

Facts on Sexually Transmitted Infections in the United States

OVERVIEW

- More than two dozen bacterial, viral or parasitic infections are known to be transmitted largely or exclusively through sexual contact. U.S. public health authorities focus on a limited set of these STIs, taking into account how common and contagious each STI is, how easy it is to detect and treat, and how much impact it may have on public health.
- In most cases, infection does not have a major, lasting impact on an individual's health if she or he seeks proper treatment. Although they can lead to serious health complications if left untreated, human papillomavirus (HPV) and the bacterial infections chlamydia, gonorrhea and syphilis can be successfully treated or cured. At the other end of the STI spectrum is HIV/AIDS, which is still considered to be ultimately fatal. However, early treatment with antiretroviral drugs and other medical and lifestyle interventions can greatly delay the onset of the disease, and with high-quality care, HIV-positive people can live many years with minimal symptoms.
- Because the most common STIs are "silent" in that they are often asymptomatic, estimates of the incidence (new cases) and prevalence (total existing cases) of most STIs are difficult to make. Many asymptomatic STIs can be diagnosed only through testing, yet routine screening is not widespread. In addition, it is difficult to measure trends in the incidence and prevalence of STIs because

of changes in reporting systems and testing methods. As a result, increases in reported cases may be due to improved testing and reporting, rather than true upsurges in incidence or prevalence.

- The most recent national estimates, now a decade old, suggest that there are approximately 19 million new cases of STIs each year, half of them among 15–24-year-olds, and that 65 million Americans have at least one viral STI, most commonly genital herpes.
- Direct medical costs associated with STIs in the United States are estimated at \$14.7 billion annually in 2006 dollars. More than \$8 billion is spent each year to diagnose and treat STIs and their complications, not including HIV.
- For some population subgroups, primarily blacks and men who have sex with men, high prevalence of STIs within the community can be a risk factor in itself, since individuals are more likely to encounter an infected partner. High community prevalence of STIs can be a symptom of other problems in the community, such as a lack of access to health care, poverty, unemployment and other persistent social and economic discrimination.
- Whereas white Americans acquire STIs predominantly through high-risk sexual behaviors, black Americans acquire them through both high- and low-risk behaviors because levels of infection within the black population are high.

INCIDENCE, PREVALENCE, DISPARITIES AND TESTING Chlamydia and Gonorrhea

- Chlamydia and gonorrhea are bacterial infections that can be cured with antibiotics.
- Untreated chlamydia and gonorrhea infections in women may lead to pelvic inflammatory disease (PID), a serious infection that itself may lead to ectopic pregnancy, infertility and chronic pain. Evidence suggests that roughly 10–40% of untreated chlamydia cases will lead to PID and that as many as 20% of women with PID will develop infertility. Forty-two percent of young women were tested for chlamydia in 2007, compared with only 25% in 2000.
- Chlamydia and gonorrhea must be reported to state health departments and the Centers for Disease Control and Prevention (CDC). In 2007, the CDC reported 1.1 million chlamydia diagnoses and 356,000 gonorrhea diagnoses. However, since most chlamydia and gonorrhea cases go undiagnosed or unreported, the true number of new infections is probably much greater.
- In 2007, the overall reported rate of chlamydia infection among women (544 cases per 100,000 females) was almost three times the rate among men (190 per 100,000 males).
- Blacks are the group most heavily affected by chlamydia and gonorrhea. The reported rates of both infections are 9–19 times higher among blacks than

whites. Although the magnitude of these disparities may be distorted due to discrepancies in reporting, the disparities are real.

- Rates of gonorrhea and chlamydia are heavily concentrated among young people. Young women aged 15–24 are hit hardest by chlamydia, with rates more than five times as high as women overall.
- Routine screening for chlamydia among women younger than 26 is widely recommended by the CDC and major medical associations, and it is considered to be a cost-effective and underutilized form of preventive health care by the U.S. Preventive Services Task Force because of its potential for helping to reduce rates of pelvic inflammatory disease.
- The U.S. Preventive Services Task Force recommends that clinicians screen all sexually active women, including those who are pregnant, for gonorrhea infection if they are at increased risk for infection (that is, if they are young or have other individual or population risk factors).

Human Papillomavirus (HPV)

• HPV is an extraordinarily common viral infection in the United States, so much so that it has been described as a virtual “marker” for having had sex. The CDC estimates that 20 million people are currently infected with HPV, 6.2 million Americans become infected each year and at least 50% of sexually active individuals will acquire an HPV infection at some point in their lives.

- Most HPV infections cause no clinical problems and resolve on their own without treatment. (As many as 91% of new infections clear up within two years.) Certain HPV strains lead to genital warts. These warts can be removed, but if the immune system fails to clear the virus entirely, symptoms may reappear. Other HPV strains are deemed “high-risk” because they occasionally develop into a persistent infection that can progress to cervical cancer if left untreated, usually over the course of decades.
- The incidence of cervical cancer in the United States has been on the decline for some time, and today cervical cancer is rare, relative to the incidence of HPV infection. The American Cancer Society estimates that 11,000 cases will occur among American women this year, resulting in 4,000 deaths.
- The major reason cervical cancer rates in this country are low today—despite high rates of HPV infection—is the widespread availability and use of Pap tests. Pap tests can detect not only early-stage cervical cancer, which is highly treatable, but also cervical dysplasia—precancerous changes of cervical cells which can linger for years—allowing for the removal of affected tissue long before invasive cancer sets in.
- Pap tests are fairly common in the United States, but 17% of American women aged 18–64 in 2005 had not been tested in the past three years.

These women account for the majority of cervical cancer diagnoses.

- In 2006, the U.S. Food and Drug Administration approved an HPV vaccine that protects against the four key strains of HPV that account for 70% of cervical cancers and 90% of genital warts. The three-dose vaccine can be given to girls as young as age nine, but is recommended for girls aged 11–12, with catch-up vaccinations recommended for those aged 13–26.

Human Immunodeficiency Virus (HIV)

- HIV is the virus that causes AIDS. HIV can be transmitted through the blood, sexual fluids or breast milk of an HIV-infected person.
- Since 1981, when the first AIDS cases were identified, more than 1.6 million Americans have been infected with HIV, and more than 540,000 have already died. Roughly 56,000 new HIV infections occur each year—a number that has remained stable since 2000. An estimated 1–1.2 million individuals in the United States are living with HIV.
- Of the new HIV infections in 2006, 53% were among men who had sex with men; 31% resulted from heterosexual contact; 12% resulted from injection drug use; and 4% were among men who had sex with men and also used injection drugs.
- In 2006, women accounted for 25% of HIV/AIDS diagnoses among adolescents and adults,

and men for 75%. However, among infections that resulted from heterosexual contact, women account for a growing majority. Eighty percent of women diagnosed with HIV/AIDS in 2006 contracted the virus through heterosexual contact.

- Among both males and females, blacks have the highest rates of new infections. Although blacks make up approximately 13% of the U.S. population, they accounted for almost half of the estimated new HIV/AIDS diagnoses in 2006.
 - In 2002, half of men and women aged 15–44 reported that they had been tested at least once for HIV (other than through blood donation); 15% had been tested in the past 12 months.
 - Close to 40% of people who test positive for HIV are diagnosed with full-blown AIDS within one year, and the majority of those who get an HIV test late in the course of their infection do so because they are already ill.
 - Current federal guidelines recommend that HIV testing be a standard part of medical care for every American aged 13–64, that more people be tested and that people be tested sooner. In 2006, as many as one in five individuals with HIV may have been unaware of their status, down from one in four in 2003.
- ### **Other STIs**
- Other common STIs include viral infections, such as herpes and hepatitis A and B, which

are incurable but treatable; and bacterial and parasitic infections, such as syphilis and trichomoniasis, which can be cured with antibiotics.

- Syphilis, hepatitis A and hepatitis B are required to be reported to state health departments and the CDC. In 2007, the most infectious stages of syphilis—primary and secondary—were diagnosed in about 11,500 Americans. The estimated number of new hepatitis B virus infections was 46,000, while only 4,800 acute clinical cases were reported in 2006. An estimated 1.25 million people in the United States have chronic hepatitis B.

- Although other STIs are not required to be reported to the CDC, estimates are available for some. The CDC estimates that one out of five adolescents and adults have had a genital herpes infection. Although genital herpes is incurable and can cause painful sores and psychological distress, it has become increasingly manageable in the United States

- About 7.4 million new cases of trichomoniasis occur each year. Left untreated, trichomoniasis can be an irritant, causing vaginal discharge, discomfort during intercourse and painful urination.

- Late-stage syphilis can, years later, cause irreversible damage to the nervous system and heart, possibly leading to blindness, insanity, paralysis and death.

- Hepatitis B can cause inflammation of the liver, and chronic cases can cause liver

cell damage, which can lead to cirrhosis of the liver and cancer. It is estimated that 5,000 people die each year in the United States due to the complications of cirrhosis and liver cancer as a result of hepatitis B.

- Herpes, trichomoniasis and many other STIs have two other very real health consequences. First, they can increase an individual's susceptibility of HIV infection. Second, they can have serious negative health outcomes during pregnancy and childbirth. Therefore, public health authorities have put an emphasis on testing and treating women during pregnancy.

PREVENTION, TESTING AND TREATMENT

Prevention

- The three most effective ways to avoid sexual transmission of STIs are to abstain from all sexual activity; to be in a long-term, mutually monogamous relationship with a partner who does not have an STI; and to use condoms consistently and correctly.

- Consistent and correct use of male latex condoms can greatly reduce, though not eliminate, the risk of STI transmission. Condoms, when used consistently and correctly, are very highly effective in preventing the sexual transmission of HIV. Similarly, latex condoms reduce the risk of many other STIs that are transmitted by genital secretions such as semen or vaginal fluids, and to a lesser degree, genital ulcer diseases. Condom use also reduces the

risk of HPV infection and HPV-associated diseases, such as genital warts and cervical cancer.

- To date, there are vaccines for only two viral STIs: hepatitis B and HPV. The hepatitis B vaccine was introduced in 1982, and today an estimated 70 million adolescents and adults, and more than 50 million infants and children, have received at least one dose of the vaccine. The vaccine protecting against four high-risk strains of HPV was introduced in 2006, and as of December 31, 2008, 23 million doses of the vaccine had been distributed in the United States.

- All three of the most effective STI prevention strategies rely on the knowledge, behavior and interpersonal skills of adolescents and adults. Comprehensive sex education contributes to these strategies by helping young people who are not ready for sex to withstand pressure to become sexually active and by equipping them with the information and skills they need to have healthy, responsible and mutually protective relationships when they do begin having sex.

- According to a comprehensive review of sex and HIV education programs published by the nonpartisan National Campaign to Prevent Teen and Unplanned Pregnancy, "two-thirds of the 48 comprehensive programs that supported both abstinence and the use of condoms and contraceptives for sexually active teens had positive behavioral effects."

Many of the participants either delayed or reduced sexual activity, reduced their number of sexual partners or increased condom or contraceptive use.

Testing and Treatment

- For most STIs, screening and treatment to cure or suppress existing infections, often referred to as secondary prevention, can play as important a role in preventing long-term harm to an individual's health and to reducing the spread of STIs as preventing infections in the first place.

- Chlamydia, gonorrhea, syphilis, trichomoniasis and other bacterial or parasitic infections can be treated and cured with antibiotics and similar medicine, in some cases with a single dose. Antiviral drugs for herpes can suppress outbreaks and reduce transmission, and antiretroviral drugs for HIV can delay the onset of AIDS and also reduce transmission.

- Screening and treatment of a patient's partner is crucial not only to improving the partner's health, but to breaking the cycle of reinfection that is commonly seen among patients with curable infections such as chlamydia and gonorrhea.

- Because it is often difficult to get a client's partner or partners to come in for testing and treatment, STI experts recommend expedited partner therapy for chlamydia and gonorrhea, in which the original patient's health care provider will provide a supply of or prescription for antibiotics to the partner without an actual diagnosis for the partner.

- Public health authorities try to prevent, screen for and treat STIs at the community level, as well as the individual level. Individuals and couples are linked into a larger sexual network; the behavior of even a small fraction of the members of a network can have profound ripple effects—both in the transmission of STIs and in their screening and treatment.
- Partner tracing or partner notification—a process whereby sex partners of patients who have been diagnosed with an STI are informed of their exposure to infection and the need to seek medical evaluation—is used to reduce the spread of STIs and prevent reinfection of the patient. However, this strategy is time-consuming and costly and can be impractical for many clients, health care providers and health departments.
- Each year, family planning clinics serve one in three women of reproductive age who obtain testing or treatment for STIs, one in four who obtain an HIV test and one in seven who obtain a Pap smear.



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