

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.

- 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 may request Treponemal Pallidum Particle Agglutination test (TPPA) in high risk individuals).
- 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 is 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. Neuro Syphilis

Client has cognitive dysfunction, motor or sensory deficits, ophthalmic or auditory symptoms, cranial nerve palsies, and symptoms or signs of meningitis.

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 may be requested by the nurse in conjunction with RPR if the client is a high risk for 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. Urine testing for chlamydia and gonorrhea are recommended. Ensure client waits 1 hour after last voiding to give sample.
4. Clients who demonstrate any of the following criteria should be referred to a private provider for a prompt cerebral spinal fluid (CSF) examination:
 - a. neurologic or ophthalmic signs or symptoms;
 - 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 case classification 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

Refer all clients suspected of having neurosyphilis to a private physician for careful
evaluation and treatment.

5. 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 private physician should be made aware of treatment and/or refusal of
needed treatment.

Doxycycline cannot be used in pregnancy.

There are no proven alternatives to penicillin 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 3, 6, & 12 months or as otherwise recommended by medical personnel.
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 infection.

D. Disease Intervention Specialist (DIS)

1. Will meet with infected clients to determine if he or she is eligible for partner services.
2. DIS will conduct partner notification if the client is eligible for partner services.
3. DIS will refer sex partner(s) of infected clients eligible for partner services for examination and treatment.
4. Clients who are not eligible for partner services will refer his or her own sex partners in for examination.
5. Assist in staging the client (important to selecting appropriate treatment regimen).
6. Obtain serological and treatment history when applicable.
7. Interview client and notify or assist in notifying contacts who need evaluation/treatment.
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.

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. Clients with reactive serology and symptoms of neurosyphilis including ophthalmic disease.
- c. Neonates and older children suspected of having congenital syphilis.
- d. Clients suspected of having tertiary (late) syphilis.

3. HIV Infected

- a. Client with HIV and syphilis are more likely to develop CNS disease.
- 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) RPR (quantitative) should be repeated at 3, 6, and 12 months after therapy. (If HIV infected, repeat at 3, 6, 9, 12 and 24 months after therapy) or more often if necessary in consult with DIS.
 - 2) 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.
 - 2) Client should be evaluated for neurosyphilis and retreated appropriately if:
 - a) Titers increase fourfold (2 dilutions);
 - b) An initially high titer ($\geq 1:32$) 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
 - a. Refers to gumma and cardiovascular syphilis, but not to all neurosyphilis.
 - b. Clients who have symptomatic late syphilis should have a CSF examination before therapy is initiated.

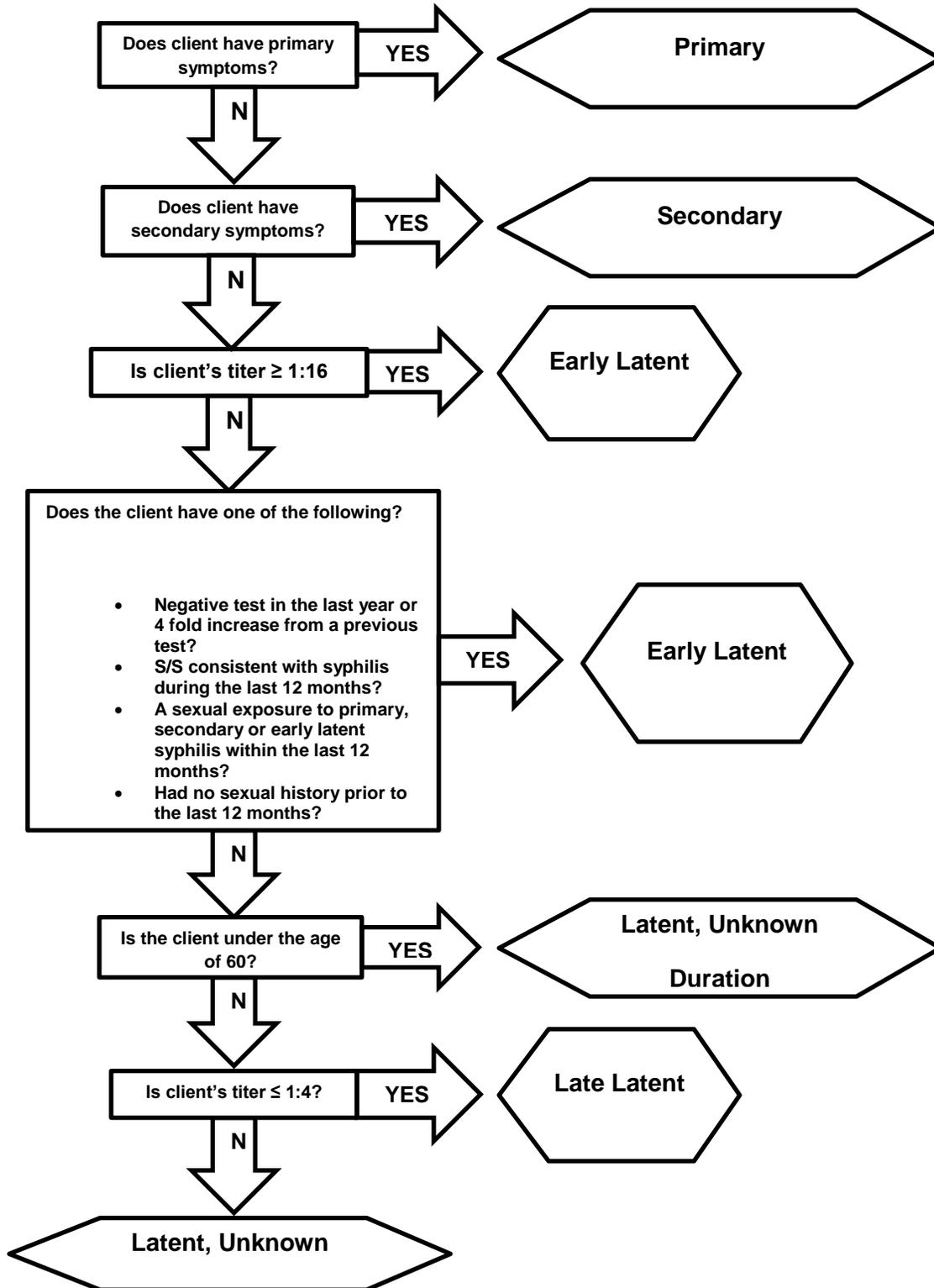
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APPENDIX 1

SYPHILIS CASE CLASSIFICATION ALGORITHM



This is a tool used by Disease Intervention Specialists to stage a case. The DIS are available for assistance.

