Evidence Gaps Research Taxonomy Table
Research to Address Evidence Gaps in Preventive Services for USPSTF
Topic: Screening for Syphilis Infection During Pregnancy

To fulfill its mission to improve health by making evidence-based recommendations for preventive services, the USPSTF routinely highlights the most critical evidence gaps for making actionable preventive services recommendations. As summarized in the research needs and gaps table (Table 2) in the recommendation statement, the USPSTF often needs additional evidence to create the strongest recommendations for everyone and especially for persons with the greatest burden of disease.

In this table, the USPSTF summarizes key bodies of evidence needed on screening for syphilis infection during pregnancy. For each of the evidence gaps listed below, the USPSTF provides guidance to researchers and funders on the types of studies needed.

The research taxonomy is intended to provide general guidance to investigators. Investigators are encouraged to develop research designs that are responsive to the research taxonomy outlined in the table, in collaboration with their research teams and areas of expertise and experience. The research developed will be reviewed according to standard USPSTF criteria for inclusion in its evidence report; inclusion criteria are summarized in the final Research Plan (Final Research Plan: Syphilis Infection During Pregnancy: Screening | United States Preventive Services Taskforce) and Procedure Manual (https://www.uspreventiveservicestaskforce.org/uspstf/about-uspstf/methods-and-processes/procedure-manual).

Topic: Research Gaps for Screening for Syphilis Infection in Pregnant Persons

Research Gap	Key Questions* or Contextual Questions	Direct/ Indirect Pathway†	Type of Gap‡	Study Characteristics	Population	Intervention/ Comparison	Outcomes/ Timing	Setting
Studies evaluating the benefits and harms of repeat screening later in pregnancy.	KQ1, KQ2, CQ	Both	Health disparities, general, refinement of screening approach	Benefits: Randomized, controlled trials; before-after and ecologic studies reporting effect of implementing a widespread screening program with historical or geographic comparator; and systematic reviews and meta-analyses (of included study designs), comparative effectiveness studies of various screening	Asymptomatic pregnant adolescent or adults, at any time during pregnancy, who are not known to have syphilis infection • Pregnant women at increased risk for syphilis infection (for example, those who live in high-prevalence areas; have a history of HIV, incarceration, or	Intervention: Two-step screening for syphilis with a nontreponemal and treponemal test (traditional or reverse sequence algorithms) performed at least twice during pregnancy Comparison: Two-step screening for syphilis with a	Benefits: Vertical transmission of syphilis (incidence of congenital syphilis); prevalence of congenital syphilis after implementation of a screening program, stillbirth, and maternal or infant morbidity and mortality	Primary care–relevant and primary care–referable settings (e.g., obstetrics/gynecology clinics, prenatal clinics, ambulatory care, family planning clinics, health clinics in correctional facilities, sexually

				intervals, modeling studies Harms: Randomized, controlled trials; cohort studies; case-control studies; diagnostic accuracy studies; large case series; and systematic reviews and meta-analyses (of included study designs), comparative effectiveness studies of various screening timepoints, modeling studies	multiple sexual partners; engage in sex in combination with drug use or commercial sex work; or are experiencing homelessness) • Pregnant women from racial and ethnic groups who currently have high burden of disease (for example, Black, Hispanic, and Native American/Alaska Native, Native Hawaiian/Pacific Islander women) • Pregnant women who are late to or have inconsistent prenatal care	nontreponemal and treponemal test (traditional or reverse sequence algorithms) performed only once during pregnancy	Harms: Harms of screening (e.g., false-positive and false-negative results, stigma, and psychosocial harms	transmitted infection clinics, emergency departments, labor and delivery)
Studies evaluating the benefits and harms of screening strategies during pregnancy that include rapid point of care tests.	KQ1, KQ2	Both	Grade assignment, refinement of screening approach	Benefits: Randomized, controlled trials; before-after and ecologic studies reporting effect of implementing a widespread screening program with historical or geographic comparator; comparative effectiveness studies; modeling studies; and systematic reviews and meta-analyses (of included study designs)	Asymptomatic pregnant adolescent or adults, at any time during pregnancy, who are not known to have syphilis infection • Pregnant women at increased risk for syphilis infection (for example, those who live in high-prevalence areas; have a history of HIV, incarceration, or multiple sexual	Intervention: Rapid point of care syphilis tests (including self-collected tests, and those collected by clinicians) Comparison: Two-step screening for syphilis with a nontreponemal and treponemal test (traditional or reverse sequence algorithms)	Benefits: Vertical transmission of syphilis (incidence of congenital syphilis); prevalence of congenital syphilis after implementation of a screening program, stillbirth, and maternal or infant morbidity and mortality	Primary care–relevant and primary care–referable settings (e.g., obstetrics/gynecology clinics, prenatal clinics, ambulatory care, family planning clinics, health clinics in correctional facilities, sexually transmitted

				Harms: Randomized, controlled trials; cohort studies; case-control studies; diagnostic accuracy studies; large case series; comparative effectiveness studies; modeling studies; and systematic reviews and meta-analyses (of included study designs) Diagnostic Test Accuracy Studies	partners; engage in sex in combination with drug use or commercial sex work; or are experiencing homelessness) • Pregnant women from racial and ethnic groups who currently have high burden of disease (for example, Black, Hispanic, and Native American/Alaska Native persons, Native Hawaiian/Pacific Islander women) • Pregnant women who are late to or have inconsistent prenatal care		Harms: Harms of screening (e.g., false-positive and false-negative results, stigma, and psychosocial harms Diagnostic Testing Accuracy outcomes	infection clinics, emergency departments, labor and delivery, community settings linked to treatment and follow-up)
Studies evaluating interventions to reduce congenital syphilis rates in populations experiencing high burdens of disease	KQ1, KQ2, CQ	Both	Health disparities	Randomized, controlled trials; before-after and ecologic studies reporting effect of implementing a widespread screening program with historical or geographic comparator; and systematic reviews and meta-analyses (of included study designs)	• Pregnant women at increased risk for syphilis infection (for example, those who live in high-prevalence areas; have a history of HIV, incarceration, or multiple sexual partners; engage in sex in combination with drug use or commercial sex work; or are experiencing homelessness)	Intervention: Interventions designed to reduce syphilis infection in populations who experience a high burden of congenital syphilis. Comparison: Usual care, wait list control, no intervention, or attention control.	Benefits: Vertical transmission of syphilis (incidence of congenital syphilis); prevalence of congenital syphilis after implementation of a screening program, stillbirth, and maternal or infant morbidity and mortality,	Primary care–relevant and primary care–referable settings (e.g., obstetrics/gynecology clinics, prenatal clinics, ambulatory care, family planning clinics, health clinics in correctional facilities, sexually transmitted

					• Pregnant women who from groups who currently have high rates of congenital syphilis (for example, Black, Hispanic, and Native American/Alaska Native persons, Native Hawaiian/Pacific Islander women) • Pregnant women who are late to or have inconsistent prenatal care		Harms: Harms of screening (e.g., false-positive and false-negative results, stigma, and psychosocial harms	infection clinics, emergency departments, labor and delivery)

* Key questions are an integral part of the approach to conducting systematic reviews the Task Force uses in its recommendation process. Along with the analytic framework, these questions specify the logic and scope of the topic, and are critical to guiding the literature searches, data abstraction, and analysis processes. Source USPSTF Procedure manual 3.2.2 Procedure Manual [link to Procedure Manual)
† The direct pathway is typically derived from RCTs of the targeted screening or preventive intervention that adequately measure the desired health outcomes in the population(s) of interest. If certainty for net benefit cannot be derived from the direct pathway, then the Task Force determines if the evidence is sufficient across the key questions and linkages in the indirect pathway to determine overall certainty.
‡ Types of gaps may include: grade assignment (moving from an I to a letter grade), change in letter grade (e.g., C to B, C to D), health disparities (e.g., populations with a disproportionate burden of the condition), combined (e.g., grade assignment and health disparities), and general gap (e.g., uptake of a clinical preventive service).

Abbreviations: KQ=key question; CQ=contextual question;; USPSTF=U.S. Preventive Services Task Force