Canadian Task Force
on Preventive Health Care

Guideline on screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Putting Prevention into Practice

Use of slide deck

- These slides are **public** after guideline release to help with dissemination, uptake and implementation into primary care practice
- Some or all of the slides may be used in educational contexts

Chlamydia and gonorrhea screening working group

Task Force members
- Ainsley Moore
- Brenda Wilson
- Donna Reynolds
- Guylène Thériault
- Brett Thombs
- John Riva

Task Force spokespersons
- Ainsley Moore
- Brenda Wilson
- Donna Reynolds
- Guylène Thériault

External Support

Public Health Agency of Canada
- Greg Traversy
- Melissa Subnath
- Elizabeth Rolland-Harris

Evidence Review and Synthesis Centre
- Alberta Research Centre for Health Evidence (ARCHE) (Jennifer Pillay, Aireen Wingert, Tara MacGregor, Michelle Gates, Ben Vandermeer, Lisa Hartling)

Content experts
- Jo-Anne Dillon
- Ameeta Singh
- Tom Wong
- Anne Burchell

Overview of webinar

- **Presentation**
  - Background
  - Methods
  - Recommendation
  - Results
  - Rationale for recommendation
  - Knowledge gaps and next steps
  - Conclusions
- **Questions and answers**

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

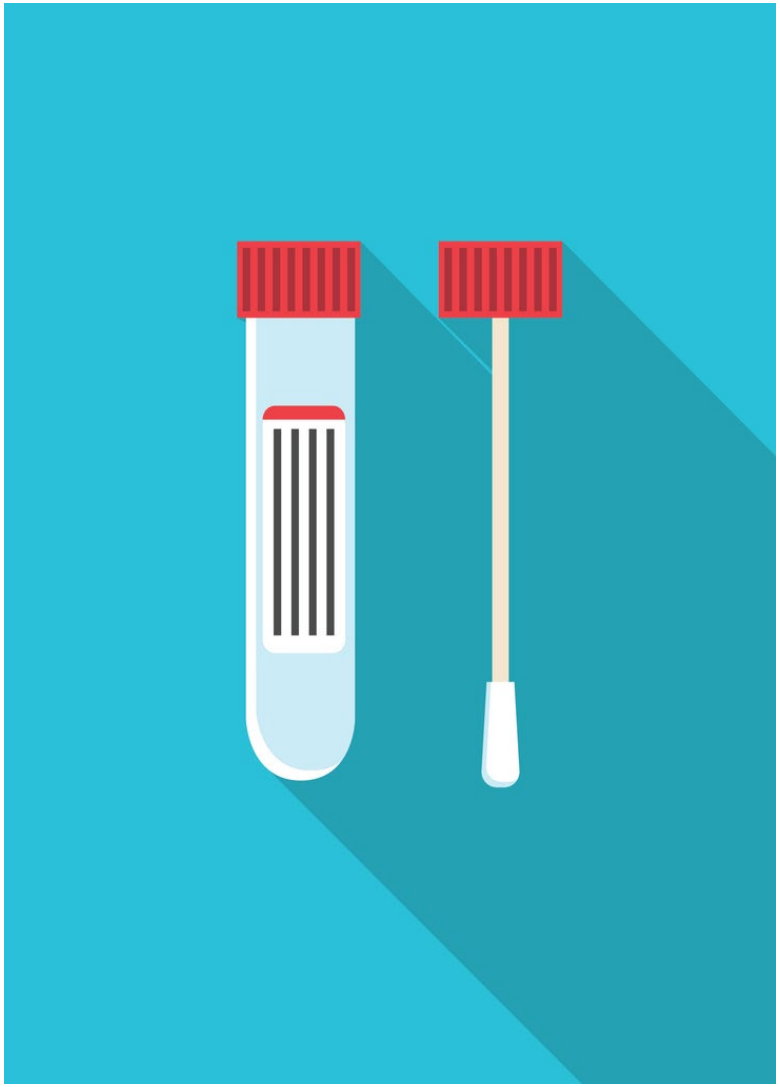
Background

Chlamydia (CT) and gonorrhea (NG) in Canada

- Most commonly reported sexually transmitted bacterial infections (STIs) with annual reported cases increasing since 2000
- 2018 reported rates in 15-29 year-olds
  - ✓ 1.0-1.9% for CT
  - ✓ 0.2-0.3% for NG
- Rates in people over 30
  - ✓ <0.5% for CT
  - ✓ <0.2% for NG

CT and NG in Canada

- Both infections are commonly asymptomatic
- True rates for CT could be as high as **5-7%** in 15-29 year-olds due to for under reporting

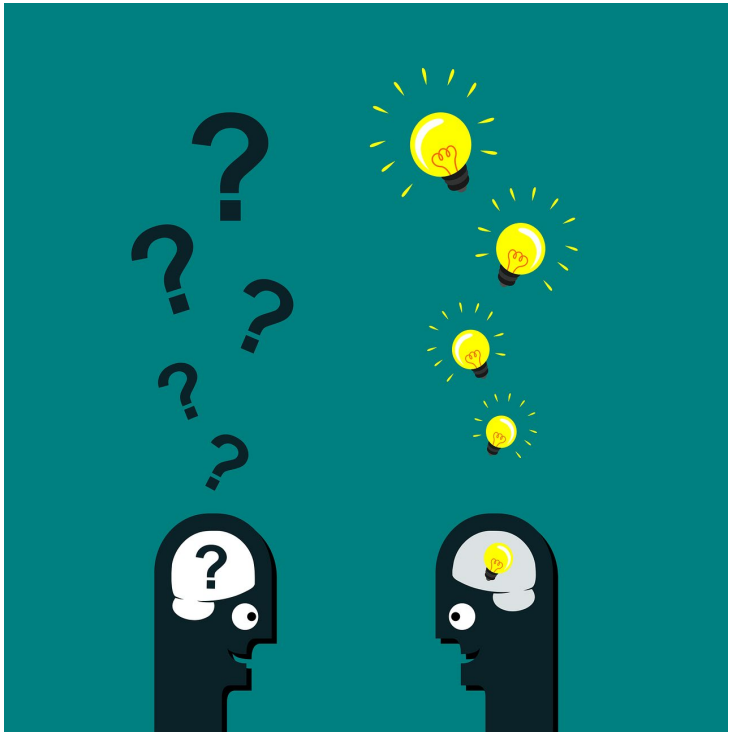


Consequences of untreated CT & NG

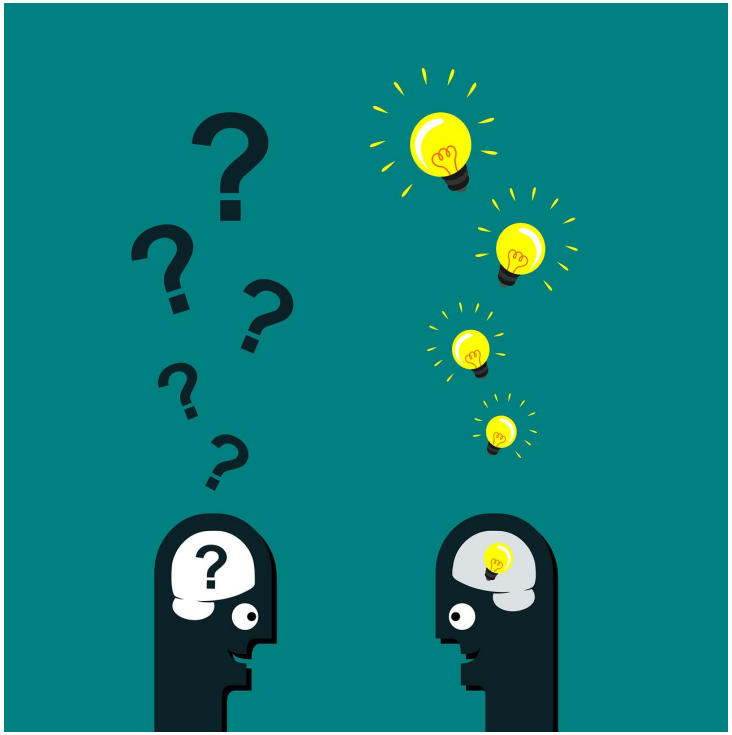
Sex	Outcome	Likelihood
Female	Cervicitis	10-20%
	Pelvic Inflammatory Disease	10-16% (higher for NG)
	Infertility	Up to 5%
	Chronic pelvic pain	3-8%
	Ectopic pregnancy	Up to 2%
Male	Epididymitis	Up to 7%
	Infertility	Very rarely
Both	Urethritis	3-4%
	Pharyngitis	Uncertain
	Proctitis	
	Reactive arthritis (<6 months)	1-4%
	Disseminated gonococcal infection	<1%

Guideline rationale - screening

- Screening sexually active individuals for CT and NG could reduce complications and transmission
- Screening will identify more infections, given high rate of asymptomatic infection (versus testing based on symptoms)



Guideline rationale – updated guidance



- New Canadian guidance needed
  - Current evidence on the potential harms, benefits
  - Patient values and preferences of screening for CT and NG
- **2010** - Public Health Agency of Canada last formal update

Guideline scope

Target Population

- Sexually active individuals under 30 not seeking care for a possible STI
  - not known to belong to a high-risk group

Not covered by this guideline

- Individuals KNOWN by the HCP to have high-risk behaviours
- Those seeking care for STI symptoms
- Pregnant individuals

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Methods

Canadian Task Force on Preventive Health Care

- Independent body of 15 clinicians and methodologists

- **Mandate**:
  - Develop evidence-based clinical practice guidelines to support primary care providers in the delivery preventive healthcare
  - Ensure dissemination, uptake and implementation of guidelines

Evidence Review and Synthesis Centres (ERSC)

- Independent systematic review (SR) of the literature based on the working group's analytical framework
- Present evidence with GRADE tables to inform Task Force guidelines
- Participate in working group and Task Force meetings (non-voting)

Task Force Guideline Development Process

Canadian Task Force on Preventive Health Care

Task Force

15 primary care and prevention experts from across Canada

1. Topic Selection
2. Evidence Synthesis
3. Guideline Development
4. Dissemination

Patients and Public

Supported by:
Global Health and Guidelines Division (PHAC)
&
Evidence Review and Synthesis Centres

With input from:

Clinical Stakeholders
- Health Professional Associations
- College of Family Physicians of Canada
- Peer Reviewers
- Clinical Experts
- Specialty Physicians
- Allied Health Care
- Program Developers

External Stakeholders
- Government
- Non-governmental organizations
- Academic Institutions
- Policymakers

Internal Stakeholders
- Task Force Staff
- Knowledge Translation Program St. Michael's Hospital
- Clinical Prevention Leaders
- Fellows

Patients & Public
- Task Force Public Advisors Network (TF-PAN)
- Canadian Public

Task Force external review process

- **Internal review process involving**:
  - ✓ Guideline working group and other Task Force members
- **External stakeholder review undertaken at key stages**:
  - ✓ Protocol, systematic review(s) and guideline
- **External stakeholder reviewer groups:**
  - ✓ Generalist and disease-specific stakeholders
  - ✓ Academic peer reviewers
- **CMAJ** undertakes an independent peer review process to review guidelines before accepting for publication

GRADE - rating evidence and grading recommendations

1. Certainty of Evidence

Certainty that the available evidence **correctly reflects the true effect**

High, Moderate, Low, Very Low

2. Strength of Recommendation

Certainty of **supporting evidence**

- Balance between **desirable** and **undesirable**
- Patient **values** and **preferences**
- **Wise use of Resources**

Strong, Conditional

Screening effectiveness systematic review

1: Screening for Chlamydia and/or Gonorrhea in Primary Health Care: Systematic Reviews on Effectiveness and Patient Preferences.

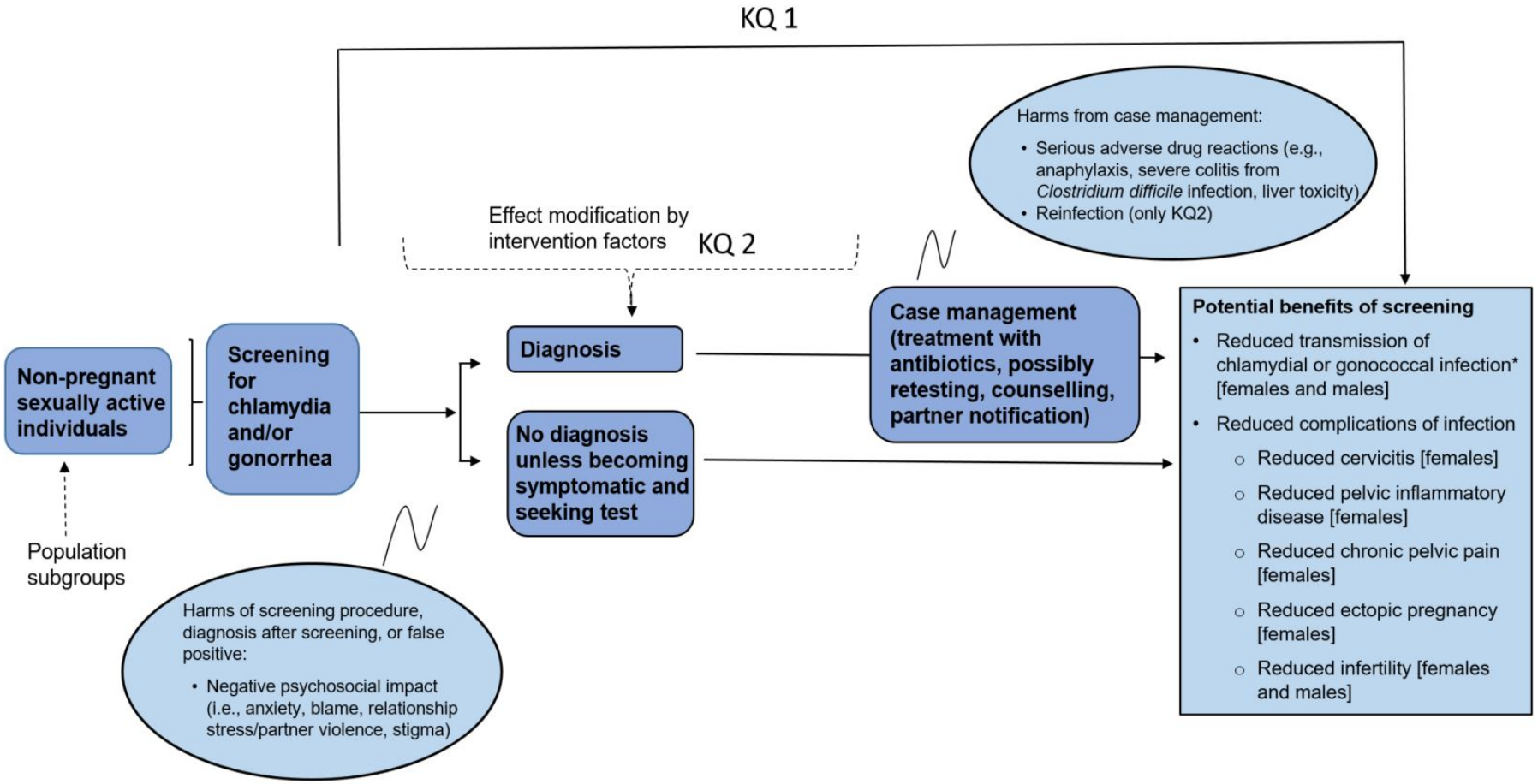
Pillay J, Wingert A, MacGregor T, Gates M, Vandermeer B, Hartling L. Systematic Reviews. Accepted for publication.

- Review will be published in *Systematic Reviews* https://www.biomedcentral.com/collections/Canadian-task-force-preventive-healthcare-evidence-reviews

- All reviews available on the Task Force website: www.canadiantaskforce.ca

Canadian Task Force on Preventive Health Care

Analytical framework



Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Recommendation

Recommendation

- We **recommend opportunistic screening** of sexually active individuals under 30 years of age who are not known to belong to a high-risk group, annually, for chlamydia and gonorrhea at primary care visits, using a self- or clinician-collected sample

  (*Conditional recommendation; very low-certainty evidence)*

✓ Providers are advised to refer to relevant national, provincial, or local guidance for screening of individuals known to belong to **specific high-risk groups**

Implementation:

- Clinicians in primary care settings are advised to:
  - ✓ **Identify** individuals eligible for screening (sexually active individuals under 30 years of age), not seeking care for a possible STI
  - ✓ **Offer** CT and NG screening opportunistically
  - ✓ **Carry out** informed consent, address privacy, reporting of positive test results to local public health offices and potential partner notification

Implementation:

- Those at high risk of CT and NG infection may not always self-identify or be easily identified.
- This routine offer of screening applies to **all sexually active individuals** without clinician knowledge of high risk behaviours.
- **Shame, embarrassment and stigma** could prevent patients from seeking screening and treatment. Routinely offering screening may be a way to reduce STI testing stigma.
- It also **requires sensitivity to stigmatization** and fear of social disapproval, especially regarding gender, culture, behaviour and other vulnerabilities.

Implementation:

- Annual screening may be appropriate for **general risk** individuals (optimal interval unknown)
- Minimally invasive sample collection methods may improve acceptability and uptake
- Clinician-collected swabs are likely acceptable and feasible during certain encounters (e.g. Pap testing)
- Consider pharyngeal and rectal swabs as clinically warranted
- For STI testing, treatment, reporting and management of actual or suspected child sexual abuse, consult local, provincial/territorial authorities (public health offices, child protection, pediatricians and clinical experts) as available and appropriate

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Results

Available Evidence: CT/NG screening benefits

- All studies on benefits of screening provided indirect evidence (i.e., low applicability) on how and to whom screening would be offered in Canadian primary care
  - *Offer to screen, regardless of uptake*
    - 4 RCTs offered screening by mailed invitation or public education and screening encouragement rather than via in-person discussion, and
    - 1 cluster RCT provided clinic-level interventions (packages) rather than direct clinician engagement, yielding low participation and offers of screening
  - *Acceptors of screening*
    - 2 RCTs and 1 CCT evaluated only those accepting of screening (acceptors of screening)
  - *Offer to screen, pre-selected individuals interested in screening*
    - 1 trial evaluated an offer to screen among those pre-selected for an interest in screening (offer to screen, pre-selected)

Benefits of screening

- **Pelvic inflammatory disease** *(PID)*
  - *Offer to screen, regardless of uptake*
    - 2 RCTs (n = 141,362) very low-certainty evidence for little to no difference in PID rate among females aged 16-29 over 1 to 3 years using an annual offer of CT screening via self-collected vaginal samples (0.3 more in 1000 [95% CI 7.6 fewer to 11 more])
  - *Offer to screen, pre-selected individuals interested in screening*
    - 1 RCT (n= 2,607) among females aged 18-34 (81% under age 24) found low-certainty evidence that offering a single CT screening via clinician-collected cervical swabs may reduce PID (15.4 fewer per 1,000 [95% CI 3.0 to 21.3 fewer], NNS= 65 [95% CI 47 to 333])
  - *Acceptors of screening*
    - 2 RCTs and 1 CCT (n = 30,652) found low-certainty evidence that females aged 15-29 who complete a single CT screen over 12-18 months via self-collected vaginal or urine samples may have a reduced risk for PID over 1 year (5.7 fewer per 1000 [95% CI 10.8 fewer to 1.1 more])

Benefits of screening

- **Ectopic pregnancy**
  - *Offer to screen, regardless of uptake*
    - 1 RCT (n = 15,459), very low-certainty evidence for little to no difference in ectopic pregnancy rates for females aged 21 to 24 over 9 years from a single offer of CT screening via self-collected vaginal samples (0.2 more in 1000 [95% CI 2.2 fewer to 3.9 more])
- **Infertility**
  - *Offer to screen, regardless of uptake*
    - 1 RCT (n = 15,459), very uncertain effects on infertility from CT screening
- **Transmission**
  - *Offer to screen, regardless of uptake*
    - 3 RCTs (n = 41,709), low-certainty evidence for little to no difference in CT transmission for individuals aged 15-29 years over 1 to 3 years from a single offer of CT screening via self-collected vaginal or urine samples (5.4 fewer per 1000 [95% CI 21.0 fewer to 12.6 more)

Benefits of screening

- **Cervicitis, chronic pelvic pain, male infertility**
  - No data available for CT screening

- No studies available effects of NG screening for outcomes of interest general risk populations

Harms of screening

11 studies identified on harms of screening

- 1 RCT (n = 37,543 tested; n = 4,574 diagnosed, n= ?? treated)
- Reported no adverse events from antibiotic treatment for chlamydia (very low-certainty evidence).

Harms of screening

- 10 cohort studies reported on a variety of psychosocial harms of screening:
  - Small to moderate proportion of individuals screened impacted (50-400 per 1,000)
  - May cause feelings of stigmatization (e.g., guilt, embarrassment, social disapproval) or anxiety about future infertility, sexuality, or risk of infection
  - Low- or very low-certainty evidence
- The number of individuals affected in the entire eligible screening population is likely smaller
- The exact duration and severity of these symptoms is unknown

Effectiveness of different screening strategies

- Home vs. clinic sampling studies with limited applicability to primary care

- One RCT in outreach setting with mail or pick-up home testing kit vs. an invitation for clinic testing found very uncertain effect on transmission (1 RCT; n= 205)

- Treatment rates (surrogate for transmission) examined in studies of outreach via community promotion and websites, health clinic and community promotion, and postal invitations from GP clinics were also very uncertain (3 RCTs; n=200 to n=2036)

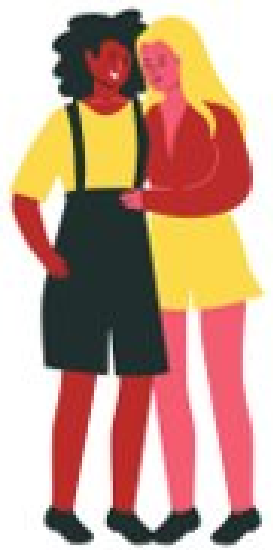
Patient values and preferences: Screening for chlamydia and gonorrhea

Patient values and preferences: Systematic Review + Patient Engagement

- **Systematic review: 14 Studies:**
  - 4 health utility studies, 10 surveys/ qualitative
- **Health state utility value studies**
  - Avoidance of infertility and chronic pelvic pain may be more important to females than ectopic pregnancy, PID, or cervicitis (low-to-moderate certainty)
  - Studies of health utility states only considered potential benefits of screening

Patient values and preferences: Systematic Review findings

- **Survey and qualitative studies**
  - Individuals considering screening (7 studies; n = 777) or undergoing screening (3 studies; n = 77) placed greater importance on potential reproductive health and transmission benefits over harms: anxiety or stigma of screening (very low-certainty evidence)
  - No studies considered patient values related to adverse events from medication



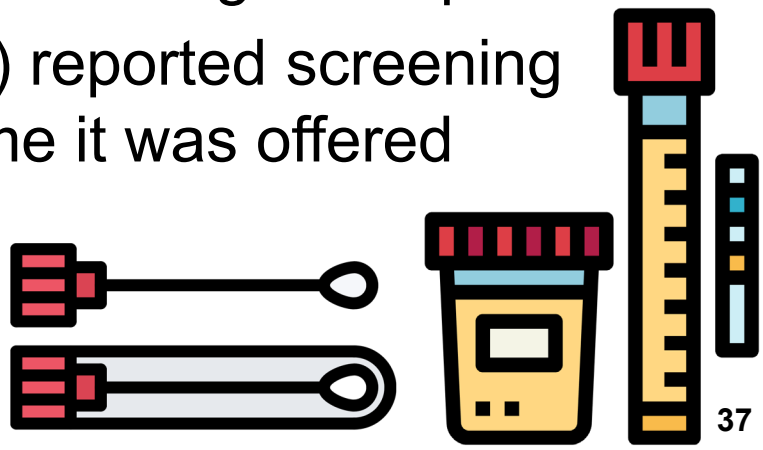
Patient values and preferences: Patient Engagement

(Knowledge Translation Team, St Michael's Hospital, Toronto,ON)

- Canadians 24-38 yrs :
  - **Protocol development**: 16 sexually active participants rated importance of screening outcomes (harms/benefits)
  - **Post-evidence review of screening effectiveness**: 17 different sexually active participants rated the importance of screening outcomes
- **Results**: Potential benefits likely prioritized (all rated critical or important) over harms (all rated important)
- Strong preference for screening; even when presented with the effectiveness evidence and its uncertainty

Feasibility and acceptability

- The Task Force judged screening for CT/NG likely feasible and acceptable to wide range of stakeholders
  - Screening part of usual primary care practice
  - Acceptable non-invasive sampling and effective treatments available
  - Current Canadian clinical and laboratory practice combines testing for CT and NG single sample
  - One RCT (effectiveness SR) reported screening was accepted 80% of the time it was offered



Health equity

- Routinely offering screening to all sexually active individuals could improve health equity by:
  - Normalizing screening
  - Reducing important screening barriers:
    - Fear of disapproval or discrimination and feelings of stigmatization
- Females carry most of the health burden of infection, so also screening males (a source of infection for females) may improve health equity for females

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Rationale for recommendation

Rationale (Benefits)

- **Major uncertainty:** Indirectness of available evidence (low applicability) to Canadian opportunistic screening offered by primary care practitioners
- **PID may be reduced** for those interested (when offered) and for those accepting and undergoing CT screening (low certainty)
- **PID may not be reduced** when CT screening is offered via mailed invitation or clinic-level packages encouraging clinician screening (very low certainty)
- **True benefit of chlamydia screening** for Canadian primary care practitioners likely lies within this observed range of screening effectiveness (Task Fore Judgment)

Rationale (Harms)

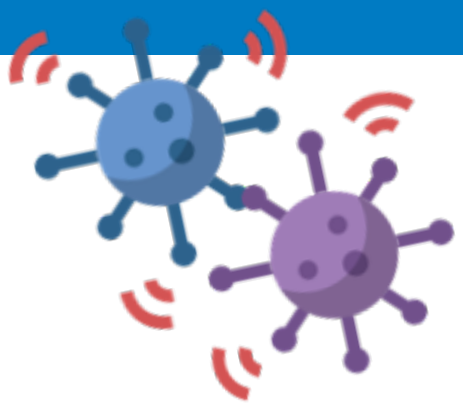
- The Task Force placed a lower priority on:
  - Very uncertain evidence of no serious adverse effects of antibiotic treatment for chlamydia and gonorrhea
  - Uncertain evidence for psychosocial harms of screening (anxiety, shame and stigma) likely experienced by a small proportion of those eligible for screening

Rationale (Patient Values and Preferences)

- Evidence suggests most Canadians also prioritize benefits over the harms of screening for chlamydia and gonorrhea

- Even when provided with evidence of effectiveness and its uncertainty

Rationale for:



- **< 30 years of age**
  - Most evidence <30 years
  - Canadian rates CT/NG increasing 25-29 years
    (similar to those 15-19 years)
  - Rates 30-39 yrs less than half 15-19 and 24-29 years
- **To also screen sexually active males (sexual network)**
  - Aim: reduce CT/NG infection and negative consequences in females, (although no available studies to inform)
- **To also screen for gonorrhea**
  - Many cases asymptomatic
  - Up to 40% of those with gonorrhea may have chlamydia (concurrent)
  - Current Canadian clinical and laboratory practice combines gonorrhea with chlamydia single sample

Rationale for recommendation: *conditional in favour*

- ✓ Recommendation is ***conditional*** due to low certainty evidence, and does not imply shared decision-making
- ✓ Desirable effects probably outweigh the undesirable effects ***(favourable)***
- ✓ ***Conditional recommendation in favour of screening***

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Knowledge gaps and next steps

Knowledge gaps

- Opportunistic screening trials
  - No trials consistent with how screening for chlamydia and gonorrhea is offered opportunistically to patients in Canadian primary care

- Screening in men
  - Limited evidence on health outcomes of screening for chlamydia or gonorrhea in men or their female partners (considering sexual networks)

Knowledge gaps

- Screening in older age groups
  - Almost no studies included participants over age 30 (may be due to low prevalence in this population)

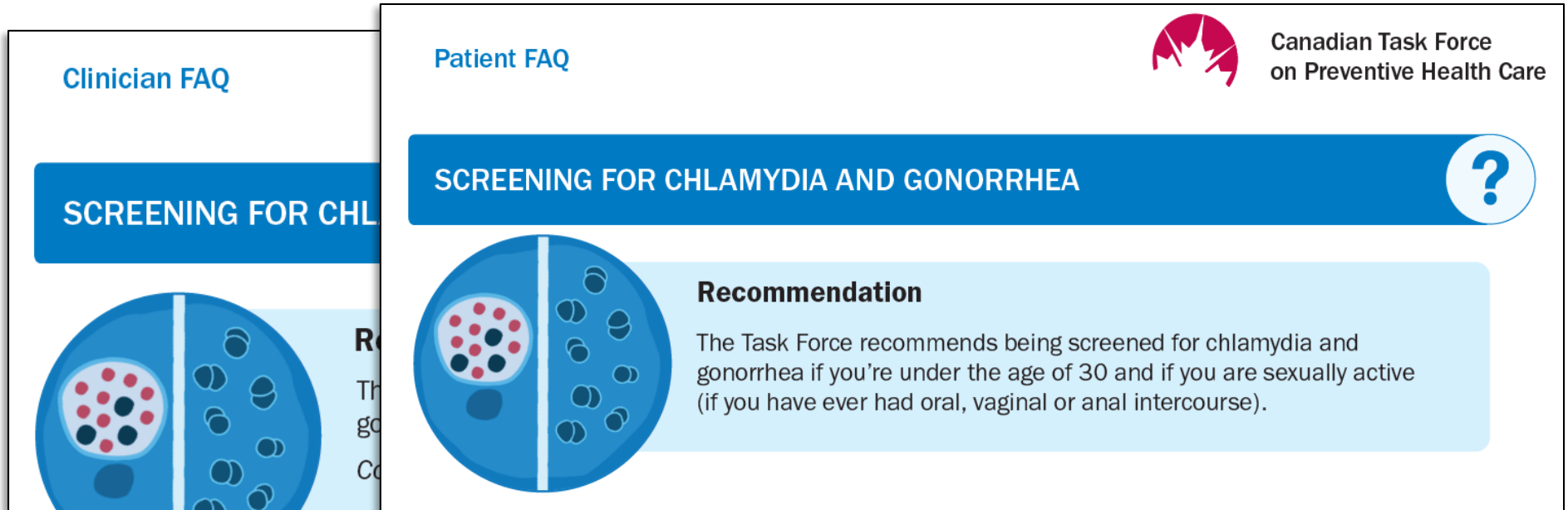
- Screening strategies
  - Studies comparing different screening intervals or screening strategies (e.g., self vs clinician sampling) on health outcomes

Knowledge translation (KT) tools

Knowledge translation (KT) tools

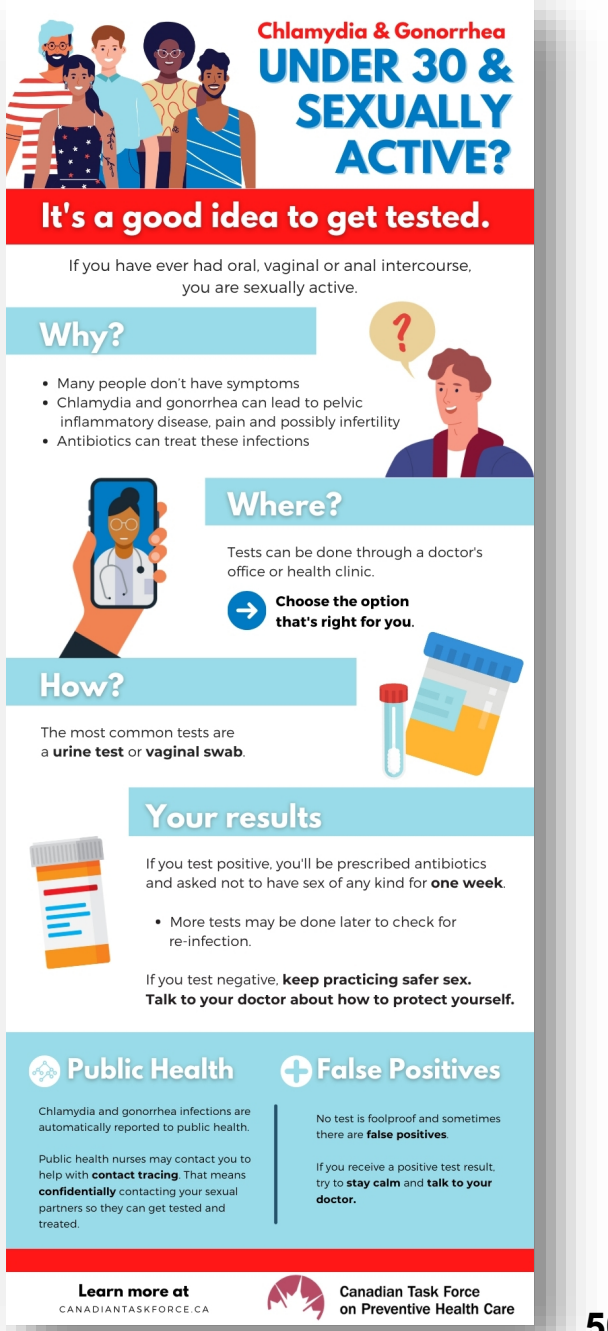
- KT tools to **help clinicians and individuals understand** the CT/NG screening guideline

- After public release, tools will be **freely available** for download in both **French** and **English** at: http://canadiantaskforce.ca



Communications strategy

- Patient infographic to help them understand the screening for CT/NG
- Patient facing web page, lay summaries
- Social media campaign: Instagram and Twitter
- Animated videos
- CMAJ press release
- Partner communications



Canadian Task Force on Preventive Health Care

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Conclusions

Conclusions

- **Opportunistic screening** for CT/NG of sexually active individuals <30 years of age confers uncertain but potentially important benefits, particularly for PID in females
- Psychosocial harms of screening are anticipated to be relatively mild, and **patients likely prioritize potential screening benefits** over harms
- The Task Force **conditionally recommends in favour** of screening sexually active individuals <30 not known to belong to a high risk group for chlamydia and gonorrhea at primary care visits

More information

For the guideline, related clinician and patient tools, visit :

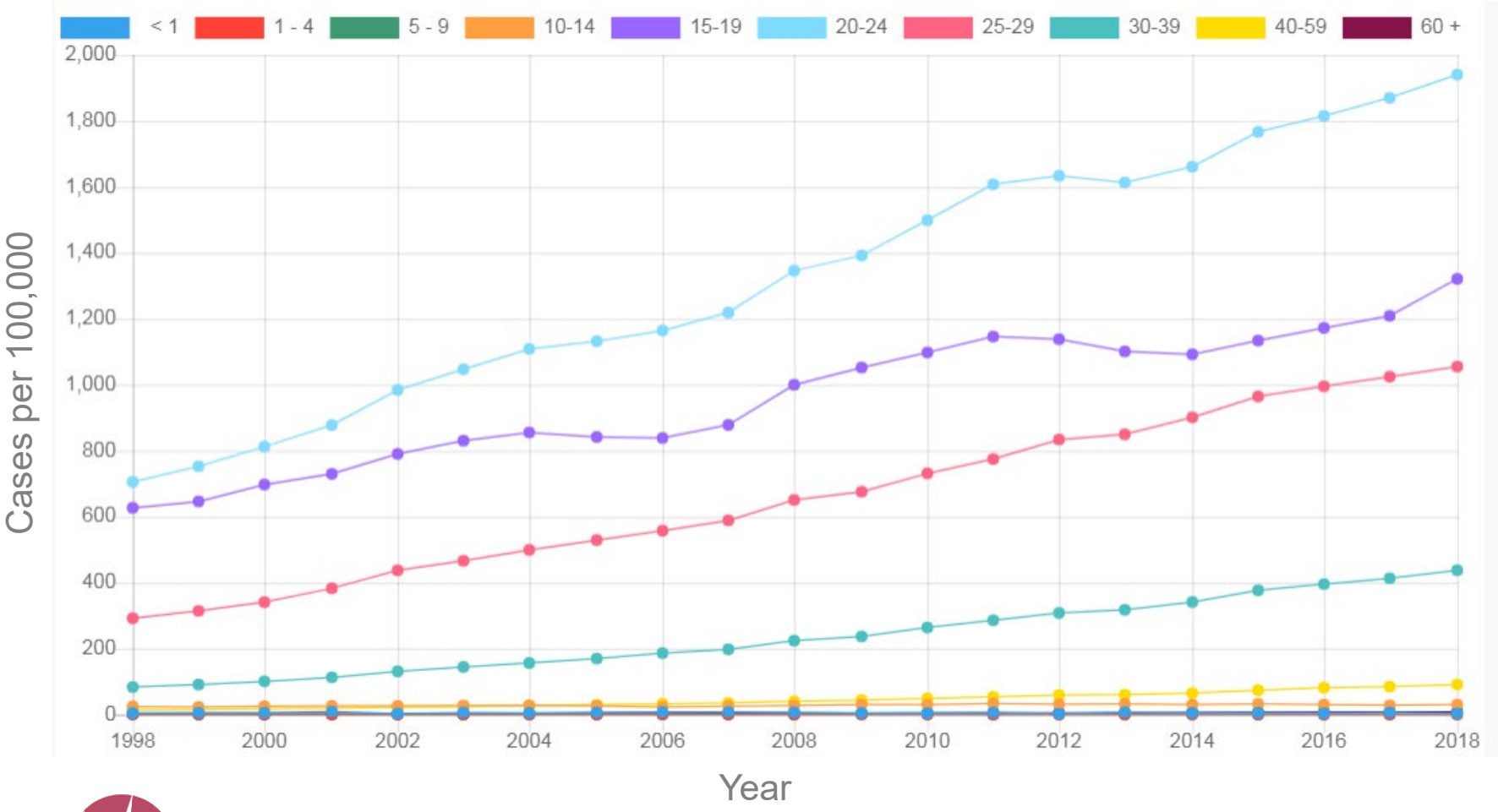
- http://canadiantaskforce.ca

Questions and answers

Thank you

Reported CT rates for different age groups in Canada over time

CT, all sexes (including unknown), 1998-2018

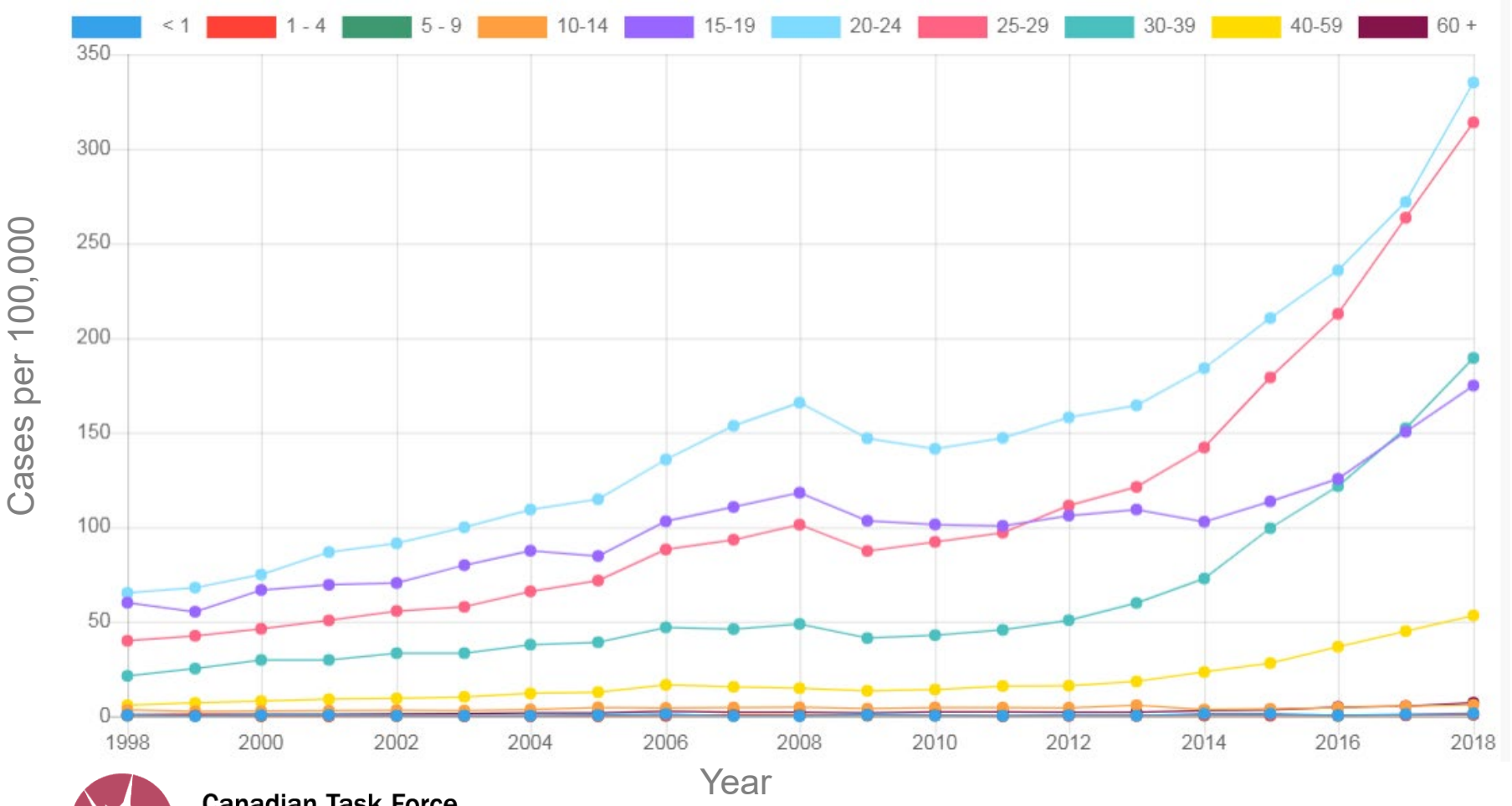


Canadian Task Force on Preventive Health Care

Data source: Canadian Notifiable Disease Surveillance System (CNDSS)

Reported NG rates for different age groups in Canada over time

NG, all sexes (including unknown), 1998-2018



Canadian Task Force on Preventive Health Care

Data source: Canadian Notifiable Disease Surveillance System (CNDSS)

The "GRADE" system:

Grading of
Recommendations
Assessment
Development &
Evaluation

GRADE process - define and collect

- **Define** questions re: populations, alternative management strategies and patient-important outcomes
- **Characterise** outcomes as critical or important to developing recommendations
- Systematic **search** for relevant studies
- **Estimate** effect of intervention on each outcome based on pre-defined criteria for eligible studies
- **Assess** certainty of evidence associated with effect estimate

GRADE – rating certainty of evidence

GRADE Approach:

- Hierarchy of evidence certainty: RCTs > Observational studies

- Rating of certainty by outcome is reduced based on:
  - Study limitations (Risk of Bias)
  - Imprecision
  - Inconsistency of results
  - Indirectness of evidence
  - Publication bias likely

Direct vs. indirect evidence

- **Direct evidence** –studies examining the effects of **screening vs. no screening** among sexually active individuals

- When direct evidence is **unavailable**, the Task Force may also examine indirect evidence

- **Indirect evidence** is less certain:
  - ✓ **linked** to the outcome of interest (e.g. transmission may be impacted by rates of treatment) ***or***
  - ✓ **related** to the screening intervention of interest (e.g. a mailed invitation to screen is indirect to an offer to screening by PCP)

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Evidence tables

PID data

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)			Certainty of the evidence (GRADE)
		Without screening*†	With a single CT screen	Difference	
Offer to screen – All eligible (based on age and sexual activity), regardless of uptake					
All-cause PID (Eligible participants) **Follow-up: 12-36 mos** **141,362 16-29 yrs (2 RCTs)**	1.01 (0.72 to 1.40)	Median control event rate (5 per 1000)			⊕⊕⊖⊖- ⊕⊕⊕⊖ LOW-TO-MODERATE (Median control event rate with low PID prevalence) due to indirectness ⊕⊖⊖⊖ VERY LOW (General- and high-risk population estimates) due to indirectness and imprecision
		5 per 1000	5.1 per 1000 (2.9 to 6.5)	**0.1 more in 1000 (2.1 fewer to 1.5 more)**	
		General-risk population†			
		27 per 1000	27.3 per 1000 (19.4 to 38)	**0.3 more in 1000 (7.6 fewer to 11 more)**	
		High-risk population‡			
		47 per 1000	47.5 per 1000 (33.9 to 65.7)	**0.5 more in 1000 (13.1 fewer to 18.7 more)**	

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)			Certainty of the evidence (GRADE)
		Without screening*†	With a single CT screen	Difference	
Scholes et al. – Offer to screen, selected participants					
All-cause PID (Eligible selected participants) **Follow-up: 12 mos** **2,607 18-34 yrs (1 RCT)**	0.43 (0.21 to 0.89)	Control event rate (21 per 1000)			⊕⊕⊖⊖-⊕⊕⊕⊖ LOW-TO-MODERATE (General risk population) due to some risk of bias and serious imprecision ⊕⊕⊖⊖ LOW (High-risk populations) due to some risk of bias and indirectness, and serious imprecision
		21 per 1000	9.2 per 1000 (4.7 to 18.7)	**11.8 fewer per 1000 (2.3 to 16.3 fewer)**	
		General-risk population†			
		27 per 1000	11.6 per 1000 (5.7 to 24)	**15.4 fewer per 1000 (3 to 21.3 fewer)**	
		High-risk population‡			
		47 per 1000	20.2 per 1000 (9.9 to 41.8)	**26.8 fewer per 1000 (5.2 to 37.1 fewer)**	

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)*			Certainty of the evidence (GRADE)
		Without screening	With a single CT screen	Difference	
Acceptors of screening					
All-cause PID **(Trials)** **Follow-up: 12-18 mos** **30,652 (2 RCTs, 1 CCT)**	0.79 (0.60 to 1.04)	Median control event rate (18 per 1000)			⊕⊕⊖⊖ LOW (General-risk populations) due to indirectness and imprecision ⊕⊖⊖⊖-⊕⊕⊖⊖ VERY LOW-TO-LOW (High-risk populations) due to (more) indirectness, and imprecision
		18 per 1000	14.3 per 1000 (10.9 to 18.7)	3.7 fewer per 1000 (7.1 fewer to 0.7 more)	
		General-risk population (27 per 1000)†			
		27 per 1000	21.3 per 1000 (16.2 to 28.1)	5.7 fewer per 1000 (10.8 fewer to 1.1 more)	
		High-risk population (47 per 1000)‡			
		47 per 1000	37.1 per 1000 (28.2 to 48.9)	9.9 fewer per 1000 (18.8 fewer to 1.9 more)	

Ectopic pregnancy data

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)*			Certainty of the evidence (GRADE)
		Without screening	With a single CT screen	Difference	
Offer to screen - All eligible participants (based on age and sexual activity), regardless of uptake					
Ectopic pregnancy (general risk) **Follow-up: 9 yrs** **15,459 (1 RCT)**	RR 1.03 (0.67 to 1.60)	6.5 per 1000	6.35 per 1000 (4.4 to 10.5)	0.20 more per 1000 (2.2 fewer to 3.9 more)	⨁⊖⊖⊖ VERY LOW for concerns about lack of consistency and indirectness and serious concerns about imprecision

Infertility data

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)*			Certainty of the evidence (GRADE)
		Without screening	With a single CT screen	Difference	
Offer to screen – All eligible participants (based on age and sexual activity), regardless of uptake					
Infertility (general-risk females) **Follow-up: 9 years** **15,459 (1 RCT)**	RR 1.15 (0.94 to 1.40)	28.1 per 1000	32.3 per 1000 (26.4 to 39.3)	4.2 more per 1000 (1.7 fewer to 11.2 more)	⨁⊖⊖⊖ VERY LOW due to lack of consistency, indirectness and imprecision

Transmission data

Outcome No. participants (studies)	Relative effect (95% CI)	Anticipated absolute effects (95% CI)*			Certainty of the evidence (GRADE)
		Without screening	With a single CT screen	Difference	
Offer to screen – All eligible participants (based on age and sexual activity), regardless of uptake					
Transmission: estimated population prevalence of CT (Both sexes; general-risk population) **Follow-up: 12-36 mos** **41,709 (3 cluster RCTs)**	RR: 0.91 (0.65 to1.21)	33 per 1000	30 per 1000 (21.5 to 39.93)	3 fewer per 1000 (11.5 fewer to 6.9 more)	⨁⨁◯◯ LOW (0.5% MID) ⨁⨁◯◯-⨁⨁⨁◯ LOW-TO-MODERATE (1% MID)

Screening for chlamydia and gonorrhea in primary care for individuals not known to be at high risk

Other chlamydia and gonorrhea screening recommendations

Other national screening recommendations

Public Health Agency of Canada, 2010

Public Health Agency of Canada | Agence de la santé publique du Canada

- CT:
  - ✓ **Annual screening:**
    - ✓ <25 years
    - ✓ Gay, bisexual, and other men who have sex with men and transgender populations
  - ✓ **Targeted screening:**
    - ✓ based on risk factors ≥ 25 years old

Public Health Ontario, 2018

Public Health Ontario | Santé publique Ontario

- NG:
  - ✓ Offer screening to asymptomatic sexually active individuals with risk factors for NG. In Ontario, key risk factors for NG among those with unprotected sex include:
    - ✓ Sexually active women <25
    - ✓ Sexually active men who have sex with men
    - ✓ Other risk factors as listed in the PHAC guidelines

Other national screening recommendations

Ministère de la santé et des services sociaux du Québec, 2019

Santé et Services sociaux Québec

- CT and NG:
  - ✓ At least annual screening:
    - ✓ Men (depending on region for gonorrhea) and women ≤ 25 who are **sexually active with no other risk factors**
    - ✓ Men and women **with new sexual partners** or more than one concurrent partner since their last test
    - ✓ Individuals who have had **an anonymous partner or 3+ sexual partners** in the last year
    - ✓ Men who have sex with men
    - ✓ Sex workers or their clients
    - ✓ (In some cases) Individuals from a region with **endemic STIs and blood-borne infections**

Other national screening recommendations

US Preventive Services Task Force, 2014

- **Screening for CT and NG** in sexually active women ≤24 yrs and older women at increased risk for infection (**Grade B recommendation)**
- Current evidence is insufficient to assess balance of benefits and harms of screening for CT and NG in men (I statement)

Other national screening recommendations

Public Health England, 2018

- CT:
  - ✓ Offer men and women <25 who have **ever been sexually active, annually** or on change of sexual partner
  - ✓ Offer CT screening across primary care, sexual and reproductive health and genitourinary medicine services

Australasian Sexual Health Alliance, 2018

- Test for CT in the following situations:
  - ✓ <30 years and sexually active
  - ✓ Partner change in the last 12 months
  - ✓ Have had an STI in past 12 months
  - ✓ Have had a sexual partner with an STI
  - ✓ At increased risk of complications of an STI
  - ✓ Signs or symptoms suggestive of CT
  - ✓ Patient requests a sexual health check