**Appendix 1: Benefits of screening for chlamydia among general risk individuals**

Table A1. Benefits of screening for chlamydia among general risk individuals

| Outcome | Approach | Number of studies/ design (n) | Follow-up period | Rate in unscreened individuals | Rate in screened individuals (95% CI) | Absolute difference (95%CI) | Certainty of evidence |
|---|---|---|---|---|---|---|---|
| Pelvic Inflammatory Disease | Offer of screening[a], all eligible | 2 RCTs (5,6) (n=141,362) | 12-36 months | 27.0 per 1000[b] | 27.3 per 1000 (19.4 to 38.0) | 0.30 more in 1000 (7.60 fewer to 11.0 more) | ⊕⊖⊖⊖ VERY LOW [c] |
| | Offer of screening[a], selected individuals | 1 RCT (28) (n=2,607) | 12 months | 27.0 per 1000 [b] | 11.6 per 1000 (5.70 to 24.0) | 15.4 fewer per 1000 (3.00 to 21.30 fewer) | ⊕⊕⊖⊖ LOW [d] |
| | Acceptors of screening | 2 RCTs, 1 CCT (8,25,30) (n=30,652) | 12-18 months | 27.0 per 1000 [b] | 21.3 per 1000 (16.2 to 28.1) | 5.70 fewer per 1000 (10.8 fewer to 1.10 more) | ⊕⊕⊖⊖ LOW [e] |
| Ectopic pregnancy | Offer of screening[a], all eligible | 1 RCT (6) (n=15,459) | 9 years | 6.50 per 1000 | 6.35 per 1000 (4.40 to 10.5) | 0.20 more per 1000 (2.20 fewer to 3.90 more) | ⊕⊖⊖⊖ VERY LOW [f] |
| Infertility (female) | Offer of screening[a], all eligible | 1 RCT (6) (n=15,459) | 9 years | 28.1 per 1000 | 32.3 per 1000 (26.4 to 39.3) | 4.20 more per 1000 (1.70 fewer to 11.2 more) | ⊕⊖⊖⊖ VERY LOW [f] |
| Transmission (population prevalence, both sexes) | Offer of screening[a], all eligible | 3 RCTs (5,24,26) (n=41,709) | 12-36 months | 60.0 per 1000 [b] | 54.6 per 1000 (39.0 to 72.6) | 5.40 fewer per 1000 (21.0 fewer to 12.6 more) | ⊕⊕⊖⊖ LOW [g] |
| Infertility (male) | No data | - | - | - | - | - | - |
| Chronic pelvic pain (≥6 months duration) | No data | - | - | - | - | - | - |
| Cervicitis | No data- | - | - | - | - | - | - |

**Abbreviations:** CI=confidence interval; CCT=controlled clinical trial; CT= chlamydia trachomatis; PID= pelvic inflammatory disease; RCT=randomized controlled trial;

[a] These analyses represent results of studies that examined the effect of offering chlamydia or gonorrhea screening to all eligible individuals, regardless of level of uptake. One study used an offer of screening approach in a pre-selected population of individuals interested in screening (Offer of screening – selected individuals) (1).

[b]The effects without screening assumed that approximately 6% of the female population would have chlamydia (general risk prevalence). For the outcome of PID, it was assumed that about 13% of females with chlamydia will develop PID (0.78% of the total population), and that

approximately 25-30% of all-cause PID is attributed to chlamydia (all cause PID = 3.5 times PID from CT); 0.78% x 3.5 = 2.7% prevalence of PID due to chlamydia in the unscreened group (1).

[c] Serious concerns about indirectness due to lack of PID ascertainment (Andersen used hospital diagnoses and doxycycline prescriptions; Hocking used clinic charts; PID assessed in some ineligible [i.e. not sexually active] individuals), use of usual care (rather than no screening) comparisons which may have underestimated the effects. There was also concern that the use of a mailed offer of screening via home sampling kits was indirect for screening at opportunistic visits in primary care. Serious concerns about imprecision as CI crossed minimally important difference thresholds (2.5 fewer or more; see systematic review and protocol for derivation of thresholds) (1,2).

[d] Some concerns about unclear risk of bias for selection, performance, and detection biases. Only study in analysis for offer of screen to selected populations but findings are similar to those for acceptors of screening and this study had fairly high rates of acceptance to the screening, so no serious concerns about inconsistency. No serious concerns due to indirectness, as although there was use of usual care control group (rather than no screening) that would have undergone some degree of testing in asymptomatic cases, we believe that this would have dampened the effects such the true effect with a no screening control would still surpass the minimally important difference threshold (1,2); outcome ascertainment and applicability of setting is good in this study. Serious concerns about imprecision because while 95% CI indicates benefit, sample size is small for rare outcome (1).

[e] Some risk of bias concerns in Clark (selection bias) and Ostergaard (incomplete outcome data; use of complete case analysis with 47% follow-up) but point estimate quite consistent with those from low risk of bias trial Oakeshott, and Ostergaard contributes very little weight (5%) in analysis so did not rate down. Serious concerns about indirectness due to applicability of settings (outreach) to primary care in all three trials and possibly low ascertainment of PID (Clark used hospital diagnoses only; Ostergaard used self-report). The use of usual care rather than no screening comparators may have dampened the effects, but the true effect with a no screening control would still surpass the minimally important difference threshold (i.e., certainty in an effect greater than the minimally important difference is not reduced) (1,2) so did not rate down for this. Serious concerns about imprecision, since there was an adequate sample size but large portion of 95% CI does not pass minimally important difference threshold (1).

[f] Some concerns about lack of evidence of consistency. Serious concerns about indirectness from poor outcome ascertainment (only hospital diagnoses) and use of usual care comparison group. Serious concern about imprecision because 95% CI of absolute effects crosses thresholds for benefits and harms (1 more or fewer per 1,000) (1).

[g] Some concerns about risk of biasin trials from performance bias and attrition bias, Hodgins and van den Broek were also unclear for detection bias; concerns about indirectness because of the use of usual care (rather than no screening) for the control groups which may have underestimated the effects from screening; imprecision around the finding of little to no difference is serious, with the range of effects indicating possible benefit or harm (i.e., effect greater than minimally important difference of 5 fewer or more per 10,000) (1,2).

**References:**

(1) Pillay J, Wingert A, MacGregor T, Gates M, Vandermeer B, Hartling L. Screening for Chlamydia and/or Gonorrhea in Primary Health Care: Systematic Reviews on Effectiveness and Patient Preferences. Syst Rev Submitted for publication.

(2) Pillay J, Moore A, Rahman P, Lewin G, Reynolds D, Riva J, et al. Screening for chlamydia and/or gonorrhea in primary health care: protocol for systematic review. Syst Rev 2018;7(1):248.