

Sexually Transmitted Diseases

Sexually transmitted diseases (STDs) refer to a variety of clinical syndromes and infections caused by pathogens that can be acquired and transmitted through sexual activity. STDs are very common; the Centers for Disease Control and Prevention [CDC] (2024) estimated that 26 million new infections occurred in the United States in 2018, with almost half among youth aged 15-24 years. The Coronavirus disease 2019 (COVID-19) significantly affected trends in STDs during 2020, resulting in likely underreporting of infections and possibly increased STD transmission. However, as screening measures returned, by the end of 2020, reported cases of gonorrhea increased by 10%, and reported cases of primary and secondary syphilis increased by 7% from 2019 to 2020. This upward trend continues as reported cases of gonorrhea increased by 15%, and reported cases of primary and secondary syphilis increased by 38% from 2019 to 2021 (CDC, 2023). The consequences of STDs can be serious and include severe reproductive complications, neonatal injury, and death. Because STDs are associated with social stigma, they also have a substantial psychological impact. The economic consequences are enormous: it's estimated that STDs cost the nation about \$16 billion in annual health care costs. While all communities are affected, significant racial, ethnic, and other disparities persist.

Review the most common infections and recommended treatments below.

Bacterial Vaginosis (BV)

BV occurs when there is too much of a certain bacterium in the vagina which alters the balance of normal flora. It is the most common vaginal infection in females ages 15 to 44 years. The cause and transmission are unknown, but sexually active females are at the greatest risk. New or multiple sex partners, as well as douching, can upset the balance of bacteria in the vagina, leading to BV. The presence of BV increases the risk of acquiring other STDs.

Signs and symptoms of BV

- Thin white or gray vaginal discharge
- Pain, itching, or burning in or outside of the vagina
- Strong fish-like odor, especially after sex
- Burning with urination

Chlamydia

Chlamydia is a common STD in both males and females that can be easily treated and cured. If left untreated, serious and permanent damage to a female's reproductive system can occur, leading to infertility and risk for future ectopic pregnancy. Chlamydia is spread by having vaginal, anal, or oral sex with an infected partner.

Signs and symptoms of chlamydia

- Symptoms are uncommon.
- Females may notice abnormal vaginal discharge or pain with urination.
- Males may notice penile discharge and burning with urination or pain and swelling in one or both testicles.

Gonorrhea

Gonorrhea is an STD that can affect both males and females, causing infection in the genitals, rectum, and throat. It is a common infection, especially in young people ages 15 to 24. Gonorrhea is spread by vaginal, anal, or oral sex with an infected person. It also can be spread from an infected mother to baby during childbirth.

Signs and symptoms of gonorrhea

- Most infected females are asymptomatic, but symptoms such as pain or burning with urinating, increased vaginal discharge, or vaginal bleeding between periods or after intercourse may occur. If left untreated, females are at risk for serious complications.
- Men can either be asymptomatic or experience symptoms such as burning with urination or penile discharge.

Trichomoniasis

Trichomoniasis is a common, curable STD caused by infection with the protozoan parasite *Trichomonas vaginalis*. Infection is more common in females than in males, with older females more likely to contract the disease than younger females. Transmission is through direct sexual contact from the penis to vagina; it does not infect the hands, mouth, or anus.

Signs and symptoms of trichomoniasis

- Symptoms of the disease vary and may be intermittent, but most infected people are asymptomatic.
- Females may notice pain with urination; itching, burning, or redness of the genitalia; or a change in vaginal discharge.
- Males may report itching or irritation inside the penis, burning after urinating or ejaculating, or penile discharge.

Genital herpes simplex virus (HSV)

HSV is a common STD caused by two types of viruses (HSV1 and HSV2) that can affect any sexually active person. It can be spread with or without symptoms through vaginal, anal, or oral sex with an infected person. HSV infection is not curable and will remain in the body, but the number of outbreaks may decrease over time.

Signs and symptoms of HSV

- Most people with genital herpes have mild symptoms or are asymptomatic.
- Herpes sores usually appear as one or more blisters on or around the genitals, rectum, or mouth, leading to painful sores that may take a week or more to heal. When the sores occur, this is considered an “outbreak.”
- The first outbreak may also cause flu-like symptoms such as fever, body aches, or swollen glands.

- Infected people may experience repeated outbreaks, especially if infected with HSV2; repeat outbreaks are usually shorter and less severe.

Human Papillomavirus (HPV)

HPV is the most common STD in the U.S. There are over 100 strains of HPV, and they can affect the skin and mucosa in various parts of the body, including the mouth, throat, cervix, anus, fingernails, and feet. Only about 40 strains affect the anogenital areas, and approximately 13 strains are considered oncogenic. Most sexually active people will acquire HPV at some point in their lives.

Cervical cancer rates have markedly decreased in the U.S. during the past 20 years, which is largely attributable to Pap smear screening. The guidelines recommend HPV testing, along with cervical cytology, for females ages 30-65 years:

- If both the cervical cytology and HPV test are negative, repeat both tests every five years.
- If HPV is positive, repeat both tests in 1 year.

**Because in younger females, HPV usually clears quickly, and given the relatively slow development of most cervical cancers, HPV testing isn't recommended for females younger than age 30 years unless cervical cytology is abnormal.*

Signs and symptoms of HPV

- Patients with HPV are usually asymptomatic.
- The virus can cause anogenital warts, which may appear as a small bump or group of bumps; warts from HPV can be small or large, raised or flat, or shaped like a cauliflower.

Treating STDS

Managing STDs	
STD	Treatment Options*
Bacterial Vaginosis	<ul style="list-style-type: none"> • Metronidazole 500 mg twice daily for 7 days • Metronidazole gel 0.75% (1) 5 g application intravaginal once daily for 5 days • Clindamycin cream 2% (1) 5 g application intravaginal at bedtime for 7 days <p><i>*BV can resolve without treatment; male sex partners do not need to be treated.</i></p>
Chlamydia	<ul style="list-style-type: none"> • Azithromycin 1 g orally in a single dose • Doxycycline 100 mg orally twice daily for 7 days
Gonorrhea	<ul style="list-style-type: none"> • Ceftriaxone 500 mg IM in single dose

Trichomoniasis	<ul style="list-style-type: none"> • Metronidazole 2 g orally in a single dose • Tinidazole 2 g orally in a single dose
HSV	<ul style="list-style-type: none"> • Initial outbreak <ul style="list-style-type: none"> ○ Acyclovir 400 mg three times daily for 7-10 days or 200 mg five times daily for 7-10 days ○ Valacyclovir 1gm twice daily for 7-10 days • Recurrent outbreak <ul style="list-style-type: none"> ○ Acyclovir 800 mg twice daily for 5 days or 800 mg three times daily for 2 days ○ Valacyclovir 500 mg twice daily for 3 days or 1 g once daily for 5 days • Suppressive therapy <ul style="list-style-type: none"> ○ Acyclovir 400 mg twice daily ○ Valacyclovir 500 mg once daily or 1 g once daily
HPV	<ul style="list-style-type: none"> • There is no treatment for the virus. • Anogenital warts may be treated by the patient using one of the following: <ul style="list-style-type: none"> ○ Imiquimod 3.75% or 5% cream ○ Podofilox 0.5% solution or gel ○ Sinecatechins 15% ointment • Options for provider-administered treatments include: <ul style="list-style-type: none"> ○ Cryotherapy with liquid nitrogen or cryoprobe ○ Surgical removal ○ Trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80%–90% solution

* For more information, refer to the [complete guidelines](#) from the Centers for Disease Control and Prevention, which include alternative treatments and recommendations for special populations.

Partner Management

An important component of STD treatment is partner management. Arrangements for the evaluation and treatment of sex partners should be made either directly or with assistance from state and local health departments.

The Role of Nurses

Nurses play an important role in educating patients on STDs, screening for disease, and providing treatment. Nurses can also help minimize the impact of social stigma by providing informed, confidential, and sensitive care and by promoting sexual health and safe practices. As first-line providers who have frequent contact with patients and know the local communities well, nurses are in a good position to help identify, treat, and prevent STDs.

References:

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