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CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Screening Strategies for the Detection of *Chlamydia Trachomatis* and/or *Neisseria Gonorrhoeae* during Pregnancy: Clinical Utility, Safety, and Cost-Effectiveness

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

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Research Questions

1. What is the clinical utility of different screening strategies for the detection of *Chlamydia trachomatis* (CT) and/or *Neisseria gonorrhoeae* (GC) during pregnancy?

2. What is the clinical evidence for the safety of different screening strategies for the detection of CT and/or GC during pregnancy?

3. What is the cost-effectiveness of different screening strategies for the detection of CT and/or GC during pregnancy?

Key Findings

Three non-randomized studies were identified regarding the clinical utility of different screening strategies for the detection of *Chlamydia trachomatis* and/or *Neisseria gonorrhoeae* during pregnancy. No relevant studies were identified regarding the clinical evidence for the safety of different screening strategies for the detection of *Chlamydia trachomatis* and/or *Neisseria gonorrhoeae* during pregnancy. Additionally, no economic evaluations were identified regarding the cost-effectiveness of different screening strategies for the detection of *Chlamydia trachomatis* and/or *Neisseria gonorrhoeae* during pregnancy.

Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, Embase, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were testing, pregnancy, and chlamydia or gonorrhea. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2018 and June 22, 2020. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Adults and adolescents who are pregnant (≥ 12 years of age, up to and including delivery)
Intervention	A screening strategy for *Chlamydia trachomatis* and/or *Neisseria gonorrhoeae*, with or without clinical management of the confirmed infection. • Testing for CT using nucleic acid amplification test on urine, vaginal, or cervical samples • Testing for GC on NAAT using urine, vaginal, or cervical samples, or cultures using urethral or endocervical samples
Comparator	• An alternative screening strategy conducted with an alternative test, specimen, approach, timing, with a different frequency, or with any subsequent management strategy for pregnant persons with confirmed infection (including no management)

	• No screening strategy
Outcomes	Q1. Clinical utility (e.g., detection yield outcomes, people who obtain screening in accordance with guidelines, adverse gynecological outcomes, adverse neonatal outcomes, patients receiving treatment for infection, prophylactic antibiotics for their offspring) Q2. Harms from undergoing screening (e.g., anxiety, adverse pregnancy outcomes, negative impacts of false-positive or false-negative results) Q3. Cost-effectiveness (e.g., cost per quality-adjusted life years, cost per benefit gained, cost per clinical outcome)
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, economic evaluations

CT = *Chlamydia trachomatis*; GC = *Neisseria gonorrhoeae*; NAAT = nucleic acid amplification test.

Results

Three non-randomized studies[1-3] were identified regarding the clinical utility of different screening strategies for the detection of CT and/or GC during pregnancy. No relevant health technology assessments, systematic reviews, randomized controlled trials, or economic evaluations were identified.

Additional references of potential interest that did not meet the inclusion criteria are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

Clinical Utility

1. Gadoth A, Shannon CL, Hoff NA, et al. Prenatal chlamydial, gonococcal, and trichomonal screening in the Democratic Republic of Congo for case detection and management. *Int J STD AIDS*. 2020;31(3):221-229. PubMed: PM31996095

2. Azevedo MJN, Nunes SDS, Oliveira FG, Rocha DAP. High prevalence of Chlamydia trachomatis in pregnant women attended at primary health care services in Amazon, Brazil. *Rev Inst Med Trop Sao Paulo*. 2019 Feb 14;61:e6. PubMed: PM30785560

3. Suzuki S, Hoshi SI, Sekizawa A, et al. Current status of Neisseria gonorrhoeae cervicitis in pregnant women in Japan. *PLoS ONE*. 2019;14(2):e0211595. PubMed: PM30730922

Economic Evaluations

No literature identified.

Appendix — Further Information

Previous CADTH Report

4. Screening for Chlamydia trachomatis and Neisseria gonorrhoeae during pregnancy: a health technology assessment. *(CADTH Health technology assessment)*. Ottawa (ON): CADTH; 2018: https://cadth.ca/screening-chlamydia-trachomatis-and-neisseria-gonorrhoeae-during-pregnancy-health-technology. Accessed 2020 Jun 26.

Systematic Review – Alternative Outcome

5. Azami M, Badfar GH, Mansouri A, et al. Prevalence of Chlamydia trachomatis in pregnant Iranian women: a systematic review and meta-analysis. *Int J Fertil Steril*. 2018;12(3):191-199.
PubMed: PM29935063

Non-Randomized Studies

Alternative Comparator

6. Bergquist EP, Trolard A, Kuhlmann AS, et al. Undertreatment of chlamydia and gonorrhea among pregnant women in the emergency department. *Int J STD AIDS*. 2020;31(2):166-173.
PubMed: PM31865863

Alternative Outcome

7. Cho T, Aoki S, Saigusa Y, et al. Risk Factors for Chlamydia trachomatis infection and preterm birth in pregnant Japanese women: does chlamydial infection cause preterm birth? *Jpn J Infect Dis*. 2020;73(3):210-213.
PubMed: PM32009052

No Comparator

8. Medina-Marino A, Mudau M, Kojima N, et al. Persistent Chlamydia trachomatis, Neisseria gonorrhoeae or Trichomonas vaginalis positivity after treatment among human immunodeficiency virus-infected pregnant women, South Africa. *Int J STD AIDS*. 2020;31(4):294-302.
PubMed: PM32089090

9. Morikawa E, Mudau M, Olivier D, et al. Acceptability and feasibility of integrating point-of-care diagnostic testing of sexually transmitted infections into a South African antenatal care program for HIV-infected pregnant women. *Infect Dis Obstet Gynecol*. 2018;2018:3946862.
PubMed: PM29861622

10. Pourabbas B, Rezaei Z, Mardaneh J, Shahian M, Alborzi A. Prevalence of Chlamydia trachomatis and Neisseria gonorrhoeae infections among pregnant women and eye colonization of their neonates at birth time, Shiraz, Southern Iran. *BMC Infect Dis*. 2018;18(1):477.
PubMed: PM30249196

11. Wynn A, Ramogola-Masire D, Gaolebale P, et al. Prevalence and treatment outcomes of routine Chlamydia trachomatis, Neisseria gonorrhoeae and Trichomonas vaginalis testing during antenatal care, Gaborone, Botswana. *Sex Transm Infect*. 2018;94(3):230-235.
PubMed: PM29097418

Testing Method Not Specified

12. Goggins ER, Chamberlain AT, Kim TG, Young MR, Jamieson DJ, Haddad LB. Patterns of screening, infection, and treatment of Chlamydia trachomatis and Neisseria gonorrhea in pregnancy. *Obstet Gynecol*. 2020;135(4):799-807.
PubMed: PM32168225

13. Warr AJ, Pintye J, Kinuthia J, et al. Sexually transmitted infections during pregnancy and subsequent risk of stillbirth and infant mortality in Kenya: a prospective study. *Sex Transm Infect*. 2019;95(1):60-66.
PubMed: PM30228109

14. Shannon CL, Bristow C, Hoff N, et al. Acceptability and feasibility of rapid chlamydial, gonococcal, and trichomonal screening and treatment in pregnant women in 6 low- to middle-income countries. *Sex Transm Dis*. 2018;45(10):673-676.
PubMed: PM29528996

Review Article

15. Lochner HJ 3rd, Maraqa NF. Sexually transmitted infections in pregnant women: integrating screening and treatment into prenatal care. *Paediatr Drugs*. 2018;20(6):501-509.
PubMed: PM30128814