Navigation

About this book

SAMHSA/CSAT Treatment Improvement Protocols

37. TIP 37: Substance Abuse Treatment for Persons with HIV/AIDS

Executive Summary and Recommendations

➡ Chapter 1-- Introduction to HIV/AIDS

Chapter 2—Medical Assessment and Treatment

Chapter 3—Mental Health Treatment

Chapter 1-- Introduction to HIV/AIDS

The first cases of acquired immunodeficiency syndrome (AIDS) were reported in the United States in the spring of 1981. By 1983 the human immunodeficiency virus (HIV), the virus that causes AIDS, had been isolated. Early in the U.S. HIV/AIDS pandemic, the role of substance abuse in the spread of AIDS was clearly established. Injection drug use (IDU) was identified as a direct route of HIV infection and transmission among injection drug users. The largest group of early AIDS cases comprised gay and bisexual men (referred to as men who have sex with men(or MSMs). Early cases of HIV infection that were sexually transmitted often were related to the use of alcohol and other substances, and the majority of these cases occurred in urban, educated, white MSMs.

Currently, injection drug users represent the largest HIV-infected substance-abusing population in the United States. HIV/AIDS prevalence rates among injection drug users vary by geographic region, with the highest rates in surveyed substance abuse treatment centers in the Northeast, the South, and Puerto Rico. From July 1998 through June 1999, 23 percent of all AIDS cases reported were among men and women who reported IDU (Centers for Disease Control and Prevention [CDC], 1999b).

IDU practices are quick and efficient vehicles for HIV transmission. The virus is transmitted primarily through the exchange of blood using needles, syringes, or other IDU equipment (e.g., cookers, rinse water, cotton) that were previously used by an HIV-infected person. Lack of knowledge about safer needle use techniques and the lack of alternatives to needle sharing (e.g., available supplies of clean, new needles) contribute to the rise of HIV/AIDS.

Another route of HIV transmission among injection drug users is through sexual contacts within relatively closed sexual networks, which are

Chapter 4—Primary and Secondary HIV Prevention

Chapter 5—Integrating Treatment Services

Chapter 6—Accessing and Obtaining Needed Services

Chapter 7—Counseling Clients With HIV And Substance Abuse Disorders

Chapter 8—Ethical Issues

Chapter 9—Legal Issues

Chapter 10—Funding and Policy Considerations

Appendix B—Glossary

Appendix C—1993 Revised Classification System For HIV Infection and Expanded AIDS Surveillance Case Definition For Adolescents and Adults

Appendix D -- Screening Instruments

characterized by multiple sex partners, unprotected sexual intercourse, and exchange of sex for money (Friedman et al., 1995). The inclusion of alcohol and other noninjection substances to this lethal mixture only increases the HIV/AIDS caseload (Edlin et al., 1994; Grella et al., 1995). A major risk factor for HIV/AIDS among injection drug users is crack use; one study found that crack abusers reported more sexual partners in the last 12 months, more sexually transmitted diseases (STDs) in their lifetimes, and greater frequency of paying for sex, exchanging sex for drugs, and having sex with injection drug users (Word and Bowser, 1997).

Following are the key concepts about HIV/AIDS and substance abuse disorders that influenced the creation of this TIP:

- **Substance abuse increases the risk of contracting HIV.** HIV infection is substantially associated with the use of contaminated or used needles to inject heroin. Also, substance abusers may put themselves at risk for HIV infection by engaging in risky sex behaviors in exchange for powder or crack cocaine. However, this fact does not minimize the impact of other substances that may be used (e.g., hallucinogens, inhalants, stimulants, prescription medications).
- **Substance abusers are at risk for HIV infection through sexual behaviors.** Both men and women may engage in risky sexual behaviors (e.g., unprotected anal, vaginal, or oral sex; sharing of sex toys; handling or consuming body fluids and body waste; sex with infected partners) for the purpose of obtaining substances, while under the influence of substances, or while under coercion.
- **Substance abuse treatment serves as HIV prevention.** Placing the client in substance abuse treatment along a continuum of care and treatment helps minimize continued risky substance-abusing practices. Reducing a client's involvement in substance-abusing practices reduces the probability of infection.
- **HIV/AIDS, substance abuse disorders, and mental disorders interact in a complex fashion.** Each acts as a potential catalyst or obstacle in the treatment of the other two--substance abuse can negatively affect adherence to HIV/AIDS treatment regimens; substance abuse disorders and HIV/AIDS are intertwining disorders; HIV/AIDS is changing the shape and face of substance abuse treatment; complex and legal issues arise when treating HIV/AIDS and substance abuse; HIV-infected women with substance abuse disorders have special needs.
- **Risk reduction allows for a comprehensive approach to HIV/AIDS prevention.** This strategy promotes changing substance-related and sex-related behaviors to reduce clients' risk of contracting or transmitting HIV.

Appendix E—Sample Codes of Ethics

Appendix F—AIDS-Related Web Sites

Appendix G—State and Territorial Health Agencies/ Offices of AIDS

Appendix H—Mini Mental State Examination (MMSE)

Appendix I—Standards of Care: Client Assessment/ Treatment Protocol

Appendix J -- Resource Panel

Appendix K—Field Reviewers

Figures

Appendix A -- Bibliography

The first part of this chapter provides a basic overview of the origin of HIV/AIDS and the transmission and progression of the disease. The second part of the chapter presents a summary of epidemiological data from the CDC. This second part discusses the impact of HIV/AIDS in regions of the United States and the populations that are at the greatest risk of contracting HIV.

Overview of HIV/AIDS

Origin of HIV/AIDS

Of the many theories and myths about the origin of HIV, the most likely explanation is that HIV was introduced to humans from monkeys. A recent study (Gao et al., 1999) identified a subspecies of chimpanzees native to west equatorial Africa as the original source of HIV-1, the virus responsible for the global AIDS pandemic. The researchers believe that the virus crossed over from monkeys to humans when hunters became exposed to infected blood. Monkeys can carry a virus similar to HIV, known as SIV (simian immunodeficiency virus), and there is strong evidence that HIV and SIV are closely related (Simon et al., 1998; Zhu et al., 1998).

AIDS is caused by HIV infection and is characterized by a severe reduction in CD4+ T cells, which means an infected person develops a very weak immune system and becomes vulnerable to contracting life-threatening infections (such as Pneumocystis carinii pneumonia). AIDS occurs late in HIV disease.

Tracking of the disease in the United States began early after the discovery of the pandemic, but even to date, tracking data reveal only how many individuals have AIDS, not how many have HIV. The counted AIDS cases are like the visible part of an iceberg, while the much larger portion, HIV, is submerged out of sight. Many States are counting HIV cases now that positive results are to be gained by treating the infection in the early stages and because counting only AIDS cases is no longer sufficient for projecting trends of the pandemic. However, because HIV-infected people generally are asymptomatic for years, they might not be tested or included in the count. The CDC estimates that between 650,000 and 900,000 people in the United States currently are living with HIV (CDC, 1997c).

In 1996, the number of new AIDS cases (not HIV cases) and deaths from AIDS began to decline in the United States for the first time since 1981. Deaths from AIDS have decreased since 1996 in all racial and ethnic groups and among both men and women (CDC, 1999a). However, the most recent CDC data show that the decline is slowing (CDC, 1999b). The decline can be

attributed to advances in treating HIV with multiple medications, known as combination therapy; treatments to prevent secondary opportunistic infections; and a reduction in the HIV infection rate in the mid-1980s prior to the introduction of combination therapy. The latter can be attributed to improved services for people with HIV and access to health care. In general, those with the best access to good, ongoing HIV/AIDS care increase their chances of living longer.

HIV/AIDS is still largely a disease of MSMs and male injection drug users, but it is spreading most rapidly among women and adolescents, particularly in African American and Hispanic communities. HIV is a virus that thrives in certain ecological conditions. The following will lead to higher infection rates: a more potent virus, high viral load, high prevalence of STDs, substance abuse, high HIV seroprevalence within the community, high rate of unprotected sexual contact with multiple partners, and low access to health care. These ecological conditions exist to a large degree among urban, poor, and marginalized communities ofinjection drug users. Thus, MSMs and African American and Hispanic women, their children, and adolescents within these communities are at greatest risk. TOP

HIV Transmission

HIV cannot survive outside of a human cell. HIV must be transmitted directly from one person to another through human body fluids that contain HIV-infected cells, such as blood, semen, vaginal secretions, or breast milk. The most effective means of transmitting HIV is by direct contact between the infected blood of one person and the blood supply of another. (See Figure 1-1 for an illustration of the structure of the virus.) This can occur in childbirth as well as through blood transfusions or organ transplants prior to 1985. (Testing of the blood supply began in 1985, and the chance of this has greatly decreased.) Using injection equipment that an infected person used is another direct way to transmit HIV.

Sexual contact is also an effective transmission route for HIV because the tissues of the anus, rectum, and vagina are mucosal surfaces that can contain infected human body fluids and because these surfaces can be easily injured, allowing the virus to enter the body. A person is about five times more likely to contract HIV through anal intercourse than through vaginal intercourse because the tissues of the anal region are more prone to breaks and bleeding during sexual activity (Royce et al., 1997).

A woman is eight times more likely to contract HIV through vaginal intercourse if the man is infected than in the reverse situation (Center for AIDS

Prevention Studies, 1998). HIV can be passed from a woman to a man during intercourse, but this is less likely because the skin of the penis is not as easily damaged. Female-to-female transmission of HIV apparently is rare but should be considered a possible means of transmission because of the potential exposure of mucous membranes to vaginal secretions and menstrual blood (CDC, 1997a).

Oral intercourse also is a potential risk but is less likely to transmit the disease than anal or vaginal intercourse. Saliva seems to have some effect in helping prevent transmission of HIV, and the oral tissues are less likely to be injured in sexual activity than those of the vagina or anus. However, if a person has infections or injuries in the mouth or gums, then the risk of contracting HIV through oral sex increases.

Role of circumcision in male infectivity

A possible link between male circumcision and HIV infectivity was first observed during studies conducted in Kenya in the late 1980s (Cameron et al., 1998; Greenblatt et al., 1988; Simonsen et al., 1988). Since then, numerous studies have been done on the possible relationship between male circumcision and HIV infectivity. Data have not revealed a direct causal link between circumcision and HIV transmission, and scientific opinion has been divided on this topic. While some studies indicate that circumcision can play a protective role in preventing HIV infection (Kelly et al., 1999; Moses et al., 1998; Urassa et al., 1997), the bulk of recent scientific research has concluded that the reverse is true and that circumcision can actually increase the rate of HIV transmission (Van Howe, 1999). Clearly, further research and analysis of circumcision as a prophylactic against HIV transmission is needed. TOP

Risks of transmission

Several factors can increase the risk of HIV transmission. One factor is the presence of another STD (e.g., genital ulcer disease) in either partner, which increases the risk of becoming infected with HIV through sexual contact. This is because the same risk behaviors that resulted in the person contracting an STD increase that person's chance of contracting HIV. STDs also can cause genital lesions that serve as ports of entry for HIV, they can increase the number of HIV target cells (CD4+ T cells), and they can cause the person to shed greater concentrations of HIV (CDC, 1998a). For this reason, all sexually active clients, especially women, should be checked regularly for STDs such as gonorrhea and chlamydia. Many STDs that cause symptoms in men are asymptomatic in women. When genital ulcers are treated and heal, the risk of HIV transmission is reduced.

Another factor that increases risk is a high level of HIV circulating in the bloodstream. This occurs soon after the initial infection and returns late in the disease. New drug therapy can keep this level (called viral load) low or undetectable, but this does not mean that other individuals cannot be infected. The virus still exists--it is simply not detectable by the currently available tests. Because the correlation between plasma and genital fluid viral load varies, transmission may still occur despite an undetectable serum viral load (Liuzzi et al., 1996).

Once HIV passes to an uninfected person who is not taking anti-HIV drugs, the virus reproduces very rapidly. It is known that drug-resistant viruses can be transmitted from one person to another. The treatment implications for a person infected with a drug-resistant virus are not yet known, but treatment will likely be difficult.

There are many misconceptions regarding HIV transmission. For example, HIV is *not* passed from one person to another in normal daily contact that does not involve either exposure to blood or sexual contact. It is not carried by mosquitoes and cannot be caught from toilet seats or from eating food prepared by someone with AIDS. No one has ever contracted AIDS by kissing someone with AIDS, or even by sharing a toothbrush (although sharing a toothbrush still is not advised). Other misconceptions people may have include the following:

- "*It can't happen to me.*"--HIV can infect anyone who has sex with, or shares injection equipment with, someone who is infected.
- "*I would know if my sex partner (injection partner) were infected.*"--Most people infected with HIV do not look or feel sick and do not even know they are infected.
- "*As long as I get treated for any sexual infections I pick up, I'll be safe.*"--No current form of treatment can cure or prevent HIV, and although treating other infections reduces risk, there is still a high chance of getting HIV through unprotected sex or sharing injection equipment.
- "*If I'm only with one sexual partner, and don't share injection equipment, I don't need to worry about HIV.*"--This is true only if the partner is uninfected and has no ongoing risk of infection. If the partner is or becomes infected, then anyone who has sex with him or shares his injection equipment is at high risk for HIV, and the only way to detect infection is to be tested.
- "*If I douche or wash after sex, I won't get HIV.*"--Douching and washing will not prevent HIV.
- "*If I don't share my own syringe, I won't get HIV.*"--HIV can also be

spread through shared cookers, filters, and the prepared drug.

TOP

Life Cycle of HIV

It is possible to prevent transmission even after exposure to HIV. In San Francisco, postexposure prophylaxis is being offered to people who believe they have high risk for HIV transmission because of exposure with a known or suspected HIV-infected individual. Treatment is started within 72 hours of exposure and includes combination therapy, which may include a protease inhibitor, for a period of 1 month and followup for 12 months.

Once an HIV particle enters a person's body, it binds to the surface of a target cell (CD4+ T cell). The virus enters through the cell's outer envelope by shedding its own viral envelope, allowing the HIV particle to release an HIV ribonucleic acid (RNA) chain into the cell, which is then converted into deoxyribonucleic acid (DNA). The HIV DNA enters the cell's nucleus and is copied onto the cell's chromosomes. This causes the cell to begin reproducing more HIV, and eventually the cell releases more HIV particles. These new particles then attach to other target cells, which become infected. Figure 1-2 illustrates how HIV enters a CD4+ T cell and reproduces.

Measuring HIV in the blood

Physicians can measure the presence of HIV in a person by means of (1) the CD4+ T cell count and (2) the viral load count. The CD4+ T cell count measures the number of CD4+ T cells (i.e., white blood cells) in a milliliter of blood. These are the cells that HIV is most likely to infect, and the number of these cells reflects the overall health of a person's immune system.

CD4+ T cells act as signals to inform the body's immune system that an infection exists and needs to be fought. Because HIV hides inside the very cells responsible for signaling its presence, it can survive and reproduce without the infected person knowing of its existence for many years. Even though the body can produce sufficient CD4+ T cells to replace the billions that are destroyed by untreated HIV each day, eventually HIV kills so many CD4+ T cells that the damaged immune system cannot control other infections that may make the person sick. This is the late stage of HIV, when AIDS is often diagnosed based on the presence of specific illnesses (i.e., opportunistic infections).

The viral load represents the level of HIV RNA (genetic material) circulating

in the bloodstream. This level becomes very high soon after a person is initially infected with HIV, then it drops. Viral load tests measure the number of copies of the virus in a milliliter of plasma; currently available tests can measure down to 50 copies per milliliter, and even more sensitive tests can measure down to 5 copies per milliliter.

To explain the relationship between CD4+ T cell count and viral load count and how together they are used to gauge a person's stage in disease progression, a "moving train" analogy can be used. The CD4+ T cell count is used to measure the person's distance to the point of high risk of contracting opportunistic infections, or death. The viral load count is used to measure the rate at which CD4+ T cells are being destroyed. Therefore, the CD4+ T cell count is the train's position on the track, and the viral load is the train's speed toward the outcome (i.e., AIDS and then death).

After a person is infected with HIV, the body takes about 6 to 12 weeks and sometimes as long as 6 months to build up proteins to fight the virus. These proteins are called HIV antibodies (disease-fighting proteins) and are detected by an HIV test called the ELISA (enzyme-linked immunosorbent assay). The ELISA is very sensitive--it almost always detects HIV if it is there. Rarely, ELISA tests will give false-positive readings (a positive test in someone uninfected). For this reason, a positive ELISA test must always be confirmed with a second, more specific test called the Western blot. According to the CDC, the accuracy of the ELISA and the Western blot together is greater than 99 percent. Rapid HIV tests and home sample collection tests also are options for clients; see Chapter 2 for a more detailed discussion of these types of tests.

The 6 to 12 weeks between the time of infection and the time when an ELISA test for HIV becomes positive are called the "window period." During this period, the individual is extremely infectious to any sexual or needle-sharing partner but does not test positive unless a more expensive viral load test is performed.

The level of virus is determined by using a viral load test; three types of viral load tests are HIV-RNA polymerase chain reaction (PCR), HIV branched DNA (bDNA), and HIV-RNA nucleic acid sequence-based amplification (NASBA). Each of these tests measures the amount of replicating or reproducing virus in the bloodstream; thus a lower value signifies less risk of rapid progression. The best viral load test result is "none detected," although this does not mean the virus is gone, only that it is not actively reproducing at a measurable level. TOP

Disease Progression

Once a person is infected with HIV, she should understand the progression of the disease from initial infection, through the latency period, symptomatic infections, and finally AIDS. The course of untreated HIV is not known but may go on for 10 years or longer in many people. Several years into HIV infection, mild symptoms begin to develop, then later severe infections that define AIDS occur. Treatment appears to greatly extend the life and improve the quality of life of most patients, although estimating survival after an AIDS diagnosis is inexact.

Initial infection

Primary HIV infection can cause an acute retroviral syndrome that often is mistaken for influenza (the flu), mononucleosis, or a bad cold. This syndrome is reported by roughly half of those who contract HIV (Russell and Sepkowitz, 1998) and generally occurs between 2 and 6 weeks after infection. Symptoms may include fever, headache, sore throat, fatigue, body aches, weight loss, and swollen lymph nodes. Other symptoms are a rash, mouth or genital ulcers, diarrhea, nausea and vomiting, and thrush. The CD4+ T cell count can drop very low during the early weeks, although it usually returns to a normal level after the initial illness is over. The initial illness can last several days or even weeks.

The greatest spread of HIV occurs throughout the body early in the disease. Approximately 6 months after infection, the level of virions produced every day may reach a "set point." A higher set point usually means a more rapid progression of HIV disease. Early treatment may be recommended to reduce the set point, potentially leading to a better chance of controlling the infection.

Alcohol and drug counselors should discuss symptoms that suggest initial HIV infection with their clients and encourage clients to be tested for HIV if they experience such symptoms. This not only will encourage clients who are infected to enter treatment early but also will provide an opportunity for the counselor to help uninfected clients remain that way. TOP

Latency period

After initial infection comes the latency period, or incubation period, during which untreated persons with HIV have few, if any, symptoms. This period lasts a median of about 10 years. The most common symptom during this period is lymphadenopathy, or swollen lymph nodes. The lymph nodes found around the neck and under the arms contain cells that fight infections. Swollen lymph nodes in the groin area may be normal and not indicative of HIV. When any infection is present, lymph nodes often swell, sometimes painfully. With

HIV, they swell and tend to stay swollen but usually are not painful. TOP

Early symptomatic infection

After the first year of infection, the CD4+ T cell count drops at a rate of about 30 to 90 cells per year. When the CD4+ T cell count falls below 500, mild HIV symptoms may occur. Many people, however, will have no symptoms at all until the CD4+ T cell count has dropped very low (200 or less). Bacteria, viruses, and fungi that normally live on and in the human body begin to cause diseases that are also known as opportunistic infections.

Early symptoms of infection may include chronic diarrhea, herpes zoster, recurrent vaginal candidiasis, thrush, oral hairy leukoplakia (a virus that causes white patches in the mouth), abnormal Pap tests, thrombocytopenia, or numbness or tingling in the toes or fingers. Most of these infections occur with a CD4+ T cell count between 200 and 500. Symptoms of these infections usually signal a problem with the immune system but are not severe enough to be classified as AIDS. Please refer to Appendix D for a complete checklist of symptoms. TOP

AIDS

In the 1980s, AIDS was defined to include a depressed immune system and at least one illness tied to HIV infection. AIDS-defining conditions are diseases not normally manifest in someone with a healthy immune system. These should prompt a confirmatory HIV test. The additional 1993 AIDS-defining conditions led to the diagnosis of more AIDS cases in women and injection drug users. Since 1993, the list of AIDS-defining conditions has included pulmonary tuberculosis (TB), recurrent bacterial pneumonia, and invasive cervical cancer. HIV-infected persons with a CD4+ T cell count of 200 or less are classified as persons with AIDS (CDC, 1992).

TB and invasive cervical cancer are two AIDS-defining conditions that warrant special mention. Pulmonary TB is the one AIDS-related infection that is contagious to those without HIV. It generally causes a chronic dry cough (sometimes with blood), fatigue, and weight loss. Pulmonary TB requires ongoing treatment for at least 6 months, and close associates of the infected person must be tested for TB. If TB is only partially treated (i.e., the TB patient does not take all of the medications), resistant TB will develop, which can then be passed to others. Although TB, coupled with a positive HIV test, is an AIDS-defining diagnosis, it also can occur while the CD4+ T cell count is still high. If TB occurs late in the disease after the CD4+ T cell count has dropped, it may not be found in the lungs, and symptoms may include only weight loss and fever, without a cough. It should be noted, however, that the

Mantoux PPD test (a test routinely administered to screen for TB by determining reaction to intradermal injection of purified protein derivative) may not be positive if the patient is anergic (i.e., if he has sufficient immune system damage to cause inability to respond to the PPD).

Cervical cancer may progress rapidly in women with HIV but usually is asymptomatic until it is too late for successful treatment. Women who are HIV positive should have Pap tests at least once every 6 months and more often if any abnormality is found.

AIDS symptoms

Most AIDS-defining diseases are severe enough to require medical care, sometimes hospitalization. Some of these diseases, however, can be treated earlier on an outpatient basis if symptoms are reported when they are mild. (Please refer to Appendix C for a complete list of AIDS-defining conditions.)

Cough is a symptom common to several AIDS-related infections, the most frequent of which is *Pneumocystis carinii* pneumonia (PCP--not to be confused with the drug by that name, phencyclidine). PCP is characterized by a dry cough, fever, night sweats, and increasing shortness of breath. Recurrent bacterial pneumonia (i.e., two or more infections within a year) also is an AIDS-defining condition. It often causes a fever and a cough that brings up phlegm. Coughing is also a symptom of TB. As a general guideline, if a cough does not resolve after several weeks, it should be checked by a medical practitioner.

Several skin problems can occur in HIV/AIDS. Kaposi's sarcoma (KS), a rare malignancy outside of HIV disease, may be the best-known skin condition in HIV infection. KS is a cancer of the blood vessels that causes pink, purple, or brown splotches, which appear usually as firm areas on or under the skin. KS also grows in other places, such as the lungs and mouth. KS is highly prevalent among men with AIDS, of whom 20 to 30 percent may develop the condition in contrast to 1 to 3 percent of women with AIDS (Kedes et al., 1997). However, since the introduction of combination anti-HIV therapy, KS is seen less frequently.

Diarrhea is a very common symptom of AIDS. Many AIDS-defining conditions cause diarrhea, including parasitic, viral, and bacterial infections. HIV itself can cause diarrhea if it infects the intestinal tract. Diarrhea also is a common side effect of HIV/AIDS medications. Weight loss can be caused by inadequate nutrition, untreated neoplasms and opportunistic infections (which often are associated with diarrhea), and deranged metabolism (Dieterich, 1997).

Changes in vision, particularly spots or flashes (known as "floaters"), may indicate an infection inside the eye. A virus called cytomegalovirus (CMV) is the most common cause of blindness in people with HIV/AIDS. CMV progresses very rapidly if not treated and is among the most feared of AIDS-related infections. Fortunately, it almost never occurs until the immune system is almost completely destroyed, so it is not usually the first symptom. Counselors can screen for early signs of CMV using the Amsler Grid (see Appendix D). The client also can be taught to screen himself using this screening tool.

A severe headache, seizure, or changes in cognitive function may herald the onset of a number of infections or cancers inside the brain. The two most common brain infections in HIV/AIDS are cryptococcal meningitis, a fungus that usually causes a severe headache, and toxoplasmosis, which can present with focal neurologic deficits or seizure. Seizures also can be caused by the cancer of the central nervous system called lymphoma. Progressive multifocal leukoencephalopathy (PML), a brain disease that causes thinking, speech, and balance problems and dementia also can occur as a result of HIV infection.

TOP

End-stage disease

A person with HIV/AIDS can live an active and productive life, even with a CD4+ T cell count of zero, if infections and cancers are controlled or prevented. The newer antiviral medicines can even help the body restore much of its lost immune function. In the past few years, a phenomenon called the Lazarus syndrome has developed among patients with AIDS, wherein, because of optimal drug therapy, someone who had seemed very near death improves and returns to fairly normal function. Untreated, the disease eventually overwhelms the immune system, allowing one debilitating infection after another. Sometimes the possible combinations of medication are no longer effective, the side effects are intolerable, or no further therapy is available.

Hospice care is an appropriate choice for those who have run out of therapeutic options. In hospice care, the individual is treated for pain and other discomforts and allowed to die of the disease. Pain therapy at this stage invariably requires narcotics. It is crucial that the client and other treatment professionals understand that using opiates for pain is entirely different from using them to feed an addiction. The client will develop a need for high doses and will have withdrawal symptoms if the drug is stopped, but will not "get high." If drugs must be stopped (which is uncommon), they can be tapered under medical supervision. See Chapter 2 for a more in-depth discussion of pain management.

Hospice care allows the person with end-stage HIV/AIDS a peaceful death and a chance to address those relationships or experiences that are important. Hospice goals involve maintaining dignity and allowing the client's significant others to dictate how they will cope with this final stage. TOP

Changes in the Epidemiology of HIV/AIDS Since 1995

With the advent of new and effective treatments, the epidemiology of HIV/AIDS is changing. The study of HIV/AIDS epidemiology helps to identify the trends of the disease. Surveillance of AIDS cases since 1996 shows substantial declines in AIDS-related deaths and increases in the number of persons living with AIDS, although the decline is slowing (CDC, 1999b). As people live longer with HIV/AIDS, the ability to use AIDS surveillance data alone to represent trends has diminished. It is difficult but important to track the distribution of prevalence (i.e., existing) and incidence (i.e., new) of both HIV and AIDS cases to detect changes in geographic, demographic, and risk/exposure trends (Ward and Duchin, 1997-1998).

With the mid-year 1998 edition, the CDC started to include information from both HIV infections and AIDS cases in the *HIV/AIDS Surveillance Report* (CDC, 1998c). It should be noted that the number of HIV cases in the report is a conservative estimate of the number of people living with HIV because not all people with HIV/AIDS have been tested (and those who have been tested anonymously are not reported to State health departments' confidential, name-based HIV registries). At the end of June 1999, 30 States and the U.S. Virgin Islands were reporting HIV cases.

This section presents an overview of the trends in the HIV/AIDS pandemic and discusses how the pandemic intertwines with substance abuse. The information is organized to provide a general look at the pandemic in the United States and its Territories, a discussion of the trends and the populations which are most at risk for contracting the infection, and a regional look at the pandemic (the regions are defined by the CDC). Finally, there is a discussion of special populations and how they are affected by the HIV/AIDS pandemic. For more detail about HIV/AIDS epidemiology, readers are encouraged to visit the CDC's Divisions of HIV/AIDS Prevention Web site, at www.cdc.gov/nchstp/hiv_aids/dhap.htm. The latest CDC HIV/AIDS surveillance reports can be downloaded, and the site provides a wealth of information about the pandemic.

To see the distribution of HIV/AIDS in the United States, see Figures 1-3 through 1-6. Figure 1-3 shows the AIDS rates for male adults and adolescents

reported from July 1998 through June 1999. Figure 1-4 shows the number of adult and adolescent male AIDS and HIV cases reported from July 1998 through June 1999. Figure 1-5 illustrates the AIDS rate for female adults and adolescents reported from July 1998 through June 1999, and Figure 1-6 shows the number of female adult and adolescent AIDS and HIV cases reported from July 1998 through June 1999.

Current Trends in the HIV/AIDS Pandemic

Current trends in HIV/AIDS disproportionally affect racial minority populations, especially women, youth, and children within those populations. HIV prevalence is higher among African Americans than in other ethnic groups; from July 1998 through June 1999, African Americans accounted for 46 percent of adult AIDS cases, while representing 12 percent of the total U.S. population. Hispanics accounted for 20 percent of adult AIDS cases from July 1998 through June 1999, while making up only 11 percent of the total U.S. population (CDC 1999b; U.S. Bureau of the Census, 1998). Together, African Americans and Hispanics represent the majority of AIDS cases thus far in the pandemic (CDC, 1999b, 1999c). In addition, of the HIV cases reported from the 30 States and one Territory from July 1998 through June 1999, 54 percent were among adult and adolescent African Americans, and 10 percent were among adult and adolescent Hispanics. Substance abuse is a primary mechanism by which these vulnerable groups become HIV-infected populations.

It is important to be aware that, although it is customary to categorize cases based on broad ethnic labels, this procedure glosses over fundamental ethnic and cultural differences among people of color and fails to address the underlying economic and social infrastructure that fuels the spread of substance abuse and HIV (National Commission on AIDS, 1992). Categorizing all persons with African racial heritage as "black" mixes together people of distinct ethnic and cultural heritage (e.g., ethnic descendents of African slaves, Caribbean immigrants) as well as individuals from different socioeconomic groups. Similarly, "Hispanic" refers to a multiethnic and multicultural blend of people from more than 30 geographic regions. Social, political, and economic forces have led to the "ghettoization" of African Americans and Hispanics in the inner cities where there are high rates of drug trafficking, unemployment, poverty, racism, and a lack of access to health care, all of which contribute to high rates of addiction and HIV/AIDS (National Commission on AIDS, 1992). It is within urban, poor, African American and Hispanic communities that HIV/AIDS is most prevalent.

These oppressive socioeconomic factors also have led to high rates of

incarceration, sex work, and homelessness for members of African American and Hispanic communities. Drug offenses account for the highest number of Federal crimes for which people are incarcerated (Mumola, 1999). For example, a survey of new commitments to California State prisons found that more than 75 percent of the offenders had histories of drug use (California Department of Corrections, 1998). Not surprisingly, these individuals also have high rates of HIV infection (Stryker, 1993). Sex workers, many of whom are poor, homeless, and substance dependent, are likely to be more concerned with immediate needs such as housing, food, or substance abuse than HIV or substance abuse prevention and intervention (Kail et al., 1995). This is also true for the homeless or marginally housed who often are dealing with both substance abuse and mental health or mental retardation problems (St. Lawrence and Brasfield, 1995).

However, the highest HIV and AIDS rates among at-risk populations are still found among MSMs (CDC, 1999b), who from July 1998 through June 1999 represented 38 percent of AIDS cases and 30 percent of HIV cases. Minority MSMs especially are at high risk for contracting the infection. See the section "HIV/AIDS Epidemiology Among Groups" later in this chapter for further discussion of HIV/AIDS and MSMs.

HIV/AIDS is epidemic among the heterosexual population as well and is fueled by sexual contact with HIV-infected, injection drug-using, or bisexual partners. Heterosexuals located in communities with high prevalence of HIV/AIDS and addiction are at greatest risk for contracting HIV/AIDS from heterosexual contact. This type of heterosexual contact, defined generally as sexual contact with an "at-risk" person (e.g., injection drug users, bisexual man) or an HIV-infected person whose risk was not specified, from July 1998 through June 1999 accounted for about 15 percent of all adult and adolescent AIDS cases and about 17 percent of reported adult and adolescent HIV infection cases (CDC, 1999b). Of these, 61 percent of AIDS cases were women and 39 percent were men; of HIV infection cases, 68 percent were women and 32 percent were men.

From July 1998 through June 1999, there were 4,296 new AIDS cases and 2,321 new HIV cases among women who reported heterosexual contact (CDC, 1999b). Of these, 28 percent of AIDS cases and 21 percent of HIV cases were among women who reported sexual contact with injection drug users, 5 percent of AIDS cases and 6 percent of HIV cases who reported sexual contact with bisexual men, and 66 percent of AIDS cases and 72 percent of HIV cases who reported sexual contact with an HIV-infected person, without reporting the origin of the partner's infection. Of the 2,754 AIDS cases and 1,070 HIV

cases for men who reported heterosexual contact, the majority reported sexual contact with an HIV-infected person without reporting the origin of the partner's infection (77 percent of AIDS cases and 80 percent of HIV cases). These data are supported by earlier research that found that HIV infection among heterosexual clients in alcohol abuse treatment, who were primarily male, was largely caused by unsafe sexual behaviors (Avins et al., 1994; Woods et al., 1996).

Figures 1-7 and 1-8 illustrate the trend of male and female AIDS cases contracted through heterosexual exposure from 1993 to 1998 by ethnicity. These figures depict only self-identified heterosexual men and women. TOP

Regional HIV/AIDS Epidemiology

Early in the U.S. AIDS pandemic, the Northeast region of the United States had the most AIDS cases, followed by the South, Midwest, and the West (Figure 1-9 contains a breakdown of the States that make up these four regions plus the U.S. Territories, as defined by the CDC). In all regions, AIDS incidence increased through 1994, with the most dramatic increases occurring in the South. Between 1997 and 1998, AIDS incidence dropped for all regions, but in 1998 the South still had the highest rate (43 percent), followed by the Northeast (28 percent), the West (17 percent), the Midwest (8 percent), and the U.S. Territories (3 percent) (CDC, 1999b). Figure 1-10 demonstrates the change in AIDS incidence of the regions for 1996, 1997, and 1998.

The HIV/AIDS pandemic is evolving differently in different regions of the United States, just as drug use varies from region to region. Therefore, alcohol and drug counselors should become familiar with HIV/AIDS prevalence, incidence, and trends in their local areas, their States, and their regions. Appendix G contains a list of State and Territory departments of health (including addresses, phone numbers, and Web sites where readers can obtain information about their State). When available, State AIDS hotlines also are listed.

The 10 States and Territories reporting the most AIDS cases, in descending order, are New York, California, Florida, Texas, New Jersey, Puerto Rico, Illinois, Pennsylvania, Georgia, and Maryland. The 10 metropolitan areas reporting the highest number of AIDS cases, in descending order, are New York City, Los Angeles, San Francisco, Miami, the District of Columbia, Chicago, Houston, Philadelphia, Newark, and Atlanta (CDC, 1999b). Not surprisingly, these major metropolitan areas also are high-intensity drug-trafficking areas as defined by the Office of National Drug Control Policy (ONDCP, 1998). TOP

HIV Epidemiology Among Groups

Homosexuals

The primary route of HIV transmission for MSMs is through sexual contact, which may occur while the participants are engaged in substance abuse, including IDU. Within this group, the focus of the pandemic among MSMs has shifted from older, white, urban men to poorer African American and Hispanic men, men with substance abuse problems (including IDU), and young men. Repeated studies have found that MSMs who abuse alcohol, speed, MDMA (3,4-methylene-dioxymethamphetamine), cocaine, crack cocaine, inhalants, and other noninjection street drugs are more likely than those who do not use substances to engage in unprotected sex and become infected with HIV (Paul et al., 1991b, 1993, 1994). One hypothesis about the reason for higher rates of HIV/AIDS among MSMs is that substance abuse may increase sexual risktaking. This is because substance abusers experience decreased inhibition, new learned behaviors (such as using substances and then having unprotected anal intercourse), low self-esteem, altered perception of risk, lack of assertiveness to negotiate safe practices, and perceived powerlessness (Paul et al., 1993).

As of June 1999, more than half of all cumulative male adult and adolescent AIDS cases were among MSMs who reported sexual risk only (57 percent) or sexual risk and IDU (8 percent). Of cumulative HIV cases among adult and adolescent males, 45 percent reported sexual risk only and 6 percent reported sexual risk and IDU (CDC, 1999b). Even though the cumulative total of AIDS cases among MSMs is still highest in white men (62 percent white, 23 percent African American, 14 percent Hispanic), new AIDS cases among MSMs indicate that the disparity between cases among whites and among minorities is narrowing. From July 1998 through June 1999, 53 percent of AIDS cases were among white men, 29 percent were among African American men, and 16 percent were among Hispanic men. Figure 1-11 illustrates the trend of MSM AIDS cases by ethnicity from 1993 to 1998.

As with injection drug users, minority MSMs are disproportionately affected by HIV disease. African American and Hispanic MSMs, compared with their white counterparts, are more likely to inject drugs, to be substance abusers, to be poor, to be paid for sex, and to engage in higher rates of unprotected anal intercourse (National Commission on AIDS, 1992; Peterson et al., 1992). Sociocultural factors, combined with some community values (e.g., machismo, family loyalty, sexual silence) and lack of access to health care and substance abuse treatment, strongly compete with safe sex and drug practices among gay

and bisexual men of color (Diaz and Klevens, 1997).

Sex networks and sexual mixing patterns (Renton et al., 1995) are hypothesized to explain the higher risk of HIV infection related to substance abuse among MSMs. MSM substance abusers may form tight groups characterized by higher HIV seroprevalence rates, higher sexual mixing, greater IDU, and more trading of sex for money, food, and drugs. These factors are another way to account for higher HIV risk-taking sexual behaviors among MSM substance abusers. TOP

Incarcerated persons

A recent study reported that the confirmed rate of AIDS cases among incarcerated people in State and Federal prisons is more than six times higher than in the general population. About 2.3 percent of all persons incarcerated in the United Sates in 1995 were HIV positive, and about 0.51 percent had confirmed AIDS (MacDougall, 1998; Maruschak, 1997). According to the Bureau of Justice Statistics in the U.S. Department of Justice, in 1997, 57 percent of State prisoners and 45 percent of Federal prisoners said they had used drugs in the month before committing their offense. In addition, 83 percent of State prisoners and 73 percent of Federal prisoners said they had used drugs at some time in the past. Even with these high rates, which increased between 1991 and 1997, substance abuse treatment services declined during the same time period (Mumola, 1999).

In 1991, only 1 percent of Federal prison inmates with substance abuse disorders received appropriate treatment. For those who completed treatment there were no aftercare services in place to help them remain abstinent after they got out of prison (U.S. General Accounting Office, 1998).

Most incarcerated people who have HIV are infected before they enter prison. One study of 46 prisons found an HIV infection rate of 1.7 percent among people entering prison (Withum, 1993). In some correctional facilities, HIV infection rates are as high as 20 percent among women and 15 percent among men. For MSMs, HIV infection rates ranged from 9 to 34 percent; among injection drug users the infection rate ranged from 6 to 43 percent.

HIV/AIDS and substance abuse interventions implemented in prisons have a great potential to impact the HIV/AIDS pandemic (MacDougall, 1998). Like the HIV-infected population, the incarcerated population has an overrepresentation of minority groups and is characterized by high poverty, overcrowding, IDU, high-risk sexual activities, and poor access to health care. Incarceration presents an opportunity to screen, counsel, and educate inmates

about HIV/AIDS, and to provide substance abuse treatment as well. For many incarcerated persons, this may be their first contact with medical interventions as well as with substance abuse treatment.

When prison inmates return to society, their health status will have an effect on the community to which they return. A study of Hispanic inmates in California found that 51 percent reported having sex within the first 12 hours after release and that they preferred not to use condoms (Morales et al., 1995). In addition, 11 percent reported IDU in the first day after release. TOP

Sex workers

The sex workers who are most vulnerable to contracting and transmitting HIV are street workers, who often are poor or homeless, may have a history of childhood abuse, and are likely to be alcohol or drug dependent. A CDC study of female sex workers in six U.S. cities found an HIV seroprevalence of 12 percent, ranging from 0 to 50 percent depending on the city and the level of IDU (CDC, 1987a). A study of male sex workers in Atlanta found an HIV seroprevalence of 29 percent, with the highest rates among those who had receptive anal sex with nonpaying partners (Elifson et al., 1993).

IDU was the main risk factor for HIV infection for female sex workers in six U. S. cities (CDC, 1987a). Female injection drug users who trade sex for money or drugs are more likely to share needles than female injection drug users who do not engage in sex trading (Kail et al., 1995). The circumstances in which sex workers live also increase their chances of contracting HIV. For example, they may agree to unprotected sex if a client offers more money, if they are desperate for money to buy drugs, or if business has been slow. Violent clients may force unsafe sex, and in many cities police confiscate condoms when they arrest or stop sex workers. HIV prevention outreach to sex workers is difficult because prostitution is illegal. Immediate attention to concerns about food, housing, and drug addiction often take precedence over HIV prevention. TOP

Homeless or marginally housed

Homelessness often occurs in conjunction with substance abuse, chronic mental illness, and unsafe sexual behavior. All of these factors increase homeless people's risk for contracting HIV. A survey of 16 U.S. cities found that 3 percent of homeless people were HIV positive, compared with less than 1 percent of the general adult population (Allen et al., 1994). In other studies, 19 percent of homeless mentally ill men in New York City were HIV positive (Susser et al., 1993), and an 8 percent HIV infection rate was found among homeless adults in San Francisco (Zolopa et al., 1994).

A survey of homeless adults in a storefront medical clinical found that 69 percent were at risk for HIV because of the following factors: (1) unprotected sex with multiple partners, (2) IDU, (3) sex with an injection drug-using partner, or (4) exchanging unprotected sex for money or drugs. Almost half reported at least two of these risk factors, and one fourth reported three or more risk factors (St. Lawrence and Brasfield, 1995). Substance abuse can exacerbate HIV risks because abusers are more likely to forget to use condoms, to share needles, and to exchange sex for drugs. A survey of homeless adults in St. Louis found that 40 percent of men and 23 percent of women reported drug use, and 62 percent of men and 17 percent of women reported alcohol use (North and Smith, 1993). TOP

Adolescents

Because the average period of time from HIV infection to AIDS is about 10 years, most young adults with AIDS were likely infected as adolescents (National Institute of Allergy and Infectious Diseases [NIAID], 1999). Through June 1999 in the United States, 3,564 cases of AIDS in people aged 13 through 19 were reported (CDC, 1999b). In the 13- to 19-year-old age group, 60 percent were male and 40 percent were female. When broken down by ethnic group, 30 percent were white, 49 percent were African American, 20 percent were Hispanic, and 1 percent were Asian/Pacific Islander or American Indian/Alaskan Native.

Most adolescents are exposed to HIV through unprotected sex or IDU. Through June 1999, HIV surveillance data show that there were 4,470 cases reported in the 13- to 19-year-old age group. Of those, 45 percent were male, and 55 percent were female. When broken down by ethnic group, 27 percent were white, 66 percent were African American, 5 percent were Hispanic, and less than 1 percent each were Asian/Pacific Islander or American Indian/Alaskan Native (CDC, 1999b). Half of the infected male adolescents reported exposure through sex with men.

Almost half (42 percent) of female adolescents were exposed to HIV through heterosexual contact. Another significant trend is the number of STDs reported among adolescents: About two thirds of the 12 million cases of STDs reported in the United States each year are among individuals under the age of 25, and one quarter are among teens. This is significant because the presence of an STD can increase the risk of HIV transmission threefold to ninefold, depending on the type of STD (NIAID, 1999).

Adolescents tend to believe they are "invincible" and therefore engage in risky

behaviors. Because of this belief they also may delay HIV testing, and, if they do test and are positive, they may delay or refuse treatment. Alcohol and drug counselors who work with adolescents should encourage them to be tested for HIV if they are at risk. Adolescents can be helped by having information about HIV/AIDS explained to them clearly, by drawing out information about behaviors that may have put them at risk for HIV, and by emphasizing the success of newly available treatments. TOP

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