Guidelines for the Management of Maternal Syphilis & Congenital Syphilis

### Contents

1. Introduction 1
2. Guiding Principles for action 2
   2.1. An integrated approach 2
   2.2. Partnership and collaboration 2
3. Diagnosis of Maternal Syphilis 3
   3.1. Case Definition of an antenatal mother with syphilis 4
4. Treatment of Maternal Syphilis 4
   4.1. Treatment of primary, secondary and early latent syphilis 4
   4.2. Late latent syphilis 4
   4.3. Follow up 5
   4.4. Allergy to penicillin 5
   4.5. HIV infection 5
   4.6. Treatment of partners 5
     4.6.1. Sexual partners of mothers with primary, secondary, early latent syphilis 5
     4.6.2. Sexual partners of mothers with late latent syphilis 5
   4.7. Follow up of partners 5
     4.7.1. Primary and secondary syphilis 5
     4.7.2. Early and late latent syphilis 6
5. Diagnosis of Congenital Syphilis 6
   5.1. Signs and symptoms 6
   5.2. Investigations
     5.2.1. Dark field microscopy 6
     5.2.2. Serology 6
     5.2.3. CSF Analysis 7
     5.2.4. Other tests 7
   5.3. Case definitions of Congenital Syphilis 8
6. Treatment of infants 9
7. The Protocol to follow when an antenatal mother with a positive VDRL/ICS test is referred to the STD Clinic 10
8. References 15
9. Annexes 16
   Annex I-ECS data collection form - 1
   Annex II-ECS data collection form - 2
   Annex III-Syphilis management letter 1
   Annex IV-Syphilis management letter 2
   Annex V-ANC syphilis screening guideline
   Annex VI-Laboratory equipment required for VDRL testing
   Annex VII-Miscellaneous
1st Edition
February 2011

Co-ordinated by
Dr. Sujatha Samarakoon
PMTCT and STI care Coordinator
Senior Consultant Venereologist
National STD/AIDS Control Programme

Published by
National STD/AIDS Control Programme
Ministry of healthcare
Colombo, Sri Lanka
1. Introduction

Sexually transmitted infections (STI) are one of the commonest communicable diseases found in the world today. Primarily they are transmitted through unprotected sexual intercourse. Transmission can also occur through contaminated blood and blood products and from an infected untreated mother to child during pregnancy, child birth or via breast milk.

Syphilis is caused by the bacterium Treponema pallidum. It is estimated that globally about 12 million cases of syphilis occur annually and of them about 2 million are among pregnant women. If a woman with untreated syphilis becomes pregnant, or a woman acquires syphilis during pregnancy, depending on the stage of syphilis, the infection can be transmitted to the foetus causing adverse pregnancy outcomes including congenital syphilis. Although estimates vary, adverse pregnancy outcomes occur in up to 80% of women with acute syphilis including stillbirth (40%), peri-natal death (20%) and serious neonatal infection (20%). Such outcomes are 12 times more likely in women with syphilis than in sero-negative women. Early congenital syphilis is defined as syphilis from birth and within two years of life. Late congenital syphilis is when vertically acquired infection manifests from third year of life onwards.

Haematogenous spread is dependent upon the occurrence of maternal spirochaetaemia. Since the early stage of syphilis is characterized by spirochaetaemia the probability of transmission to the foetus is nearly 100% if the mother has early syphilis. The signs of syphilis which the mother shows will depend on the stage of syphilis. The spirochaetaemia diminishes over time and two years after acquisition of syphilis the probability of sexual transmission becomes low. However, the probability of transmission to a foetus can be up to 70% four years after acquisition of the disease by the mother.

The spirochetes can cross the placenta at anytime during pregnancy although occurs more commonly in the last two trimesters. The stage of maternal syphilis, gestational age of foetus, adequacy of maternal treatment and the immunological response of the foetus causes the varied manifestations of congenital syphilis. The diagnosis is complicated because more than half of all infants are asymptomatic at birth and signs and symptoms of infants may be subtle and non specific. If the mother becomes infected late in pregnancy she may show no signs before delivery and the infected newborn may also appear normal at birth.

There are two general scenarios that need to be considered when assessing the risk of congenital syphilis. 1) an infected untreated woman becoming pregnant 2) a woman becoming infected during pregnancy. The latter tends to be associated with overall severe outcomes for the infant as it always involves the early spirochetaemic stages of the disease in which the likelihood of transmission to the foetus is high.

Unlike many neonatal infections, congenital syphilis (CS) can be effectively prevented, either through prevention of maternal infection or by detection of infection early in pregnancy and provision of adequate treatment. Control of sexually transmitted infections in the community by promoting safer sex, increasing awareness about syphilis and its adverse effects on mother and infant could also help prevent maternal infection. But, if an infected woman becomes pregnant, only screening programmes can prevent effects of maternal infection on the foetus. Universal
screening for syphilis during pregnancy, treatment of infected pregnant women, their partners and treatment of infants born to sero-positive women are shown to be cost effective, feasible in the prevention of congenital syphilis even at relatively low prevalence settings. Preventing even an occasional case is economically worthwhile and is cost effective even at very low prevalence settings of maternal infection. The cost of averting a case of CS is much lower than for other diseases. Yet, in this era of concern about the number of babies who are born with HIV infection, congenital syphilis receives scant attention.

The overarching goal of the present WHO initiative is the elimination of congenital syphilis as a public health problem. This would be achieved through reduction of prevalence of syphilis in pregnant women and by the prevention of mother to child transmission of syphilis. WHO recommends four strategies for elimination of congenital syphilis:

1) Ensure advocacy and sustained political commitment for a successful health initiative
2) Increase access to and quality of maternal and new born health services
3) Screen and treat all pregnant women and partners
4) Establish surveillance, monitoring and evaluation systems.

These 4 strategies will be adopted in Sri Lanka to eliminate congenital syphilis by 2015. The proposed interventions for elimination of congenital syphilis will contribute to the achievements of the UN Millennium Development Goals 4, 5 and 6.

2. Guiding Principles for action

2.1. An integrated approach

The elimination of congenital syphilis should not be conceived as a vertical programme. It is an integrated programme into the existing maternal and newborn health services, primary health care programmes, family planning clinics, well woman clinics and adolescent reproductive health services.

No mother should leave the hospital after partus without the maternal serologic status having being determined.

2.2. Partnership and collaboration

Cross-sectoral collaboration at the government level (Ministry of Education, Ministry of Youth Affairs, etc) as well as with other reproductive health services and community based health programmes run by other civil society organizations is vital to achieve the goal of elimination of congenital syphilis by 2015. Participation of the community is crucial for acceptance of health programmes and compliance with recommended behavioural changes.

Collaborating with primary health care team can be effective in promoting and encouraging the early use of antenatal services and referral of mothers with positive test results to the STD clinic.
3. Diagnosis of Maternal Syphilis

Traditionally laboratory diagnosis in adults is based on initial use of a non-treponemal screening test. These tests detect antibody to reagin antigen, which is found in both *T. pallidum* and some human tissues. They are thus not specific for *T.pallidum* and could give false positive results. Examples include the Venereal Disease Research Laboratory (VDRL) test. If a non-treponemal test is positive, it should be confirmed by a treponemal test using an antigen of *T.pallidum*, examples include the *T.pallidum* haemagglutination assay (TPHA) and the *T.pallidum* particle agglutination assay (TPPA). Syphilis is diagnosed when the confirmatory treponemal test is positive.

When a non treponemal test is positive in the absence of a reactive treponemal test it is called a biological false positive test. The non treponemal test becomes positive sometimes due to certain physiological or pathological conditions. Acute false positive tests are found in persons suffering from many viral and bacterial infections or who have had certain vaccinations or immunizations. Chronic false positives are found in the presence of autoimmune conditions, tuberculosis, leprosy, or malaria. False positives are also found during pregnancy or even without a specific cause or a pre existing disease. Therefore a positive non-treponemal test should be confirmed by a specific treponemal serologic test to arrive at a diagnosis of syphilis.

The non treponemal test has the advantage of being and sensitive (especially in early infection). However, these tests cannot be done on whole blood, they require lab instruments for processing, and misinterpretation is common by inexperienced laboratory technicians because reading of the results is subjective. Thus false positive results may occur due to technical problems.

Treponemal tests, while theoretically more specific than non-treponemal tests may also give false positive results. Moreover, they cannot differentiate between individuals with active (untreated) syphilis and those who have previously been successfully treated for infection. In both cases, the treponemal test result will be positive. Non treponemal tests, on the other hand, can distinguish current or recent infections from old, treated infections to a certain extent based on the titre levels.

For the diagnosis of syphilis, a combination of the two tests is recommended. Traditional confirmatory assays require expensive laboratory equipment and technical expertise, and are therefore seldom available outside reference laboratories. However, these can now be replaced by simple, rapid, point-of-care treponemal tests which use whole blood, require minimal training, no equipment or special storage conditions.

Rapid simple treponemal tests using immunochromatographic strips (ICS) which use whole blood, do not need equipment or special storage conditions and require minimal training are now available and can be used on the site including peripheral areas. Sensitivity (85-98%) and specificity (92-98%) of these tests are high. The new rapid test has been estimated to cost only US 7 per each case of congenital syphilis averted. The affordability, convenience and practicality of rapid tests make them attractive tools, as on-site screening tests in primary care settings or in areas where laboratory services are not available.
However, since treponemal antibodies persist for years irrespective of treatment, a positive test will not help in distinguishing active infection from past treated infection. Treponemal tests cannot be used to monitor effectiveness of treatment.

In the event the ICS becomes positive, a second sample should be drawn from the mother and sent to STD clinic for re-confirmation or refer the mother to the STD clinic as early as possible.

3.1. Case Definition of an antenatal mother with syphilis

Case Definition of an antenatal mother with syphilis is a pregnant mother with serologic evidence of syphilis (positive TPPA test) in the current pregnancy with or without symptoms of syphilis. A woman who has documentary evidence of having been adequately treated in the past and in whom re-infection during the current pregnancy is ruled out is excluded from this case definition.

4. Treatment of Maternal Syphilis

Syphilis in adults is easily cured. If not treated in its early stages, the disease can become chronic, often with a long latent period followed by clinically recognizable late stages. In pregnancy, early treatment with penicillin is required for a successful pregnancy outcome. Treatment should be provided early in gestation before significant fetal involvement take place. Treating the mother with penicillin during the first and second trimester will prevent major adverse outcomes, but later treatment, inadequate treatment or lack of treatment may result in fetal death, fetal damage or birth of an infected child.

4.1. Treatment of primary, secondary and early latent syphilis

Benzathine penicillin 2.4 million units IM as a single dose after excluding allergy.

4.2. Late latent syphilis

Benzathine penicillin 2.4 million units IM once a week for 3 consecutive weeks.

Adequate penicillin treatment will end infectivity within 24-48 hours. There are conflicting data on whether giving a single dose of Benzathine penicillin to pregnant women is sufficient to prevent adverse pregnancy outcomes or whether a course of at least three doses is better. The WHO recommends that women with early syphilis (primary, secondary and early latent) be given one dose and women with late latent syphilis should be given three weekly doses.
4.3. Follow up

Pregnant mothers treated for early syphilis should have monthly quantitative serology tests throughout pregnancy. Those who do not show a fourfold drop in titre at end of 3 months or who show a 4 fold rise in titre should be re-treated.

It is not necessary to retreat mothers who have documented evidence of adequate therapy for previous syphilis so long as there is no evidence of serologic or clinical evidence of re-infection or relapse. Babies born to such mothers do not require prophylactic penicillin therapy.

If doubts exist about the adequacy of previous therapy, re-treatment should be commenced promptly.

4.4. Allergy to penicillin

When patient sensitivity to penicillin precludes its use, Erythromycin is recommended as an alternative. In early syphilis (primary, secondary and early latent) give erythromycin 500mg oral 6 hourly for 15 days. In Late latent syphilis give erythromycin 500mg oral 6 hourly for 30 days.

4.5. HIV infection

Evidence suggests that treatment for syphilis in pregnant women who are HIV positive should be similar to that given to other pregnant women and follow up should be the same as for adults with HIV infection.

4.6. Treatment of partners

4.6.1. Sexual partners of mothers with primary, secondary, early latent syphilis

Epidemiological treatment of sexual contacts is mandatory as these stages of syphilis are infectious. Those with reactive serology should be treated according to the stage of syphilis of the partner.

4.6.2. Sexual partners of mothers with late latent syphilis

Treat according to the stage of syphilis if clinical evidence of syphilis is present or if serology is positive.

4.7. Follow up of partners

4.7.1. Primary and secondary syphilis

Patients should be re-examined clinically and serologically using VDRL test at 3 months, 6, 12 and 24 months after treatment.
4.7.2. Early and late latent syphilis

Patients should be re-examined clinically and serologically using VDRL test at 6, 12 and 24 months for both early and late syphilis.

Serofast non treponemal low antibody titres might not require re-treatment. However, persistent higher titre antibody tests might indicate reinfection and require treatment. Therefore discuss with a Consultant Venereologist.

5. Diagnosis of Congenital Syphilis

The diagnosis of congenital syphilis depends on a combination of physical, serologic, radiographic, or direct microscopic evidence. Diagnosis is complicated because more than half of all infants are asymptomatic at birth and signs and symptoms of infants may be subtle and non specific.

At birth, babies born to mothers with confirmed syphilis should be examined thoroughly for physical signs of congenital syphilis. Attempts should be made to demonstrate the presence of Treponema pallidum by dark ground microscopy from clinical lesions. Serological tests on both the mother and the baby should be done. A sample of infant blood (5cc) should be sent to the STD clinic for VDRL and IgM antibody test together with 5cc of blood from the mother. Cord blood is not suitable for testing. The mother's non treponemal serology test (VDRL) should be compared with the VDRL titre of the baby.

5.1. Signs and symptoms

At birth about 50% of babies with congenital syphilis may be asymptomatic. Usually symptoms appear in the first months but the clinical manifestations may be delayed until the second year of life. The most frequent clinical signs at birth are hepatomegaly with or without splenomegaly (33-100%), blistering skin rash (40%), and bone changes seen on X-ray (75-100%). Other early signs are pseudoparesis (12-36%), bleeding (10%), fever (16%), low birth weight (10-40%), swelling of joints, oedema, abdominal distention, pallor and respiratory distress. None of these signs are pathognomonic of syphilis and are seen in other congenital infections.

5.2. Investigations

5.2.1. Dark field microscopy

A definitive diagnosis of syphilis is made by demonstrating the presence of T.pallidum by dark ground microscopy on any suspicious lesions or body fluids, for example in nasal discharge, skin rash. However, this procedure is cumbersome and not always possible.

5.2.2. Serology

The diagnosis of congenital syphilis is complicated by passive transfer of maternal non treponemal and treponemal IgG antibodies to the foetus. The presence of these maternal antibodies makes the interpretation of reactive serological tests for syphilis in infants difficult.
Passively transmitted maternal antibodies would be catabolized and undetectable in non-infected infants by 6 months of age. Infants born to mothers with positive serologic tests for syphilis should be evaluated by a quantitative non-treponemal serologic test (VDRL) at birth. It is necessary to compare the infant's titre with maternal serologic titre using the same test. A fourfold higher VDRL titre in the infant is accepted as significant. However, studies from serum pairs from infected mothers and infants show that less than 30% of infants have higher titres than their mothers. Congenital syphilis cannot be excluded in infants who do not have a four-fold or higher increase in VDRL titre. A sample of serum from the neonate should be sent, since cord blood may produce false-positive results.

The detection of Immunoglobulin M (IgM) in infant's serum also indicates active infection because maternal IgM antibodies do not cross the placenta. IgM antibodies can be detected in more than 80% of symptomatic infants but data on its sensitivity for asymptomatic infants are limited. Because IgM responses take time to develop in infants and may be diminished with early treatment or inadequate treatment. A negative IgM result should not be used to exclude congenital syphilis. False positives also could occur.

Serologic evidence of congenital syphilis

i. Serum quantitative non treponemal serologic titre (VDRL titre) that is fourfold higher than the mother's titre at the time of delivery or
ii. Presence of IgM antibodies in the infant (EIA test) or
iii. Rising non treponemal antibodies in infant's serum

Presence of non treponemal antibodies due to causes other than syphilis in the pregnant mother will also cross the placenta to produce a reactive serologic test which is of a false positive nature in the newborn. This titre usually reverts to non-reactive by 3 months of life.

5.2.3. CSF Analysis

Ideally babies with symptoms suggestive of syphilis or serological evidence is suggestive of syphilis should have a lumbar puncture and CSF analysis for VDRL, Cell count & protein

5.2.4. Other tests (when indicated)

i. Complete blood count
ii. Long bone radiographs
iii. Liver function tests
iv. Cranial ultrasound
v. Ophthalmoscopic examination
vi. Auditory brain stem response
5.3. Case definitions of Congenital Syphilis

**Case definition -1-a**

Congenital syphilis is defined as a live born infant with clinical evidence (one major and 2 minor criteria) and serologic evidence of syphilis to a mother with confirmed syphilis.

<table>
<thead>
<tr>
<th>Major criteria</th>
<th>Minor criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swelling of joints</td>
<td>Hepatosplenomagaly</td>
</tr>
<tr>
<td>Bullous skin lesions</td>
<td>Jaundice</td>
</tr>
<tr>
<td>Snuffles</td>
<td>Anaemia</td>
</tr>
<tr>
<td>Radiological changes in long bones</td>
<td>*</td>
</tr>
</tbody>
</table>

**Case definition -1-b**

Congenital syphilis is defined as a death of a neonate born to a mother with confirmed syphilis and has postmortem/ histological evidence of congenital syphilis.

**Case definition -2**

Congenital syphilis is defined as a live born asymptomatic infant/ foetal loss/stillbirth** to a mother with confirmed syphilis and anyone of the following

- Reactive non-treponemal test which is four fold higher than that of the mother’s titre at delivery
- A reactive syphilis specific IgM antibody test
- Rising non-treponemal titre
- Persistently reactive treponemal test in the infant beyond 6 months of age

** if it is a stillbirth, there should be postmortem/ histological evidence

An Incidence case of congenital syphilis is an infant who fall into either case definition 1 or 2

**Case definition -3**

Congenital syphilis is defined as a live born asymptomatic infant, still birth, or foetal loss to a mother with syphilis where

- Mother was treated < 4weeks prior to delivery or
- Mother was untreated, treatment status undocumented or unknown, or
- Mother not completed the recommended course of penicillin during pregnancy or
- Mother treated with non penicillin antibiotics

Case definition -3 is for programmatic purposes. Since some babies of the above mothers would be uninfected although they fall into case definition -3 and should have a TPPA test after 6 months of age. The diagnosis of congenital syphilis is ruled out when the TPPA test is negative after 6 months.

Yet, the recommended therapy for babies in category -3 and born to mothers who have been inadequately treated should have the IV penicillin regimen.
A syphilitic stillbirth is defined as a fetal death occurring after 20 weeks of gestation or weighing more than 500 g in which the mother had untreated or inadequate treatment for syphilis at delivery.

6. Treatment of infants

Treatment decisions must be made on the basis of:

1. Identification of syphilis in the mother,
2. Adequacy of maternal treatment
3. Presence of clinical, laboratory or radiological evidence of syphilis in infants
4. Comparison of maternal (at delivery) and infant non-treponemal serologic titres

6.1. Schedule -1

All asymptomatic babies who have no serological evidence of syphilis and are born to mothers who were adequately treated for maternal syphilis with penicillin during the current pregnancy before 4 weeks of delivery according to guidelines should be treated with a single dose of prophylactic penicillin.

**IM Prophylactic treatment regimen**

Benzathine penicillin G 50,000 units /kg given as a single intra muscular injection

6.2. Schedule -2

**IV treatment regimen**

Aqueous crystalline penicillin G 100,000-150,000 million units /kg/day intravenously. It could be given as 50,000 units /kg /dose IV every 12 hours during the first 7 days of life and thereafter every 8 hours for 3 days to complete a total of 10 days of treatment.

This should be given to:

1. All symptomatic babies

2. All asymptomatic babies
   i. whose VDRL titre is 4 fold higher than that of the mother at delivery
   ii. having a rising non-treponemal titre
   iii. with a reactive syphilis specific IgM antibody test
   iv. born to mothers with clinical evidence of syphilis
   v. born to mothers who were treated with penicillin < 4 weeks before delivery,
   vi. born to mothers who did not complete the recommended course of penicillin during pregnancy
   vii. born to mothers whose non treponemal high titre had not dropped four folds as expected by 6 months of treatment
   viii. born to mothers who were treated with non penicillin regimens (Erythromycin) during pregnancy
   ix. born to mothers whose treatment status is unknown or undocumented
7. The Protocol to follow when an antenatal mother with a positive VDRL/ICS test is referred to the STD Clinic

- Counsel the mother and get a second blood sample for confirmation of syphilis. Do a VDRL test on all mothers who have a positive ICS test. As non-treponemal serology results are helpful in comparing with baby's serology and for follow up. The mother will be given a OPD number.
- Only when the 2nd sample is positive the mother will be informed of the diagnosis and a STD file should be opened.

**Step - 1**  Take a detailed history (including whether the mother was treated in the past or this is a new infection during the current pregnancy)

**Step - 2**  Carry out a comprehensive clinical assessment taking into consideration the clinical and laboratory results. Determine the stage of syphilis.

**Step - 3**  Screen for other STI and treat as appropriate

**Step - 4**  
- Counsel and treat for syphilis according to the stage of syphilis
- Counsel on safer sex
- Promote HIV testing of mother

**Step - 5**  Refer to PHNS for health education and issue of contact slip.

**Step - 6**  
- Screen spouse/partner and give epidemiological treatment
- Counsel on safer sex
- Promote HIV testing of the partner

**Step - 7**  
- Follow up the mother until delivery.
- Carry out monthly VDRL testing until delivery
- Give a referral letter to MOH/VOG
• Advice the mother to bring the baby to the STD clinic for review. Carry out complete physical examination of the baby. Draw blood for VDRL and IgM (ELISA) if these serological tests were not done at birth by the respective ward. There is no purpose in doing a TPPA test at this time as there will be passively transmitted antibodies.

**Step – 8** Make arrangements for management of baby according to national guidelines (Epidemiological Rx or IV penicillin regimen)

**Step – 9** Follow up

**Symptomatic baby (case definition -1)**

• Review at 1, 3, 6, 12 months and until clinical features resolve and non treponemal test shows a fourfold drop
• Check whether the baby was treated according to treatment schedule-2 (IV penicillin regimen)

• Repeat VDRL at 3, 6 and 12 months by 6 months the VDRL titre should drop four folds. If the titre has not dropped by 6 months discuss with a Consultant Venereologist
• The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP with a copy to focal point ECS and SIM unit

_**In symptomatic infants given appropriate therapy clinical features such as hepatomegaly, jaundice and bone changes resolve within 3 months of birth and serological markers (VDRL & IgM) disappear within 6 months**_

**Asymptomatic infected baby (case definition-2)**

• Review at 3, 6, 12 months and carry out a thorough physical examination to reconfirm absence of symptoms
• Check whether the baby was treated according to treatment schedule-2 (IV penicillin regimen)
• Repeat VDRL at 3, 6 and 12 months by 6 months the VDRL titre should drop four folds. If the titre has not dropped by 6 months discuss with a Consultant Venereologist
- The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP, 29 De Saram Place Colombo 10, with a copy to focal point ECS and SIM unit.

Asymptomatic baby born to mother treated with penicillin but < 4 weeks before delivery (presumed infected until proved otherwise) (case definition - 3)

- Review at 1, 3, 7, 12 *months and carry out a thorough physical examination to reconfirm absence of symptoms
- Check whether the baby was treated according to treatment schedule-2 (IV penicillin regimen)
- Repeat VDRL at 3, 7 and 12* months of age.
- Do a TPPA test at 7 months (as passively transferred maternal antibodies are expected to disappear by 6 months of age). If it is a case of congenital syphilis then the TPPA test will remain positive beyond 6 months. Discuss with a Consultant Venereologist regarding further management.

This baby may need further follow up. *Babies who test negative for TPPA at 7 months do not need a follow up at 12 months. This is not a case of congenital syphilis.

- The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP, 29, De Saram Place Colombo 10, with a copy to focal point ECS and SIM unit.

Asymptomatic baby born to mother treated adequately with penicillin according to the stage of maternal syphilis > 4 weeks before delivery (presumed uninfected)

- Check whether the following serology has been done- VDRL, IgM (EIA antibody test) and baby has no serological evidence of CS.
- Check whether the baby was treated according to treatment schedule-1 (Prophylactic penicillin regimen)
- Review at 3, 7 months of age.
- Do a TPPA test at 7 months (as passively transferred maternal antibodies are expected to disappear by 6 months of age and sero-eversion takes place). Babies who test negative for TPPA at 7 months do not need a follow up at 12 months. This is not a case of congenital syphilis.
- The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP with a copy to focal point ECS and SIM unit.
**Passively transmitted antibodies disappear by 6 months. Thus the Serological markers (VDRL/IgM) will be negative by 6 months.**

Asymptomatic baby born to mother treated adequately with penicillin according to the stage of maternal syphilis > 4 weeks before delivery (baby presumed uninfected) and the VDRL titre is the same as the mother's titre (equivocal titre) may not be infected. Therefore discuss with a Consultant Venereologist on the treatment schedule.

**Asymptomatic baby born to mother treated adequately for infectious syphilis with penicillin > 4 weeks before delivery (baby presumed uninfected) but a 4 fold serology is not observed in the mother at delivery**

- Check whether the following serology has been done- VDRL, IgM (EIA antibody test) and baby has no serological evidence of CS.
- Check whether the baby was treated according to treatment schedule-2 (IV penicillin regimen)
- Review at 3, 7 months of age.
- Do a TPPA test at 7 months (as passively transferred maternal antibodies are expected to disappear by 6 months of age and sero-eversion takes place). Babies who test negative for TPPA at 7 months do not need a follow up at 12 months. This is not a case of congenital syphilis.

- The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP 29, De Saram Place Colombo 10, with a copy to focal point ECS and SIM unit

**Passively transmitted antibodies disappear by 6 months. Thus the Serological markers (VDRL/IgM) will be negative by 6 months.**

Asymptomatic baby born to mother treated with erythromycin during delivery (presumed infected unless proved otherwise)

- Examine the baby thoroughly to exclude clinical evidence of congenital syphilis.
- Check whether the baby was treated according to treatment schedule-2 (IV penicillin regimen)
- Compare baby's VDRL serology with that of the mother. If baby is un infected it should not be 4 fold higher than that of the mother
- Check whether the IgM result is available. Even if it is negative, follow up the baby as the sensitivity of the test is not optimal
- Repeat VDRL test at 3, 7, 12*, months
• Do a TPPA test at 7 months (as passively transferred maternal antibodies are expected to disappear by 6 months of age). *Babies who test negative for TPPA at 7 months do not need a follow up at 12 months. This is not a case of congenital syphilis.
• The diagnosis should be correctly done according to the guidelines given in page 10. Reporting form should be correctly filled. A copy of the reporting form should be sent to Director NSACP, 29 De Saram Place Colombo 10, with a copy to focal point ECS and SIM unit.

There is another scenario where the pregnant mother is seen as a contact of a partner who has been treated for infectious syphilis. Then manage as follows:

• Counsel the mother and draw blood for VDRL and TPPA test and treat the mother with a single dose of Benzathine penicillin G 2.4 MU IM after the sensitivity test as epidemiological treatment.
• Review in 1 week for test results. If negative inform the mother during counseling. To rule out maternal syphilis repeat TPPA test after 8-12 weeks. Discuss the possibility of re-infection and safer sexual practices.
• If the mother’s TPPA test is positive – then the mother is diagnosed as syphilis. In the event she is in the stage of late latent syphilis (which is unlikely if she acquired syphilis from the current partner) treats with 3 doses of Benzathine penicillin.
• Counsel the partner and discuss the importance of follow up and safer sexual practices. Discuss the importance of preventing congenital syphilis.
• Manage baby accordingly as given in the section on treatment.

Step-10 Mother - Follow up VDRL should be done according to the stage of syphilis.
7. References


Annexes
## QUARTERLY DATA COLLECTION FORM 1
(data to be obtained from MOH clinics)

<table>
<thead>
<tr>
<th>Name of the Reporting STD clinic</th>
<th>Year</th>
<th>Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MOH area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. No; of Mothers Registered</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Mothers registered by POA</td>
<td>3.1</td>
<td>3.2</td>
</tr>
<tr>
<td>4. No of mothers tested for syphilis (VDRL)</td>
<td>4.1. STD clinic</td>
<td>4.2. Non STD State labs</td>
</tr>
<tr>
<td>5. No; of mothers tested by VDRL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. No; of mother tested by ICS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Total No; of mothers tested²</td>
<td>8.1</td>
<td>8.2</td>
</tr>
<tr>
<td>8. Percentage of coverage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. No; of mothers TPPA positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. No; of mothers referred</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- No: of mothers tested by VDRL (Column No 5) should be able to get by adding the column No. 4.1, 4.2, and 4.3, Total No: of mothers tested (column 7) should be able to get by adding the column No 5 and 6, percentage of total coverage (column 8.1) should be able to get by Column 7 divided by column 2, percentage covered by Gov. Sector (column 8.2) should be able to get by total of Column 4.1 & Column 4.2 divided by Column 2.

---

1 | 2 | 3 | 4 | 5 | 6 |
---|---|---|---|---|---
1 |   |   |   |   |   |
2 |   |   |   |   |   |
3 |   |   |   |   |   |
4 |   |   |   |   |   |
5 |   |   |   |   |   |
6 |   |   |   |   |   |
7 |   |   |   |   |   |
8 |   |   |   |   |   |
9 |   |   |   |   |   |
10|   |   |   |   |   |
11|   |   |   |   |   |
12|   |   |   |   |   |
13|   |   |   |   |   |
14|   |   |   |   |   |
15|   |   |   |   |   |
16|   |   |   |   |   |
17|   |   |   |   |   |
18|   |   |   |   |   |
19|   |   |   |   |   |

**TOTAL**

Column 2: VDRL test done in government labs other than STD clinic laboratories, 4.3-Privet sector laboratories, 6-ICS – Immunochromatographic Strip test (Distributed under the ECS programme to MOH areas where VDRL testing is not available/feasible). 7.If a mother tested by VDRL and ICS, do not double count.
# QUARTERLY DATA COLLECTION FORM 2

<table>
<thead>
<tr>
<th>Name of the Reporting STD clinic</th>
<th>Year</th>
<th>Quarter</th>
</tr>
</thead>
</table>

## Management of syphilis positive women, partners and their babies (During the quarter)

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total number of syphilis confirmed antenatal mothers registered.</td>
</tr>
<tr>
<td>2</td>
<td>Total number of partners of pregnant women confirmed positive for syphilis</td>
</tr>
<tr>
<td>3</td>
<td>Total number of symptomatic babies <em>(Case definition - 1)</em></td>
</tr>
<tr>
<td>4</td>
<td>Total number of infants with congenital syphilis <em>(Case definition 2)</em></td>
</tr>
<tr>
<td>5</td>
<td>Total number of infants with congenital syphilis <em>(Case definition 3)</em></td>
</tr>
<tr>
<td>6</td>
<td>Total number of infants eligible for single dose prophylactic penicillin <em>(Refer treatment schedule – 1)</em></td>
</tr>
<tr>
<td>7</td>
<td>Total No ; of antenatal mothers with past history of syphilis referred by MOH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Total number of positive pregnant mothers treated for syphilis</td>
</tr>
<tr>
<td>2a</td>
<td>Total number of partners of positive pregnant women treated</td>
</tr>
<tr>
<td>3a</td>
<td>Total number of symptomatic babies treated <em>(Treatment schedule – 2)</em></td>
</tr>
<tr>
<td>4a</td>
<td>Total number of infants (Diagnosed by case definition 2) treated <em>(Treatment schedule – 2)</em></td>
</tr>
<tr>
<td>5a</td>
<td>Total number of infants (Diagnosed by case definition 3) treated <em>(Treatment schedule – 2)</em></td>
</tr>
<tr>
<td>6a</td>
<td>Total number of infants who were given Single dose B. penicillin</td>
</tr>
</tbody>
</table>

Refer the book “Guidelines for the Management of Maternal Syphilis & Congenital Syphilis” for case definitions and treatment schedules

Let’s Eliminate Congenital Syphilis from Sri Lanka by 2015
MOTHERS TESTING POSITIVE FOR SYphilis

1) Name: .........................................................

2) Results of serological tests for Syphilis: VDRL □ TPHA □

3) Diagnosis: □ Primary syphilis □ Secondary syphilis □ Early latent syphilis □ Late latent syphilis

   Due to the following reason she has not been adequately treated according to the stage of syphilis

   a) Mother presented < 4 weeks before delivery
   b) Mother was not treated with penicillin due to hypersensitivity
   c) Mother’s VDRL titre has not shown a four fold drop
   d) Mother not completed the full course of penicillin
   e) Mother treated with non penicillin course

Management of Baby

   The baby should be evaluated by a pediatrician

   Since syphilis serology (VDRL & IgM ELISA antibody tests) have to be done on baby’s blood, please send 5 cc of baby’s blood to the STD/AIDS reference Laboratory, properly labeled, with the duly filled Pathology Request Form (Health 356). (Cord blood is not suitable)

   Together with baby’s blood send 5cc of mother’s blood

Recommended treatment:
Aqueous crystalline penicillin 100,000 -150,000 IU/kg/ day for 10 days. It is administered as 50,000 IU/kg/dose IV every 12 hours during the first 7 days and every 8 hours thereafter for 3 days.

   Please refer both mother and baby to the STD clinic before discharge from the Ward.
MOTHERS TESTING POSITIVE FOR SYPHILIS

1) Name: ..............................................................................................................................

2) Results of serological tests for Syphilis - VDRL ☐ TPPA ☐

3) Diagnosis ☐ Primary syphilis ☐ Secondary syphilis ☐ Early latent syphilis ☐ Late latent syphilis

The above named mother has been adequately treated according to the stage of syphilis with benzathine benzylpenicillin and is no longer infectious.

Management of Baby

- The baby should be evaluated by a pediatrician

- Since syphilis serology (VDRL & IgM ELISA antibody tests) have to be done on baby’s blood, please send 5 cc of baby’s blood to the STD/AIDS reference Laboratory/clinic, properly labeled, with the duly filled Pathology Request Form (Health 356). (Cord blood is not suitable)

- Together with baby’s blood send 5 cc of mother’s blood

- If the baby is asymptomatic and has no serological evidence of syphilis the following treatment should be given as epidemiological treatment.

  Recommended treatment: Benzathine penicillin 50,000 IU/kg IM in a single dose

- If baby has evidence of congenital syphilis, after drawing a specimen of blood for syphilis serology, the baby should be treated in a pediatric ward with intravenous penicillin.

  Recommended treatment: Aqueous crystalline penicillin 100,000 -150,000 IU/kg/day for 10 days. It is administered as 50,000 IU/kg/dose IV every 12 hours during the first 7 days and every 8 hours thereafter for 3 days.

- Please refer both mother and baby to the STD clinic before discharge from the Ward.

Consultant Venereologist/ MO (STD)
National STD/AIDS Control Programme
1. Drawing of blood should be done by MOH, MO, RMO/AMO, PHNS or Nurse. If it is a field clinic, either MOH or PHNS should draw blood. When STD clinic team visits ANCs for blood drawing MOSTD, Nurse or MLT may draw blood.

2. Disposable syringes should be used to draw blood and 5cc blood should be taken in to a tube or a plain bottle. Label the sample with reference number date and time of collection. It should be kept in room temperature for at least 2 hours.

3. If it is sent within 12 hours to the laboratory not necessary to keep in the refrigerator or use special carriers for transportation. If it is not sent within 12 hours, keep samples in the main compartment of the refrigerator and send to the laboratory in a vaccine carrier within three days. Given specimen forms should be used. There should be prior arrangement before sending samples to the STD lab.

4. In the STD laboratory if the test is not done on the same day serum should be separated and could be kept for about one month in the freezer compartment of the refrigerator.

5. Result of the screening test will be conveyed to relevant PHM through the MOH and positive cases will be referred to STD clinic and confirmatory test will be done there. MO/STD shall use the contact slip of NSACP to get the partner for management. MO/STD will inform the MOH/VOG for the management of mother and baby by the card prepared for this purpose.

6. MOMCH and MO/STD should meet quarterly and discuss the matters related to antenatal syphilis screening.

7. VDRL test will be the first choice for syphilis screening and in areas where facilities are not available, rapid test can be recommended by FHB and NSACP.
Laboratory Equipment required for VDRL testing

1. Antigen preparation bottle
2. Binocular Microscope
3. Bowl – (to contain ejected tips)
4. Centrifuge
5. Graduated pipette (Pyrex) – 1ml, 5 ml, 10ml
6. Khan tubes
8. Micro tips
9. Pipette pillar
10. Serum Rack (96 wells)
11. Stop watch
12. Syringe & needle-18 gauge
13. Vacutainer tubes
14. VDRL Antigen Kits
15. VDRL shaker
16. VDRL slide (perma slide)
17. Water bath 56° C
18. Wire Rack (96 wells)
නිදහස් ලුයෝ ආරීකරණය

මෙම ප්‍රදේශයේ තොරතුරු නිදහස් සමග විශේෂ කැමරණයක් පැවැතිය. මෙම විශේෂ කැමරණය සමග පොළො重金属 VDRL විශේෂ කැමරණයක් පැවැතී.

2015 ටින් චිත්‍රපටයේ ප්‍රදේශ නිදහස් පැවැති බවයි.
Prevention of mother to child transmission of syphilis infection
Referral card for prevention of Congenital Syphilis Mo-(STD to MOH/VOG)

STD clinic: ____________________________
Name of mother: ____________________________
Date of registration: ____________________________
POA: ____________________________
EDD: ____________________________
Stage of maternal syphilis: ____________________________

Treatment given:
- Benznathine penicillin - 1 dose on ____________________________
- Benznathine penicillin - 2 dose on ____________________________
- Benznathine penicillin - 3 dose on ____________________________
- Erythromycin - on ____________________________

▲ Maternal treatment completed
Baby requires:
- clinical evaluation
- serologic test for syphilis (VDRL/IGM)
- Prophylaxis treatment - benznathine penicillin 50,000 IU/kg intra-muscular in a single dose before discharge from ward

▲ Maternal treatment incomplete
Baby requires:
- clinical evaluation
- serologic test for syphilis (VDRL/IGM)
- Treatment for congenital syphilis - aqueous crystalline benzyl penicillin 100,000-150,000 IU/kg, IV in two divided doses for 7 days and three times a day for another 3 days to complete 10 days (given as 50,000 IU, IV b.d for 7 days and t.o.d for another 3 days)

Dates for follow up clinic visits: ____________________________

Please bring this card when visiting the clinic.
සිංහල නවකතාව මහත්මත් නවකතාව සමාගමේ දෙයින් කළු
