Screening for Syphilis Infection in Pregnancy: U.S. Preventive Services Task Force Reaffirmation Recommendation Statement

U.S. Preventive Services Task Force

Abstract

Description:

Update of the 2004 U.S. Preventive Services Task Force statement about screening for syphilis in pregnancy.

Methods:

The U.S. Preventive Services Task Force did a targeted literature search for evidence on the benefits of screening, the harms of screening, and the harms of treatment of syphilis with penicillin during pregnancy.

Recommendation:

Screen all pregnant women for syphilis infection. (Grade A recommendation.)

The U.S. Preventive Services Task Force (USPSTF) makes recommendations about preventive care services for patients without recognized signs or symptoms of the target condition.

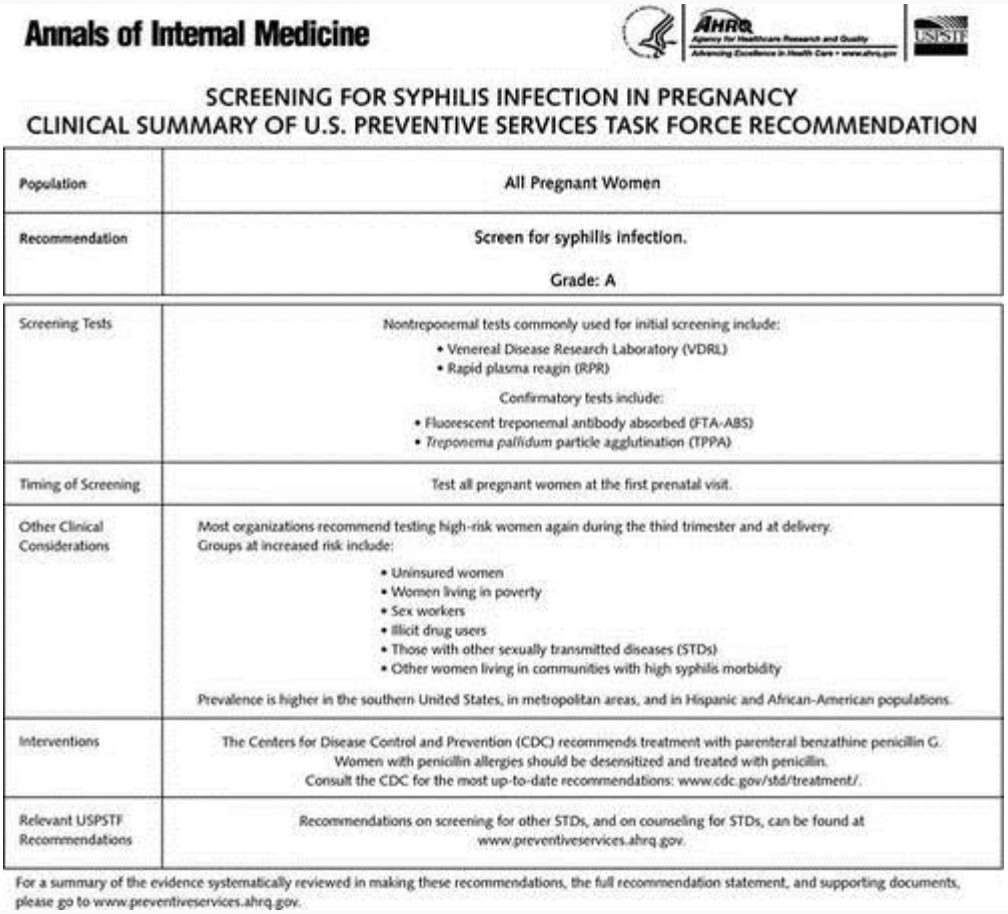
It bases its recommendations on a systematic review of the evidence of the benefits and harms and an assessment of the net benefit of the service.

The USPSTF recognizes that clinical or policy decisions involve more considerations than this body of evidence alone. Clinicians and policymakers should understand the evidence but individualize decision making to the specific patient or situation.

Summary of Recommendation and Evidence

The USPSTF recommends that clinicians screen all pregnant women for syphilis infection. This is a grade A recommendation.

See the Figure for a summary of the recommendation and suggestions for clinical practice.



Annals of Internal Medicine

SCREENING FOR SYPHILIS INFECTION IN PREGNANCY
CLINICAL SUMMARY OF U.S. PREVENTIVE SERVICES TASK FORCE RECOMMENDATION

Population	All Pregnant Women
Recommendation	Screen for syphilis infection. Grade: A
Screening Tests	Nontreponemal tests commonly used for initial screening include: • Venereal Disease Research Laboratory (VDRL) • Rapid plasma reagin (RPR) Confirmatory tests include: • Fluorescent treponemal antibody absorbed (FTA-ABS) • *Treponema pallidum* particle agglutination (TPPA)
Timing of Screening	Test all pregnant women at the first prenatal visit.
Other Clinical Considerations	Most organizations recommend testing high-risk women again during the third trimester and at delivery. Groups at increased risk include: • Uninsured women • Women living in poverty • Sex workers • Illicit drug users • Those with other sexually transmitted diseases (STDs) • Other women living in communities with high syphilis morbidity Prevalence is higher in the southern United States, in metropolitan areas, and in Hispanic and African-American populations.
Interventions	The Centers for Disease Control and Prevention (CDC) recommends treatment with parenteral benzathine penicillin G. Women with penicillin allergies should be desensitized and treated with penicillin. Consult the CDC for the most up-to-date recommendations: www.cdc.gov/std/treatment/.
Relevant USPSTF Recommendations	Recommendations on screening for other STDs, and on counseling for STDs, can be found at www.preventiveservices.ahrq.gov.

For a summary of the evidence systematically reviewed in making these recommendations, the full recommendation statement, and supporting documents, please go to www.preventiveservices.ahrq.gov.

Figure. Screening for syphilis infection in pregnancy: clinical summary of a U.S. Preventive Services Task Force recommendation.

USPSTF = U.S. Preventive Services Task Force.

Table 1 describes the USPSTF grades, and Table 2 describes the USPSTF classification of levels of certainty about net benefit. Both are also available at www.annals.org.

Table 1. What the USPSTF Grades Mean and Suggestions for Practice

Table 1. **What the USPSTF Grades Mean and Suggestions for Practice**

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer/provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer/provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.	Offer/provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of the USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF = U.S. Preventive Services Task Force.

Table 2. U.S. Preventive Services Task Force Levels of Certainty Regarding Net Benefit

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Level of Certainty*	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: the number, size, or quality of individual studies inconsistency of findings across individual studies limited generalizability of findings to routine primary care practice lack of coherence in the chain of evidence. As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: the limited number or size of studies important flaws in study design or methods inconsistency of findings across individual studies gaps in the chain of evidence findings that are not generalizable to routine primary care practice a lack of information on important health outcomes. More information may allow an estimation of effects on health outcomes.

* The U.S. Preventive Services Task Force (USPSTF) defines *certainty* as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Rationale

Importance

Untreated syphilis during pregnancy is associated with stillbirth, neonatal death, bone deformities, and neurologic impairment.

Detection

There is adequate evidence that screening tests can accurately detect syphilis infection.

Benefits of Detection and Early Treatment

The USPSTF found convincing observational evidence that the universal screening of pregnant women decreases the proportion of infants with clinical manifestations of syphilis infection.

Harms of Detection and Early Treatment

Screening and treatment may result in potential harms, including false-positive results that require clinical evaluation, unnecessary anxiety to the patient, and harms of antibiotic use. However, the USPSTF concluded that the harm from screening is no greater than small.

USPSTF Assessment

The USPSTF concludes with high certainty that the net benefit of screening is substantial for pregnant women.

Clinical Considerations

Patient Population Under Consideration

This recommendation applies to pregnant women.

Assessment of Risk

Pregnant women who are at increased risk for syphilis infection include uninsured women, women living in poverty, sex workers, illicit drug users, and women in communities with high syphilis morbidity (1). The prevalence of syphilis infection differs by region (it is higher in the southern United States and in some metropolitan areas than it is in the United States as a whole) and by ethnicity (it is higher in Hispanic and African-American populations than in the white population). Persons in whom sexually transmitted diseases have been diagnosed may be more likely than others to engage in high-risk behavior, which places them at increased risk for syphilis.

Screening Tests

Nontreponemal tests commonly used for initial screening are the Venereal Disease Research Laboratory (VDRL) test or the rapid plasma reagin (RPR) test. These are typically followed by a confirmatory fluorescent treponemal antibody absorbed test or *Treponema pallidum* particle agglutination (TPPA) test.

Treatment

The Centers for Disease Control and Prevention (CDC) has outlined appropriate treatment of syphilis in pregnancy (www.cdc.gov/std/treatment/). In its 2006 sexually transmitted disease treatment guidelines, the CDC recommends parenteral benzathine penicillin G for the treatment of syphilis in pregnancy. Evidence on the efficacy or safety of alternative antibiotics in pregnancy is limited; therefore, women who report penicillin allergies should be evaluated for penicillin allergies and, if present, desensitized and treated with penicillin. Because the CDC updates these recommendations regularly, clinicians are encouraged to access the CDC Web site (www.cdc.gov/std/treatment/) to obtain the most up-to-date information.

Screening Intervals

All pregnant women should be tested at their first prenatal visit. For women in high-risk groups, many organizations recommend repeated serologic testing in the third trimester and at delivery. Most states mandate that all pregnant women be screened at some point during pregnancy, and many mandate screening at the time of delivery. Follow-up serologic tests should be obtained after treatment to document decline in titers. To ensure that results are comparable, follow-up tests should be performed by using the same nontreponemal test that was used initially to document the infection (for example, VDRL or RPR).

Useful Resources

The USPSTF has made recommendations on screening for other sexually transmitted diseases in pregnancy, including gonorrhea, chlamydial infection, hepatitis B, herpes, and HIV. Please see the USPSTF Web site (www.preventiveservices.ahrq.gov) for more information on these recommendations. The CDC guidelines on treatment for syphilis in pregnancy can be accessed at www.cdc.gov/std/treatment/.

Discussion

In 2004, the USPSTF reviewed the evidence on screening for syphilis in pregnant women. In 2008, the USPSTF performed a targeted literature review and determined that the net benefit of screening pregnant women continues to be well established (2). This literature update included a search for new and substantial evidence on the benefits of screening, harms of screening, and harms of treatment with penicillin. The USPSTF found no new substantial evidence that could change its recommendation, and therefore reaffirms its recommendation to screen all pregnant women. The previous recommendation statement and evidence report, as well as the 2008 summary of the updated literature search, can be found at www.preventiveservices.ahrq.gov.

Recommendations of Others

The American Academy of Pediatrics and the American College of Obstetricians and Gynecologists recommend (3) that all pregnant women be screened for syphilis with serologic testing at the first prenatal visit, after exposure to an infected partner, and at the time of delivery. They recommend that pregnant women who are considered at high risk for acquiring syphilis should also be tested at the beginning of the third trimester. The American Academy of Pediatrics and the American College of Obstetricians and Gynecologists advise (3) using a nontreponemal screening test initially (RPR or VDRL), followed by a confirmatory treponemal antibody test. The CDC recommends (4) that all pregnant women be screened for syphilis with serologic testing at the first prenatal visit. Pregnant women who are at high risk, live in areas with a high prevalence of syphilis, have not been previously tested, or have had a positive serologic test result for syphilis during the first trimester should be screened again early in the third trimester (28 weeks) and at the time of delivery. The American Academy of Family Physicians strongly recommends (5) that all pregnant women be screened for syphilis. It advises screening with serologic testing at the first prenatal visit, with repeated serologic testing at 28 weeks and at the time of delivery for pregnant women who are at high risk.

Appendix: U.S. Preventive Services Task Force

Members of the U.S. Preventive Services Task Force† are Ned Calonge, MD, MPH, *Chair* (Colorado Department of Public Health and Environment, Denver, CO); Diana B. Petitti, MD, MPH, *Vice-Chair* (Arizona State University, Phoenix, AZ); Thomas G. DeWitt, MD (Children's Hospital Medical Center, Cincinnati, OH); Allen Dietrich, MD (Dartmouth Medical School, Lebanon, NH): Kimberly D. Gregory, MD, MPH (Department of Obstetrics and Gynecology, Cedars-Sinai Medical Center, Los Angeles, CA); David Grossman, MD, MPH (Group Health Cooperative, Seattle, WA); George Isham, MD, MS (Health Partners, Minneapolis, MN); Michael L. LeFevre, MD, MSPH (University of Missouri School of Medicine, Columbia, MO); Rosanne Leipzig, MD, PhD (Mount Sinai School of Medicine, New York, NY); Lucy N. Marion, PhD, RN (School of Nursing, Medical College of Georgia, Augusta, GA); Bernadette Melnyk, PhD, RN, CPNP/NPP (Arizona State University College of Nursing and Healthcare Innovation, Phoenix, AZ); Virginia A. Moyer, MD, MPH (Baylor College of Medicine, Houston, TX); Judith K. Ockene, PhD (University of Massachusetts Medical School, Worcester, MA); George F. Sawaya, MD (University of California, San Francisco, San Francisco, CA); J. Sanford Schwartz, MD (University of Pennsylvania School of Medicine and The Wharton School, Philadelphia, PA); and Timothy Wilt, MD, MPH (Minneapolis Veterans Affairs Medical Center for Chronic Disease Outcomes Research, Minneapolis, MN).

†Members of the Task Force at the time this recommendation was finalized. For a list of current Task Force members, go to www.ahrq.gov/clinic/uspstfab.htm.