

## Counseling for Sexually Transmitted Infections

### *Clinical Recommendations*

The Women's Preventive Services Initiative recommends directed behavioral counseling by a health care provider or other appropriately trained individual for sexually active adolescent and adult women at an increased risk for sexually transmitted infections (STIs).

The Women's Preventive Services Initiative recommends that health care providers use a woman's sexual history and risk factors to help identify those at an increased risk of STIs. Risk factors may include age younger than 25, a recent history of an STI, a new sex partner, multiple partners, a partner with concurrent partners, a partner with an STI, and a lack of or inconsistent condom use. For adolescents and women not identified as high risk, counseling to reduce the risk of STIs should be considered, as determined by clinical judgement.

### *Implementation Considerations*

The Women's Preventive Services Initiative recommends as preventive service for women at increased risk for STIs, directed behavioral counseling that includes, but is not limited to, longer duration or multiple counseling sessions, motivational interviewing techniques, and goal setting.

The Women's Preventive Services Initiative recommends as a preventive service, STI counseling regardless of whether or not STI screening takes place during the same visit and regardless of the type of sexual activity or the partners' gender.

## EVIDENCE MAP

Behavioral counseling by a health care provider or other appropriately trained individual for sexually active adolescent and adult women at increased risk for sexually transmitted infections (STIs).

Systematic Reviews	Additional Studies	USPSTF; Bright Futures
<ul style="list-style-type: none"> <li>• 2014 USPSTF review of 31 trials<sup>1</sup>: intensive counseling is most effective for promoting safer sexual practices and reducing STIs, although less intense approaches are also effective in some studies.</li> <li>• Systematic review of 13 meta-analyses and systematic reviews<sup>2</sup>: behavioral counseling is effective for promoting safer sexual practices and reducing STIs.</li> <li>• Systematic review of 31 trials<sup>3</sup>: brief sexuality communication showed some effect for promoting safer sexual practices and reducing STIs.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced sexual risk taking behaviors after various behavioral interventions in adolescents reported in 2 RCTs.<sup>4-6</sup></li> <li>• A brief sexuality intervention had no effect on safer sexual practices and reducing STIs versus brief general health intervention in one RCT.<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>• USPSTF<sup>8</sup>: Recommends intensive behavioral counseling for all sexually active adolescents and for adults who are at increased risk for sexually transmitted infections (STIs). At-risk adults include those with current STIs or infections within the past year; have multiple sex partners; or who do not consistently use condoms. Clinicians should also be aware of populations with a high prevalence of STIs. (Level B; 2014)</li> <li>• Bright Futures<sup>9</sup>: Risk reduction for STIs should be discussed in adolescent visits as part of routine health supervision. Anticipatory guidance should include discussions about sexuality and healthy sexual development and provide an opportunity for risk screening, health promotion, counseling, and sex education.</li> </ul>

Abbreviations: RCT=randomized controlled trial, STI=sexually transmitted infection, USPSTF=U.S. Preventive Services Task Force

## SUMMARY OF EVIDENCE

### Introduction

Sexually transmitted infections (STIs) are a broad category of infectious diseases that are transmitted primarily through sexual activity including chlamydia, gonorrhea, hepatitis B, genital herpes, human immunodeficiency virus (HIV), and syphilis. Counseling to prevent STIs includes any intervention that may reduce the likelihood of an individual acquiring a STI. Interventions range in intensity, delivery, structure, and content, though the focus of this discussion is on interventions that can be delivered by health care providers in a clinical setting.

## Current Recommendations and Coverage of Services

The gap in services provided under the provisions of the Patient Protection and Affordable Health Care Act of 2010 (ACA) previously identified by the Institute of Medicine (IOM) Committee was the limitation of STI counseling to adults who have current or recent STIs or who identify as having multiple sex partners.<sup>10</sup> The IOM Committee recommended expanding this scope to annual counseling for STIs for all sexually active women (**Table 1**). The U.S. Preventive Services Task Force (USPSTF) updated its recommendation in 2014, however, the updated recommendation is limited to at-risk adults<sup>8</sup> as opposed to all sexually active adults.

**Table 1. Summary of Recommendations Currently Covered under the Affordable Care Act**

IOM Committee <sup>10</sup>	Annual counseling on STIs for sexually active women. HIV counseling is also included under a separate recommendation for HIV screening.
USPSTF <sup>8</sup>	Intensive behavioral counseling for all sexually active adolescents and for adults who are at increased risk for STIs. At-risk adults include those with current STIs or infections within the past year; have multiple sex partners; or who do not consistently use condoms. Clinicians should also be aware of populations with a high prevalence of STIs (e.g. African Americans, men who have sex with men, persons with low incomes in urban settings, current or former inmates, military recruits, persons who exchange sex for money or drugs, persons with mental illness or disability, current or former intravenous drug users, persons with a history of sexual abuse, and patients at public STI clinics). Intensive behavioral interventions range in duration from 30 minutes to 2 or more hours. Interventions vary in their components and delivery methods but are intended to be provided by primary care clinicians or through referral to trained counselors. (Level B; 2014)
Bright Futures <sup>9</sup>	Risk reduction for STIs should be discussed in adolescent visits as part of routine health supervision. Anticipatory guidance should include discussions about sexuality and healthy sexual development and provide an opportunity for risk screening, health promotion, counseling, and sex education.

Abbreviations: HIV=human immunodeficiency virus; IOM=Institute of Medicine; STIs=sexually transmitted infections; USPSTF=U.S. Preventive Services Task Force

## Background

The Centers for Disease Control and Prevention (CDC) provides information about rates and trends of chlamydia, gonorrhea, and syphilis infections in U.S. populations. According to the CDC there were 1,441,789 cases of chlamydia reported in 2014 (546.1 cases per 100,000 population), an increase of 2.8% from previous year.<sup>11</sup> Rates in women as a group increased between 2013 and 2014. However, rates decreased by 4.2% in adolescent women 15 to 19 years, continuing a decline in rates of infection among this group since 2011. Compared with men, the rate of chlamydia infection in women was nearly double (278.4 vs. 672.2 cases per 100,000), reflecting the greater number of women screened for chlamydia. Although overall rates of infection

in men are lower than women, they increased by 22% from 2010-2014, compared with a 6% increase for women during the same period. Racial disparities for chlamydia also exist. The highest rates are among blacks, with rates 6 times that of whites, and American Indians/Alaska Natives with infection rates nearly 4 times that of whites.

From 2009 to 2012 the rate of gonorrhea infection increased annually to 106.7 cases per 100,000 population.<sup>11</sup> The increased rate of gonorrhea infection from 2013 to 2014 occurred primarily among men. The burden of infection varied by race with the highest rate of infection among blacks (405.4 cases per 100,000), which was almost 11 times the rate among whites (38.3 cases per 100,000 population). However, while rates of gonorrhea have been declining among blacks since 2010, they have increased in all other racial/ethnic groups. Notably, among American Indian/Alaska Natives, rates have increased 104% over the same period.

Rates of primary and secondary syphilis have increased almost every year since 2000. In 2014, there were a total of 19,999 cases reported to the CDC and the national rate increased to 6.3 cases per 100,000 population, the highest rate reported since 1994.<sup>11</sup> The increased rate of syphilis infection from 2000 to 2014 is largely attributed to an increase among men, specifically, among men who have sex with men. However, during 2013 to 2014, overall rates of infection increased for both women (22.7%) and men (14.4%). In 2014, 91% of all cases of primary and secondary syphilis were in men. During the same period, overall rates of infection increased among men and women in all age categories between 15 and 44, in every region, and in every race/ethnicity other than Native Hawaiians/Pacific Islanders. As with gonorrhea and chlamydia infections, the rate of primary and secondary syphilis infection affect different racial groups disproportionately. The 2014 infection rate among blacks was 5.4 times that of whites and the infection rates among black and American Indian/Alaska Native women were 9 to 10 times higher than that of white women.

STIs in women can result in long term reproductive consequences including pelvic inflammatory disease and subsequent infertility, ectopic pregnancy, and chronic pelvic pain. Perinatal transmission is also a concern. Unfortunately many women are not adequately screened and counselled for STIs. A recent Kaiser Family Foundation survey-based study found that counseling about STIs is not routine among women age 15 to 44 years.<sup>12</sup> Specifically, only 50% of women reported a recent conversation about sexual history with a health provider, 34% reported discussing HIV, and 30% reported discussing STIs. Many women are under the impression that HIV and STI testing are a routine part of the gynecological exam, and about half of women who reported being tested for HIV/STIs in the past two years mistakenly believed that the testing was done as a routine part of an examination.<sup>12</sup> Consequently, actual screening rates are likely lower than reported rates.

Several professional organizations have issued practice recommendations regarding counseling for STI prevention (**Table 2**).

**Table 2. Recommendations of Professional Organizations**

American College of Obstetricians and Gynecologists (ACOG) <sup>13-15</sup>	STIs should be discussed at the initial reproductive health visit for adolescent patients and when patients transition from pediatric to adult health care. The annual well-woman visit is an opportunity to counsel women about STI risk and provide information on risk reduction strategies, as well as screening and immunizations for STIs based on age and risk factors.
American Academy of Family Physicians (AAFP) <sup>16</sup>	Intensive behavioral counseling for all sexually active adolescents and for adults at increased risk for STIs.
Centers for Disease Control and Prevention (CDC) <sup>17</sup>	All providers should routinely obtain sexual histories from their patients and encourage risk reduction strategies through prevention counseling. Prevention counseling should be provided to all sexually active adolescents and adults with an STD diagnosis, a history of an STD in the past year, or those with multiple sex partners.

Abbreviations: STD=sexually transmitted disease; STI=sexually transmitted infection

## UPDATE OF EVIDENCE

### USPSTF systematic review

A 2014 USPSTF systematic review addressed the effectiveness of behavioral sexual risk-reduction counseling in primary care for prevention of STIs. This review included 31 fair-to good-quality trials.<sup>18-48</sup> Trials focused on persons at increased risk for STIs based on demographics, risky sexual behavior, or history of an STI; and included mostly women and nonwhite or minority populations.<sup>1,49</sup>

Although interventions varied, several elements were similar. All interventions aimed to minimize high-risk sexual behaviors and provided basic information about STIs. Interventions often included communication of basic information about STIs, risk assessment, skills training in condom use, safe sex communication, problem solving, and decision making. Some interventions included additional components such as HIV counseling, and many interventions were culturally tailored to a target group. Intervention implementation varied and included face-to-face counseling, videos, computer, and phone support. Most high-intensity (>2 hours) interventions included group sessions with extensive educational and behavioral change components; moderate-intensity programs generally involved one or two individual meetings; and low-intensity programs involved brief individual meetings with providers or were limited to modalities other than face-to-face contact. Interventions were commonly delivered in the setting of a primary care clinic or an STI clinic.

Among adolescents, high intensity interventions significantly reduced STI incidence (odds ratio [OR], 0.38; 95% confidence interval [CI] 0.24 to 0.60, 5 studies).<sup>18,31,34,36,46</sup> Two moderate intensity intervention groups showed reductions of 33% to 47% in the odds of having an STI, though only one result was statistically significant.<sup>36,37</sup> One low intensity intervention trial demonstrated non-significant group differences.<sup>23</sup> Four trials<sup>23,31,34,37</sup> conducted in primary care settings reported reductions of 33% or more in the odds of contracting

an STI, though not all effects were statistically significant. Six trials that reported sexual behavior outcomes in adolescents found a beneficial effect for some outcomes, most commonly for condom use or unprotected sex.

As with adolescents, high intensity interventions significantly reduced STI incidence among adults (OR 0.70, 95% CI 0.56 to 0.87; 9 studies).<sup>20,21,24,25,35,36,38,45,46</sup> Three high-intensity trials<sup>20,35,38</sup> conducted in primary care settings had ORs ranged from 0.48 (95% CI 0.24 to 0.97) to 0.82 (95% CI 0.46 to 1.45). The pooled effects for low- and moderate-intensity trials did not demonstrate reductions in the odds of contracting an STI,<sup>49</sup> though some individual low- and moderate-trials demonstrated effectiveness.<sup>29,35,40,47</sup> Nine of twelve high intensity interventions that reported behavioral outcomes found a benefit for at least one outcome. Four trials reported increased use of condoms (reduction in OR 24% to 42%). Studies of moderate intensity interventions had mixed results, with odds ratio for condom use and unprotected sex ranging from 0.98 to 2.2. Low-intensity interventions generally showed no group differences in behavioral outcomes.

Three trials that reported adverse events found no harms related to counseling interventions.<sup>19,26,38</sup> No statistically significant increases in STI incidence were noted in any of the studies, and no consistent evidence demonstrated that interventions increased sexual activity in adolescents.<sup>49</sup>

Most included trials were conducted in populations with high STI incidence, particularly blacks and/or Hispanic women, and found interventions to be effective in reducing STI incidence. Aside from the increased likelihood of benefit in adolescents compared with adults, there was no clear evidence that any interventions were more or less likely to be effective in any given subgroup evaluated by intervention trials, though some subpopulations were underrepresented in trials. Subgroup results were generally consistent with overall results.

Intervention intensity was the only characteristic that appeared to influence outcomes in trials.<sup>49</sup> There were no clear relationships between other aspects, such as cultural tailoring, group versus individual format, counselor characteristics, setting, or number of sessions and outcomes, although these effects were difficult to isolate.

The results from the USPSTF review were limited in their generalizability since low-risk populations were underrepresented in all studies. Also, there were few studies meeting criteria for good-quality. Methodological shortcomings included high attrition and lack of information on allocation concealment and randomization. The use of self-reported behaviors also affected data reliability.

### Relevant studies published since the USPSTF systematic review

Since the USPSTF review, a systematic review that included 31 trials and observational studies (23 in the United States) focused on brief sexuality communication (10 to 60 minute interventions that include some type of communication on sexual health).<sup>3</sup> Interventions included audio/visual materials, risk assessment, didactic sessions, skill building/motivational interviewing, and providing resource lists. Overall, results indicated that STIs and HIV were less commonly reported in intervention groups compared with control groups. Condom use was also higher, and numbers of sexual partners and unprotected sexual intercourse were lower in the

intervention compared with control groups. This review did not provide data based on age or subpopulations and not all trials showed differences.<sup>7</sup>

Another systematic review included 13 meta-analyses or systematic reviews (representing 248 studies) of behavioral interventions to promote condom use.<sup>2</sup> Results indicated that behavioral interventions were effective in promoting condom use and reducing STIs, as well as delaying intercourse, decreasing the frequency of intercourse and number of partners, increasing STD/HIV knowledge, and reducing unprotected sex. Most interventions were delivered face-to-face, but their components were heterogeneous and included individual counseling, coping strategies, risk reduction counseling, skills training, and provision of resources. This review found that tailoring interventions to the characteristics of the population and including skills building exercises were aspects of successful interventions. The included reviews varied by geography, population, gender, ethnicity, and age sampling, and the primary outcomes were based on self-report.

Two randomized controlled trials of adolescents reported reduced sexual risk taking behaviors after various behavioral interventions. A trial of 738 U.S. urban adolescent females (69% black) randomized participants to a theory-based, sexual risk reduction intervention or a health promotion control group.<sup>4</sup> Girls in both groups increased their use of risk reduction strategies post-intervention, but those in the intervention group used risk reduction strategies at a faster rate than those in the control group. Both groups were exposed to motivational interviewing techniques and group and booster sessions.

A trial of 715 African American adolescent females age 15 to 21 years recruited from U.S. clinics providing sexual health services randomized participants to intervention or usual care groups.<sup>5</sup> The intervention included two 4-hour group sessions and 4 telephone contacts over 12 months that focused on personal, relational, sociocultural, and structural factors associated with adolescent STI/HIV risk (HORIZONS). The enhanced usual care arm consisted of 1-hour group sessions that included an STI prevention video, question and answer session, and group discussion. Over the 12-month follow-up period, fewer adolescents in the intervention arm had chlamydial infections (42 vs. 67; RR 0.65, 95% CI 0.42 to 0.98) or recurrent chlamydial infections (4 vs. 14; RR 0.25, 95% CI 0.08 to 0.83). Participants in the intervention arm also had higher numbers of condom-protected sex acts (mean difference 10.84, 95% CI 5.57 to 16.42). They were also more likely to report consistent condom use (RR 1.41, 95% CI 1.09 to 1.80) during the 60 days prior to assessment, as well as condom use at last intercourse (RR 1.30, 95% CI 1.09 to 1.54).

To assess persistence of risk reduction behavior following the HORIZONS intervention, a trial of 701 adolescent African American girls from U.S. sexual health clinics compared the HORIZONS intervention that also included a prevention maintenance intervention against a prevention maintenance intervention that focused on general health.<sup>50</sup> The intervention included phone contact every 8 weeks for 36 months to reinforce prevention messages. Results indicated that fewer participants in the prevention specific group had incident chlamydial infection compared with the general health group (94 vs. 105; RR 0.95, 95% CI 0.90 to 1.00) at 36-month follow-up. Participants in the prevention specific group reported more condom use in the 90 days (mean difference

0.08; 95% CI, 0.06 to 0.11) and 6 months (mean difference -0.61, 95% CI -0.98 to -0.24) prior to assessment, fewer episodes of sexual acts while on drugs and/or alcohol, and fewer vaginal sex partners in the prior 6 months.

In addition, a retrospective cohort study based on chart review of 274 sexually active girls aged 15 to 19 years who were seen in an adolescent clinic and diagnosed with gonorrhea, chlamydia, or trichomonas infection found that girls who were had been seen by a health educator for a 20 minute session focused on STI acquisition, treatment adherence, and prevention of future STIs had lower rates of recurrent STIs at 3, 6, and 12 months compared with girls receiving usual care that included standardized counseling by a health care provider or triage nurse (29% vs. 57%, 42% vs. 65%, and 57% vs. 76%, respectively;  $p < 0.05$  for all comparisons), as well as longer time to STI recurrence. Although girls in the control group were more likely to engage in high-risk behaviors including substance use and no-condom use versus girls in the intervention group, the reduced risk among those receiving health education counseling persisted after adjusting for clinical presentation, past history of STIs, drug use, condom use, numbers of retest, age of first intercourse, and numbers of sex partners (hazard ratio 0.38, 95% CI 0.19 to 0.74). Also, in the final multivariate model, health education counseling was found to be protective against subsequent STIs (hazard ratio 0.39, 95% CI 0.22 to 0.72).<sup>51</sup>

## CONCLUSIONS

Behavioral counseling interventions are effective in reducing high risk STI behaviors for both adolescents and adults. In studies, the effectiveness of interventions generally varies by intensity, with higher intensity interventions more consistently improving outcomes across studies (increased condom use, reduced unprotected sex acts, reduced STI incidence). Interventions targeting adolescents are particularly effective, even at lower intensities. Although a wide variety of counseling interventions have been studied, characteristics defining the most effective methods are not clear. However, most efficacious interventions provide basic STI information, risk assessment, and training in relevant skills such as condom use. Low-risk populations are not well represented in studies, limiting generalizability of conclusions. Also, there is a lack of data regarding the appropriate frequency of interventions, although one study of adolescents demonstrated sustained effects over 36 months with phone contacts every 8 weeks. In the future, new methods of delivery such as text messaging may improve the accessibility, acceptability, and effectiveness of less intense counseling interventions.

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