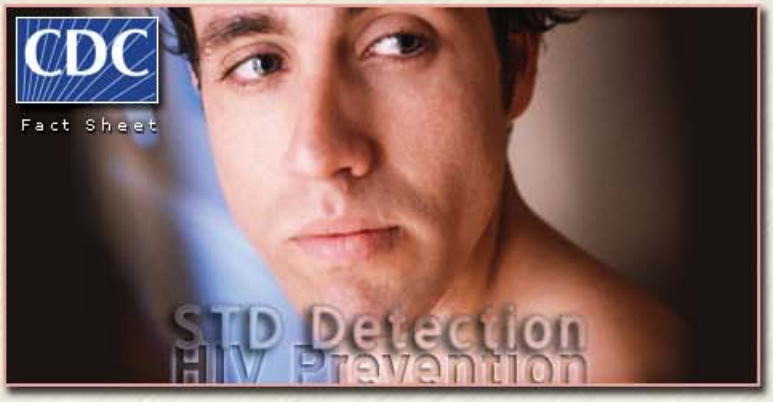

The Role of STD Detection and Treatment in HIV Prevention

Testing and treatment of sexually transmitted diseases (STDs) can be an effective tool in preventing the spread of HIV, the virus that causes AIDS. An understanding of the relationship between STDs and HIV infection can help in the development of effective HIV prevention programs for persons with high-risk sexual behaviors.

What is the link between STDs and HIV infection?

Individuals who are infected with STDs are at least two to five times more likely than uninfected individuals to acquire HIV if they are exposed to the virus through sexual contact. In addition, if an HIV-infected individual is also infected with another STD, that person is more likely to transmit HIV through sexual contact than other HIV-infected persons (Wasserheit, 1992).

There is substantial biological evidence demonstrating that the presence of other STDs increases the likelihood of both transmitting and acquiring HIV (Fleming, Wasserheit, 1999).

- Increased susceptibility. STDs probably increase susceptibility to HIV infection by two mechanisms. Genital ulcers (e.g., syphilis, herpes, or chancroid) result in breaks in the genital tract lining or skin. These breaks create a portal of entry for HIV. Non-ulcerative STDs (e.g., chlamydia, gonorrhea, and trichomoniasis) increase the concentration of cells in genital secretions that can serve as targets for HIV (e.g., CD4+ cells).
- Increased infectiousness. Studies have shown that when HIV-infected individuals are also infected with other STDs, they are more likely to have HIV in their genital secretions. For example, men who are infected with both gonorrhea and HIV are more than twice as likely to shed HIV in their genital secretions than are those who are infected only with HIV. Moreover, the median concentration of HIV in semen is as much as 10 times higher in men who are infected with both gonorrhea and HIV than in men infected only with HIV.

How can STD treatment slow the spread of HIV infection?

Evidence from intervention studies indicates that detecting and treating STDs can substantially reduce HIV transmission at the individual and community levels.

- STD treatment reduces an individual's ability to transmit HIV. Studies have shown that treating STDs in HIV-infected individuals decreases both the amount of HIV they shed and how often they shed the virus (Fleming, Wasserheit, 1999).
- STD treatment reduces the spread of HIV infection in communities. Two community-level, randomized trials have examined the role of STD treatment in HIV transmission. Together, their results have begun to clarify conditions under which STD treatment is likely to be most successful in reducing HIV transmission. First, continuous interventions to improve access to effective STD treatment services is likely to be more effective in reducing HIV transmission than intermittent interventions through strategies such as periodic mass treatment. Second, STD treatment is likely to be most effective in reducing HIV transmission where STD rates are high and the heterosexual HIV epidemic is young. Third, treatment of symptomatic STDs may be particularly important.

  The first community trial, conducted in a rural area of Tanzania, demonstrated a decrease of about 40% in new, heterosexually transmitted HIV infections in communities with continuous access to improved treatment of symptomatic STDs, as compared to communities with minimal STD services, where incidence remained about the same (Grosskurth, Mosha, Todd, et al., 1995). However, in the second trial conducted in Uganda, a reduction in HIV transmission was not demonstrated when the STD control approach was community-wide mass treatment administered to everyone every 10 months in the absence of regular access to improved STD services (Wawer, et al., 1999).

What are the implications for HIV prevention programs?

Strong STD prevention, testing, and treatment can play a vital role in comprehensive programs to prevent sexual transmission of HIV. Furthermore, STD trends can offer important insights into where the HIV epidemic may grow, making STD surveillance data helpful in forecasting where HIV rates are likely to increase. Better linkages are needed between HIV and STD prevention efforts nationwide in order to control both epidemics.

In the context of persistently high prevalence of STDs in many parts of the United States and with emerging evidence that the U.S. HIV epidemic increasingly is affecting populations with the highest rates of curable STDs, CDC's Advisory Committee on HIV and STD Prevention (ACHSP) has recommended the following:

- Early detection and treatment of curable STDs should become a major, explicit component of comprehensive HIV prevention programs at national, state, and local levels;
- In areas where STDs that facilitate HIV transmission are prevalent, screening and treatment programs should be expanded;
- HIV and STD prevention programs in the United States, together with private and public sector partners, should take joint responsibility for implementing these strategies.

The ACHSP also notes that early detection and treatment of STDs should be only one component of a comprehensive HIV prevention program, which also must include a range of social, behavioral, and biomedical interventions.

Where can I get more information?

Division of STD Prevention (DSTDP)
Centers for Disease Control and Prevention
http://www.cdc.gov/std

Personal health inquiries and information about STDs:

CDC National STD and AIDS Hotlines
(800) 227-8922 or (800) 342-2437
En Espanol (800) 344-7432
TTY for the Deaf and Hard of Hearing (800) 243-7889

National HPV and Cervical Cancer Hotline (919) 361 - 4848
Resource Center: http://www.ashastd.org/hpvccrc/

National Herpes Hotline
(919) 361-8488

CDC National Prevention Information Network (NPIN)
P.O. Box 6003
Rockville, MD 20849-6003
1-800-458-5231
1-888-282-7681 Fax
1-800-243-7012 TTY
E-mail: info@cdcnpin.org
http://www.cdcnpin.org

American Social Health Association (ASHA)
P. O. Box 13827
Research Triangle Park, NC 27709-3827
1-800-783-9877
http://www.ashastd.org

Printable versions of this and other STD fact sheets are available at:
http://www.cdc.gov/std/healthcomm/fact_sheets.htm

CDC
Fact Sheet