

# Sexually Transmitted Infections: A Medical Update



Patricia R. Jennings, PA-C, DrPH\*, Ronald W. Flenner, MD

## KEYWORDS

• STI • Genital infections • Syphilis • Gonorrhea • Chlamydia • Trichomonas

## KEY POINTS

- After reading this article, the participant should be able to describe the current statistical trends of common sexually transmitted infections (STIs) in the United States.
- After reading this article, the participant should be able to discuss the current screening and diagnostic testing available for common STIs in the United States.
- After reading this article, the participant should be able to incorporate the current treatment plan available for common STIs in the United States into their practice.
- After reading this article, the participant should be able to discuss prevention strategies for common STIs in the United States.

The term sexually transmitted infections (STIs) refers to a variety of clinical syndromes and infections caused by pathogens that can be acquired and transmitted through sexual activity. The Centers for Disease Control and Prevention (CDC) estimates that nearly 20 million new STIs occur every year in this country, half among young people aged 15 to 24, and account for almost \$16 billion in health care costs. Many STIs are undiagnosed and others are not reportable to the CDC (herpes, trichomonas, human papilloma virus), therefore the actual number may be much higher. In addition to increasing a person's risk for acquiring and transmitting human immunodeficiency virus (HIV) infection, STIs can lead to severe reproductive health complications, such as infertility and ectopic pregnancy.<sup>1</sup> Physician assistants (PAs) play a critical role in identifying, treating, and preventing STIs. As part of the clinical encounter, PAs should routinely obtain sexual histories from their patients and address risk reduction.

Several factors contribute to the spread of STIs, including biologic, social, economic, and behavioral. STIs are acquired during unprotected sex with an infected

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Eastern Virginia Medical School, 700 West Onley Road, Norfolk, VA 23507, USA

\* Corresponding author.

E-mail address: [jenninpa@evms.edu](mailto:jenninpa@evms.edu)

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partner. Unfortunately, many STIs either do not produce any signs or symptoms or the signs and symptoms are so mild that they are unnoticed. Therefore, many infected individuals do not know that they need treatment and may unintentionally transmit their infection to an uninfected partner. Certain racial and ethnic groups have high rates of STIs when compared with white individuals.<sup>2</sup> STIs disproportionately affect disadvantaged people and people in social networks in which high-risk sexual behavior is common. Many studies document the association of substance abuse with STIs and the introduction of new illicit substances into communities can alter sexual behavior in high-risk sexual networks.<sup>3</sup> Another important factor contributing to the spread of STIs in the United States is the stigma associated with STIs and the general discomfort of eliciting a sexual history from patients of all ages. An innovative communication strategy that normalizes perceptions of sexual health and STI prevention may be helpful in identifying high-risk behaviors, infected individuals, and prevention strategies.

This article reviews recent demographics, as well as current screening, diagnostic testing, and treatment of syphilis, herpes, gonorrhea, chlamydia, trichomonas, and nongonococcal urethritis.

## SYPHILIS

### Overview

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Syphilis has been called “the great imitator” because it has so many possible symptoms, many of which look like symptoms from other diseases. The painless ulcer can be confused for an ingrown hair, zipper cut, or a seemingly harmless bump. The non-pruritic body rash that develops during the secondary stage of syphilis can show up on the palms of the hands and soles of the feet, all over the body, or in just a few places. Approximately 20,000 cases of syphilis were reported to the CDC in 2014 compared with 6103 cases in 2001. Before 2013, increasing syphilis rates were mainly due to cases in men, particularly in men who have sex with men (MSM). But from 2013 to 2014, syphilis case rates increased 22.7% in women and the congenital syphilis case rate increased 37% (from 2012 to 2014).<sup>4</sup>

Syphilis is caused by the spirochete *Treponema pallidum*. Syphilis is transmissible by sexual contact with infectious lesions, from mother to fetus in utero, and via blood product transfusion. If untreated, it progresses through 4 stages: primary, secondary, latent, and tertiary. Primary syphilis is characterized by the development of a painless chancre at the site of transmission after an incubation period of 3 to 6 weeks. The lesion has a punched-out base and rolled edges and is highly infectious (**Fig. 1**). Secondary syphilis develops approximately 4 to 10 weeks after the appearance of the primary lesion. During this stage, the spirochetes multiply and spread throughout the body. Secondary syphilis lesions are quite variable in their manifestations. Systemic manifestations include malaise, fever, myalgias, arthralgias, lymphadenopathy, and rash. Latent syphilis is a stage at which the features of secondary syphilis have resolved, although patients remain seroreactive. Latent syphilis acquired within the preceding year is referred to as early latent syphilis; all other cases of latent syphilis are late latent syphilis or syphilis of unknown duration.<sup>1</sup> Approximately one-third of patients with untreated latent syphilis go on to develop tertiary syphilis, whereas the rest remain asymptomatic. Currently, tertiary syphilis disease is rare.<sup>5</sup> *T pallidum* can infect the central nervous system and result in neurosyphilis, which can occur at any stage of syphilis. Early neurologic clinical manifestations (ie, cranial nerve dysfunction, meningitis, stroke, acute altered mental status, and auditory or ophthalmic abnormalities) are usually present within the first few months or years of infection.

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