Prevention of HIV Infection in Women: Overcoming Barriers

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The proportion of total reported cases of acquired immune deficiency syndrome (AIDS) in US women increased annually between 1988 and 1994 from 10% to 18%, indicating an urgent need for prevention measures. Interventions designed to reduce unsafe sex and drug-using behaviors in women have been limited. Barriers to human immunodeficiency virus (HIV) prevention for women include a disproportionately low investment of resources, inadequacy and inaccessibility of substance abuse treatment programs, the crack/cocaine epidemic and resulting unsafe sex behaviors, lack of a woman-controlled method to prevent sexual transmission of HIV, and unique social and cultural factors that limit women's power in sexual decision making. Some interventions have been successful in reducing women's risk behaviors. Expanding prevention efforts targeted to women is necessary in order to stem the rising rate of HIV infection.

Background and Epidemiology

Cases of acquired immume deficiency syndrome (AIDS) in US women have increased annually since the epidemic was first recognized in 1981, but more strikingly, the *proportion* of AIDS cases in women has increased steadily, reaching 18% in 1994 (see Table 1). With a change in the surveillance case definition, the numbers of reported AIDS cases doubled between 1992 and 1993, but the increase was 105% for male and 151% for female cases.[1] This disproportionate increase was not due to the newly added female-specific diagnosis of cervical cancer, since this accounted for less than 1% of cases in women. Moreover, with the same case definition, the proportion of female cases increased from 16% to 18% of total AIDS cases between 1993 and 1994. If this trend continues, it is expected that women will account for close to 30% of AIDS cases by the year 2000.

In the northeastern United States, AIDS case rates are now higher for injection drug users (IDUs) than for gay men, and the epidemic has moved into the South and Midwest with increasing AIDS case rates in these areas.[2] Of the 58,00 cumulative cases reported in women as of the end of 1994, 48% occurred in IDUs and 19% in sex partners of IDUs. A comparison of transmission categories for AIDS cases in 1994 shows that injection drug use accounted for 41% of female and 24% of male AIDS cases, while heterosexual transmission accounted for only 4% of male compared with 38% of female cases (see Figure 1). Injection drug use is the highest transmission category for all women, but for women age 25 and under, heterosexual intercourse was the predominant mode of transmission.[3] Thus, women who inject drugs and those who engage in unsafe sexual intercourse should be the highest priority for prevention interventions.

African-American and Hispanic women account for 21% of the US population, but constitute 74% of cumulative AIDS cases in women. The 1994 female case rates by race/ethnicity (see Table 2) show the heavy burden on black women. In 1992, AIDS became the fourth leading cause of death of young women in the United States (see Figure 2), but AIDS has been the leading cause of death for black women in New York and New Jersey since 1987.[4]

The geographic distribution of 1994 AIDS cases in women shows that no state is spared (see Figure 3). Human immunodeficiency virus (HIV) serologic surveys in women generally show the

Table 1: Adult AIDS Cases 1988-1994

Year	Total*	% Female
1988	32,000	10
1989	35,000	11
1990	43,000	12
1991	44,000	13
1992	49,000	14
1993**	106,000	16
1994	80,000	18

* Rounded to nearest thousand
**Surveillance case definition changed

Table 2: Adult Female AIDS Cases and Annual Rates per 100,000 Population by Race/Ethnicity, Reported in 1994 United States

Race/Ethnicity	Cases	Rate
White, not Hispanic	3,148	3.8
Black, not Hispanic	8,016	62.7
Hispanic	2,814	26.0
Asian/Pacific Islander	49	1.3
American Indian/ Alaskan Native	42	5.8
All Women*	14,081	12.8

*Includes 12 women whose race/ethnicity is unknown.
Source: CDC. HIV/AIDS Surveillance Report 1994, Volume 6.

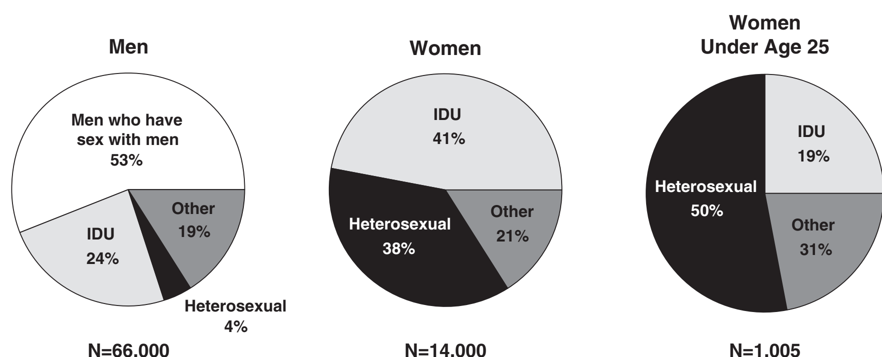

Figure 1. Adolescent and adult AIDS cases, 1994 — transmission categories.

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same epidemiologic and geographic distribution pattern as AIDS cases.[5] Therefore, focusing HIV prevention programs on women using drugs or having unsafe sex in high AIDS incidence areas is one reasonable prevention strategy. An investment in primary prevention is also necessary, especially in minority communities, to prevent women of all ages from initiating unsafe sex and drug-using behaviors.

Prevention of HIV Infection

Since neither an effective vaccine nor a curative treatment for HIV infection will be available within the next five to ten years, the only means to prevent transmission to women is to prevent or change HIV risk behaviors. Recommended for the prevention of HIV infection are: to avoid injection drug use or, if injecting and unable to stop, to avoid sharing of needles, syringes, and other drug use paraphernalia; for sexually active women, either monogomous relationsips with uninfected partners or using condoms consistently and correctly for sexual intercourse. It may be very difficult for many women to adopt and maintain these preventive behaviors, especially since women have no direct control over condom use. Other reported impediments to safer heterosexual sex for women include difficulty in discussing sexual issues with partners, gender role expectations that may vary among racial/ethnic populations, unequal power relationships between men and women in sexual decision making, and fear of disrupting a relationship by bringing up safer sex issues such as condom use.[6,7]

Interventions that were successful in reducing HIV risk behaviors in gay men, IDUs, and heterosexual adolescents have recently been reviewed.[8,9] Much less is known about effective strategies for women. In a review of interventions to reduce sexual risk behavior,[7] the limited evidence suggested that women's knowledge about HIV/AIDS can be increased, but knowledge alone was insufficient to produce changes in behavior. We discuss some of the major barriers for HIV prevention in women and opportunites for overcoming them.

Barriers to Prevention

Barriers exist in understanding the urgent need for HIV prevention programs for women, in identifying women at risk, in developing culturally appropriate interventions to reduce risk behaviors, in empowering women to practice safe behaviors, and in understanding what constitutes effective interventions, ie, those that will give women the knowledge, skills, motivation, and ablility to practice these safe behaviors. Some of the major barriers to prevention of HIV infection in women are:

1. Tendency to focus on treatment rather than prevention. Although this is not unique for women, the relative inattention to HIV infection in women has resulted in a constant struggle for resources to find and care for women with HIV infection. Prevention efforts usually take a lower priority and are the first to be cut when resources are diminished. Activists have focused on the needs of HIV-infected women, such as inclusion in clinical treatment trials and access to appropriate care, whereas attention to prevention efforts has lagged. The need for balance in investing resources in treatment and prevention services for women is clear, but exactly how to do this is not. No formula exists to guide policy makers in allocating resources for HIV prevention, therefore these decisions are easily influenced by political lobbying and demands for reducing budgets.[10] Leadership is needed from public health policy makers to recognize the urgency and ensure a commitment to fund HIV prevention programs for women.

2. Unique cultural, social, and legal influences on women IDUs may prevent entry into and successful completion of substance abuse programs. A major strategy for preventing HIV transmision in IDUs is to provide treatment programs to stop injection drug use. Women IDUs are more likely than their male counterparts to live with spouses or sex partners who also inject drugs,[11] sharing needles and drugs with them,[12] and thus are less likely to independently seek substance abuse treatment. Women IDUs are also more likely to be unemployed[11] and dependent on their partners for financial support. Men often obtain drugs for their female partners,[12] making women IDUs relatively invisible in drug dealing and thereby inaccessible to outreach programs. Evidence suggests that women IDUs may be at greater risk for HIV infection from unsafe sexual behavior than from drug use behavior,[13,14] but financial and drug dependence on male partners puts them at enormous disadvantage in attempting to negotiate condom use. Twice as many women as men IDUs have children living with them.[11] Many state laws, local statutes or ordinances permit authorities to take dependent children away from women IDUs seeking substance abuse treatment. Authorities may also prosecute pregnant women who admit to illicit drug use, thus creating considerable disincentives for women to seek treatment.[12,15,16] Pregnant women have been denied entry into substance abuse treatment programs,[12] and although this may have improved somewhat, drug treatment programs may refuse services to pregnant women

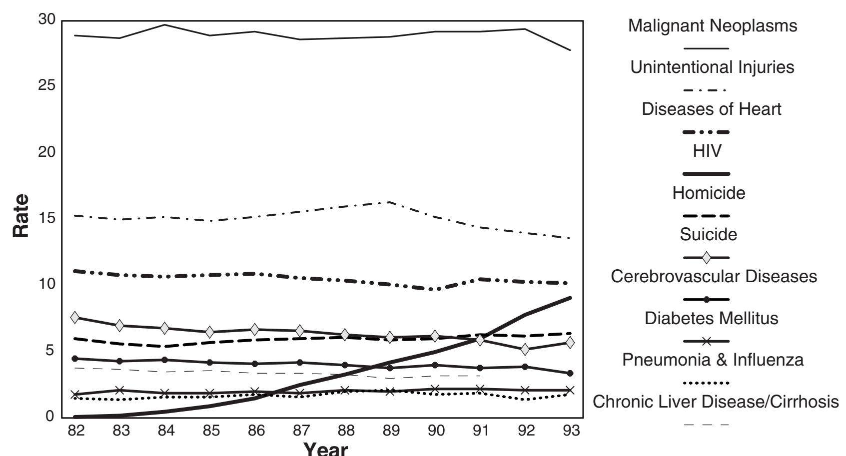

Figure 2. Death rates* for leading causes of death among women 25-44 years, by year — United States, 1982-1993†

*Per 100,000 population
†National vital statistics based on underlying cause of death, using final data for 1982-1991 and provisional data for 1992 and 1993. Data for liver disease in 1992-1993 were unavailable.
Source: National Center for Health Statistics, CDC

receiving Medicaid.[17] Many drug treatment programs are inhospitable to women because they do not provide services for dependent children and/or offer male-oriented counseling approaches.[12] These obstacles must be recognized and addressed in the design of HIV prevention measures for women IDUs.

3. Crack/cocaine use in women and associated unsafe sexual behavior. The epidemic of crack use in the United States, especially in women, has been linked to increases in HIV infection[18] and other sexually transmitted diseases (STDs).[19] Some female users exchange sex for crack or for money to buy it, thus putting themselves at risk for STDs and HIV. The need for multiple doses of crack per day pushes those who trade sex to multiple sexual encounters.[20] Compared to IDUs, crack-addicted women are more likely to be poor, African-American, homeless, and to sell sex for money, while they are less likely to enroll in drug treatment programs. Moreover, crack-using women have more sex partners and are less likely to have partners who use condoms.[20,21] The spread of crack use to adolescents has resulted in dramatically increased STD rates in this population.[22] Programs to treat crack addiction are limited, and their effectiveness has not been evaluated sufficiently. There is ample evidence that the overlap between the crack and HIV epidemics will drive HIV rates upward,[23] especially in African-American women. Control of the crack epidemic is vital to preventing the further spread of HIV to women.

4. Female sex partners of HIV-infected, bisexual, or injection drug using men are not easily identified and targeted for HIV prevention programs. The social networks of these women are largely unknown, and points of access for prevention are more obscure than for gay men and IDUs. A substantial proportion of female sex partners of IDUs engage in unprotected sexual intercourse,[24] even those knowledgeable about HIV risk.[25] Notification of female partners of HIV-positive men is one method of gaining access to these women. This strategy depends on a cooperative index patient, a considerable investment in resources to track partners, and has only been evaluated with regard to the number of HIV-positive partners found.[26] Whether notification alone will result in reduction of risk behavior in the notified partner is not known. Counseling and a skills-building component for the female partner in addition to notification would be more likely to result in behavior change.[7]

5. Lack of an effective woman-controlled method to prevent HIV sexual transmission. The male condom is the most effective device for preventing HIV transmission during sexual intercourse.[27] Although a female condom is now on the US market (Reality, Wisconsin Pharmacal), data on its effectiveness for HIV prevention are lacking, and its use requires a cooperative sex partner. In one study, the use of a spermicide-impregnated sponge in the vagina did not decrease HIV transmission,[28] thereby casting doubt on the usefulness of this formulation of nonoxynol-9 in HIV prevention. Another study showed more promising results from a nonoxynol-9 vaginal suppository, but the study design and small number of subjects leave these results open to question.[29] The development of a vaginal microbicide that would prevent HIV transmission is a research priority both nationally and internationally, but a product is unlikely in the near future.[30] Woman-controlled methods to prevent HIV infection are urgently needed.[31] The empowerment of women to protect themselves against HIV infection is dependent on the availability of such methods.

6. Poverty, unemployment, elevated school dropout rates, alcohol and other substance abuse, violence, unsafe sex, and high rates of unplanned pregnancy coexist in communities where women are at greatest risk for HIV infection.[32] Categorical programs that focus only on HIV prevention may have little relevance to women at risk.[7] The design and evaluation of a comprehensive intervention to address these interrelated problems should be a priority.

Overcoming the Barriers

Despite the obstacles, some HIV prevention efforts for women have succeeded. The most successful examples of reduction of risky sexual behavior in women have been in heterosexual, discordant couple studies in Europe,[33,34] Africa,[35,36] and North America.[37,38] In the majority of couples, the male partner was infected with HIV and the woman was not. Both partners received counseling on safer sex practices. Condom use increased dramatically, and HIV seroconversion of the uninfected partner was significantly lower in couples who consistently used condoms. An intervention specifically tailored for women with high-risk sexual behavior who attended a primary care clinic was effective in reducing this behavior.[39] Community-based outreach efforts have shown that female sex partners of IDUs can be reached and will participate in risk reduction programs.[40,41] Interventions designed for female IDUs and sex partners of IDUs in the Harlem AIDS Project were successful in reducing their risky sex and drug-use behaviors.[42] Important research on the determinants of risk behaviors in African-American women[43-45] have provided the groundwork for interventions in this population. HIV prevention in women can and does work at least in small-scale studies. Interventions designed to overcome gender-related barriers to reducing HIV risk

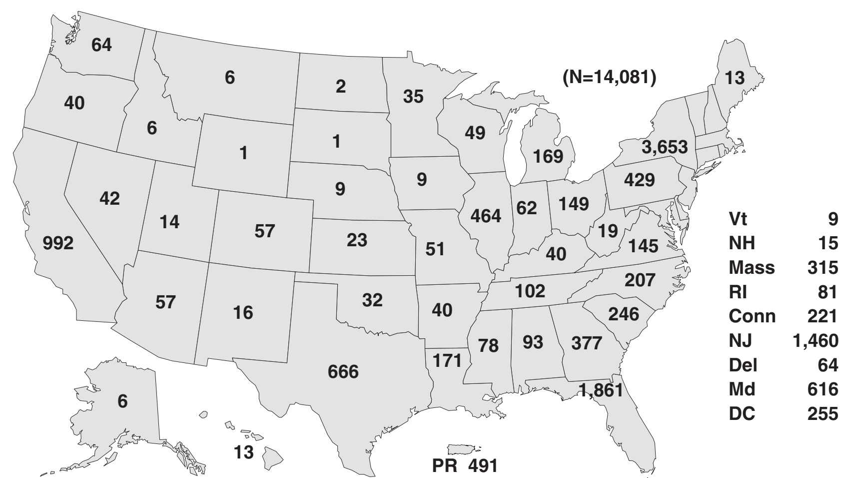

Figure 3. Female adult/adolescent AIDS cases reported in 1994, United States.

behaviors in women must be be the focus of larger scale studies, especially in minority communities.

In summary, the increasing rate of AIDS cases in women indicate that prevention of HIV in women should be a high priority. Evidence from a small number of studies suggests that women can and do reduce their risk behaviors in response to interventions that address their needs. A better understanding of the HIV prevention needs of young African-American women is critical, and interventions for this population must be given special prominence in order to reduce rates of HIV infection in women in the United States.

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