.

- 3 To establish quality management arrangements to support continuous quality improvement and achievement of national quality standards.

- 4 To provide services based on the best available evidence.

- 5 To monitor and evaluate services.

MATERNITY SERVICE RESPONSIBILITIES	TIMESCALE
ANTENATAL SYPHILIS SCREENING PROGRAMME	
1 Identify a lead professional with responsibility for co-ordination, delivery and quality management of the programme within maternity services.	As soon as possible – ongoing.
2 Provide information on syphilis testing to all pregnant women.	Prior to booking (or ASAP if unbooked).
3 Offer syphilis testing to all pregnant women presenting for the first time in each pregnancy to the Trust for maternity care (unless there is a hard copy record of a syphilis test result in current pregnancy).	Antenatally at 'booking' (or ASAP if unbooked).
4 Ensure syphilis screening is managed as urgent after 20 weeks gestation.	Ongoing.
5 Establish a timely system for ensuring that results are obtained for all women tested, abnormal results identified promptly and appropriate actions are taken.	As soon as possible – ongoing.
FOR WOMEN IDENTIFIED WITH SYPHILIS INFECTION	
TIMESCALE	
1 Arrange urgent review appointment ASAP with named consultant and midwife present.	As soon as confirmed positive result is phoned through from lab.
2 Contact GUM consultant and arrange urgent referral for treatment as per their instructions.	Prior to mother attending urgent review appointment.
3 Record syphilis results in chart and on NIMATS/manual system.	On receipt of lab result.
4 Give diagnosis and oral and written information. Provide advice on: <ul style="list-style-type: none"> i) the need to attend GUM urgently, for assessment and treatment ii) future management of woman and newborn infant; iii) need to follow up sexual contacts and other children iv) breastfeeding does not transmit syphilis. 	At urgent review appointment.
5 Assess for possibility of non attendance at GUM.	At urgent review appointment.
6 Inform local paediatricians of diagnosis, gestation and EDC. Arrange antenatal appointment for mother to see local paediatrician.	On receipt of GUM proforma.
7 Inform infectious diseases paediatricians in RBHSC.	On receipt of GUM proforma.
8 Check that mother keeps post treatment follow up blood appointments at GUM and follow up all A/N and GUM DNAs.	At each antenatal appointment.

<p>8 Ensure treatment for infant is held in Unit.</p> <p>9 Inform resident paediatrician of delivery.</p> <p>10 Check mother's VDRL/TPHA titre.</p> <p>11 Assess infant and provide treatment as per paediatric protocol in guidelines.</p> <p>12 Refer infant to the consultant paediatrician in Infectious Diseases, RBHSC by telephone (contact: 90635607 or 90 634763) and request an appointment for the infant at 6 weeks of age. Provide written referral to paediatric infectious diseases, RBHSC, including copy of mother's syphilis lab result.</p> <p>13 Advise mother of the infant's 6 week appointment date and record details in the PCHR.</p> <p>14 Record syphilis status, the treatment given and details of referral to paediatric ID for follow-up, in maternal/neonatal discharge form (CHS3) and in the PCHR.</p>	<p>Prior to delivery.</p> <p>Whilst mother is in delivery suite.</p> <p>Once delivered.</p> <p>Within 6 hours of delivery.</p> <p>Before discharge from hospital.</p> <p>Before discharge from hospital.</p> <p>Before discharge from hospital.</p>
<p>SYPHILIS STATUS UNKNOWN AT DELIVERY (INCLUDING WHERE SCREENING IS DECLINED)</p> <p>1 Provide information on syphilis screening to newly delivered woman.</p> <p>2 Offer and recommend syphilis screening to mother.</p> <p>3 Record details of offer, acceptance/decline and testing if done in notes and on NIMATS.</p> <p>4 Ensure all syphilis test results are completed and filed in notes.</p>	<p>TIMESCALE</p> <p>As soon as possible once delivered.</p> <p>As soon as possible.</p> <p>Ongoing.</p> <p>Ongoing.</p>

GENITO-URINARY MEDICINE SERVICE RESPONSIBILITIES	TIMESCALE
<p>INDEX CASE</p> <p>1 Make differential diagnosis and arrange treatment accordingly.</p> <p>2 Provide sexual health advice to mother including risks of treatment and prevention of re infection.</p> <p>3 Identify sexual contacts and arrange follow-up.</p> <p>4 Complete sexual health screen including testing for hepatitis C.</p> <p>5 Provide RVH microbiology with special clinic number details to allow accurate matching of syphilis samples.</p> <p>6 Refer mother's other children, if any, to paediatric infectious disease consultant for assessment and testing.</p> <p>7 Complete proforma re management and treatment and send to mother's obstetrician for inclusion in maternity notes.</p> <p>8 Complete post treatment follow up bloods at appropriate times.</p> <p>9 Inform obstetrician and lead midwife of any DNA for post treatment follow up bloods.</p>	<p>ASAP following referral.</p> <p>At initial referral.</p> <p>ASAP following referral.</p> <p>ASAP following referral.</p> <p>At time of 2nd confirmation sample.</p> <p>ASAP following referral.</p> <p>Once initial referral appointment is complete.</p> <p>At 1, 2, 3 and 6 months following end of treatment.</p> <p>Ongoing.</p>
<p>SEXUAL PARTNERS OF SYPHILIS POSITIVE WOMEN</p> <p>10 Take blood for syphilis testing and complete sexual health screen.</p> <p>11 Provide treatment and sexual health advice.</p>	<p>TIMESCALE</p> <p>ASAP following notification.</p> <p>ASAP following notification.</p>

LABORATORY SERVICE RESPONSIBILITIES	TIMESCALE
1 Have clear pathways for urgent confirmation of any reactive syphilis test result and the follow up actions for confirmed positive results.	Ongoing.
2 Urgently advise clinical staff of confirmed VDRL, TPHA, EIA positive results by telephone and in hard copy.	Ongoing.
3 Provide explanatory note on all confirmed positive test results.	Ongoing.
4 Notify DPH/ CCDC electronically or hard copy, of all confirmed positive results identified through the antenatal screening programme.	Ongoing.
5 Establish system to identify, investigate and respond to false negative and false positive results.	Ongoing.
6 Ensure prompt response for confirmatory tests.	Ongoing.

PAEDIATRIC INFECTIOUS DISEASE SERVICE, RBHSC, RESPONSIBILITIES	TIMESCALE
1 Identify named paediatrician(s) for follow-up of infants/children of syphilis positive women.	On referral.
2 Screen other children of mother for syphilis.	Following referral from GUM.
3 Provide follow up appointment for newborn infant upon telephone request of the maternity unit.	At time of telephone request.
3 Provide written reminder to mother in advance of appointment date.	Two weeks in advance of appointment.
4 Complete follow up of infant.	At 6 weeks, 3,6 and 12 months.
5 Do quantitative VDRL.	At 0, 3, 6 and 12 months or until non reactive.
6 Record details in the PCHR.	Ongoing.
7 Establish process for follow-up of DNAs.	Ongoing.