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Sexually Transmitted Infection: Screening, Testing and Treatment Guideline

Last guideline approval: October 2019

Guidelines are systematically developed statements to assist patients and providers in choosing appropriate health care for specific clinical conditions. While guidelines are useful aids to assist providers in determining appropriate practices for many patients with specific clinical problems or prevention issues, guidelines are not meant to replace the clinical judgment of the individual provider or establish a standard of care. The recommendations contained in the guidelines may not be appropriate for use in all circumstances. The inclusion of a recommendation in a guideline does not imply coverage. A decision to adopt any particular recommendation must be made by the provider in light of the circumstances presented by the individual patient.

Major Changes as of October 2019

New	Previous
Screening for **syphilis** is now recommended for all patients at high risk for any sexually transmitted infection (STI). For women at high risk, **trichomoniasis** screening is also recommended.	
Sample collection recommendations have been added for men and expanded for women to include **routine use of rectal and/or throat swabs** when exposure has occurred at those sites.	Sample collection recommendations included only vaginal self-swab, cervical swab, and urine testing.
Pharmacologic options for the **treatment of herpes, syphilis, and trichomoniasis** have been added.	Pharmacologic options were for chlamydia treatment only.

Prevention

Risk reduction counseling should be tailored to each patient's individual risk factors, needs, and abilities. Effective measures to reduce risk include:

- Abstaining from sex.
- Maintaining a mutually monogamous relationship with a partner known to have no STIs.
- Regular and proper use of latex condoms or female condoms.
- Avoiding contact with casual partners and high-risk individuals (e.g., injection drug users, commercial sex workers, and persons with multiple sex partners).
- Avoiding high-risk sexual practices (such as condomless anal intercourse outside of a long-term monogamous relationship).

Recommendations for STI Screening: Risk-based

For risk-based screening, order the **STD LAB PANEL (FEMALE)** for patients with a vagina or **STD LAB PANEL (MALE)** for patients with a penis.

High-risk behaviors that indicate a need for STI screening include:

- History of previous chlamydia and gonorrhea within past year
- Multiple partners or new partner since last STI testing
- A sex partner with concurrent partners or with an STI
- Inconsistent condom use among persons who are not in mutually monogamous relationships
- History of exchanging sex for money or drugs since last STI testing
- History of juvenile detention in jail facilities or adult correctional facilities in the past 3 years
- Men who have sex with men
- Any illicit drug use
- People who do not report one of these risk factors but who request STI testing

See Table 1 on the following page.

Table 1. Recommended risk-based STI screening by population							
Sex assigned at birth	**Behavior**	**Chlamydia [1]**	**Gonorrhea [1]**	**Syphilis [3]**	**HIV [2,3]**	**Trichomonas**	**Herpes**
Female	Monogamous sex with male partner	✓	✓		✓		
	High-risk	✓	✓	✓	✓	✓	
Male	Monogamous sex with female partner				✓		
	High-risk	✓	✓	✓	✓		✓
All	HIV-positive	✓	✓	✓		✓	✓
	HIV discordant couples			✓	✓		✓

[1] Annual screening for chlamydia and gonorrhea is recommended for all women aged 16–24.

[2] One-time HIV screening is recommended for all men and women aged 15–65.

[3] The window for detecting syphilis infection is 2–6 weeks, and the window for HIV is 3–4 weeks, so **false negatives** may occur if testing is done too early. If a patient is screened for and/or diagnosed with gonorrhea or chlamydia less than 4–6 weeks after a sexual encounter, consider repeating the HIV and syphilis tests after this window has passed in order to rule out these infections.

Recommendations for STI Testing: Symptomatic Patients

Symptomatic testing for STIs is recommended for any patient with the symptoms described below.

- **Chlamydia** symptoms may include mild itching/discomfort inside urethra, vaginal or penile discharge, vaginal bleeding between periods, pelvic pain and dyspareunia, burning during urination, painful or swollen testicles, and anal pain, discharge or bleeding. Note that chlamydia infections may also be asymptomatic.
- **Gonorrhea** symptoms may include burning during urination, painful or swollen testicles, vaginal or penile discharge, vaginal bleeding between periods, pelvic pain and dyspareunia, painful bowel movements, and anal discharge, itching, soreness or bleeding. Note that gonorrhea may be asymptomatic, especially if the infection is in the throat or anus.
- **Early syphilis** symptoms may include a sore or ulcer of the anus, genitals or throat that may or may not be painful, night sweats, or fatigue. Note that early syphilis may also be asymptomatic.
- **Trichomonas** symptoms may include itching, burning during urination or after ejaculation, and vaginal or penile discharge.
- **Herpes** symptoms may include genital, anal, and mouth sores/blisters.
- **Mycoplasma genitalium** symptoms may include persistent or recurrent urethritis in men or cervicitis and pelvic inflammatory disease in women.

Exposure Sites

All potential STI exposure sites—genitals, anus, and throat—should be screened on an opt-out basis. Because many providers do not routinely ask patients about sexual exposures to the throat or anus, a large proportion of infections in these sites may be missed by genital screening alone.

A new question will be added to the Well Visit Questionnaires for teens and adults in early 2020 to address this gap in patient sexual history information:

> "Many sexually transmitted infections (STI) do not have symptoms you can see or feel. Places that could be infected include the genitals, anus, and throat. We routinely do testing for all sites that could be infected. Are there any sites you don't want me to check?"

It is important for providers to have a frank conversation with patients about sexual history before deciding whether sampling of the throat and/or anus is indicated (in additional to genital screening). For talking points on the most approachable way to have conversations with patients about risk factors, exposure tests, and recommended screening tests, see "Tips for taking a sexual history," pp. 5-6.

Lab Tests and Collection Methods

For STI testing, order the **STD LAB PANEL (FEMALE)** for patients with a vagina or **STD LAB PANEL (MALE)** for patients with a penis. See KPWA HIV Screening Guideline for HIV testing recommendations.

Table 2. Lab test and collection methods for STI testing

STI	Lab test	Collection method
Chlamydia/ Gonorrhea	**All patients** NAAT is used to test for both chlamydia and gonorrhea.	**Women** Vaginal self-swab is the preferred collection method due to higher sensitivity than cervical swab or urine testing. For women who require a pelvic examination for other reasons, a vaginal swab may be collected by the provider. Collect a rectal and/or throat swab if there has been exposure at those sites. Urine testing is an acceptable option if the patient prefers this over vaginal self-swab. Cervical swabs are not recommended. **Men** First-catch urine is the recommended collection method for men. Urethral swab is also an acceptable option, especially if discharge is visible. Collect a rectal and/or throat swab if there has been exposure at those sites. Testing urine will not detect infection in the anus or throat. Site-specific testing is needed if there has been an exposure.
Syphilis	**All patients** Syphilis testing is done by serology using the reverse sequence for syphilis screening – treponemal antibody test with reflex to RPR.	**All patients** Blood draw.
Trichomonas	**Partner of a trichomonas-positive individual** (vaginal swab/urine in men) **Symptomatic women** Vaginitis screen. If negative, follow up with NAAT if symptoms persist and there is high clinical suspicion of trichomonas	**Women** Vaginal swab performed in the clinic. **Men (with positive partner only)** First-catch urine is the recommended collection method for men.
Herpes	**Patients at high risk** who have had a sex partner with genital herpes or have multiple sex partners. If patient is **non-symptomatic but at high risk,** serologic testing may be useful. If patient is **symptomatic**, the preferred diagnostic test is viral culture of unroofed genital lesions.	**Non-symptomatic** Blood draw. **Symptomatic** Genital swab.
Mycoplasma genitalium	**All patients** NAAT is the preferred method to detect *M. genitalium.*	**Women** Mycoplasma genitalium testing is done by vaginal swab. **Men** First-catch urine is the recommended method for men.

Talking with Adults About Their Sexual History

When taking the sexual history of an adult, it can be helpful to:

- Remind the patient that the conversation is confidential.
- Explain that you are asking some personal questions about their sex life and interests so that you can advise, screen, and vaccinate them appropriately.
- Have the conversation in a comfortable setting, ideally when the patient is dressed/not in a gown.
- Use non-judgmental facial expressions, tone, and questions.
- Keep in mind that a patient's sexual behavior or interests may change over time and are worth revisiting.
- Not assume heterosexuality.
- Be wary of using jargon or abbreviations.

Questions when asking adults about their sexual behaviors:

- "Do you have sex with men, women, and or trans partners?"
- "Do you use condoms or other forms of birth control?"
- "Would you like screening for sexually transmitted infections? Which sites do we need to test?"
- "Inappropriate pressure to have sex can be common, and people often find it hard to talk about. Do you feel pressure to have sex, or has anyone made you do something sexual when you did not want to?"
- "The CDC recommends that all patients between the ages of 15 and 65 have a one-time screening for HIV. May I screen you today?"
- "Do you have any questions or concerns about your sexual interests, practices or partners?"

Talking with Teens About Their Sexual History

Adapted from HEEADSSS 3.0: The psychosocial interview for adolescents updated for a new century fueled by media. *(Contemporary Pediatrics* 2014). Follow the link for additional "opening lines" and suggested questions.

For younger teens with a romantic partner, ask a "screener'" question to help decide whether more explicit questions are needed:

- "Do you ever touch each other underneath your clothes?"

If the answer is yes, they are unlikely to be offended by more explicit questions, which should be preceded by,

- "I need to ask you some very personal questions to know how to best take care of your health."

Unlike adults, teens may not intuitively understand why you are asking about which sexual behaviors they engage in. One way to explain it is,

- "I need to know what parts of your body to test for sexually transmitted infections."

Questions when asking teens about their sexual behaviors:

- "Are you or have you been in a romantic relationship?"
- "Are you or have you been in a sexual relationship?"
- "Do you have partners with penises, vaginas, or both?" (It is more helpful to ask about partners' body parts than gender.)

Ask all teens in "consensual" sexual relationships if they ever feel pressured by their partner to have sex, and if they always get to say if and when they have sex.

Tips for talking with parents of teens who are reluctant to leave the room during questions about sexual history

- Remind them: "We talk privately to teenagers about health issues that come up for many teens so they can start to learn how to take responsibility for their own health care. Our goal is that by the time they are 18 (or leave for college, if applicable) they are ready to conduct the whole visit on their own."
- Be clear that you talk to **all** teens privately for some portion of their well visit. In other words, you haven't singled out their child as seeming to be at high risk.
- If the parent (or teen) says, "It's okay, we tell each other everything," respond "That's great! I hope after our visit your teen will share with you everything we talk about."
- Remind them that if their teen has any health questions that might feel "embarrassing," you (the health care provider) are a better source of information than their friends or the internet.
- Make sure they understand the limits of confidentiality: If their teen's life were in jeopardy, you would talk with the teen about the best way for you to share that information with the parent, which you would then do.

Treatment

Goals

Eradication of infection in patient and partner(s).

Lifestyle modifications/non-pharmacologic options

Patients who have tested positive for an STI should receive counseling to abstain from sex until they and their partner(s) have completed a course of antibiotic treatment.

Pharmacologic options: infected individuals

Chlamydia: Table 3
Gonorrhea: Table 4
Syphilis: Table 5
Genital herpes: Table 6
Trichomonas: Table 7
Mycoplasma genitalium: Table 8

HIV: Refer all Western Washington patients with confirmed positive HIV test results to the HIV/PrEP Program. In KP HealthConnect, type **Ref HIV** to pull in the referral automatically.

Table 3. Recommended pharmacologic options for CHLAMYDIA treatment

Eligible population	Line	Medication	Regimen
Non-pregnant women and men with uncomplicated infections	1st	Azithromycin	1 g PO (single dose)
	2nd	Doxycycline [1]	100 mg PO b.i.d. x 7 days
		Erythromycin base	500 mg PO q.i.d. x 7 days
		Levofloxacin	500 mg PO daily x 7 days
Pregnant women with uncomplicated infections	1st	Azithromycin	1 g PO (single dose)
	2nd	Amoxicillin	500 mg PO t.i.d. x 7 days
		Erythromycin base	500 mg PO q.i.d. x 7 days

[1] Doxycycline is the preferred option for anal chlamydia.

Table 4. Recommended pharmacologic options for GONORRHEA treatment [1]			
Eligible population	**Line**	**Medication**	**Regimen**
Non-pregnant women and men with uncomplicated infections	1st	Ceftriaxone plus azithromycin	Give both at the same time: ceftriaxone 250 mg IM plus azithromycin 1 g PO (single dose)
	2nd	Cefixime [2] plus azithromycin [3]	Give both at the same time: cefixime 400 mg PO (single dose) plus azithromycin 1 g PO (single dose)
Pregnant women with uncomplicated infections	1st	Ceftriaxone plus azithromycin	Give both at the same time: ceftriaxone 250 mg IM plus azithromycin 1 g PO (single dose)
		If cephalosporin allergy or other considerations preclude treatment with this regimen, consultation with an infectious disease specialist is recommended.	

[1] Gonorrhea treatment using two antimicrobials with different mechanisms of action is recommended to potentially slow the emergence of resistance to cephalosporins.

[2] MSM are at higher risk of infection with cefixime-resistant gonorrheal strains, so cefixime should be avoided in the MSM population.

[3] Patients with pharyngeal gonorrhea who are treated with the second-line regimen should return 14 days after treatment for a test of cure, using either culture or NAAT.

Table 5. Recommended pharmacologic options for SYPHILIS Treatment		
Eligible population [1]	**Medication**	**Regimen**
Patients with primary or secondary syphilis	Benzathine penicillin G	2.4 million units IM (single dose)
Patients with tertiary syphilis [2]	Benzathine penicillin G	2.4 million units IM (3 doses, given at 1-week intervals)
Patients with neurosyphilis or ocular syphilis [3]	Aqueous crystalline penicillin G **OR**	18–24 million units IV per day, either 3–4 million units IV every 4 hours, or continuous infusion for 10–14 days
	Procaine penicillin G **plus** Probenecid	1.8–2.4 million units IM once daily for 10–14 days 500 mg PO 4 times per day for 10–14 days
Patients with EARLY latent syphilis	Benzathine penicillin G	2.4 million units IM (single dose)
Patients with LATE latent syphilis or syphilis of unknown duration	Benzathine penicillin G	2.4 million units IM (3 doses, given at 1-week intervals)

[1] Eligible population includes pregnant women and people with HIV.
[2] Excludes patients with cerebral spinal fluid abnormalities, who should be referred to Infectious Disease.
[3] Ocular syphilis should be managed in collaboration with an ophthalmologist.

Table 6. Recommended pharmacologic options for GENITAL HERPES treatment [1]			
Eligible population	**Line**	**Medication**	**Regimen**
First clinical episode	1st	Acyclovir	400 mg PO t.i.d. for 7–10 days
	2nd	Acyclovir **or** Valacyclovir	200 mg PO 5 times per day for 7–10 days 1g PO b.i.d. for 7–10 days
Suppressive treatment for recurrent genital herpes	1st	Acyclovir	400 mg PO b.i.d.
	2nd	Valacyclovir [2]	500 mg PO once daily **or** 1 g PO once daily
Episodic therapy for recurrent genital herpes	1st	Acyclovir	400 mg PO t.i.d. for 5 days **or** 800 mg PO b.i.d. for 5 days **or** 800 mg PO t.i.d. for 2 days
	2nd	Valacyclovir	500 mg PO b.i.d. for 3 days **or** 1 g PO once per day for 5 days
Suppressive treatment for persons with HIV	1st	Acyclovir	400–800 mg PO b.i.d. or t.i.d.
	2nd	Valacyclovir	500 mg PO b.i.d.
Episodic therapy for persons with HIV	1st	Acyclovir	400 mg PO t.i.d. for 5–10 days
	2nd	Valacyclovir	1 g PO b.i.d. for 5–10 days

[1] While there is no "cure" for genital HSV infection, antiviral medications are used to manage symptomatic outbreaks and for prevention in patients with a history of frequent symptomatic outbreaks.

[2] Valacyclovir 500 mg once daily might be less effective than other valacyclovir or acyclovir dosing regimens in persons who have very frequent recurrences (e.g., ≥ 10 episodes per year).

Table 7. Recommended pharmacologic options for TRICHOMONAS treatment			
Eligible population	**Line**	**Medication**	**Regimen**
Patients with trichomonas infection	1st	Metronidazole	2 g PO (single dose)
	2nd	Metronidazole	500 mg b.i.d. for 7 days

Table 8. Recommended pharmacologic options for MYCOPLASMA GENITALIUM treatment	
Eligible population	
Patients with mycoplasma genitalium infection	Consult with Infectious Disease for treatment recommendations.

Public Health reporting and partner notification

Reportable STIs **in Washington state** include chlamydia, gonorrhea, genital herpes, HIV, and syphilis. Within KP Washington, the reporting is done by the lab. Patients newly diagnosed with HIV, early syphilis, or gonorrhea, and men who have sex with men (MSM) with chlamydia, may be contacted by their local health department to assist with partner treatment. Public Health does not routinely contact patients with genital herpes or heterosexuals with chlamydia.

Providers should advise patients diagnosed with any STI, whether or not it is reportable, to notify their sex partners of their diagnosis and encourage them to get treatment and abstain from sex until their infection is cleared. For gonorrhea and chlamydia, patients should notify any sex partners within 60 days prior to diagnosis. For HIV and syphilis, patients should notify any sex partners within 90 days prior to diagnosis.

Expedited partner therapy for chlamydia and gonorrhea

The Centers for Disease Control and Prevention recommends that all sex partners of patients infected with chlamydia or gonorrhea from the **preceding 60 days** be evaluated, tested, and treated to prevent reinfection and curtail further transmission.

Sex partners should be seen by a clinician whenever possible. However, providers may offer all heterosexual patients medication (at no charge to the partner) to give to their sex partners if treatment cannot otherwise be ensured. With expedited partner therapy (EPT), partners may be treated without waiting for laboratory confirmation of infection.

Note: **EPT is not recommended for MSM**. Public Health should be notified of MSM who test positive for chlamydia and/or gonorrhea, so these patients and their partners can be followed up and treated and tested for HIV.

Table 9. Recommended pharmacologic options for EXPEDITED PARTNER THERAPY

Eligible population	Medication	Regimen
Partners of patients with active CHLAMYDIA infections	Azithromycin	1 g PO (single dose)
Partners of patients with active GONORRHEA infections	Cefixime plus azithromycin	Give both at the same time: cefixime 400 mg PO (single dose) plus azithromycin 1 g PO (single dose)

Additional EPT resources:

- See the Pharmacy EPT page on the staff intranet.
- More information is available through the Washington State Department of Health.
- Use the SmartPhrases **.RXEPTCHLAMYDIA** and **.RXEPTGONORRHEA** for documentation in KP HealthConnect.

Follow-up/Monitoring

Table 10. Recommended FOLLOW-UP TESTING for patients treated for STIs		
Eligible population	**Test**	**Timing**
Sexually active women [1] and men with chlamydia or gonorrhea	NAAT	3 months after initial treatment
Sexually active women and men with primary or secondary syphilis	Nontreponemal titer	6 and 12 months after treatment
Sexually active women and men with genital herpes	N/A	Follow clinically until signs and symptoms have resolved
Sexually active women [2] with trichomonas	NAAT	3 months after initial treatment

[1] Pregnant women with chlamydia or gonorrhea should be re-tested by NAAT 3 weeks after the initial treatment and during the third trimester.
[2] Data are insufficient to support re-testing men for trichomonas.

The majority of post-treatment infections result from reinfection, frequently occurring because the patient's sex partners were not treated or because the patient resumed sex with a new partner who is infected.

Except in pregnant women, test-of-cure (repeat testing 3–4 weeks after completing therapy) is **not** recommended. Nucleic acid amplification tests (NAATs) conducted less than 3 weeks after completion of therapy in persons who were treated successfully could yield **false-positive** results because of the continued presence of dead organisms.

The window for detecting syphilis infection is 2–6 weeks, and the window for HIV is 3–4 weeks, so **false negatives** may occur if testing is done too early. If a patient is screened for and/or diagnosed with gonorrhea or chlamydia less than 4–6 weeks after a sexual encounter, consider repeating the HIV and syphilis tests after this window has passed in order to rule out these infections.

Confidentiality Considerations for Adolescents

Adolescents at least 14 years of age have a right to confidential STI testing and treatment without parental involvement.

To order STI testing confidentially, see this tip sheet on the staff intranet:
http://incontext.ghc.org/cis/reference/documents/ConfidentialBilling.pdf

For additional information, see Adolescent Confidentiality and Consent on the staff intranet.

Evidence Summary

The Sexually Transmitted Infection Screening, Testing and Treatment Guideline was developed using an evidence-based process, including systematic literature search, critical appraisal, and evidence synthesis.

As part of our improvement process, the Kaiser Permanente Washington guideline team is working towards developing new clinical guidelines and updating the current guidelines every 2–3 years. To achieve this goal, we are adapting evidence-based recommendations from high-quality national and international external guidelines, if available and appropriate. The external guidelines should meet several quality standards to be considered for adaptation. They must: be developed by a multidisciplinary team with no or minimal conflicts of interest; be evidence-based; address a population that is reasonably similar to our population; and be transparent about the frequency of updates and the date the current version was completed.

In addition to identifying the recently published guidelines that meet the above standards, a literature search was conducted to identify studies relevant to the key questions that are not addressed by the external guidelines.

External Guidelines Eligible for Adapting

CDC June 2015: Sexual Transmitted Diseases Treatment Guidelines
USPSTF December 2014: Screening for Chlamydia and Gonorrhea
USPSTF June 2016: Screening for syphilis infection in nonpregnant adults and adolescents
USPSTF December 2016: Serologic screening for genital herpes infection
Kaiser Permanente National June 2019: HIV/STI Screening & Prevention Clinical Practice Guideline

Key questions addressed in the KPWA guideline

1. Are self-collected vaginal swab specimens for chlamydia trachomatis and Neisseria gonorrhea in asymptomatic women (collected in and/or outside clinic) equivalent in sensitivity and specificity to clinician-collected vaginal specimens using NAATs or to urine specimens using NAATs?

    - Although performance of self-collected vaginal swabs (performed in clinic) is higher than both clinician-collected vaginal/endocervical swabs and first void urine samples using NAATs, there are no statistically significant differences between these specimens at detecting gonorrheal and chlamydial infections in this population of asymptomatic/symptomatic adolescent and adult women. (Fang 2008, Knox 2002, Shafer 2003, Stewart 2012)

    - The CDC (2015) indicated that self-collected vaginal swab specimens are comparable in sensitivity and specificity to those collected by a clinician using NAATs, and that women find this screening strategy highly acceptable.

2. What is the accuracy of ThinPrep in comparison to the use of cervical or vaginal swab specimens or separate swab in women who need both HPV and GC/CT testing?

    Low-quality evidence suggests that detection of chlamydia trachomatis and Neisseria gonorrhea using NAAT on ThinPrep samples is comparable to detection using cervical sample in women undergoing Pap smear tests. (Chernesky 2007, Koumans 2003, Martens 2013)

3. Does rectal screening increase detection of gonorrhea or chlamydia in asymptomatic women compared to screening urogenital specimens alone? What is the proportion of rectal infections missed with genital screening alone?

    - Low-quality evidence suggests that rectal screening increases detection of gonorrhea and chlamydia compared to urogenital screening alone among adolescent and adult women visiting STI clinics who had receptive anal intercourse. In addition, a large proportion of rectal chlamydial and gonorrheal infections would have been missed by genital testing alone in this population. (Barry 2010, Javabakht 2012, Llata 2018, Tao 2018, Trebach 2015)

    - Assessment of women with rectal infections who did not have anal intercourse was scarce.

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Guideline Development Process and Team

Development process

The STI Screening, Testing and Treatment Guideline was developed using an evidence-based process, including systematic literature search, critical appraisal, and evidence synthesis.

This edition of the guideline was approved for publication by the Guideline Oversight Group in October 2019.

Team

The STI Testing and Treatment Guideline development process included representatives from the following specialties: adolescent medicine, clinical lab, family medicine, gender health, HIV Program, infectious disease, pharmacy, and residency.

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Disclosure of conflict of interest

Kaiser Permanente requires that team members participating on a guideline team disclose and resolve all potential conflicts of interest that arise from financial relationships between a guideline team member or guideline team member's spouse or partner and any commercial interests or proprietary entity that provides or produces health care–related products and/or services relevant to the content of the guideline.

Team members listed above have disclosed that their participation on the STI Screening, Testing and Treatment Guideline team includes no promotion of any commercial products or services, and that they have no relationships with commercial entities to report.