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Twenty-Five Years of HIV/AIDS --- United States, 1981--2006

On June 5, 1981, *MMWR* published a report of *Pneumocystis carinii* pneumonia in five previously healthy young men in Los Angeles, California (Figure) (1). These cases were later recognized as the first reported cases of acquired immunodeficiency syndrome (AIDS) in the United States. Since that time, this disease has become one of the greatest public health challenges both nationally and globally. Human immunodeficiency virus (HIV) and AIDS have claimed the lives of more than 22 million persons worldwide, including more than 500,000 persons in the United States.

In 2006, more than 1 million persons are living with HIV/AIDS in the United States, and an estimated 40,000 new HIV infections are expected to occur this year (2). Since the beginning of the epidemic, countless persons and organizations, inside and outside of government, have mobilized to prevent and treat this disease. These efforts have been enhanced by the commitment and involvement of those living with HIV/AIDS. At this milestone marking the 25th year of AIDS, one way to recognize those persons who have died and those who have been affected by this epidemic is to accelerate the development of measures for preventing HIV transmission.

Successes in HIV Prevention

CDC's overarching HIV-prevention goal is to reduce the number of new HIV infections and to eliminate racial and ethnic disparities by the promotion of HIV counseling, testing, and referral and by encouraging HIV prevention among both persons living with HIV and those at high risk for contracting the virus (3).

The decrease in mother-to-child (perinatal) HIV transmission is a public health achievement in HIV prevention in the United States. The number of infants infected with HIV through perinatal transmission has decreased from 1,650 during the early- to mid-1990s to 144--236 in 2002 (4). This decline is attributed to multiple interventions, including routine voluntary HIV testing of pregnant women, the use of rapid HIV tests at delivery for women of unknown HIV status, and the use of antiretroviral therapy by HIV-infected women during pregnancy and by infants after birth.

Widespread availability and use of diagnostic and screening tests for HIV infection to promote individual knowledge of HIV serostatus and to ensure the safety of the nation's blood supply has been another success. Since the mid-1980s, blood donor screening methods and testing technology have steadily improved; today, with nucleic acid testing, the risk for HIV transmission is estimated at as low as one per 2 million blood donations (5). Widespread HIV testing promotion and uptake have resulted in approximately 50% of persons aged 15--44 years in the United States reporting that they have had an HIV test (6), with a high proportion of those at increased risk (e.g., men who have sex with men [MSM] and injection-drug users) reporting having an HIV test during the preceding year (6,7).

National HIV-prevention initiatives have been supported by HIV-prevention programs of state and local health departments, community-based organizations, and other partners (8). Prevention interventions, including drug treatment programs, peer outreach, and risk reduction, have contributed to a steady decline in new HIV/AIDS diagnoses among injection-drug users in 35 areas with HIV reporting, from an estimated 8,048 in 2001 to 5,962 in 2004 (9). Another prevention success has been the diffusion of evidence-based effective behavioral interventions (DEBIs) for primary and secondary HIV prevention among persons, small groups, and communities (3). These interventions help to ensure that those persons at greatest risk for HIV transmission or acquisition are able to obtain intensive support to reduce risk behaviors and adopt protective strategies for their health and the health of their partners.

Remaining Challenges

Despite these successes, several challenges remain. HIV/AIDS continues to be a leading cause of illness and death in the United States. An estimated 252,000--312,000 HIV-infected persons in the United States are unaware of their HIV infection (2). Not only are they at high risk for transmitting HIV to others, but they are much less likely to take advantage of effective medical treatments.

Certain subpopulations remain at increased risk. MSM account for approximately 45% of newly reported HIV/AIDS diagnoses and nearly 54% of cumulative AIDS diagnoses (10,11). A recent survey indicated that in several large U.S. cities, approximately one in four MSM surveyed in social venues is infected with HIV, and nearly 50% of MSM are unaware of their HIV infections (12). Moreover, young MSM were least likely to know they were infected, and MSM from racial/ethnic minority populations consistently demonstrated higher prevalence than white MSM. Annual HIV incidence among MSM is high, ranging from 1.2% to 8.0% (12). Racial and ethnic minority communities also are disproportionately affected by HIV/AIDS (13). During 2001--2004, in 35 areas with HIV reporting, 51% of all new HIV/AIDS diagnoses were among blacks, who account for approximately 13% of the U.S. population (14). Of these, 11% (12,650) of HIV/AIDS diagnoses in men were in black men who were infected through heterosexual contact, and 54% (23,820) of HIV/AIDS diagnoses in women were in black women infected through heterosexual contact. Today, women account for approximately one quarter of all new HIV/AIDS diagnoses and, in 2002, HIV infection was the leading cause of death for black women aged 25--34 years.

A scaling up of the diffusion of effective behavioral interventions (e.g., DEBIs) is required; however, limitations exist in CDC's ability to meet current training and technical assistance needs, as well as states' abilities to implement them widely. Other gaps include the lack of data regarding the effectiveness of adapting DEBIs to all at-risk populations (15). In many locales, the community-level workforce might be weakened by attrition, fatigue, and inadequate program skills (15,16). Changing public perceptions of HIV/AIDS in the United States, coupled with the widespread availability of highly active antiretroviral treatment, has led to the widespread belief that AIDS is no longer a problem or a severe disease in the United States (17). Although 26% of persons in the United States consider AIDS as a top health concern for the nation (second only to cancer [35%]), the proportion who see it as the number one health problem has declined during the past few years (18). Complacency, stigma, and discrimination persist and all decrease motivation among persons and communities to adopt risk-reduction behaviors, get tested for HIV, and access prevention and treatment services (19).

New Strategies

Despite these challenges, substantial opportunities remain to enhance and demonstrate the effectiveness of HIV-prevention measures. New strategies will need to be combined with a scaling up of traditionally effective interventions that are tailored for local epidemiology and context to maximize public health impact despite resource constraints.

Partnerships. Eliminating HIV/AIDS in the United States cannot be achieved by any single agency or group, but will require public health partnerships comprising persons, communities, agencies, and the private sector. Strong partnerships are especially important to address stigma and discrimination and to promote greater acceptance of those living with HIV/AIDS. Religious and business communities and correctional and mental health services all need to be part of a national mobilization in the prevention of HIV transmission (20). Improved collaboration across government agencies is also required to provide a unified public health infrastructure dedicated to research, prevention, treatment, care, and rehabilitative services for persons affected by HIV/AIDS.

Increased access to voluntary HIV testing. For the estimated quarter of a million persons living with HIV who are unaware of their HIV infection, testing is the gateway to lifesaving treatment. Persons who know they are infected with HIV are more likely to take steps to prevent themselves from transmitting the virus to others (21). To reduce the number of persons with undiagnosed HIV infections, a sustained expansion of access to and uptake of HIV testing will be required. This reduction can be achieved by making voluntary HIV testing a routine part of medical care, reducing the barriers to HIV testing, and ensuring easy access to new rapid HIV tests that, in many jurisdictions, can be performed by trained persons who are not clinicians (22--24).

Prevention messages focused on both HIV-positive and HIV-negative persons. Providing culturally and contextually appropriate messages is essential to help persons at risk avoid contracting HIV infection and to help those who are infected with HIV avoid transmitting the virus. Prevention messages also need to focus on the role of alcohol and drug abuse in HIV risk. Substance abuse (via injection drugs, alcohol, or methamphetamines) can facilitate risky behaviors among persons who might otherwise protect themselves and others from HIV. Preventing substance abuse and increasing access to substance-abuse treatment are examples of effective interventions for reducing HIV transmission.

Integrated prevention programs. Federal, state, and local prevention measures are increasingly focused on maximizing public health impact for any given program. One approach to increasing program effectiveness is increasing the development and implementation of integrated HIV-prevention programs. Several integrated programs exist across the nation, combining HIV, sexually transmitted disease (STD), viral hepatitis, mental health, and substance abuse services (25--27). Effective integration requires that program leaders 1) better define program integration goals, 2) identify best practices in the field and ensure that they are disseminated and implemented widely, 3) implement policies and regulations that enhance and support integration at local levels, and 4) evaluate the most cost-effective strategies.

Improved monitoring of new HIV infections. Reliable, population-based data are essential to track the HIV epidemic and target prevention measures accurately. For decades, AIDS surveillance has been a cornerstone of national, state, and local efforts to monitor the scope and impact of the HIV epidemic. However, AIDS surveillance data no longer accurately describe the full extent of the epidemic because effective therapies have slowed the progression of the disease. Since 1999, CDC has recommended that states conduct HIV reporting using the same name-based approach currently used for AIDS surveillance nationwide. Currently, 43 states and five territories use confidential, name-based HIV case reporting. Several of the remaining states intend to implement name-based HIV surveillance in 2006. Moreover, in 2006, data from a new national HIV incidence surveillance system will provide the most accurate estimates of new HIV infections. These data, combined with improved surveillance of the patterns and distributions of risk behaviors in the population, will refine the targeting and delivery of HIV-prevention efforts.

New prevention technologies. Certain prevention technologies still under development, including preexposure prophylaxis, microbicides, and vaccines, are unlikely to provide full protection against HIV, might offer little or no protection against other STDs such as gonorrhea and chlamydia infections, and will not prevent unwanted pregnancies. Instead, new technologies are more likely to be incorporated into the spectrum of tools for comprehensive approaches to disease prevention. Effective behavior-change programs will still be needed to address possible behavioral disinhibition (i.e., continuing or returning to high-risk behaviors when one feels protected) among persons who receive these interventions. Prevention counseling that addresses informed choice and consent; the HIV-prevention behaviors of abstinence and delay of sexual debut, being monogamous, having fewer sex partners, and using condoms correctly and consistently; and other reproductive health needs (e.g., STD treatment and family planning) must be incorporated alongside these new prevention interventions.

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HIV/AIDS remains a potentially deadly chronic disease. Prevention of HIV infection requires a continued commitment from persons at risk, persons infected, and society as a whole. Prevention efforts need to keep pace with a changing epidemic. Most importantly, younger generations, who might not remember the deadlier, early days of the epidemic, continually need to receive basic HIV-prevention messages. Twenty-five years after first reporting on AIDS, *MMWR* dedicates this issue to retrospectives on the epidemic, including the changing epidemiology of HIV/AIDS, the public health achievement in reducing perinatal transmission of HIV, and the evolution of measures to prevent HIV/AIDS.

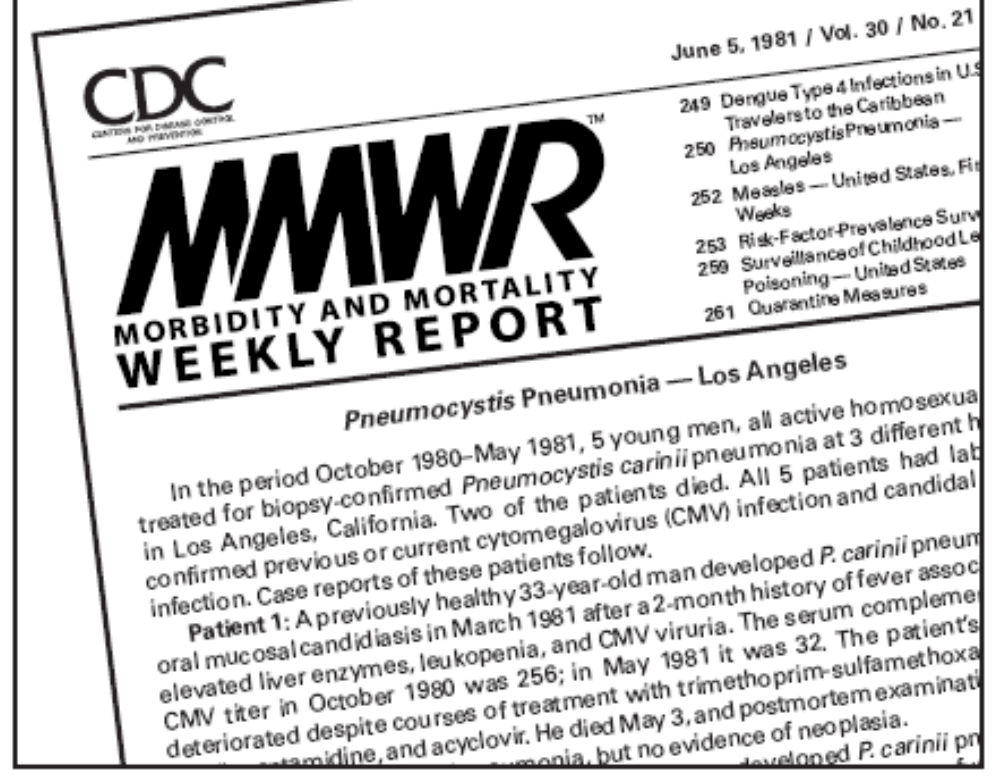
Reported by: KA Fenton, RO Valdiserri, National Center for HIV/AIDS, Viral Hepatitis, STD and TB Prevention (proposed), CDC.

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Figure

FIGURE. *MMWR* report on *Pneumocystis pneumonia* in five previously healthy young men in Los Angeles — June 5, 1981



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