

How to Cite:

Hazazi, A. A., Alanazi, A. A., Darbashi, M. A., Alharthi, Y. S., Al Suliman, R. M., Alluhaydan, J. A. S., Alanazi, N. K. S., Alanazi, Y. A. J., Alotaibi, A. B., & Al-Arej, I. M. (2024). Sexually transmitted infections: An updated review article for healthcare professionals. *International Journal of Health Sciences*, 8(S1), 1517–1530.
<https://doi.org/10.53730/ijhs.v8nS1.15306>

Sexually transmitted infections: An updated review article for healthcare professionals

Aishah Abduh Hazazi

KSA, National Guard Health Affairs

Ahmad Alhelo Alanazi

KSA, National Guard Health Affairs

Meshael Ali Darbashi

KSA, National Guard Health Affairs

Yaser Saad Alharthi

KSA, National Guard Health Affairs

Rana Mohammed Al Suliman

KSA, National Guard Health Affairs

Jumanah Abdulaziz Saleh Alluhaydan

KSA, National Guard Health Affairs

Nadyah Khalaf Safi Alanazi

KSA, National Guard Health Affairs

Yasmeen Alhumaidi Jado Alanazi

KSA, National Guard Health Affairs

Areej Bader Alotaibi

KSA, National Guard Health Affairs

Ibrahim Muhammad Al-Arej

KSA, National Guard Health Affairs

Abstract--Background: Sexually transmitted infections (STIs) represent a significant public health concern worldwide, frequently going untreated and leading to severe health complications. The prevalence of STIs, particularly in underserved populations, necessitates a comprehensive understanding of their epidemiology,

transmission, and management. **Aim:** This review aims to provide healthcare professionals with an updated overview of the most prevalent STIs, their epidemiology, clinical manifestations, and effective prevention and treatment strategies. **Methods:** The review synthesizes current data from the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO), alongside relevant literature on STI pathogenesis, symptomatology, and management protocols. It also highlights the need for improved data collection systems to track and manage STI incidence effectively. **Results:** The review identifies the seven most prevalent STIs, including chlamydia, gonorrhea, syphilis, herpes, HIV, HPV, and trichomoniasis, detailing their transmission routes, risk factors, and treatment options. Epidemiological data indicate a rising trend in STI cases, particularly in populations aged 15 to 50, with significant co-infection rates observed among those with HIV. **Conclusion:** There is an urgent need for healthcare providers to enhance their knowledge of STIs to implement effective prevention, diagnosis, and treatment measures. Establishing centralized data collection systems can further aid in understanding the distribution and management of STIs, ultimately improving public health outcomes.

Keywords---sexually transmitted infections, epidemiology, prevention, healthcare professionals, treatment.

Introduction

Sexually transmitted infections (STIs), previously referred to as sexually transmitted diseases, encompass the transfer of pathogens between sexual partners via various modes of sexual activity, including oral, anal, or vaginal contact.[1] STIs pose significant challenges and burdens on healthcare systems, particularly as many cases remain untreated, leading to serious health complications. This discussion highlights the epidemiology and transmission patterns of prevalent STIs, alongside strategies for prevention, evaluation, diagnosis, and treatment.[2]

Etiology:

STIs represent a critical global health issue recognized by public health authorities worldwide. These infections often go unnoticed, with a heightened prevalence observed in medically underserved populations. The clinical manifestation of STIs is contingent upon the specific pathogen, transmission route, and associated symptoms. Factors that elevate the risk of STI transmission include engaging in unprotected sex with multiple partners, having a history of STIs, experiencing sexual violence, involvement in sex work, having a partner with concurrent sexual contacts or a history of STIs, and substance use, including alcohol and recreational drugs. The specific pathogens responsible for STIs are detailed below. Research indicates that male circumcision significantly lowers the risk of acquiring several STIs, such as human papillomavirus, genital herpes, and notably, human immunodeficiency virus (HIV), with infection risk diminished by

50% to 60%.[3][4] The seven most prevalent STIs consist of five treatable infections (chlamydia, gonorrhea, syphilis, and trichomoniasis) and three chronic yet manageable conditions (herpes simplex virus, HIV, and human papillomavirus (HPV). Hepatitis B and C can also be sexually transmitted, although they are more frequently contracted through other exposure routes. Additional details can be found in the respective companion StatPearls references.

Common STIs

1. **Chancroid:** Chancroid is caused by *Haemophilus ducreyi*, a fastidious Gram-negative coccobacillus requiring specific media and environmental conditions for growth in culture. Microscopically, this organism often appears in elongated formations, resembling "railroad tracks" or "schools of fish." Notably, this infection significantly enhances the risk of HIV transmission and is exceedingly rare in the United States and other developed nations.[5]
2. **Chlamydia:** The Gram-negative obligate, nonmotile intracellular bacterium *Chlamydia trachomatis* (*C trachomatis*) is categorized as the most prevalent curable STI in the United States, as reported by the Centers for Disease Control (CDC) and the World Health Organization (WHO). Two infectious forms are identified: the elementary body (EB) that invades host cells, and the reticulate body (RB) that replicates and produces additional infectious EB.[6][7]
3. **Genital Herpes:** Genital herpes results from infection with herpes simplex virus 1 (HSV-1) or herpes simplex virus 2 (HSV-2).[8] HSV is characterized as a double-stranded DNA virus encased in a lipoprotein membrane, which facilitates its infection of target cells.[9] Although traditionally associated with orolabial infections, HSV-1 has increasingly become a leading cause of genital herpes among younger and homosexual populations, with an estimated 50 million individuals infected in the United States.[8][9][10]
4. **Gonorrhea:** Gonorrhea is caused by the Gram-negative diplococci bacterium *Neisseria gonorrhoeae* (*N gonorrhoeae*), recognized as the second most common STI in the United States (following *C trachomatis*).[8] This organism utilizes glucose to penetrate mucus epithelial cells and alters cellular proteins to enhance its invasiveness, resulting in localized inflammation that manifests as typical STI symptoms.[11][12]
5. **Granuloma Inguinale:** Granuloma inguinale, associated with the Gram-negative intracellular bacterium *Klebsiella granulomatis* (previously known as *Calymmatobacterium granulomatis*), is also referred to as Donovanosis. It is rarely reported in the U.S. and is predominantly found in developing nations, particularly in tropical regions, with a higher prevalence noted in the Caribbean, southern Africa, South America, New Guinea, and India.[13]
6. **Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome:** These conditions are caused by enveloped retroviruses containing two single-stranded RNA molecules. The primary clinical presentation of HIV is characterized by flu-like symptoms, often misdiagnosed as an acute viral syndrome.[14] The onset of symptoms typically occurs between four to ten weeks after infection, with the majority of U.S. cases being HIV-1. Acquired immunodeficiency syndrome (AIDS) represents the advanced stage of HIV infection,[15] with a median progression time from HIV to AIDS of approximately 11 years, though this varies significantly. The likelihood of

syphilis among HIV-positive individuals is 77 times higher than in the general population.[16]

7. **Human Papillomavirus:** Human papillomavirus (HPV) is a double-stranded DNA virus that replicates within the basal layer of stratified squamous epithelial cells, leading to hyperplasia and potential malignant transformation. Oncogenic strains, notably types 16 and 18, are implicated in carcinogenesis, while types 6 and 11 are associated with the development of anogenital warts (condyloma acuminata).[1] HPV is recognized as the most widespread STI globally and in the United States.
8. **Lymphogranuloma Venereum:** Lymphogranuloma venereum is another condition caused by Chlamydia trachomatis, albeit a different serotype than those responsible for common chlamydial infections, specifically serovars L1, L2, and L3. This infection is infrequent in the United States but prevalent in tropical and subtropical regions, primarily affecting men who have sex with men, and is often linked with HIV infections.[18]
9. **Mycoplasma Genitalium:** Mycoplasma genitalium ranks as the second most common cause of nongonococcal urethritis following chlamydia and is a frequent contributor to female cervicitis as well as resistant or recurrent urethritis. This pathogen grows very slowly in culture, with incubation periods extending up to six months. Due to the absence of a cell wall, it cannot be Gram-stained. Key risk factors include being younger than 25 years, smoking, engaging in frequent sexual activity, and having multiple sexual partners, with a noted association to HIV infections.[19]
10. **Syphilis:** Syphilis is attributed to the spirochete bacterium Treponema pallidum (T pallidum), which is extremely slow-growing and cannot be cultured nor observed via standard light microscopy. The organism evades initial immune detection due to its limited protein exposure and lack of lipopolysaccharides in its outer membrane. Recent reports from the CDC indicate an increase in syphilis infections compared to previous data,[8] with the disease being notably more prevalent in developing regions, particularly among populations with limited access to healthcare.[20] The clinical presentation includes a painless chancre at the infection site, with varying forms categorized as primary, secondary, or tertiary stages.[8] Globally, approximately 12% of men who have sex with men are affected by this condition.
11. **Trichomoniasis:** Trichomoniasis is caused by the anaerobic, flagellated protozoan Trichomonas vaginalis, leading to direct epithelial damage and subsequent microulcerations primarily in the vagina, cervix, urethra, and paraurethral glands.[22][23]

Epidemiology:

The human papillomavirus (HPV) represents the most prevalent sexually transmitted infection (STI) in the United States. Current estimates suggest that approximately 80% of sexually active individuals are infected, with 42% of adults aged 18 to 59 years affected. Among those infected, about 7% harbor oral HPV, contributing to an estimated 14 million new cases reported annually. HPV's ubiquity is highlighted by the Centers for Disease Control and Prevention (CDC), which projects that nearly all sexually active individuals who have not received vaccination will contract the virus at some stage in their lives. Globally, HPV has

affected no fewer than 291 million women. In 2020, the CDC reported approximately 2.4 million cases of STIs not related to HPV in the US. Chlamydia was the most prevalent, with 1.6 million reported cases. Gonorrhea followed with 677,769 cases, reflecting a 45% increase since 2016, while primary and secondary syphilis cases reached 133,945, a 52% increase during the same timeframe. Notably, congenital syphilis was diagnosed in 2,148 infants in 2020, marking a 235% rise since 2016. A significant majority (over 80%) of primary and secondary syphilis cases are reported among men, with men who have sex with men constituting nearly half (47%) of these cases. The CDC estimates that 44% of bisexual and gay men who test positive for syphilis are also co-infected with HIV.

1. Overall, the prevalence of STIs in the US is on the rise.
2. Global epidemiological data from the World Health Organization (WHO) reveal the following trends:
3. More than 1 million new potentially treatable STIs are acquired globally each day, with most infections remaining asymptomatic.
4. An estimated 376 million new infections occur annually, with one in four attributable to curable STIs (chlamydia, gonorrhea, syphilis, and trichomoniasis).
5. Trichomonas is the most common, with 156 million new cases globally each year, followed by chlamydia at 127 million, gonorrhea at 87 million, and syphilis at 6.3 million.
6. The incidence of STIs in the US has increased, showing a nearly 30% rise in reportable cases between 2015 and 2019.
7. Approximately 12% of the US population aged 14 to 49 is currently estimated to be infected with herpes.
8. Globally, herpes simplex virus type 2 prevalence exceeds 500 million individuals.
9. In 2016, approximately one million pregnant women were estimated to have an STI, resulting in over 350,000 complications related to childbirth or neonatal health.
10. HPV infections have been linked to over 310,000 cervical cancer fatalities annually.
11. Syphilis ranks as the second leading cause of stillbirths worldwide.
12. In 2016, HIV/AIDS impacted around 37 million individuals globally.
13. In the US, about 15% of those infected with HIV are unaware of their status and account for 40% of all new HIV cases.
14. The CDC estimates that approximately 35,000 new HIV cases occur each year in the US.
15. Mycoplasma genitalium is responsible for 15% to 20% of all non-gonococcal urethritis cases and 40% of recurrent or persistent urethritis infections.

To effectively evaluate and understand the incidence, distribution, progression, and management of all STIs, a centralized data collection system should be established, encompassing contributions from physicians, public health authorities, political leaders, and healthcare organizations. Optimal sources of data should include published research and reports from government and healthcare institutions that analyze the statistical significance of STIs across different geographic areas and demographics. STI rates are particularly elevated in most countries, especially among individuals aged 15 to 50. Additionally,

undiagnosed STIs are estimated to contribute to around 20,000 infertility cases annually among women in the US [27-28].

Pathophysiology

This review aims to provide an overview of sexually transmitted infections (STIs), highlighting prevalent infections such as HIV, gonorrhea, chlamydia, genital herpes, HPV, trichomoniasis, and syphilis. STIs can be classified as bacterial, viral, or parasitic. These infections enter the human body through microscopic lesions in the mucosal membranes of the penis, vagina, anus, or other mucosal surfaces. Additional routes of transmission may include intravenous drug use and exposure during childbirth or breastfeeding. Pathogens invade healthy cells and overwhelm the immune response, resulting in the characteristic signs and symptoms associated with these infections. The review will cover essential symptomatology, including genital, extragenital, or disseminated manifestations, along with a comprehensive history and physical examination to facilitate differential diagnosis and recommended treatments. Current treatment guidelines from the CDC and WHO will be discussed, providing a broad overview of common STIs. It is critical for physicians and healthcare professionals to distinguish between curable and incurable STIs, as untreated infections can result in serious, long-term health consequences, including infertility, scarring, chronic pain, sexual dysfunction, and various cancers.

History and Physical

Healthcare professionals receive training to interact effectively with patients, their partners, and families to grasp the primary complaints and develop an efficient differential diagnosis. It is essential to gather a comprehensive medical history, whether in a primary care setting or an emergency department. The clinician must communicate effectively with patients presenting symptoms indicative of an undiagnosed sexually transmitted infection (STI). It is crucial for clinicians to understand that all adolescents under 18 are entitled to STI testing and treatment without the necessity of parental consent in the US. [6] Clinicians should be aware of the strong connection between STIs and patient behavior, which must be addressed with sensitivity, diplomacy, and an absence of judgment during the clinical assessment. [29] The role of healthcare professionals is to assist, treat, and educate patients about their conditions, while also promoting and advocating for healthy behaviors that reduce the risk of re-infection. For more information, individuals should consult state health care systems or refer to the "Sexually Transmitted Disease Treatment Guidelines 2021" published by the CDC. [29]. During the collection of sexual history, a helpful mnemonic for guiding clinical inquiries can be recalled as the "other 5 Ps":

- Partners
- Practices
- Prevention against pregnancy
- Prior history of STIs
- Protection against STIs [30]

The physical examination should be directed by the primary complaint and the symptoms gathered during the review of systems. [7] The examination should be

conducted in a private setting with a chaperone present, whose name should be documented in the patient's medical record. [8] At the conclusion of the examination, clinicians should pose an open-ended question to ensure ongoing dialogue and to ascertain if the patient has additional information regarding their sexual practices that has not been previously addressed. This overview briefly outlines the most common signs, symptoms, and physical examination findings associated with sexually transmitted infections that can be assessed in an acute care environment. Each STI is linked to a separate StatPearls reference for a more comprehensive exploration. The physical examination will be categorized by the prevalent signs, symptoms, physical findings, and diagnoses.

Chancroid

Women and Men: Signs and symptoms: This condition frequently affects individuals in their 20s and 30s, particularly sex workers and their clients. The most commonly impacted areas include the distal penis in men, while women may experience lesions in the vagina, labia, and perianal regions. The primary symptom is an exceptionally high level of pain when the lesion evolves to the ulcerative phase. [5] The lesion initiates as a reddish papule that swiftly advances to a pustule and eventually transforms into an extremely painful ulcer. Often referred to as a "soft chancre," the ulcer exhibits soft, irregular edges with a friable base and a grayish-yellow exudate; it tends to bleed easily. Typically measuring 1 to 2 cm in diameter, these ulcers may resolve spontaneously within three months, even without treatment. Nearly half of the affected individuals will develop regional lymphadenopathy, which may be tender. Approximately 25% of patients may develop infected bullae or abscesses that could rupture and become superinfected, resulting in significant tissue damage to the genital area. It is estimated that 10% of those affected may also have syphilis or genital herpes.

Chlamydia

Women: Signs and symptoms: While most infections can be asymptomatic, they may present with vaginal discharge, abnormal bleeding, lower pelvic pain, increased urinary frequency, or dysuria. [31] If a systemic infection is present, the patient may exhibit fever, abdominal pain, nausea, vomiting, fatigue, and malaise. [7] Signs of cervix inflammation with mucopurulent discharge may be observed, along with ectropion, vaginal discharge, heightened sensitivity of the cervix, and tenderness in the adnexal areas and abdomen. [31] If a systemic infection or Fitz-Hugh-Curtis syndrome is suspected, tenderness in the right upper quadrant may indicate perihepatitis. [7] Common presenting complaints include dysuria, testicular pain, and discomfort during defecation due to inflammation in the rectal region and prostate. [7] This condition often results in a beige or yellowish discharge from the male urethra. Tenderness in the testicles (especially over the epididymis) or discomfort upon palpation of the prostate or rectum. [7]

Genital Herpes

Women and Men: Signs and symptoms: Primary infections are likely to induce systemic symptoms, such as painful vesicular lesions in the affected areas, pruritus, dysuria, fever, headaches, malaise, and lymphadenopathy. Initial

infections typically resolve spontaneously in about two weeks. Reactivation often presents with a prodromal phase that includes tingling, itching, and rash resembling vesicular lesions. [9][10] Recurrent infections generally tend to be less severe and have a shorter duration. [32] The affected area can be localized or widespread. Primary herpes infections are often more severe, involving multiple systems, potentially leading to complications such as pneumonitis, hepatitis, meningitis, and encephalitis. Women may exhibit diffuse vesicular lesions in both internal and external vaginal areas. [32] Men may have widespread vesicular lesions on the glans of the penis, penile shaft, scrotum, perineal/perianal region, and rectum, both internally and externally. Recurrent herpes infections may cause isolated vesicular lesions along a neuronal pathway where the virus is dormant. [33]

Gonorrhea

Women: Genitourinary exam: This may reveal inflammation of the external vagina, resulting in excoriations from itching, mucopurulent discharge, and friable, inflamed cervical mucosa. Patients may report dysuria, urgency, urinary frequency, lower pelvic pain, and irregular vaginal bleeding. [7] A thorough examination is necessary if a systemic infection is suspected. [12] **Men:** Signs and symptoms: Patients may experience testicular pain, dysuria, purulent discharge from the meatus, and discomfort during defecation due to inflammation in the rectum or prostate. [30] The clinician should also carefully monitor for systemic signs consistent with disseminated gonococcal infection, such as sore throat, eye redness, joint pain, and skin lesions. [12] Possible tenderness over the epididymis, purulent discharge from the meatus, or palpable tenderness in the prostate or rectum. [30] A comprehensive general physical examination is necessary due to concerns regarding disseminated gonococcal infections, particularly in the joints. [12]

Granuloma Inguinale

Women and Men: Signs and symptoms: Patients typically present with highly vascularized lesions on the genitals and perineum that are usually painless but can result in significant scarring. [35][36][37] Typical findings consist of beefy, red ulcer-like lesions indicative of high vascularization that bleed easily upon manipulation. Subcutaneous granulomas may also be present, though lymphadenopathy is uncommon. The lesions are generally large and irregular and often linked to secondary infections. Four primary types of lesions may be observed during examination:

- **Ulcerovegetative:** Large painless ulcer identified during the examination.
- **Nodular:** Soft and red lesions that tend to ulcerate throughout the course of infection.
- **Cicatricial:** Dry ulcers that may progress into plaques.
- **Hypertrophic:** Thick, painless lesions.

HIV:

Women and Men: Signs and symptoms: Patients may be asymptomatic or present with an acute viral syndrome that includes systemic symptoms: malaise,

fatigue, loss of appetite, fever, chills, joint pain, muscle pain, or skin manifestations. [15] Indicators of advanced infection include fever, diarrhea, shortness of breath, cough, and oral candidiasis. Acute retroviral syndrome may manifest with nonspecific symptoms like fatigue, muscle pain, skin rash, headache, sore throat, swollen lymph nodes, joint pain, night sweats, and diarrhea. This syndrome occurs early in 50% to 90% of newly infected individuals, often before their antibody tests yield positive results. [14] The main complaint will direct the physical examination. A comprehensive history and physical assessment are necessary to rule out a broad differential diagnosis. [14] Secondary and opportunistic infections are prevalent, particularly in cases of AIDS.

HPV and Genital Warts

Women and Men: Signs and symptoms: Most complaints are either cosmetic or incidental findings due to the typically asymptomatic nature of prevalent HPV types 6 and 11, which account for the majority (90%) of venereal and anogenital warts. Patients may also report ulcerative lesions related to oncogenic HPV types 16 and 18, which can progress to malignancies if triggered by factors such as folate deficiency, ultraviolet light exposure, pregnancy, immunosuppression, or smoking. [17] Upon examination, an exophytic lesion may appear as a cauliflower-like growth known as condylomata acuminata. [17] Lesions can be found in the external genital region, perineum, or perianal area. For women, an examination includes a speculum exam to screen for cervical cancer. [38]

Lymphogranuloma Venereum

Women and Men: Signs and symptoms: Patients often present with painful lymphadenopathy localized to the inguinal region, frequently noting an initial pustule that progressively leads to extensive painful ulceration. [39] Men typically present during early or acute stages, while women often present at a later stage. [18] Characteristic findings include unilateral inguinal lymphadenopathy or bubo formation, which may lead to painful drainage or abscess formation. Ulcerations may be presented as soft, friable lesions that bleed easily. [19]

Syphilis

Women and Men: Primary: Patients present with a painless, well-defined lesion or ulcer known as a chancre at the site of inoculation. [21] This typically occurs within three months following the exposure. If left untreated, these lesions may heal spontaneously within three to eight weeks; however, approximately 30% of patients may progress to tertiary syphilis. [21]

Secondary: This stage appears 2 to 4 weeks after the initial chancre and is characterized by systemic symptoms, including a cutaneous lesion and a distinct maculopapular rash. Wart-like lesions known as condylomata lata may also develop and resolve during this phase. The rash is non-itchy and includes mucous membranes, as well as the palmar surfaces of the hands and soles of the feet, which are usually unaffected in other conditions. [21]

Latent: During this phase, there are no clinical signs or symptoms, although serological tests will return positive results. [21]

Tertiary: Approximately one-third of untreated patients will exhibit tertiary symptoms, which may manifest months, years, or even decades after the initial infection. Systemic symptoms can vary, affecting the cardiovascular, neurological, and cutaneous systems, leading to gummatous lesions. Neurosyphilis may present with symptoms resembling a stroke, cranial nerve deficits, altered mental status, general paresis, or tabes dorsalis. For further details, refer to the companion StatPearls reviews on "Neurosyphilis" and "Tabes dorsalis."

Signs and Symptoms: The symptoms associated with syphilis vary depending on the stage of the infection at the time of evaluation. They can be classified into primary, secondary, latent, and tertiary phases, which are thoroughly explained in the companion StatPearls review on "Syphilis." [21] The findings during the physical examination will depend on the specific stage of the syphilis infection.

Trichomoniasis

Women: Signs and Symptoms: Women may remain asymptomatic but can also report foul-smelling vaginal discharge, pruritus, dyspareunia, dysuria, and vaginal spotting. [22]

Physical Exam: The examination may reveal irritation of both the external and internal vagina, including classic findings of "strawberry cervix," also known as colpitis macularis. A foul, frothy vaginal discharge may be observed during the exam.

Men: Signs and Symptoms: Men may also be asymptomatic when infected with *Trichomonas vaginalis* but can present with testicular pain, dysuria, or rectal discomfort.

Physical Exam: There may be tenderness upon palpation of the epididymis and prostate during a rectal examination. No skin lesions or signs of inflammation are typically evident.

Conclusion

In conclusion, the rising incidence of sexually transmitted infections (STIs) necessitates heightened awareness and proactive measures from healthcare professionals. This review highlighted the multifaceted nature of STIs, discussing their epidemiology, clinical presentations, and the critical importance of effective prevention and treatment strategies. The prevalence of STIs, particularly in vulnerable populations, underscores the need for targeted interventions and education regarding safe sexual practices. Additionally, the review emphasized the role of timely diagnosis and management in mitigating the long-term consequences of untreated STIs, including infertility, chronic pain, and increased susceptibility to other infections, particularly HIV. Current trends reveal alarming statistics, with significant increases in cases of chlamydia, gonorrhea, and syphilis reported in the United States and globally. The identification of specific risk factors, such as multiple sexual partners and substance use, can inform

tailored educational campaigns to reduce transmission rates. Furthermore, the implementation of robust data collection systems will enhance the ability of public health authorities to monitor and respond to STI outbreaks effectively. Continuous education and training for healthcare professionals are vital to improve patient interactions, ensure accurate diagnoses, and foster an understanding of the implications of STIs on overall health. Ultimately, a coordinated effort among healthcare providers, public health entities, and community organizations is essential in addressing the challenges posed by STIs. By enhancing prevention strategies, facilitating access to treatment, and promoting public awareness, we can work towards a significant reduction in STI incidence and its associated health impacts.

References

1. Smith L, Angarone MP. Sexually Transmitted Infections. *Urol Clin North Am*. 2015 Nov;42(4):507-18.
2. Wagenlehner FM, Brockmeyer NH, Discher T, Frieze K, Wichelhaus TA. The Presentation, Diagnosis, and Treatment of Sexually Transmitted Infections. *Dtsch Arztebl Int*. 2016 Jan 11;113(1-02):11-22.
3. Gray R, Kigozi G, Kong X, Ssempiija V, Makumbi F, Watty S, Serwadda D, Nalugoda F, Sewenkambo NK, Wawer MJ. The effectiveness of male circumcision for HIV prevention and effects on risk behaviors in a posttrial follow-up study. *AIDS*. 2012 Mar 13;26(5):609-15.
4. Farley TM, Samuelson J, Grabowski MK, Ameyan W, Gray RH, Baggaley R. Impact of male circumcision on risk of HIV infection in men in a changing epidemic context - systematic review and meta-analysis. *J Int AIDS Soc*. 2020 Jun;23(6):e25490
5. Irizarry L, Velasquez J, Wray AA. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): May 22, 2023. Chancroid.
6. Bugg CW, Taira T, Zaurova M. Pelvic inflammatory disease: diagnosis and treatment in the emergency department [digest]. *Emerg Med Pract*. 2016 Dec 22;18(12 Suppl Points & Pearls):S1-S2.
7. Mohseni M, Sung S, Takov V. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Aug 8, 2023. Chlamydia.
8. Workowski KA, Bolan GA., Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Recomm Rep*. 2015 Jun 05;64(RR-03):1-137.
9. Saleh D, Yarrarapu SNS, Sharma S. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Aug 28, 2023. Herpes Simplex Type 1
10. Mathew Jr J, Sapra A. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Mar 13, 2024. Herpes Simplex Type 2.
11. Springer C, Salen P. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Apr 17, 2023. Gonorrhea.
12. WHO Guidelines for the Treatment of *Neisseria gonorrhoeae*. World Health Organization; Geneva: 2016.
13. Santiago-Wickey JN, Crosby B. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Mar 12, 2023. Granuloma Inguinale.
14. Swinkels HM, Justiz Vaillant AA, Nguyen AD, Gulick PG. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Jul 27, 2024. HIV and AIDS.

15. Capriotti T. HIV/AIDS: An Update for Home Healthcare Clinicians. *Home Healthc Now*. 2018 Nov/Dec;36(6):348-355.
16. Chesson HW, Heffelfinger JD, Voigt RF, Collins D. Estimates of primary and secondary syphilis rates in persons with HIV in the United States, 2002. *Sex Transm Dis*. 2005 May;32(5):265-9.
17. Luria L, Cardoza-Favarato G. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Jan 16, 2023. Human Papillomavirus.
18. Rawla P, Thandra KC, Limaie F. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Jul 31, 2023. Lymphogranuloma Venereum.
19. Lanao AE, Chakraborty RK, Pearson-Shaver AL. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Aug 7, 2023. Mycoplasma Infections.
20. Hook EW. Syphilis. *Lancet*. 2017 Apr 15;389(10078):1550-1557.
21. Tudor ME, Al Aboud AM, Leslie SW, Gossman W. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Aug 17, 2024. Syphilis.
22. Schumann JA, Plasner S. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Jun 12, 2023. Trichomoniasis.
23. Kissinger P. Epidemiology and treatment of trichomoniasis. *Curr Infect Dis Rep*. 2015 Jun;17(6):484.
24. James C, Harfouche M, Welton NJ, Turner KM, Abu-Raddad LJ, Gottlieb SL, Looker KJ. Herpes simplex virus: global infection prevalence and incidence estimates, 2016. *Bull World Health Organ*. 2020 May 01;98(5):315-329.
25. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin*. 2018 Nov;68(6):394-424.
26. Huynh K, Kahwaji CI. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Apr 17, 2023. HIV Testing.
27. Ye X, Liu J, Yi Z. Trends in the Epidemiology of Sexually Transmitted Disease, Acquired Immune Deficiency Syndrome (AIDS), Gonorrhea, and Syphilis, in the 31 Provinces of Mainland China. *Med Sci Monit*. 2019 Jul 30;25:5657-5665.
28. De Schryver A, Meheus A. Epidemiology of sexually transmitted diseases: the global picture. *Bull World Health Organ*. 1990;68(5):639-54.
29. Cook RL, Hutchison SL, Østergaard L, Braithwaite RS, Ness RB. Systematic review: noninvasive testing for Chlamydia trachomatis and Neisseria gonorrhoeae. *Ann Intern Med*. 2005 Jun 07;142(11):914-25.
30. Dalby J, Stoner BP. Sexually Transmitted Infections: Updates From the 2021 CDC Guidelines. *Am Fam Physician*. 2022 May 01;105(5):514-520.
31. Glatz M, Juricevic N, Altwegg M, Bruisten S, Komericki P, Lautenschlager S, Weber R, Bosshard PP. A multicenter prospective trial to assess a new real-time polymerase chain reaction for detection of Treponema pallidum, herpes simplex-1/2 and Haemophilus ducreyi in genital, anal and oropharyngeal ulcers. *Clin Microbiol Infect*. 2014 Dec;20(12):O1020-7.
32. Xu F, Sternberg MR, Kottiri BJ, McQuillan GM, Lee FK, Nahmias AJ, Berman SM, Markowitz LE. Trends in herpes simplex virus type 1 and type 2 seroprevalence in the United States. *JAMA*. 2006 Aug 23;296(8):964-73.
33. Jennings LK, Krywko DM. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): Mar 13, 2023. Pelvic Inflammatory Disease.

34. Martín-Sánchez M, Ong JJ, Fairley CK, Chen MY, Williamson DA, Maddaford K, Aung ET, Carter G, Bradshaw CS, Chow EPF. Clinical presentation of asymptomatic and symptomatic heterosexual men who tested positive for urethral gonorrhoea at a sexual health clinic in Melbourne, Australia. *BMC Infect Dis.* 2020 Jul 08;20(1):486.
35. Jain B. The key role of differential diagnosis in diagnosis. *Diagnosis (Berl).* 2017 Nov 27;4(4):239-240.
36. Andrist LC. Taking a sexual history and educating clients about safe sex. *Nurs Clin North Am.* 1988 Dec;23(4):959-73.
37. Guaschino S. [Complications of sexually transmitted diseases: clinical course and treatment]. *Ann Ist Super Sanita.* 2000;36(4):431-5.
38. Waymack JR, Sundareshan V. StatPearls [Internet]. StatPearls Publishing; Treasure Island (FL): May 3, 2023. Acquired Immune Deficiency Syndrome.

العدوى المنقولة جنسياً: مقال مراجعة محدث لمهنيي الرعاية الصحية

الملخص:

الخلفية: تمثل العدوى المنقولة جنسياً (STIs) قضية صحية عامة هامة على مستوى العالم، حيث غالباً ما تبقى دون علاج مما يؤدي إلى مضاعفات صحية خطيرة. إن انتشار العدوى المنقولة جنسياً، خصوصاً في الفئات السكانية المحرومة، يتطلب فهماً شاملاً لعلم الأوبئة وطرق انتقالها وإدارتها.

الهدف: تهدف هذه المراجعة إلى تزويد مهنيي الرعاية الصحية بنظرة محدثة عن أكثر العدوى المنقولة جنسياً انتشاراً، ووبائياتها، وأعراضها السريرية، واستراتيجيات الوقاية والعلاج الفعالة.

الأساليب: تستند المراجعة إلى البيانات الحالية من مراكز السيطرة على الأمراض والوقاية منها (CDC) ومنظمة الصحة العالمية (WHO)، إلى جانب الأدبيات ذات الصلة حول مسببات العدوى المنقولة جنسياً، والأعراض، وبروتوكولات الإدارة. كما تسلط الضوء على الحاجة إلى تحسين أنظمة جمع البيانات لتتبع وإدارة حالات العدوى المنقولة جنسياً بشكل فعال.

النتائج: تحدد المراجعة سبع عدوى منقولة جنسياً الأكثر انتشاراً، بما في ذلك الكلاميديا، والسيلان، والزُّهري، والهربس، وفيرس نقص المناعة البشرية (HIV)، وفيرس الورم الحليمي البشري (HPV)، والداء المشعرات، مع تفاصيل حول طرق انتقالها، وعوامل الخطر، وخيارات العلاج. تشير البيانات الوبائية إلى اتجاه متزايد في حالات العدوى المنقولة جنسياً، خاصة في الفئات العمرية من 15 إلى 50 عاماً، مع ملاحظة معدلات عالية من العدوى المشتركة بين المصابين بفيروس نقص المناعة البشرية.

الخلاصة: هناك حاجة ملحة لمقدمي الرعاية الصحية لتعزيز معرفتهم بالعدوى المنقولة جنسياً من أجل تنفيذ تدابير فعالة للوقاية، والتشخيص، والعلاج. يمكن أن تساعد أنظمة جمع البيانات المركزية بشكل أكبر في فهم توزيع وإدارة العدوى المنقولة جنسياً، مما يؤدي في النهاية إلى تحسين النتائج الصحية العامة.

الكلمات المفتاحية: العدوى المنقولة جنسياً، علم الأوبئة، الوقاية، مهنيي الرعاية الصحية، العلاج.