# Heterosexuals and AIDS: Mixed Messages

## Recently reported studies on heterosexual transmission of AIDS expose some disturbing threats to public health

By DIANE D. EDWARDS

After the first recognized case of AIDS was described in the United States in 1981, the fatal disease appeared to attack only homosexuals and a few other isolated groups, a situation often perceived as a brutal yet limited medical menace. Now the recognition of heterosexual transmission brings AIDS closer to everyone's home.

Of the nearly 37,000 AIDS cases reported in the United States as of July 1, approximately 4 percent were classified as heterosexual cases, where the only known source of the AIDS virus was sexual relations with an infected person of the opposite sex. Although relatively few in number, these cases represent the fastest growing group of U.S. patients with AIDS. Elsewhere, percentages of heterosexual cases vary from country to country, but are viewed with equal alarm by world health officials. The World Health Organization estimates that 50 million to 100 million of the world's population will be infected within five years, an unpredictable number of those through heterosexual contacts.

With an increasing proportion of those dying from AIDS falling outside the originally defined high-risk groups, scientists and health officials are trying to define the boundaries of an AIDS-inflicted future. As part of that effort, studies on heterosexual transmission presented at last month's Third International Conference on AIDS in Washington, D.C., addressed the following questions: What are the factors influencing the heterosexual route to AIDS? Which groups are most likely to be affected? And, perhaps most important, how can the heterosexual spread of the disease be reduced or stopped?

The answers, far from complete and frequently contradictory, are both hopeful and horrific.

Among the many reports at the meeting were three that illustrate major areas in AIDS research: the respective roles of sexual promiscuity and intravenous drug use; the prevalence, or extent, of heterosexual transmission; and AIDS among women.

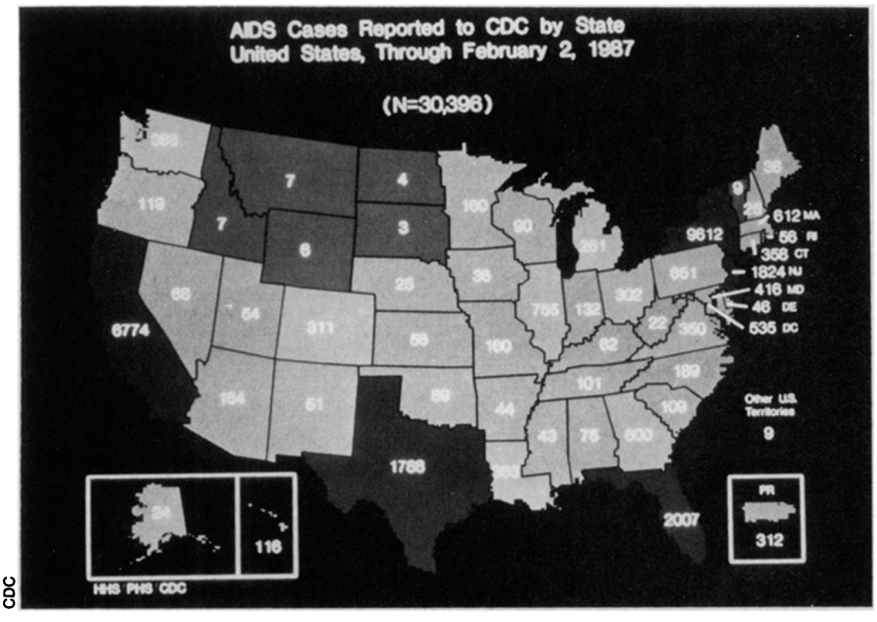
• Scientists from the University of California at San Francisco (UCSF) presented data from an ongoing study of 513 heterosexually active women aged 18 years or older, about 100 of whom are prostitutes. They conclude that it is not the number of sexual partners a woman has, but the "character" of those partners, that determines the woman's risk of developing AIDS. The women, randomly recruited from throughout the city, were enrolled in the study if, in the previous three years, they had had sexual relations with a man known to be infected with the AIDS virus, with a man in a high-risk group (bisexual, intravenous drug user or hemophiliac) or with at least five male sex partners lacking high-risk factors. With 75 percent of the women white, the study is not truly representative of the AIDS situation in the United States, since AIDS is more common among black and Hispanic women, UCSF researcher Judith Cohen told SCIENCE NEWS. It does, however, say something about increased risks among women in general.

When the study began in 1985, none of the women tested positive for the presence of blood antibodies against the AIDS virus; by the beginning of 1987, 28 had "seroconverted" and developed antibodies, indicating infection. On the basis of periodic interviews with the women, the scientists conclude that either intravenous drug use or sex with an intravenous drug user will at least double the risk of being infected. Having an infected sexual partner carries a bigger risk, increasing the chances of infection more than three-fold. But having multiple sex partners from no known risk group — whether five or more than 50 over a three-year period — does not make a woman more likely to become infected than a woman who is not "sexually adventurous," says Cohen.

• A survey of more than 500 prostitutes in Nairobi, Kenya, by that country's department of health and the Institute of Tropical Medicine in Antwerp, Belgium, found that the prevalence of seropositives among the prostitute population increased steadily from 8 percent in 1981 to greater than 85 percent in 1987. One postulated factor is the frequent presence of other sexually transmitted diseases, which are thought to make a person more susceptible to AIDS infection. In the Antwerp study, more than 80 percent of the seropositive individuals had other venereal diseases as a predominant risk factor.

Although the researchers admit this strong relationship may not hold in a broader population, several other studies presented at the meeting also found a strong correlation between increased risk of infection with the AIDS virus and concurrent venereal disease — particularly genital ulcers. The findings suggest that control of conventional sexual diseases could reduce the spread of AIDS in the heterosexual population.

The study also is tied to one of the key epidemiologic questions regarding heterosexual transmission: Why does it oc-



CDC

cur with such relative ease in Africa, where it has always been the primary mode of infection? At least as many women as men there reportedly develop the disease, in sharp contrast to other areas of the world. While researchers try to separate the cultural causes from the scientific factors, African prostitutes — now considered a major reservoir of the AIDS virus — are the target of intense epidemiologic studies and educational programs.

• In the New York/New Jersey area — unique because the majority of AIDS cases there are intravenous drug users — attempts to stop the sharing of virus-contaminated needles are met with mixed success. One such study, conducted by the New Jersey State Department of Health, resorts to distributing free coupons redeemable at neighborhood detoxification clinics. A decrease in voluntary admission for heroin detoxification following imposition of client fees in 1981 had public health officials worried that addicts were not learning about AIDS prevention, says health worker Joyce Jackson. Of the first group of coupons distributed last year, 86 percent were redeemed by addicts, who heard a lecture on the dangers of AIDS. About 20 percent of those decided to continue the detox program, but very few of those were the younger addicts officials were hoping to reach, says Jackson. She says that potentially fatal misinformation is rampant among addicts, many of whom believe they can tell whether a person has AIDS simply by his or her appearance.

In the United States, most of the heterosexual spread of AIDS thus far has been among younger black and Hispanic women from inner-city areas of New York and New Jersey, says Tim Dondero of the Centers for Disease Control (CDC) in Atlanta. And most of those have had sex with an intravenous drug user or are drug users themselves, thus posing a serious problem for health care officials who recognize how difficult it will be to stop needle sharing and unprotected sex among addicts.

"We really need to emphasize that intravenous drug use is the major portal of entry of the [AIDS] virus into the heterosexual population," says Neal Steigbigel of the Montefiore Medical Center in Bronx, N.Y. But how do you reach the intravenous drug addict, who currently represents about 16 percent of the nation's AIDS patients, or users who also have homosexual or bisexual partners — another 7.5 percent of those with AIDS?

While these studies seek to separate and prioritize the various factors involved in heterosexual AIDS, others measure the prevalence of infection in the world's mostly heterosexual population. In the United States, where federal health officials estimate that about 1.5 million have been infected with the AIDS virus, controversy over confidentiality and civil rights thus far has discouraged widespread testing. Therefore, mandatory testing among military recruits and personnel provides much of the prevalence data. Begun in October 1985, screening of all military applicants for the AIDS antibody has shown that the percentage of seropositive men and women has held "remarkedly stable" over an 18-month period, John F. Brundage of Walter Reed Army Institute of Research in Washington, D.C., said at last month's meeting. Data from 963,077 individuals show the lowest prevalence (1 in 1,000 to 5,000) among whites over 21 years of age, and the highest (1 in 210 to 350) among urban blacks in their early 20s.

Military screening results also hint at the increase of AIDS infection among women. Using a subset of data collected between October 1985 and March 1986, Brundage and others report in the July 16 NEW ENGLAND JOURNAL OF MEDICINE that equal percentages of male and female applicants from the very-high-prevalence areas of New York City and San Francisco tested seropositive.

According to Brundage, who points out that fewer high-risk individuals may be applying to the military these days, the data probably underrepresent infection rates in the entire U.S. population. To better assess those rates, the federal government announced during the AIDS conference that, sometime in the next 12 months, 45,000 randomly selected volunteers from throughout the United States will be tested to provide more accurate estimates.

The seriousness of heterosexual transmission may be evident earlier, if Surgeon General C. Everett Koop is correct. Speaking before a House committee last month, he said that it should become obvious within several months whether a "heterosexual explosion" of AIDS will rock the United States. If it does, intravenous drug users are the most likely detonators, according to scientists at last month's meeting.

No one knows whether the rapidly growing AIDS problem among urban addicts will explode, or whether the success of efforts in Europe to reduce needle sharing by dispensing free needles to addicts could or should be repeated in the United States. At present, there is no indication that AIDS will break out into the general population, says CDC's Chief Epidemiologist Harold W. Jaffe. And Dondero says that "the typical person at risk is not the 35-year-old white suburban woman, but the disadvantaged black teenager. We need to avoid broad statements like 'everyone who is sexually active is at risk.' Not everyone is at equal risk."

Today's heterosexual cases, says Mary Chamberland of CDC's AIDS program, represent mainly minority women of childbearing age, a hard-to-reach population that can transmit the virus to unborn children. (Only 26 percent of female AIDS patients are white, whereas whites account for about 67 percent of all AIDS patients — a demographic profile that is likely to change with homosexuals altering their sexual behavior.)

In a world occasionally ravaged by epidemics, our dread of AIDS is not unprecedented, says CDC's Donald R. Hopkins, noting that the first case of AIDS was described 13 months after smallpox was officially eradicated worldwide. But what *is* unprecedented, he says, are the apparent 100 percent mortality and the fact "that virtually all asymptomatic persons are able to transmit the virus to others, and probably can do so for the rest of their lives." With studies showing that 9 to 58 percent of the heterosexual partners of high-risk individuals become infected, the rules apply to an ever-larger group. Referring to heterosexuals and AIDS, Hopkins said last month that "the tiger is already in our house, but how it got in isn't as important as its presence. [Our] actions, not [our] fears, are what matter." □

## Reported Cases of AIDS, United States by Standard Metropolitan Statistical Area (SMSA) of Residence, 1981 to July 13, 1987

| SMSA of Residence | Cases | Percentage of Total Cases | Cases Per Million Population* |
|---|---|---|---|
| New York City | 9,873 | 26 | 1,082 |
| San Francisco | 3,804 | 10 | 1,170 |
| Los Angeles | 3,337 | 9 | 446 |
| Miami | 1,082 | 3 | 666 |
| Newark, N.J. | 911 | 2 | 463 |
| Elsewhere, U.S.A. | 19,305 | 50 | 93 |
| Total | 38,312 | 100 | 167 |

*Based on 1980 Census

Adapted from CDC figures