Topic Brief: Prenatal Syphilis Screening

Date: 7/21/2022
Nomination Number: 1000

Purpose: This document summarizes the information addressing a nomination submitted on June 3, 2022, through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: The nominator is interested in a review on interventions to improve prenatal syphilis screening and prevent congenital syphilis. They plan to use an evidence review to inform clinical guidance.

Findings: We found a systematic review addressing the first question, and no relevant research studies related to the second question. For these reasons the EPC Program will not consider this nomination further.

Background

Syphilis is a sexually transmitted infection. In pregnant people it can be passed to the fetus and cause congenital syphilis. This can result in stillbirth, premature delivery, bone deformities, anemia, jaundice, blindness, deafness, meningitis, seizures and developmental delay. [1]

Screening pregnant people for syphilis and receipt of treatment can prevent congenital syphilis. Many states have laws in place requiring prenatal screening for syphilis.[2]

Congenital syphilis rates have risen dramatically recently with over 2000 cases in 2020. Concerns about this rise have led healthcare providers to consider whether a more optimal approach to prenatal screening with repeat screening or better strategies to implement prenatal screening are needed to address this.

Scope

1. What are the comparative effectiveness and harms of repeat prenatal screening strategies to prevent congenital syphilis?
2. What are the comparative effectiveness and harms of state/local prenatal screening implementation strategies?

[1] https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm

[2] https://www.cdc.gov/std/treatment/syphilis-screenings.htm

Assessment Methods

See Appendix A.

Summary of Literature Findings

We identified a 2018 systematic review on question 1. The scope of the review included various screening strategies including repeat screening for syphilis during pregnancy.[3]

For KQ 2 we identified no relevant studies in Medline and Clinicaltrials.gov.

We identified too few studies addressing the nomination questions; therefore the EPC Program will not consider this nomination further.

Author

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Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

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[3] Lin JS, Eder M, Bean S. Screening for Syphilis Infection in Pregnant Women: A Reaffirmation Evidence Update for the U.S. Preventive Services Task Force. Evidence Synthesis No. 167. AHRQ Publication No. 18-05238-EF-1. Rockville, MD: Agency for Healthcare Research and Quality; 2018.

Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We conducted a search for existing systematic reviews. We searched for high-quality, completed or in-process evidence reviews published in the last three years June 2019 to June 2022 on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
    - AHRQ Evidence Reports https://www.ahrq.gov/research/findings/evidence-based-reports/index.html
    - EHC Program https://effectivehealthcare.ahrq.gov/
- US Department of Veterans Affairs Products publications
    - Evidence Synthesis Program https://www.hsrd.research.va.gov/publications/esp/
    - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program https://www.healthquality.va.gov/
- Cochrane Systematic Reviews https://www.cochranelibrary.com/
- PROSPERO Database (international prospective register of systematic reviews and protocols) http://www.crd.york.ac.uk/prospero/
- PubMed https://www.ncbi.nlm.nih.gov/pubmed/

Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Feasibility of New Evidence Review

We conducted a limited Medline search of primary literature published within the last five years from July 2016 through July 2022.
https://clinicaltrials.gov/ct2/results?cond=prenatal+syphilis&term=&cntry=&state=&city=&dist=

History and Search Details

Search	Actions	Details	Query	Results	Time
#14			Search: **#4 OR #7 OR #13**	23	17:53:48
#13			Search: **#12 AND (Systematic Review[PT] OR Meta-Analysis[PT] OR Clinical Study[PT])**	6	17:31:36
#12			Search: **Syphilis[mesh] AND pregnancy AND (Diagnostic Errors[mesh] OR "false positive" OR "false positives" OR "false negative" OR "false negatives" OR Jarisch-Herxheimer OR Jarish-Herxheimer OR Drug-Related Side Effects and Adverse Reactions[mesh] OR stigma OR stigmatization OR anxiety) AND ("2017"[Date - Publication] : "2022"[Date - Publication])**	32	17:31:16
#11			Search: **Syphilis[mesh] AND pregnancy AND (Diagnostic Errors[mesh] OR "false positive" OR "false positives" OR "false negative" OR "false negatives" OR Jarisch-Herxheimer OR Jarish-Herxheimer OR Drug-Related Side Effects and Adverse Reactions[mesh] OR stigma OR stigmatization OR anxiety)**	189	17:29:58
#10			Search: **#9 AND (Systematic Review[PT] OR Meta-Analysis[PT] OR Clinical Study[PT])**	1	17:29:21
#9			Search: **Syphilis[mesh] AND pregnancy AND (Screening/adverse effects[mesh] OR Hematologic Tests/adverse effects[mesh]) AND ("2017"[Date - Publication] : "2022"[Date - Publication])**	3	17:28:05
#8			Search: **Syphilis[mesh] AND pregnancy AND (Screening/adverse effects[mesh] OR Hematologic Tests/adverse effects[mesh])**	6	17:25:58
#7			Search: **#6 AND (Systematic Review[PT] OR Meta-Analysis[PT] OR Clinical Study[PT])**	6	17:24:31
#6			Search: **(Syphilis[mesh] AND screening AND (pregnancy OR prenatal) AND (implementation OR implementing OR Health Plan Implementation[mesh] OR Regional Health Planning[mesh] OR Health Planning[mesh:NoExp] OR State Government[mesh] OR Community Health Planning[mesh] OR Public Reporting of Healthcare Data[mesh] OR Local Government[mesh] OR Healthcare Financing[mesh] OR Health Resources[mesh])) AND ("2017"[Date - Publication] : "2022"[Date - Publication])**	40	17:22:48
#5			Search: **Syphilis[mesh] AND screening AND (pregnancy OR prenatal) AND (implementation OR implementing OR Health Plan Implementation[mesh] OR Regional Health Planning[mesh] OR Health Planning[mesh:NoExp] OR State Government[mesh] OR Community Health Planning[mesh] OR Public Reporting of Healthcare Data[mesh] OR Local Government[mesh] OR Healthcare Financing[mesh] OR Health Resources[mesh])**	106	17:21:18

Search	Actions	Details	Query	Results	Time
#4			Search: #2 AND (Systematic Review[PT] OR Meta-Analysis[PT] OR Randomized Controlled Trial[PT] OR Observational Study[PT])	21	17:20:45
#3			Search: #2 AND (Systematic Review[PT] OR Meta-Analysis[PT])	8	17:19:49
#2			Search: Syphilis[mesh] AND screening AND (Pregnancy[mesh] OR Prenatal Care[mesh]) AND ("2017"[Date - Publication] : "2022"[Date - Publication])	336	17:18:58
#1			Search: Syphilis[mesh] AND screening AND (Pregnancy[mesh] OR Prenatal Care[mesh])	1,452	17:17:02

Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.?	Yes.
1b. Is the nomination a request for an evidence report?	The nominator is interested in guidance to assist in healthcare decision-making. Such guidance would ideally be supported by an evidence review.
1c. Is the focus on effectiveness or comparative effectiveness?	Yes. The nominator is interested in effectiveness and harms of treatment.
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes.
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Cases of congenital syphilis have risen dramatically recently with over 2000 cases in 2020. Congenital syphilis can result in stillbirth, premature delivery, bone deformities, anemia, jaundice, blindness, deafness, meningitis, seizures and developmental delay.
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes. The nominator is interested in both benefits and harms.
2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes.
3. Desirability of a New Evidence Review/Absence of Duplication	
3. A recent high-quality systematic review or other evidence review is not available on this topic	We identified one 2018 systematic review addressing screening strategies for prenatal syphilis. This review was used by the US Preventive Services Task Force to inform their recommendation on screening for prenatal syphilis. We did not identify systematic reviews addressing the second question on implementation.

4. Impact of a New Evidence Review	
4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)?	Guidance is inconsistent across groups about rescreening pregnant women for syphilis. We identified a recommendation from US Preventive Task Force on screening strategies for prenatal syphilis. Screening for prenatal syphilis early is Grade A (recommended). The USPSTF found no new studies that examined the effectiveness of repeated testing for syphilis during pregnancy (https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/syphilis-infection-in-pregnancy-screening) The Centers for Disease Control and Prevention (CDC; https://www.cdc.gov/std/treatment-guidelines/syphilis-pregnancy.htm) and joint guidelines from the American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG) recommend repeat screening in women at high risk for syphilis early in the third trimester (at approximately 28 weeks of gestation) and again at delivery.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	Yes, because of varying guidance.
5. Primary Research	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies)	Too few studies are available to inform a new systematic review.