SYPHILIS

I. DEFINITION:

A. Syphilis is a systemic, sexually transmitted disease (STD) caused by the *Treponema pallidum* bacterium.

B. It can cause long-term complications if not treated correctly. Symptoms in adults are divided into stages. These stages are described below in the Clinical Features. Syphilis has been called ‘the great imitator’ because it has so many possible symptoms, many of which look like symptoms from other diseases. The painless syphilis chancre that clients get after they are first infected can be confused for an ingrown hair, zipper cut, or other seemingly harmless bump. Many times the client does not know they had a sore. The non-itchy body rash that develops during the second stage of syphilis can show up on the palms of the client’s hands and soles of their feet, all over the body, or in just a few places. The rash is usually bilateral, meaning it appears equally on both sides of the body.

C. The three means of syphilis transmission are:

1. Person to person via vaginal, anal, or oral sex through direct contact with a syphilis chancre.
2. Person to person during foreplay, even when there is no penetrative sex (much less common).
3. Pregnant mother with syphilis to fetus - very serious complications may occur (fetal demise, long bone deformities, “saddle nose”).

II. CLINICAL FEATURES:

If left untreated, the disease progresses through several stages during which the infected person may or may not be symptomatic. The DIS and ‘Syphilis Diagnosis And Treatment Algorithm’ (Appendix 1) can assist with staging.

A. Primary Syphilis

1. One or more chancres (usually firm, round, small, and painless) appear at the site of infection (most often the genital area) 10 to 90 days after infection.
2. The chancres heal on their own in 3-6 weeks, even without treatment.
3. Client is highly infectious in the primary stage.
4. The rapid plasma reagin test (RPR) may not yet be reactive for a week after the appearance of a primary chancre. (The nurse should request Treponemal Pallidum Particle Agglutination test (TPPA) in high risk individuals and/or individuals who appear with primary symptoms).

B. Secondary Syphilis

1. Rashes occur as the chancre(s) fades or a few weeks after the chancre heals.
2. Rashes typically appear on the palms of the hands, the soles of the feet, or on the face, but also may appear on other areas of the body. The skin lesions are bilaterally symmetrical.
3. Sometimes wart-like “growths” may appear on the genital area.

4. Rashes and syphilitic warts tend to clear up on their own within 2-6 weeks, but may take as long as 12 weeks.

5. May have lymphadenopathy, oral and/or genital mucous patches, hepatitis, optic neuritis, arthritis and peripheral neuropathy.

6. Client may be highly infectious in the secondary stage.

C. Early Latent Syphilis
   1. Client is seroreactive within one year of onset of infection, but has no symptoms.
   2. Client is potentially infectious.

D. Late Latent Syphilis
   1. Client is seroreactive more than 1 year after onset of infection, but has no symptoms.
   2. Client is not infectious in late latent state.

E. Late (Tertiary) Syphilis
   1. Manifestations in the skin and bones (gummas, which are infectious like chancres), central nervous system, and cardiovascular system.
   2. Client is only infectious if a gumma is present.

F. Neurosyphilis
   Client has cognitive dysfunction, motor or sensory deficits, ophthalmic or auditory symptoms, cranial nerve palsies, and symptoms or signs of meningitis or stroke.
   Neurosyphilis can occur during any stage of syphilis.

III. MANAGEMENT PLAN:

A. Laboratory Studies – collect specimens for appropriate testing:
   1. Rapid plasma reagin test (RPR) blood test. May not be reactive if client is newly exposed or has a compromised immune system.
   2. Treponemal Pallidum particle Agglutination (TPPA)-Blood test should be requested by the nurse in conjunction with RPR if the client is a high risk for syphilis, the client presents with symptoms of primary syphilis, or the test was recommended by the Disease Intervention Specialist (DIS).
      Note: Use one Serum Separator Tube (SST) – even if requesting both tests.
   3. Contact DIS immediately if client has primary and/or secondary symptoms upon initial exam.
   4. Specimen for *C. trachomatis* and *N. gonorrhoeae*:
a) **Females**: Vaginal Swab is the preferred specimen collection method for *C. trachomatis* and *N. gonorrhoeae* testing. Collect vaginal swab if product is available refer to vaginal swab specimen collection procedure for instructions. If vaginal swab testing is not available, collect urine specimen. Ensure client waits 1 hour after last voiding before providing urine specimen.

b) **Males**: Collect urine for *C. trachomatis* and *N. gonorrhoeae*. Ensure client waits 1 hour after last voiding before providing urine specimen.

5. HIV testing is recommended.

6. Clients who demonstrate any of the following symptoms or criteria should be referred to the nearest hospital emergency department for a prompt cerebral spinal fluid (CSF) examination:
   a. neurologic or ophthalmic signs or symptoms; (e.g., abnormal gait, numbness or weakness in toes, feet, or legs, headache, stiff neck, seizure, visual changes/blindness, hearing loss, mental confusion, poor concentration, confusion, irritability, incontinence)
   b. evidence of active tertiary syphilis (e.g., aortitis, gumma);
   c. serologic treatment failure.

B. Treatment of Source Client and Contact(s)

1. **Pregnancy Testing**
   
   If it is determined that the client has syphilis of any stage (using the Syphilis Diagnosis and Treatment algorithm, Appendix 1), urine testing for pregnancy is recommended for all women of childbearing age. Childbearing age includes the period of a woman’s life between puberty and menopause.

2. **Primary, Secondary, and Early Latent Syphilis**
   
   Option #1 Benzathine penicillin G 2.4 million units IM in a single dose. For non-penicillin allergic adults (safe in pregnancy).
   
   Option #2 Doxycycline 100 mg orally 2 times a day for 14 days. Only if client is allergic to penicillin. This option cannot be used in pregnancy.
   
   Option #3 Refer PREGNANT Penicillin-allergic clients to private physician for treatment.

3. **Late Latent and Tertiary Syphilis with no evidence of gumma, cardiovascular, or neurosyphilis symptoms**
   
   Option #1 Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals. For non-penicillin allergic adults (safe in pregnancy).
If treatment is interrupted (greater than 10 days between doses), the whole 3 week course of treatment must be restarted.

**Option #2**

Doxycycline 100 mg orally 2 times a day for 28 days for client who is allergic to penicillin. This option cannot be used in pregnancy.

**Option #3**

Refer PREGNANT Penicillin-allergic clients to private physician for treatment.

4. **Neurosyphilis**

Neurosyphilis can occur with any stage of syphilis. Treatment regimen of syphilis among clients with symptoms of or suspected neurosyphilis should be administered according to the stage of the syphilis diagnosis. Client should then be referred to the nearest hospital emergency department for careful evaluation and treatment of neurosyphilis. DIS will assist with staging, recommended treatment, and referral process.

5. **Treatment of Syphilis among clients with HIV**

Treatment regimen of syphilis among clients with HIV diagnosis should be administered according to the stage of the syphilis diagnosis. Clients with HIV infection and syphilis should be carefully assessed for symptoms of neurosyphilis. If symptoms of neurosyphilis are reported upon assessment, contact DIS and coordinate for client to be referred to nearest emergency facility for further evaluation.

There are no proven alternative nonpenicillin regimens for treatment of syphilis among clients with HIV. Clients with penicillin allergy must be referred to a private provider or specialist for desensitization and treatment.

6. **Treatment of syphilis in pregnancy (all stages)**

Treatment during pregnancy should be the penicillin regimen appropriate for the woman's stage of syphilis. Some experts recommend additional therapy. (A second dose of benzathine penicillin 2.4 million units IM may be administered one week after the initial dose for women who have primary, secondary, or early latent syphilis). When possible, the client's PCP or OB provider should be made aware of treatment and/or refusal of needed treatment. When syphilis is diagnosed during the second or third trimester of pregnancy, management should include referring client for sonographic fetal evaluation for congenital syphilis.

**Doxycycline cannot be used to treat syphilis in pregnancy.**

There are no proven alternative nonpenicillin regimens for syphilis treatment during pregnancy. A pregnant female with a history of penicillin allergy must be referred to a private physician for treatment with penicillin, after desensitization, if necessary.

Females treated for syphilis during the second half of pregnancy are at risk for premature labor or fetal distress, or both, if their treatment precipitates the Jarisch-Herxheimer reaction. Advise these women to contact their physician if they notice any
change in fetal movements or have contractions. Stillbirth is a rare complication of treatment, but concern for this complication should not delay necessary treatment.

C. Client Education

1. Client to remain in the county health department in a common area for at least 20 minutes to observe for reaction.

2. Impress on client the importance of returning for injections when scheduled if a multiple dose treatment is needed. Explain if treatment is interrupted (greater than 10 days between doses), the whole 3 week course of treatment must be restarted. To eliminate the treponem, the penicillin blood level must be high and maintained for three weeks. If the blood level drops during the 3 weeks, the client may not be cured.

3. Jarisch-Herxheimer reaction

   a. Definition: An acute febrile reaction accompanied by headache, myalgia, and other symptoms that may occur within the first 24 hours after any therapy for syphilis.

   b. During pregnancy may induce early labor or cause fetal distress among pregnant women. This concern should not prevent or delay therapy.

   c. Common among clients with early syphilis.

   d. Antipyretics may be recommended.

4. If given doxycycline

   a. Provide with written instructions.

   b. Discuss possible side effects.

   c. Emphasize importance of completing regimen.

5. Client should return for repeat RPRs at the recommended intervals according to the stage of the diagnosis (See Follow up section G) or as otherwise recommended by or DIS.

6. For women: Emphasize the risks of syphilis during pregnancy. If pregnant, return for follow-up serologic tests in the 3rd trimester.

7. If client is positive for syphilis, encourage client to discuss sexual history with DIS.

8. Client and partner(s) should avoid sex until seven (7) days after their completion of treatment and the resolution of all symptoms. (Note: Symptoms could persist for greater than seven days.)

9. Return for evaluation should symptoms persist or recur.

10. Prevention measures (e.g., condoms) to help prevent future infections.
11. Syphilis has been associated with an increased risk of acquiring HIV.

D. Disease Intervention Specialist (DIS)
   1. DIS should be notified immediately upon client presenting with signs/symptoms of primary and/or secondary syphilis, and/or positive test.
   2. DIS will assist in staging and recommend appropriate treatment for the client.
   3. DIS will determine if client is eligible for partner services (See Partner Services Eligibility, Appendix II). If client is not eligible for partner services, DIS will assist in arranging treatment for the client with the confirmed diagnosis.
   4. DIS will interview and conduct partner notification if the client is eligible for partner services. DIS will refer eligible partners for examination and treatment.
   5. Clients who are not eligible for partner services will refer his or her own sex partners in for examination.
   6. DIS will refer clients who have tested positive at another agency for treatment and complete a DIS Referral form to provide testing information if needed.
   7. Obtain serological and treatment history when applicable.
   8. Assist in notifying client to return for follow-up serology if needed.

E. Management of Sex Partner(s)

Sexual transmission of *T. pallidum* occurs only when mucocutaneous syphilitic lesions are present; such manifestations are uncommon after the first year of infection. However, persons sexually exposed to a client with syphilis in any stage should be evaluated clinically and serologically according to the following:

1. Time periods for identifying at-risk sex partner(s)
   a. Source client has primary syphilis:
      Any sexual partner(s) within the last 4½ months;
   b. Source client has secondary syphilis:
      Any sexual partner(s) within the last 8 months;
   c. Source client has early latent syphilis:
      Any sexual partner(s) within the last year.

2. When to treat sex partner(s) presumptively (epi treat)
   a. Source client has primary, secondary, or early latent (duration < 1 year) syphilis or unknown duration
      Sex partner(s) exposed within the preceding 90 days may be infected even if blood tests are negative and therefore should be treated presumptively (epi treat).
   b. Source client has late syphilis:
1) Serologic test results are not available immediately;

2) The opportunity for follow-up is uncertain;

3) Long-term sex partners should be evaluated clinically and serologically for syphilis and referred to a private physician for further evaluation if tests are reactive.

3. Self-Referred Sex Partners

Management of self-referred sex partners should follow the same guidelines as DIS referred sex partners unless the source client information is not available.

a. If the name of the source client is known, PHN should call DIS to determine stage of the source client and then determine examination and treatment needs.

b. If the name of the source client is not known, PHN should examine the client for syphilis.

1) If the partner’s results are positive, treat accordingly.

2) If the partner’s results are negative and they have had a sexual exposure within the last three months, recommend syphilis testing again in three months.

F. Consultation/Referral

1. Consultation

a. Notify the DNM of any complications.

b. Consult with the Disease Intervention Specialist (DIS) assigned to your county health department for all positive syphilis test.

2. Refer to private physician for evaluation and treatment

a. Pregnant women who have syphilis and are allergic to penicillin are referred to a physician for treatment.

b. Neonates and older children suspected of having congenital syphilis.

c. Clients suspected of having tertiary (late) syphilis.

d. Clients with reactive serology and symptoms of neurosyphilis and/or ophthalmic syphilis should be treated with bicillin regimen appropriate for the stage of the diagnosis and then referred to nearest emergency department for evaluation and treatment of neurosyphilis.

3. HIV Infected

a. Client with HIV and syphilis are more likely to develop CNS disease.
Client with HIV with confirmed syphilis and are allergic to penicillin are referred to a physician or nearest emergency department for desensitization and treatment.

b. Serological titers may be higher or lower than expected.
c. Seroconversion may occur later than expected.

G. Follow-Up
(The PHN may obtain specimens serology testing for diagnosis purposes, as noted below and as requested by Disease Intervention Specialist.)

1. Early syphilis (< 1 year duration)
   a. Primary and Secondary syphilis
      1) Clients who present with active primary or secondary symptoms (e.g. chancre and/or rash) upon initial assessment should be scheduled to return to CHD 1 week after treatment to evaluate for resolution of symptoms.
      2) RPR (quantitative) should be repeated at 6, and 12 months after therapy. (If client has HIV positive status, repeat at 3, 6, 9, 12 and 24 months after therapy) or more often if necessary in consult with DIS.
      3) Retreatment and evaluation required if (consult with DIS)
         a) Signs/symptoms persist or recur.
         b) Client has a sustained fourfold (two dilutions) increase in RPR when compared to either the baseline titer or to a subsequent result (treatment failure or reinfected).
         c) RPR fails to decline fourfold (two dilutions) by 6 months after therapy. Client should be reevaluated for HIV infection.
   b. Latent syphilis
      1) RPR should be repeated at 6, 12, and 24 months (If client has HIV positive status, repeat at 6, 12, 18, and 24 months after therapy) or more often if necessary in consult with DIS.
      2) Client should be evaluated for neurosyphilis and retreated appropriately if:
         a) Titers increase fourfold (2 dilutions);
         b) An initially high titer (≥ 1:32) fails to decline at least fourfold (two dilutions) within 12-24 months;
         c) Client develops signs or symptoms attributable to syphilis.

2. Late (Tertiary) syphilis
b. Refers to gumma and cardiovascular syphilis, but not to all neurosyphilis.

c. Clients who have symptomatic late syphilis should have a CSF examination before therapy is initiated.

REFERENCES:


Sexually Transmitted Infections and HIV. Clutterbuck, Dan
PARTNER SERVICES (PS) ELIGIBILITY

SYPHILIS

ELIGIBILITY CRITERIA:
• Primary/Secondary Syphilis
• Syphilis Titer > 1:8
• Contact (P1) to a PSE Syphilis Case

ELIGIBLE CASE
• All Original Interviews conducted in person.
• Re-Interview may be omitted with certain criteria.

Partners:
• All Partners are initiated for PS and interviewed in person by DIS.
• Partners within last 90 days are referred to HD for preventative treatment.
• Partners >90 days can be tested by DIS in field.

Social Contacts:
• DIS may meet Social Contacts and test/interview.
• DIS may refer Social Contacts to HD for testing.

INELIGIBLE
• DIS does not interview client.
• DIS ensures the client receives treatment.
• DIS encourages provider to have client inform partners of exposure.

HIV

ELIGIBILITY CRITERIA:
• All Newly Identified HIV Cases
• HIV/Syphilis Co-infection

ELIGIBLE CASE
• All Original Interviews conducted in person.
• Re-Interview may be omitted with certain criteria.

Partners and Social Contacts:
• All Partners and Social Contacts are initiated and worked by the DIS.

To assist PS ineligible clients with partner notification:
www.sotheycanknow.org