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***Women and Acquired Immunodeficiency
Syndrome: Issues for Prevention***

Five Case Vignettes

Although as of 1987 women comprised only 7% of all the reported AIDS patients in the United States, they are an important potential source for heterosexual human immunodeficiency virus (HIV) transmission as well as the source of transmission to infants. In New York State in early 1988, 1 in 61 infants was born with the antibodies to the AIDS virus (Josephs, 1988). Moreover, recent trends indicate increases in sexually transmitted cases in U.S.-born women, suggesting an increase in the heterosexual transmission of the AIDS virus to women (Hardy & Guinan, 1987). A few brief case vignettes culled from interviews and clinical records of clients from the Hyacinth Foundation AIDS Project in New Jersey will provide a picture of the diverse background of women with AIDS and a compelling portrait of the problems these women face.

Diane is a 32-year-old, strikingly beautiful black woman who grew up in Newark, NJ. By the age of 13 Diane was "shooting drugs," by 15 she was a street prostitute, and by the age of 22 she had two children for whom she was the sole source of financial support. Five years ago she stopped using drugs; last year she was diagnosed as having AIDS and *Pneumocystis carinii* pneumonia. She continues her job as a fork-lift operator but will not have the physical stamina to work much longer. Fortunately, Diane has a large extended family that is helping her care for her children. Diane has been celibate since her diagnosis. She assesses her chances of finding a new appropriate male partner at close to zero. She is probably correct; the stigma attached to AIDS for women is commonly far greater than that for men.

Prevention Sylvia was a black woman who divorced her first husband, a drug addict, 6 years ago and remarried a non-drug-using man shortly thereafter. Two years ago she began to exhibit vague symptoms that were incorrectly diagnosed as psychosomatic. It did not occur to either her or her physician that she might be HIV infected, and she was psychiatrically hospitalized with a diagnosis of bulimia because she was vomiting so frequently. Last spring Sylvia's ex-husband called her to inform her of his HIV-seropositive status. She died within a month of learning that her symptoms were HIV related, rather than psychiatric. Her grief-stricken second husband, himself now seropositive (apparently infected by Sylvia), is now caring for his two children from a previous marriage and the two children from her first marriage that Sylvia left behind.

Susan is a 29-year-old white working-class woman who also suffered symptoms that were misdiagnosed for a year. In her third month of pregnancy, Susan mentioned to her doctor that she had had several different sexual partners since adolescence. On the basis of this clue, her doctor finally referred her for HIV antibody testing, and Susan received a diagnosis of AIDS-related complex (ARC) when her test results were positive. Only at this point did her steady male sexual partner of 4 years, the father of her child, admit his past homosexual behavior. He told Susan that he had been afraid to tell her before this because he was afraid she would leave him. He also said that he never considered himself to be at risk for AIDS because "AIDS happens to homosexuals, not bisexuals." Bobby, the boyfriend, subsequently was diagnosed with ARC himself. Susan was told, in her fourth month of pregnancy, that if she carried her baby to term both she and the baby would probably die. Frantic, she was left on her own to seek an abortion and was unable to find a clinic that would agree to perform the more complicated second trimester procedure on an HIV-infected woman. In her fifth month, on the same day she finally found a clinic that would perform the abortion, Susan's baby moved inside her for the first time and she was unable to go through with the abortion. Susan's daughter was born in August

and is healthy and thriving at this time. Susan, however, contracted toxoplasmosis in September. Now well, Susan, on her good days, thinks about having a second baby. She believes, incorrectly, that if her daughter remains healthy that that means a second child would necessarily also be healthy. On the other hand, if this child becomes ill, Susan will feel a desperate need to try to replace her sick baby with a well one. In addition, being a mother is life-affirming for Susan and helps her maintain a hopeful attitude toward her own illness, an attitude that ironically is psychologically adaptive in many ways although it could lead her to become pregnant for a second time.

Clarissa, 23, is a Puerto Rican woman who lives in Jersey City and whose first husband was an addict. Clarissa learned she was seropositive because she was routinely tested during pregnancy. Her deep religiosity, among other things, prevented her from aborting this pregnancy and her first child was born with AIDS. Soon after this birth, her first husband died of AIDS. When Clarissa's little boy was a year old, she met another man who miraculously, from Clarissa's point of view, fell in love with her and moved in to live with her and support her despite her seropositive status. Clarissa's new partner asked her to have a second child—he wanted her to have his baby—and Clarissa complied. She never considered not complying, in fact, and left her fate, in her view, in the hands of God. Clarissa is now seven months pregnant. Her little boy died of AIDS 6 weeks ago.

Cindy is 20. She grew up in a poor white family where she was physically and sexually abused, and by the age of 12 she was a runaway sleeping in abandoned cars. Her husband is an addict who was diagnosed as having AIDS when their baby was 5 months old. Cindy, Richard, and the baby have an income of \$136 per month from local welfare because Richard's Social Security Disability benefit was denied when his clinic doctor filled out the paperwork incorrectly. Cindy and the baby are healthy, but Cindy didn't want Richard to use condoms in their sexual relationship even after his diagnosis. During group counseling, Cindy verbalized her fantasy that, if she contracted AIDS, her abusive and neglectful family might finally "come around" and care for her in a way they never had loved her as a child. The group persuaded her to give up this fantasy and she began to have safer sex with Richard.

Epidemiology of AIDS in Women To some extent, the relatively low overall percentage of female AIDS cases in the United States is misleading because it primarily reflects the fact that AIDS in this country was first diagnosed among gay men. In some parts of Africa, where heterosexual behavior appears to be the dominant mode of transmission, 50% of cases are female. In this country, areas in which AIDS is found among intravenous (IV) drug users tend to have higher percentages of women, reflecting not only AIDS among female drug users but also heterosexual transmission from male addicts to their female partners. New Jersey, with 17% of female AIDS cases, has the highest percentage; New York State, another state with many IV drug user cases, has 11% of female AIDS patients.

The 7% overall figure for women has remained stable since 1982. If one analyzes risk factors for heterosexual men and women (Table 26-1), it is clear that IV drug use is the primary transmission mode (52%) for women, just as it is for men (68%). The most noteworthy differences in risk factors between men and women are that a higher percentage of women contracted AIDS through heterosexual sexual contact (21% versus 1%). In absolute numbers, female sexual transmission cases outnumber male by a ratio of 5:1 (through 1986, 381 versus 75), although we should note that the actual extent of sexual transmission as a mode of transmission is somewhat obscured by the fact that individuals with multiple modes of risk—say,

IV drug use and heterosexual sexual risk—are likely not to be categorized in the heterosexual sexual transmission category.

It is difficult to accurately interpret these data. At least two theories have been advanced to explain the disparate rates and numbers of U.S. female versus male heterosexual sexual transmission. According to one theory, the rates could be an artifact of the particular stage of the epidemic the United States was experiencing during the decade of the 1980s. That is, assume that AIDS first appeared in mass numbers in this country in gay males—who primarily, though not exclusively, transmit to other males—and IV drug users, 75 to 80% of whom are male. If this is true, as it appears to be, then it could take a long time for the epidemic to spread to large numbers of women, especially through sexual transmission. Furthermore, assume, as also appears to be true, that male drug addicts have more female sexual partners and more female sexual partners who are not themselves IV drug users (L. S. Brown, Addiction Research and Treatment Corporation, Brooklyn, NY, personal communication, November 1987; Murphy, Brown, & Primm, 1987), as reported by Dr. Des Jarlais (Chapter 17). Thus, infected women, fewer in number to begin with, would be slower to sexually transmit the disease back to uninfected men than infected men would be to transmit it to women.

A second theory on the disparate rates is related to the fact that female-to-male vaginal intercourse may be a less efficient mode of transmission than is male-to-female sexual transmission. This is plausible: semen may contain higher quantities of HIV than do vaginal secretions, and the vagina/cervix/uterus appear to be better "portals of entry" than are the skin of the penis and the penile urethra. Some people argue that the apparent ease of female-to-male sexual transmission in Africa is affected by the common presence of open venereal lesions on the penises of African men, whose general health care is of much poorer quality than that of American men. Moreover, some women engage in receptive anal intercourse, a route known to have high efficiency of transmission, and one anatomically unavailable as a route for heterosexually active men. Obviously, these theories are neither exhaustive nor mutually exclusive.

Table 26-2 shows risk factors of the male partners who presumably infected women who contracted AIDS through heterosexual activity. As one would expect, the majority (67%) of these male partners appear to have been IV drug users, with a smaller percentage (16%) of "other unreported risks." Other data support the observation that many women appear not to know how they sexually contracted AIDS and/or do not consider themselves to be at risk, and later in this chapter we will discuss why this might be so.

If one analyzes the epidemiological data on women with AIDS in order to predict future trends, one sees that, over time, higher percentages of women have become sexually infected with AIDS in the United States, while relatively lower percentages have been infected by needle contact or are foreign-born heterosexual contact cases (Hardy & Guinan, 1987) (Table 26-3). There has been no corresponding increase in heterosexual transmission for men. Moreover, there is a 10-month doubling time for the mostly female heterosexual transmission cases as opposed to a 14-month doubling time for gay male and intravenous drug user cases (Hardy & Guinan, 1987). In other words, we can predict for the future that heterosexual women who contract AIDS sexually will be one new rapidly multiplying risk group and could theoretically grow to comprise as many AIDS cases as we now see among gay men and drug users. Of course, if this happens we will see a corresponding rapidly occurring rise in the number of infants born infected—a phenomenon already occurring in New York.

When we look at other characteristics of women with AIDS, we see that AIDS is not spread evenly among racial or social classes, as it is, more or less, among gay men. Overall, both male and female heterosexuals with AIDS in the United States tend to be people of color—half are black and about one quarter Hispanic. As one would expect, children with AIDS, the children of these women, are also primarily nonwhite. Women with AIDS are young: AIDS affects women in their child-bearing years, with one third of female AIDS cases 29 years old or younger and another 45% between the ages of 30 and 39 years (Guinan & Hardy, 1987).

These data reflect the fact that there are at this point in time in the United States two major and only somewhat overlapping AIDS epidemics. One is among homosexually active men who are infecting mostly each other (although not exclusively) and whose behavior has changed so drastically (see Dr. McKusick's discussion in Chapter 7) that the rate of newly infected people in this group is decreasing in some areas. The second epidemic is among poor, minority people in urban centers where IV drug use and shared needle use is very common. This epidemic started with mostly male drug users, and some female drug users and the female drug users' children, but is spreading out to include women who are not drug users but who have been the sexual partners of drug users, and these women's children. If unchecked, and depending upon factors such as the ease of female-to-male transmission and rates of female partner change, this "second epidemic" could eventually outstrip and dwarf the first and become a disease of poor minority heterosexuals and their children who live in urban centers. This is the most likely and greatest possible spread to the so-called "heterosexual population." Whether this epidemiological spread continues unchecked into the white heterosexual middle class depends upon factors such as rates of sexual contacts across racial barriers (interracial pairings) and across social class.

Another source of spread to white middle-class heterosexuals is through the activity of functionally bisexual men, both men who label themselves bisexual (a very small percentage of all men), men who identify as heterosexual but who have clandestine homosexual activity, and men who identify themselves as gay but have some continuing heterosexual activity. The approximately 3% of women with AIDS who have contracted AIDS in this way are a harbinger of this trend, which through tertiary female-to-male sexual spread could introduce a new risk group—white middle-class heterosexuals whose only source of infection is sexual contact with other white non-drug-using heterosexuals. It is impossible to predict the rate or likelihood of substantial spread in this way at the current time, because there are too many unknown, unmeasured variables that could affect this transmission. Among these unknown variables is the true rate of bisexual activity in the United States, behavior discussed by Dr. Reinisch in Chapter 3 in this book.

Part of the difficulty faced in describing or predicting the course of the AIDS epidemic among women (and thus among children and non IV drug-using heterosexuals) lies in the fact that there are so few cohort studies of women such as the ones in progress studying AIDS among gay men. In the absence of such studies, we must piece together a picture of women and AIDS from bits of data gathered in high-incidence, and some low-incidence, areas. Among the most relevant statistics are the following:

In New York City AIDS is the leading cause of death for all women ages 25 to 34 years (Josephs, 1987a, b).

In New York last year there was an 8% increase in new IV drug user AIDS cases over a base of 50% seroprevalence among addicts. If one compares that to

1% or less new seropositive conversions among gay men, one can see that AIDS is becoming more and more a heterosexual minority problem and less a gay male problem. Indeed, actual figures may even be higher than official Centers for Disease Control (CDC) statistics show. A recent analysis of IV drug user deaths in New York City led to the conclusion that there may be as much as 50% underreporting of cases of AIDS among IV drug users (Josephs, 1987a,b).

A sample of women with AIDS at Montefiore Hospital in New York showed that 35 women had a combined total of 52 dependent children. This underscores the fact that women with AIDS do not simply bear infected infants; they also have other children. In fact, the problem of "AIDS orphans" is a much bigger problem in numbers than that of pediatric AIDS cases (Friedland, 1985).

A sampling of seroprevalence statistics for women from various places in the United States (Table 26-4) shows rates of seropositivity varying from 0.5 to 5%, figures roughly comparable to some rates in Africa.

Women with AIDS die faster than men, even when the confounding factor of IV drug use is controlled (Kolata, 1987). Fischl et al. (1987), in Florida, reported that women with AIDS live an average of 7 months after diagnosis as opposed to a 12- to 14-month average for men. Harder reported that in San Francisco women live an average of 40 days after diagnosis as opposed to 1 year or more for men.

Women who are HIV-infected bear infected infants, but probably the percentage of infected infants is lower than the 50% rates first reported, perhaps as low as 30 to 35% (Peckham, Senturia, & Ades, 1987). Moreover, most pregnant seropositive women choose not to terminate their pregnancies, even when informed of the risk. A study in New York reported that of 80 pregnant seropositive women only 1 chose to abort (Josephs, 1987). These figures reflect the tremendous role that motherhood plays in the lives of women who do not have access to other social roles or to other sources of self-esteem, pleasure, and life satisfaction. Moreover, to many poor women whose lives are already full of risks, even the possibly 50:50 odds of having a well baby represent a comparatively acceptable risk. Coupled with these factors are variables such as religious beliefs about abortion and mistrust of doctors and health authorities who convey risk information.

Issues Influencing Sexual Transmission Let us examine some of the research that has bearing specifically upon the sexual transmission of AIDS, through heterosexual sexual activity, to and from women. Four recent studies are of particular significance: the Downstate Study (Landesman, Minkoff, Holman, McCallia, & Sijin, 1987); the "partner studies" done by Fischl et al. (1987) and Padian et al. (1987); and Cohen et al.'s San Francisco Women's Cohort Study (1987).

In November 1987, Landesman et al. reported on a study of 602 newborn infants and their mothers delivered at Kings County Hospital in New York. The sample was almost entirely nonwhite, poor, and urban. The researchers conducted 15-minute interviews of the mothers to determine CDC-defined risk factors and compared that to the mothers' antibody status as ascertained from cord blood samples. As a result of the interviews, the researchers determined that 28% of the sample might be at risk, mostly because they were Haitian or sex partners of Haitians.

By contrast, blood samples showed 2% of these women to be infected. When the researchers tried to match the real seropositives to the interview-determined risk factors, 42% could not be classified. In other words, neither the woman nor the interviewer would have suspected her seropositive status. Moreover, of the seven

women the interviewers picked as high-risk women, three of them did not recognize their own risk. Only the IV drug users recognized their own risk. In other words, the Downstate Study suggests that women still do not recognize their risk of exposure to AIDS from sexual contact: two thirds of these seropositives did not know they were at risk. This may be because the informational and educational messages we give women mislead them and in part it may be because women often do not know the sexual and drug use histories of the men with whom they have sexual relations.

The two most substantial "partner studies" of women done in the United States give us information about the relative risk of exposure to AIDS through various forms of heterosexual sexual contact. Both Fischl and Padian and their colleagues studied the steady sexual partners of men (and for Fischl, women as well) who had already been diagnosed as having AIDS or ARC at entry into their studies. (Both studies are somewhat flawed by the assumption that the partner first diagnosed with AIDS or ARC was the first to be infected and "gave" the virus to the other, an assumption that is not necessarily true.) Both studies followed partners over some time (2 years or more) and thus were able to ascertain, for nondiagnosed partners who were seronegative at entry, the approximate point at which they seroconverted. What do the results of these studies tell us?

Statistically, on the average it appears to take many exposures through vaginal sex with an infected man for a woman to become infected. It can sometimes take years of exposure for infection to occur. Twenty-three percent of Padian et al.'s female partners were infected at entry into the study, a rate similar to that obtained by Paul Paroski in a partner study at Woodhull Hospital in Brooklyn (personal communication, November 1987). Fourteen percent of Fischl et al.'s female partners were infected at entry into the study, and these women had been in relationships with their infected partners for nearly 6 years on average at the time the study began. In Fischl et al.'s study, most women who continued to engage in unprotected sex with their male partners eventually became infected but, again, it often took several years of repeated exposure.

Fischl et al. reported that seroconversion did not occur in 9 of the 10 couples who regularly used condoms after becoming enrolled in the study.

Vaginal sex is clearly sufficient for transmission. Anal intercourse probably is yet more efficient—Padian et al. estimate more than twice as efficient.

Padian et al. (as Dr. Detels reports for gay men, as well, in Chapter 1) found that oral sex did not appear to increase transmission risks significantly. Fischl et al. found a correlation between oral sex and seroconversion, but this variable was confounded because in her study couples who used condoms also did not engage in oral sex, whereas couples who did not use condoms did engage in oral sex. Thus oral sex may have been a mere marker for couples who engaged generally in "unsafe" sex.

One of the most striking findings is the lack of relationship between number of sexual partners and seroconversion. In fact, Padian et al. found that their seronegative women actually had more sexual partners since 1987 than did the seropositives.

The other study that gives us some in-depth information about sexual transmission to women is the San Francisco Women's Cohort study being conducted by Judith Cohen and her associates with 450 women (Cohen et al., 1987). This is a study of all seropositivity in women, not just infection through sexual transmission. In this study, women were interviewed extensively and also tested for HIV antibody. Moreover, their male partners were interviewed. Cohen et al. found an overall seroprevalence

of 5% in their sample, half of which was linked to IV drug use on the part of the women. For the other half, sexual transmission cases, several findings are noteworthy.

Among women who acquired HIV through sexual transmission, their infection could invariably be traced to one partner—an ongoing steady male partner who had a history of IV drug use or who was bisexual. Again, the male partner's risk status was often unknown to the woman until the male partner was interviewed by the research team. Having multiple sexual partners was not correlated with seropositivity in this sample. In fact, the same team tested a sample of prostitutes and, in every case; seropositivity was connected to IV drug use, not sexual transmission.

Anal sex (discussed in Chapters 1, 2, and 19) was not related to seropositivity—only vaginal sex was—but a high percentage (over 40%) of both seropositive and seronegative women had practiced anal sex. (Padian et al. also found that 31% of their sample practiced anal sex and, as in Dr. Reinisch's study reported in Chapter 3, they found that women who had had bisexual male partners were more likely to have had anal sex.)

The only other factor that correlated strongly with seropositivity was having sex during menstruation (Cohen et al., 1987; L. Poole, San Francisco General Hospital, personal communication, November 1987). This may have simply been a marker for high sexual frequency. On the other hand, there are other possible explanations for this finding that are related to the physiology of the vagina or the site of entry of the virus into a woman's system. In Chapter 25, Masters and Johnson discussed vaginal pH and its possible relationship to HIV infection; this may account for the menstruation finding. Alternately, since the cervical os is dilated at menstruation, it may be that entry at the cervix or uterus is more efficient than vaginal entry for the HIV virus.

This last hypothesis is worthy of more investigation. There is a bit of circumstantial evidence that hints at this theory—that is, data on donor insemination and AIDS. The well-known Australian report (Stewart et al., 1985) of four women who seroconverted after being inseminated by the same infected sperm donor contrasts with a study by Pies, Rinkenazi, Newsletter, & Shepard, (1987) of lesbians inseminated by infected gay men. In the latter study, not one woman became infected, and it may be because these women tended to use a self-insemination method less likely to bring semen into contact with the cervical os or uterus than the medical methods used in the Australian report. There is a desperate need to follow up these data with biophysical research on site of entry for women, because it has such a direct bearing on prevention strategies.

If the cervix or uterus are the prime "portals of entry," then barrier contraceptives such as the diaphragm, cervical cap, or contraceptive sponge might reduce risk of transmission (see Chapters 22 and 23 by Drs. Bernstein and Coulson). Women could then control their own risk reduction much more easily than at present, when the only method of risk reduction, the condom, is one that is used by the male partner.

All four of the studies discussed above suggest that women tend to become infected by steady male sexual partners rather than from multiple partners. This finding is worth examining in more detail, since it is in such contrast to the data on sexual transmission of AIDS among gay men. J. Wiley (University of California at Berkeley, personal communication, November 1987) has used Padian et al.'s data as well as data from two other partner studies in which number of sexual episodes was counted and has calculated the mean infectivity rate per exposure for vaginal intercourse

(infected male partner to female partner) to be 0.001. This suggests two things: it may explain why it seems to take a long time in these partner studies for women to become infected, but it also may explain why multiple partners are less important in vaginal transmission to women. One implication of the infectivity rate per exposure is that until one gets above a number of sexual episodes equal to I divided by this coefficient, having multiple partners versus one partner does not make a great deal of difference in one's probability of becoming infected. If Wiley's figure is correct, until a woman has over 1,000 sexual episodes, it makes little difference whether she has those episodes with one or many partners, unless she can screen her one partner for risk factors better than she can screen her multiple partners.

And as we have already observed, women do not seem to be able to screen their partners very well. Just for comparison, contrast this figure with the rate for gonorrhea, where the comparable coefficient is about 0.5: in other words, for gonorrhea, anything over two sexual episodes makes multiple partners more risky. There are other factors that make multiple partners more risky; for example, multiple partners might put one at greater risk for other sexually transmitted diseases, and these in turn might be cofactors for HIV transmission.) Moreover, most heterosexual women are not nearly as sexually active as some gay men. In Fischl et al.'s study, for example, heterosexual women had an average of two to three sexual episodes per week, probably not nearly as high a frequency as that for some groups of gay men, especially early in the epidemic. Moreover, in practical terms women tend to practice serial monogamy and to have fewer partners than do men in general. For example, Padian et al.'s seropositive women had an average of 2.5 partners in the same time period during which the San Francisco Men's Cohort study found its sampling of gay men having 200 partners and its sampling of heterosexual men, 20.

If women tend to get AIDS from a steady partner whose risk factors are unknown to them, who then are these men? Some are IV drug users, as discussed earlier. Others are bisexual men. From the survey data presented by Reinisch et al. in Chapter 3, we know that perhaps as many as 25% of adult males are behaviorally bisexual. In other words, hidden bisexual behavior among apparently heterosexual men probably accounts for many of the "unknown" cases of sexual transmission to women. However, there is also quite a bit of hidden bisexual behavior among self-identified gay males. For example, consider the data from ; prevention study conducted by Gay Men's Health Crisis that specifically recruited gay men (Quadland, Shattis, Schuman, Jacobs, & D'Eamo 1987). Among a sample of 619 men, 92 individuals had collectively had 210 different female partners in the last years.

Gaps in Knowledge and Need for Future Research It is probably clear at this point that there are several glaring gaps in our knowledge of AIDS, and indeed of sexual behavior in general, that have direct bearing on the spread, especially the sexual spread, of HIV to and from women. Among the areas that need to be addressed are:

Research on the exact mechanism of transmission. If it were to be determined, for example, that the uterus rather than the vagina was the primary site of transmission, women could use barrier methods such as a diaphragm or contraceptive sponge for prevention. Currently, women must rely on a prevention technique—condoms—that is not under their own control.

Research on the sexual patterns of bisexual men to determine future risks of transmission to women through this population. In light of the high incidence

of bisexual behavior in adult men found in all sexological research from the time of Kinsey to the present, and in the light of Padian et al.'s evidence regarding anal intercourse in female partners of these men, it is somewhat surprising that this transmission vector has not been more salient in the AIDS epidemic. Although there are theoretical explanations for this phenomenon, more research is needed to investigate the future potential of this mode as a source of transmission. Moreover, research is needed to investigate effective prevention techniques for bisexual men, most of whom do not self-identify as gay and may not be exposed to prevention messages promulgated within the gay community.

Research is needed to evaluate the efficacy of different prevention techniques targeted at women. Preliminary reports (J. Jackson, New Jersey Department of Health, personal communication, November 1987) suggest that information alone is not effective at behavior change, and field reports suggest strongly that techniques useful with gay men cannot be translated to women.

Closer analysis of data suggesting rather low efficiency of transmission, male to female, via vaginal intercourse. Some researchers have speculated that the research findings that point to this are actually an artifact of a phenomenon that has been labeled the "super-spreader" effect. That is, it may be that the semen of some infected males is highly effective at transmitting AIDS whereas other infected men are virtually incapable of transmitting HIV to their sexual partners. This phenomenon might be responsible for data that suggest that vaginal intercourse is a fairly inefficient mode of transmission, when in fact the real picture may be closer to "all or nothing"—some males transmit very easily, others not at all.

Research on the sexual and drug use habits of the urban nongay populations most affected at present. For example, we need to know more about the sexual patterns of male and female drug users, the needle use habits of occasional drug users versus addicts, and the likelihood of sexual contact across class and racial lines. These data can help us carefully target prevention messages as well as to predict the likelihood of future spread of AIDS to other segments of the heterosexual population.

Research on female-to-male transmission. Reports from some sources (e.g., the military) are highly suspect (Potterat, Phillips, & Muth, 1987). While some female-to-male transmission seems to occur, we must know much more to ascertain how prevalent it actually is, and in this area in particular we need researchers highly skilled in sexual interview techniques. Reports from the field (J. French, New Jersey Department of Health, personal communication, November, 1987; Wallace, 1987) cast particular doubt upon men who claim to have contracted AIDS from prostitutes but who may actually be concealing a bisexual background.

Development and testing of prevention strategies aimed at men. As long as the major prevention tool for women (condoms) remains in the hands of men, it is critical to reach men with prevention messages.

Recommendations for Prevention: Interim Strategies In the absence of comprehensive data, we must nevertheless increase and improve prevention efforts aimed toward women. We have no research investigating the efficacy of prevention strategies for women, but some survey reports, such as that done by Joyce Jackson in New Jersey, suggest that women in the minority urban populations who are most at risk have a good deal of knowledge about how AIDS is spread but are nevertheless not practicing safer sex techniques (i.e., not utilizing condoms).

Interestingly, the only women showing significant behavior change are prostitutes: the CDC Multi-Center Prostitute Study (Centers for Disease Control, 1987) showed

that 78% of prostitutes insisted that their male customers use condoms. However, even the prostitute- who made customers use condoms did not use condoms during sex with their boyfriends or spouses.

Any prevention efforts targeted toward women must address the issue of why even women knowledgeable about AIDS do not use condoms for sex. The reasons are complex and probably not entirely clear, but they are bound up in sex role socialization and social class issues. To begin with, women in this culture are socialized to defer to men in the setting of limits for sex: men usually determine how, when, and how often sex will occur. For a woman to suggest condom use, she must first overcome her internal barrier to setting any sexual limits. Moreover, for women sex is less likely to fulfill a pleasure function than it is to fulfill more pragmatic functions. Among these is the role of sex as a barter exchange for the financial support of a male partner. A poor woman, in particular, often cannot afford to alienate the man who supports her and her children. Many urban poor minority women at risk report fears of abandonment or even physical assault if they suggest condom use, and these women cannot simply replace a recalcitrant partner with a more compliant one that easily. Related to this is the notion of relative risk and temporally close versus temporally distant risk: if a woman balances the risk of AIDS in the future against the immediate loss of food and shelter for her and her children, safer sex loses.

A major obstacle to prevention for women is our failure to convince men of the necessity to use condoms. Safer sex messages have been effective in the gay male community for a number of reasons, but among these is the fact that messages played more upon the desire to protect oneself than the altruistic desire to protect others. That is, gay men were told to use condoms because they risked AIDS from both insertive and receptive anal intercourse. Most heterosexual men have the (erroneous) impression that condoms are necessary only to protect their female partners, and thus we are relying solely upon an altruistic motive rather than addressing the motive of self-interest. This is doubly difficult because condom use often interferes with a rather rigid sexual repertoire among many heterosexuals, compared with the repertoire of substantial numbers of gay men. That is, many gay men have never been as focused upon anal intercourse as a sexual mode as heterosexuals are focused upon vaginal intercourse. Also, among drug users, we have obscured the real significance of sexual transmission by grouping those with multiple risk factors as "IV drug user" cases. In other words, a drug-abusing woman who contracts AIDS is presumed to have been infected through needle use, although she may indeed have been infected through sex.

Because we view all cases of AIDS among drug users as needle related, we underemphasize the role of sexual transmission to the very population we would like to change their sexual habits.

It has been particularly difficult for (mostly) white professionals in the health care field to reach minority populations in an effective way. These very groups of people often have grave mistrust of a white bureaucracy, often based on many years of negative experiences with hospitals, social service agencies, and the like. Hyacinth Foundation staff members, for example, often are asked to respond to questions from black audiences about whether AIDS itself is a plot by the United States government to eradicate blacks. Herb Samuels, prevention consultant for the New York City Health Department, says that Health Department employees are sometimes physically assaulted in minority communities.

A not insignificant factor in the failure of women (and male heterosexuals) to use condoms is that most AIDS prevention messages emphasize multiple sexual partners as the chief risk factor. To most of the population, this phrase translates as "promiscuity," and is extremely perjorative. This message has two unfortunate effects. First, it implies that only "promiscuous" people get AIDS, and that is one reason why women do not see themselves to be at risk if their sexual pattern has been serial monogamy with a small number of partners. Second, the "promiscuity" message means that if a woman asks her male partner to use a condom, she is implying either that he has been "immoral" or that she has been. If she implies that she has been "sexually loose" she risks rejection from her male partner; if she suggests that he may have been she risks his anger and outrage. Moreover, women have been socialized to emotionally protect their male partners. Joyce Jackson describes women who say that they cannot ask their partners to use condoms for fear of hurting their feelings; these women truly are prepared to die for love.

In the absence of better research, and despite the complexity of the problem, what, then, can we suggest as interim prevention strategies for women? We can do the following:

- Provide free or low-cost legal clean needles to drug users; half of women with AIDS are still drug users.
- Focus prevention on the group that needs it the most: inner-city minority women of child-bearing age. Use people indigenous to the community to deliver prevention messages.
- Emphasize the risk from ongoing steady sexual partners rather than multiple partners. Emphasize the length of time the HIV virus has been around, so that women who have been in monogamous relationships for several years do not believe themselves to be safe. Let women know that it can take many exposures to one infected partner before infection takes place, so that women in steady relationships where safer sex has not been practiced do not feel that it is "too late" to start condom use. "It's never too late" is a better message.
- Target the two highest risk behaviors—anal and vaginal intercourse—rather than a laundry list of "possibly safe/possibly unsafe" behaviors. The less we ask people to change, the more likely they will be to change.
- Target heterosexual men, not just women.
- Consider race, class, language (e.g., Spanish), and age factors in designing prevention strategies; consider the roles and functions sex plays in the lives of women.
- Suggest two barrier methods—for example, condoms plus spermicides with nonoxynol-9, diaphragm, etc. Suggest that if a woman absolutely cannot get her man to use a condom, she at least can use a method she herself can control.

We must learn more about AIDS and women, indeed about all aspects of AIDS. But in the meantime, we can prevent thousands of unnecessary deaths if we simply act upon the existing knowledge we already have.