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Screening for STIs at Home or in the Clinic?

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Abstract

Purpose of review—To assess the evidence to support home versus clinic-based screening for sexually transmitted infections.

Recent findings—Home-based screening for sexually transmitted infections has been shown to be a feasible approach for men and women from a variety of settings, including high risk, low income, and resource-poor communities. In recent studies, the testing rate with home-based screening was up to 11 times greater than the testing rate with clinic-based screening. For most individuals, self-collection and testing of urine or vaginal specimens at home was considered to be easy, acceptable, and often preferred over testing at a clinic. There is limited evidence with regard to the cost-effectiveness of home-versus clinic-based screening for sexually transmitted infections. However, a study from the U.S. concluded that home-based screening is cost saving.

Summary—Improvements in screening rates for sexually transmitted infections can be achieved with home-based screening methods. Making low-cost home test kits available may encourage at-risk young individuals with less access to clinic care, who may not otherwise be screened, to self-test for sexually transmitted infections.

Keywords

Sexually transmitted infections; screening; home testing; home-obtained specimen; postal specimen

Introduction

In the United States, chlamydial and gonorrheal infections are a major public health concern as they remain the most common reportable infectious diseases in the country. More than 1.5 million cases of chlamydia and gonorrhea were reported to the Centers for Disease Control and Prevention in 2008[1]. Screening for sexually transmitted infections (STIs) is particularly important since most infections with *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) are asymptomatic and remain undiagnosed or untreated [2, 3]. Major sequelae can result, including pelvic inflammatory disease (PID), tubal infertility, ectopic pregnancy, and chronic pelvic pain in women, and epididymitis in men [4–6].

Home-based screening strategies using self-collected, mail-in specimens are a feasible approach to screen for STIs, and have been implemented in many population-level screening studies in Sweden [7], Denmark [8], the United Kingdom[9, 10], and the Netherlands [11, 12]. Additional evidence suggests that home-based STI tests may be even more acceptable and effective than traditional STI testing at a clinic[8, 13]. This review examines the

published literature from January 2007 to August 2010 for studies comparing home-with clinic-based screening for STIs.

Randomized controlled trials

We identified a total of 7 randomized controlled trials (RCTs) comparing home-versus clinic-based STI screening (Table 1). The literature review included a PubMed/MEDLINE search of the literature from January 2007 to August 2010 (MeSH terms: sexually transmitted diseases; *Chlamydia trachomatis*; chlamydia infections; *Neisseria gonorrhoeae*; mass screening; home care services; self care; self-examination; postal service; specimen handling; and reagent kits, diagnostic) and review of bibliographies of key articles in the medical literature. Of the 7 RCTs, 3 were conducted in the U.S. [14**, 17*, 18] and 2 were conducted in lower-income populations in South Africa and Brazil [19*, 24*]; the remaining 2 studies focused primarily on home-based methods for contact tracing as opposed to STI screening [15, 16], and therefore are not discussed in this review. Of note, we found 7 additional RCTs outside of the review period, including 2 large trials conducted in Denmark [8, 13], a study in Scotland [25], a study examining STI rescreening [26], as well as 2 RCTs centered on partner management and contact tracing [27, 28], and an RCT follow-up study which examined the incidence of PID one year following either home-or clinic-based STI screening [29].

Studies conducted in the United States

The most recent RCT comparing home-with clinic-based STI screening was conducted by Graseck and colleagues in St. Louis, Missouri [14**]. The results of this trial were an extension of their findings in an earlier observational study, described in further detail later in this review [20**]. In this RCT, 558 women using long-acting reversible contraception (LARC) were randomized to STI screening at home or at a clinic, either with their regular healthcare provider or at 1 of 4 family planning clinics. A total of 243 women (44.3%) completed STI screening. However, women were more likely to complete screening when they were randomized to receive a home test kit (56.3%) than when they were invited to screen at a clinic (32.9%, RR 1.7, 95% CI 1.4–2.0). Furthermore, of 122 women who completed a survey regarding testing satisfaction, all women reported use of the vaginal self-swab to be easy, and 70% felt self-collection of vaginal samples was extremely easy. The majority of home-testers (83%) also preferred home STI testing in the future, whereas only 49% of clinic-testers preferred to be tested at a clinic ($p < 0.001$). These results suggest that, compared to traditional screening at a clinic, home-based STI screening is a more effective and favored screening approach among women. Home screening may encourage more women to complete testing, particularly for LARC method users who may be less likely to visit a clinic compared to those using other contraceptive methods.

In Seattle, Washington, a population-based, randomized STI screening trial was conducted to compare the effectiveness of 3 different outreach methods to improve the rates of chlamydia screening in men [17*]. Between November 2001 and October 2002, 8,820 men ages 21–25 years from a managed care plan were randomized to 1 of 3 different screening strategies: 1) an invitation letter offering CT screening in addition to a card that could be mailed back to request a home test kit; 2) an invitation letter in addition to direct mailing of a home test kit; or 3) usual clinical care (control group) where STI testing was provided only if the participant presented to one of the managed care clinics. A reminder letter was sent to the men in the 2 intervention arms after 3–4 weeks had elapsed. At 4 months post-randomization, significantly more men completed CT testing when they were sent an invitation letter in addition to either a test-request card (3.6%, relative risk [RR] 5.6, 95% CI 3.6–7.8) or direct mailing of a home test kit (7.8%, RR 11.1, 95% CI 7.3–16.9) compared to usual clinical care (0.8%). However, more men completed CT testing when they received a

home test kit directly than when they were asked to mail back a test-request card (RR 2.3, 95% CI 1.8–2.9). While these results suggest that home-based STI screening is more effective than clinic-based screening, they are limited by the fact that the intervention groups received screening invitations and reminder letters, whereas the control group received neither. In effect, the intervention group received co-interventions that may have encouraged men to complete STI testing beyond that of a home test kit or test-request card alone.

In the Detection Acceptability Intervention for STDs in Young Women (DAISY) study, home-based STI screening similarly out-performed clinic-based screening [18]. Four hundred and three women, ages 15–24 years, with recent STIs or risk factors for STIs were recruited from clinics and surrounding neighborhoods, and randomized to receive repeated STI screening at 6, 12, and 18 months post-enrollment either at a clinic or at home. Postcards were sent to the clinic group at 6, 12, and 18 months inviting the women to attend STI screening at the clinic, whereas home test kits were picked up by or directly mailed to the home testing group at 6, 12, and 18 months. By the end of the study, women in the home testing group completed more overall tests than those in the clinic group (RR 1.38, 95% CI 1.23–1.55), and they completed more tests when they were asymptomatic (RR 1.57, 95% CI 1.34–1.83). The investigators concluded that home STI screening is a feasible approach to improve STI screening rates in high-risk young women, particularly those with less regular attendance at healthcare clinics.

Studies conducted in low income and resource-poor communities

Two similar trials were conducted concurrently in South Africa and Brazil comparing home- with clinic-based screening for GC, CT, and *Trichomonas vaginalis* (TV)[19*, 24*]. In Gugulethu, South Africa, Jones and colleagues randomized 626 women to self-collection using a test kit at a clinic under supervision of a nurse, or using an identical test kit at home to be mailed back to study staff[19*]. Women in the home testing group(60%)were more likely to self-collect a vaginal sample than women in the clinic testing group (42%, RR 1.4, 95% CI 1.2–1.7), and a majority of women in both the home and clinic testing groups said self-collection was easy/very easy. However, compared to home-testers, more clinic-testers reported self-collection to be easy/very easy (96.2% versus 85.5%, RR 1.12, 95% CI 1.03–1.22). Among home-testers, self-collection at home was acceptable and preferred by a majority of women (58%), whereas most clinic-testers (66%) preferred self-collection at the clinic. These findings indicate that self-collection of vaginal specimens for STI screening is a feasible practice in both clinic and home settings. Making home test kits easily available may be particularly valuable in this setting as 22% of women in the study population tested positive for CT, 10% for TV, and 8% for GC.

A randomized trial with similar methodology was conducted by Lippman and colleagues in São Paulo, Brazil in which 818 low-income women were randomized to self-collect vaginal specimens with STI test kits either at a clinic or at home[24*]. However, in this study, participants were required to drop off their completed test kits at the clinic instead of mailing it to study staff, eliminating much of the benefit of home STI testing. The testing rate was nevertheless slightly higher among home-testers (93%) compared to clinic-testers (89%) at their 6-week follow-up visit (RR 1.04, 95% CI 1.00–1.09). Similar to the findings of Jones and colleagues, a majority of home-testers(61%)preferred self-collection at home; however, only 26% of clinic-testers preferred home-based testing in the future. The randomization group most strongly predicted a woman's testing preference. In this setting as well, offering home test kits appears to be feasible as 96% of all participants said self-collection of vaginal samples was easy, and that they felt comfortable doing so.

Observational studies

Our PubMed/MEDLINE search returned 2 relevant controlled, observational studies within the study period that compared home-with clinic-based STI screening (Table 1) [20**, 21]. As mentioned previously, Graseck and colleagues conducted an observational study as a prelude to their RCT. Their observational study examined the selection and STI testing rates of 462 women who were offered the option of STI testing at home or at a clinic [20**]. A majority of women (75.5%) chose home-based STI testing, whereas only 16.1% and 8.2% chose to be tested at a family planning clinic or with their own providers, respectively; all comparisons were significantly different from one another ($p < 0.001$). Overall, 56.6% of women completed STI testing, but home-testers were more likely to complete testing than clinic-testers (64.6% versus 31.6%, RR 2.04, 95% CI 1.51–2.76). The investigators' findings indicate high acceptability of home-based STI screening among women and suggest that home-based approaches may be more effective in improving STI screening rates than testing in traditional clinic venues.

Another study in Scotland compared different outreach strategies for chlamydia screening in venues outside of genitourinary medicine clinics [21]. Williamson and colleagues offered home test kits at commercial settings (e.g., record stores, pharmacies), asexual health clinic, and local colleges, as well as clinic-based testing conducted by nurses at the sexual health clinic or on college campuses. A total of 4,475 young men (15.2%) and women (84.8%), ages 13–25 years, completed testing, of which 51.3% completed home test kits, 42.0% tested at the clinic, and 6.7% tested on college campuses. A majority of men (80.2%) used home test kits, whereas only 46.1% of women were home-testers and 48.1% were clinic-testers. The CT incidence was 12.3% among men and 10.6% among women. These findings indicate that distributing home test kits at commercial venues is a feasible approach and suggest that home testing may be a particularly good option to increase STI screening rates in men.

Economic and cost analyses

We identified 2 studies from our PubMed/MEDLINE search which discussed the costs and cost-effectiveness of home-based STI screening (Table 1) [22, 23]. In the UK, Roberts and colleagues used a transmission dynamic model to compare the cost-effectiveness of population-based STI screening using home test kits compared to a policy of no organized screening (i.e., mostly opportunistic screening where individuals are screened for STIs during clinic visits for other reasons) [22]. The investigators concluded that home-based screening was not cost-effective. However, we noted several limitations to this report. The study's primary objective was to evaluate a systematic, population-level STI screening program in the UK compared to opportunistic screening; it is not a direct assessment of home versus clinic-based STI screening. In addition, the investigators did not include chronic pelvic pain as a fairly common and costly adverse outcome of PID. Thus, this study will not be discussed in further detail in this review.

In the U.S., Smith and colleagues compared the costs associated with STI screening at home versus at a clinic [23] using data gathered from the DAISY study described previously [18]. Clinic testing was calculated to cost \$111 per test, including \$49 in direct costs and \$62 in indirect costs such as transportation, child care, and missed work (2005 prices). In comparison, home testing was calculated to cost \$25 per test, which was determined to be cost saving for the overall study population. When only participants recruited from clinics were considered, a group with higher baseline clinic utilization rates, home testing was also found to be cost saving because the availability of home test kits allowed this subset of women to reduce their use of clinic services. However, when considering only the subset of

women recruited from surrounding neighborhoods, home testing was not considered cost saving because the increase in home testing was not accompanied by a corresponding reduction in clinic testing. This result does, however, suggest that home screening may tap at-risk populations that might normally have less access or inclination to utilize clinic services for STI screening, which may prove to be cost saving from a public health perspective.

Strengths and Limitations

Recent studies comparing home-with clinic-based STI screening include both men and women from a wide range of social and economic settings, and several are conducted as RCTs, providing stronger evidence that home test kits can be used effectively to test for STIs. However, these studies are also limited because they differ widely in methodology. While participants in some studies may have been more encouraged to complete home testing because of study elements like reminder letters, participants in other studies may have been less encouraged to complete home testing because, for instance, they were required to hand-deliver their test kits to the study clinic. Cost-effectiveness studies are also limited because they do not account for all of the direct and indirect costs associated with STI complications and treatment, and they are based on different estimates of screening uptake and STI complication rates.

Conclusion

The recent evidence indicates that home-based STI screening is a feasible, well-accepted, and often the preferred approach to test for STIs compared to testing at a traditional clinic venue. In almost all studies, higher testing rates were achieved with home-compared to clinic-based STI screening in both men and women. This suggests that improved STI screening rates might be achieved among young individuals, particularly those with less clinic access, by increasing the availability of home STI test kits. Further investigation needs to be made with regard to the cost-effectiveness of home versus clinic-based STI testing based on population-specific estimates of screening rates, STI prevalence, and incidence of adverse STI outcomes such as PID, ectopic pregnancy, chronic pelvic pain, and infertility.

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References and recommended reading

1. Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2008. Atlanta, Georgia: U.S. Department of Health and Human Services; Nov. 2009
2. Miller WC, Ford CA, Morris M, et al. Prevalence of chlamydial and gonococcal infections among young adults in the United States. *JAMA*. 2004; 291:2229–2236. [PubMed: 15138245]
3. Turner CF, Rogers SM, Miller HG, et al. Untreated gonococcal and chlamydial infection in a probability sample of adults. *JAMA*. 2002; 287:726–733. [PubMed: 11851539]
4. Berger RE, Alexander ER, Harnisch JP, et al. Etiology, manifestations and therapy of acute epididymitis: prospective study of 50 cases. *J Urol*. 1979; 121:750–754. [PubMed: 379366]
5. Cates W Jr, Wasserheit JN. Genital chlamydial infections: epidemiology and reproductive sequelae. *Am J Obstet Gynecol*. 1991; 164:1771–1781. [PubMed: 2039031]
6. Paavonen J, Eggert-Kruse W. *Chlamydia trachomatis*: impact on human reproduction. *Human Reproduction Update*. 1999; 5:433–447. [PubMed: 10582782]

7. Novak DP, Karlsson RB. Simplifying chlamydia testing: an innovative *Chlamydia trachomatis* testing approach using the internet and a home sampling strategy: population based study. *Sex Transm Infect.* 2006; 82:142–147. [PubMed: 16581742]
8. Andersen B, Olesen F, Møller JK, Østergaard L. Population-based strategies for outreach screening of urogenital *Chlamydia trachomatis* infections: a randomized, controlled trial. *JID.* 2002; 185:252–258. [PubMed: 11807700]
9. Low N, McCarthy A, Macleod J, et al. The chlamydia screening studies: rationale and design. *Sex Transm Infect.* 2004; 80:342–348. [PubMed: 15459400]
10. Macleod J, Salisbury C, Low N, et al. Coverage and uptake of systematic postal screening for genital *Chlamydia trachomatis* and prevalence of infection in the United Kingdom general population: cross sectional study. *BMJ.* 2005; 330:940. [PubMed: 15809231]
11. Gotz HM, van Bergen JE, Veldhuijzen IK, et al. Lessons learned from a population-based chlamydia screening pilot. *Int J STD AIDS.* 2006; 17:826–830. [PubMed: 17212860]
12. van Bergen JE, Gotz HM, Richardus JH, et al. Prevalence of urogenital *Chlamydia trachomatis* infections in the Netherlands suggests selective screening approaches. Results from the PILOT CT population study. *Drugs of Today.* 2006; 42:25–33. [PubMed: 16683041]
13. Østergaard L, Andersen B, Olesen F, Møller JK. Efficacy of home sampling for screening of *Chlamydia trachomatis*: randomised study. *BMJ.* 1998; 317:26–27. [PubMed: 9651263]
- 14*. Graseck AS, Secura GM, Allsworth JE, et al. Home compared with clinic-based screening for sexually transmitted infections: a randomized controlled trial. *Obstet Gynecol.* in press. This is the most recently conducted randomized controlled trial comparing home-with clinic-based screening.
15. Apoola A, Beardsley J. Does the addition of a urine testing kit to use of contact slips increase the partner notification rates for genital chlamydial infection? *Int J STD AIDS.* 2009; 20:775–777. [PubMed: 19833688]
16. Cameron ST, Glasier A, Scott G, et al. Novel interventions to reduce re-infection in women with chlamydia: a randomized controlled trial. *Human Reproduction.* 2009; 24:888–895. [PubMed: 19136481]
- 17*. Scholes D, Heidrich FE, Yarbrow P, et al. Population-based outreach for chlamydia screening in men: results from a randomized trial. *Sex Transm Dis.* 2007; 34:837–839. One of the first population-based studies of home STI screening conducted in the U.S. It specifically addresses the feasibility of home-based screening in men. [PubMed: 17538514]
18. Cook RL, Østergaard L, Hillier SL, et al. Home screening for sexually transmitted diseases in high-risk young women: randomised controlled trial. *Sex Transm Infect.* 2007; 83:286–291. [PubMed: 17301105]
- 19*. Jones HE, Altini L, de Kock A, et al. Home-based versus clinic-based self-sampling and testing for sexually transmitted infections in Gugulethu, South Africa: randomised controlled trial. *Sex Transm Infect.* 2007; 83:552–557. One of the first studies to assess the feasibility and acceptability of using home test kits, as opposed to traditional clinic testing, to screen for STIs in a developing country. [PubMed: 17901084]
- 20*. Graseck AS, Secura GM, Allsworth JE, et al. Home screening compared with clinic-based screening for sexually transmitted infections. *Obstet Gynecol.* 2010; 115:745–752. This is the most recent observational study comparing home-with clinic-based STI screening. It highlights that, when given an option, women are more likely to choose and to complete home testing than clinic testing. [PubMed: 20308834]
21. Williamson LM, Scott G, Carrick-Anderson K, et al. *Chlamydia trachomatis* testing among 13–25-year-olds in non-genitourinary medicine settings. *J Fam Plann Reprod Health Care.* 2007; 33:177–182. [PubMed: 17609076]
22. Roberts TE, Robinson S, Barton PM, et al. Cost effectiveness of home based population screening for *Chlamydia trachomatis* in the UK: economic evaluation of chlamydia screening studies (CLASS) project. *BMJ.* 2007; 335:291. [PubMed: 17656504]
23. Smith KJ, Cook RL, Ness RB. Cost comparisons between home-and clinic-based testing for sexually transmitted diseases in high-risk young women. *Infect Dis Obstet Gynecol.* 2007; 2007:62467. [PubMed: 18273404]

- 24*. Lippman SA, Jones HE, Luppi CG, et al. Home-based self-sampling and self-testing for sexually transmitted infections: acceptable and feasible alternatives to provider-based screening in low-income women in São Paulo, Brazil. *Sex Transm Dis.* 2007; 34:421–428. This study is one of the first to assess home-versus clinic-based STI screening using self-collected vaginal specimens in a developing country. [PubMed: 17091118]
25. Senok A, Wilson P, Reid M, et al. Can we evaluate population screening strategies in UK general practice? A pilot randomised controlled trial comparing postal and opportunistic screening for genital chlamydial infection. *J Epidemiol Community Health.* 2005; 59:198–204. [PubMed: 15709078]
26. Sparks R, Hesters JRL, Handsfield HH, et al. Rescreening for gonorrhea and chlamydial infection through the mail: a randomized trial. *Sex Transm Dis.* 2004; 31:113–116. [PubMed: 14743074]
27. Andersen B, Østergaard L, Møller JK, Olesen F. Home sampling versus conventional contact tracing for detecting *Chlamydia trachomatis* infection in male partners of infected women: randomised study. *BMJ.* 1998; 316:350–351. [PubMed: 9487169]
28. Østergaard L, Andersen B, Møller JK, et al. Managing partners of people diagnosed with *Chlamydia trachomatis*: a comparison of two partner testing methods. *Sex Transm Infect.* 2003; 79:358–362. [PubMed: 14573827]
29. Østergaard L, Andersen B, Møller JK, Olesen F. Home sampling versus conventional swab sampling for screening of *chlamydia trachomatis* in women: a cluster-randomized 1-year follow-up study. *Clin Infect Dis.* 2000; 31:951–957. [PubMed: 11049776]

Table 1

Studies comparing home-with clinic-based screening for STIs

Randomized Controlled Trials				
Author and Year	Setting	Study Population	Hypotheses/Objectives	Results
Graseck <i>et al.</i> 2010 [14**]	St. Louis, MO, USA; 2009	n= 558 women using long-acting reversible contraception and enrolled in the Contraceptive CHOICE Project, a large prospective cohort study. Randomization: home screening (n= 268) vs. clinic screening (n= 280)	To determine whether offering home-based STI screening results in a higher screening rate compared to clinic-based screening	Overall, 243 women (44.3%) completed STI screening. Home-testers were more likely to screen than clinic-testers (56.3% vs. 32.9%, RR 1.7, 95% CI 1.4–2.0). Of the 122 women surveyed regarding satisfaction, all women said self vaginal swabs were easy to use, 70% said vaginal self-sampling was extremely easy. The majority (83%) of home participants preferred home screening; only 49% of clinic participants preferred clinic screening in the future (p<0.001).
Apoola and Beardsley 2009 [15]	UK; study period not specified	n= 200 women who tested positive for CT at an STI clinic. Randomization: conventional partner notification with contact slips (swab testing at a clinic; n= 100) vs. contact slips + home sampling kit (urine testing at home with hand-delivery of sample to the clinic; n= 100)	To compare partner notification outcomes achieved by conventional partner notification with contact slips vs. contact slips + home sampling kit	No group differences in # of partners treated per index case (0.67 contact slip only vs. 0.62 for contact slip + home sampling kit, p=0.46). Male contacts provided only with contact slips may not have been aware that testing would involve urethral swab.
Cameron <i>et al.</i> 2009 [16]	Edinburgh, Scotland; May 2004-Dec 2006	n= 330 women, ages 16–45 y, who tested positive for CT at a family planning clinic, genitourinary medicine clinic, or hospital termination of pregnancy center. Randomization: postal test kits (n= 110) vs. patient-delivered partner therapy (n= 110) vs. partner notification by patient referral (n= 110)	To compare CT reinfection rates in women whose partners were notified by postal test kits vs. patient-delivered partner therapy vs. patient referral	65% women retested over 12 mths, 15% retested positive for CT. No significant differences in reinfection rates between patient-delivered partner therapy vs. patient referral; postal test kit vs. patient referral; or patient-delivered partner therapy vs. postal test kit groups. Adjusted OR 2.88 (95% CI 1.05–7.87) for postal test kit vs. patient referral. No significant difference in % partners confirmed tested/treated between patient referral (34%) vs. postal test kit (41%) vs. patient-delivered partner therapy (42%).
Scholes <i>et al.</i> 2007 [17*]	Washington, USA; Nov 2001-Oct 2002	n= 8820 men, ages 21–25 y. Randomization: Letter + test-request card (n=2940) vs. letter + home test kit (n=2940) vs. usual clinical care/control (n= 2940)	To compare the efficacy of a letter + test-request card vs. a letter + home test kit vs. usual clinical care to improve CT screening in men	Compared to usual clinical care, more men completed screening with letter + test-request card (3.6%, RR 5.6, 95% CI 3.6–8.7) and letter + home test kit (7.8%, RR 11.1, 95% CI 7.3–16.9). Letter + home test kit was more effective than letter + test-request card (RR 2.3, 95% CI 1.8–2.9). CT

Randomized Controlled Trials				
Author and Year	Setting	Study Population	Hypotheses/Objectives	Results
				prevalence: 1.0% letter + test-request card, 2.6% letter + home test kit, 0.8% usual clinical care.
Cook <i>et al.</i> 2007 [18]	Pennsylvania, USA; Nov 2000-Apr 2003	n= 403 women, ages 15–24 y (mean age 18.9 y), enrolled and followed in the DAISY study. Randomization: home screening (n= 197) vs. clinic screening (n= 191)	To determine whether GC/CT testing rates can be increased by offering repeated home testing at 6, 12, 18 mths	Women in home screening group completed more overall tests (RR 1.38, 95% CI 1.23–1.55) and more tests when asymptomatic (RR 1.57, 95% CI 1.34–1.83) compared to the clinic screening group. No difference in STI incidence between groups.
Jones <i>et al.</i> 2007 [19*]	Gugulethu, South Africa; Sept 2003-Apr 2004	n= 626 women, ages 14–25 y. Randomization: home screening (n=313) vs. clinic screening (n=313)	To determine whether more women will screen for GC, CT, and TV when offered home-vs. clinic-based screening in a resource-poor setting	More home-testers completed self-collection of vaginal specimens (60%) compared to clinic-testers (42%, RR 1.4, 95% CI 1.2–1.7). STI prevalence: 22% CT, 8% GC, 10% TV. Majority of home participants preferred self-collection at home (58%) whereas majority of clinic participants preferred self-collection at a clinic (66%) in the future.
Observational Studies				
Graseck <i>et al.</i> 2010 [20**]	St. Louis, MO, USA; Aug-Dec 2008	n= 462 women enrolled in the Contraceptive CHOICE Project	To compare test completion rates and the acceptability of home-vs. clinic-based STI screening	75.5% chose home-based screening vs. 16.1% clinic-based screening vs. 8.2% screening with own provider. Overall, 56.6% women completed screening; 64.6% home-testers completed screening vs. 31.6% clinic-testers.
Williamson <i>et al.</i> 2007 [21]	Lothian, Scotland; May 2001-June 2004	n= 4475 men (15.2%) and women (84.8%), ages 13–25 y	To compare young individuals who screen for STIs using postal test kits placed at non-genitourinary medicine clinic settings (i.e., record stores, pharmacies, sexual health clinics, colleges) with those who screen on college campuses or at the local sexual health clinic	Overall, 4475 kits returned—51.3% postal test kits, 42.0% clinic, 6.7% colleges. 80.2% men and 46.1% women were postal testers, 48.1% women were clinic testers. For women, the % of postal testers increased with age. For men, % postal testers was highest among those ages 13–15 y. CT prevalence: 12.3% men, 10.6% women.
Cost analyses				
Roberts <i>et al.</i> 2007 [22]	UK (Bristol, Birmingham)	n= 50,000 hypothetical men and women, ages 12–62 y; 16–24 yo invited to be screened each year	To determine the cost-effectiveness of a population-level, systematic home CT screening program compared to no organized screening (i.e., opportunistic screening) using a transmission dynamic model	Model was run 40 times × 15,000 simulated days. Incremental cost per major outcome averted for screening women after 8 years = £22,300; for screening men and women = £28,900. Adding patient's cost of screening in the combined male and female model = £41,300 per major outcome averted vs. no organized screening. PID was most frequently averted

Randomized Controlled Trials				
Author and Year	Setting	Study Population	Hypotheses/Objectives	Results
				major outcome. Chronic pelvic pain not considered in the model.
Smith <i>et al.</i> 2007 [23]	Pennsylvania, USA; Nov 2000-Apr 2003	n= 398 women, ages 15–24 y (mean age 18.9 y), enrolled and followed in the DAISY study, and completed surveys about costs. Randomization: home screening (n=197) vs. clinic screening (n=191).	To compare the cost differences between home- and clinic-based GC/CT testing.	Clinic screening: \$49/test direct costs + \$62/test indirect costs (i.e., transportation, child care, missed work). Home screening: \$25/test. Home screening is cost saving when considering overall study sample and subset of participants recruited from clinics. Home screening is not cost saving when considering only participants recruited from neighborhoods surrounding the clinics, and when only considering asymptomatic test results.