

# CDC Paints a Picture of HIV Infection in U.S.

*The Centers for Disease Control amassed a collection of surveys on HIV infection; the risk groups are still at risk, while the general population, for now, appears to be spared.*

At the request of the White House, a team of epidemiologists from the Centers for Disease Control (CDC) recently performed an intense review of the numerous studies that measure rates of infection for human immunodeficiency virus (HIV) in the United States. In a nutshell, CDC concludes that the AIDS epidemic continues to focus on the established risk groups, whose ranks are filled by homosexual men and needle-sharing drug abusers and their sexual partners. As for heterosexuals in the so-called "general population," the rate of infection remains remarkably low, or a fraction of 1%. How long this lull in the AIDS storm will last is not known.

The CDC report is the first to pull together all the surveys that are complete or currently under way, published or unpublished. Indeed, the phrase "personal communication" is the most frequent reference citation in the report. In an attempt to be truly comprehensive, hundreds of sources were canvassed during October 1987. The data come from local health departments, federal agencies, and medical research institutes.

CDC warns the White House that large gaps in knowledge still exist. The report correctly states: "The various surveys and studies differ in sampling, inclusion and exclusion criteria for subjects, rigor of ascertaining risk information, and resulting bias. The results, therefore, cannot always be validly compared." Regardless, the CDC report does paint a picture, or rather a montage, of current HIV infection in the United States, and as such it is a useful document even though the image may be a bit impressionistic.

According to CDC, homosexual and bisexual men remain at greatest risk for HIV infection. Fifty surveys from 23 cities show rates of infection generally ranging between 20 and 50%, though CDC states that these numbers probably overestimate infection because most surveys were done at clinics treating sexually transmitted diseases, where it is assumed one would find the more promiscuous members of the community. Estimating the size of the homosexual population continues to be a nagging problem. CDC takes the well-beaten path to the 1948

Kinsey report *Sexual Behavior in the Human Male* for its estimate that 2.5 million American males are exclusively homosexual throughout life, while another 2.5 to 7.5 million men have the occasional homosexual liaison. Using data from studies conducted in 1986 and 1987, CDC estimates average seroprevalence for men who are exclusively homosexual to be between 20 and 25%, meaning that between 500,000 and 625,000 men harbor the virus. For bisexuals and men with infrequent homosexual encounters, CDC tabulates a prevalence rate of 5%, giving a total of between 125,000 and 375,000 additional men positive for HIV.

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## *The AIDS epidemic continues to focus on the established risk groups.*

Users of intravenous drugs are the second largest group of HIV-infected individuals, and the one that gives public health workers the most concern, since the population is hard to reach and may serve as a bridge of infection to the general population. In 88 studies in 52 cities, CDC discovered that seroprevalence among drug addicts depends on where they are found. Rates of infection in New York City, northern New Jersey, and Puerto Rico range between 50 and 60%. In areas outside the East Coast, rates are below 5%. CDC estimates that average prevalence for heavy users of i.v. drugs is 25% and for occasional users 5%. According to the National Institute on Drug Abuse, there are 1.1 million i.v. drug users in the country, of which 200,000 are intermittent users. Of these, CDC states that 335,000 are infected with the virus.

Of the 15,500 persons with hemophilia A or B, the government believes that 9800 persons harbor the virus. Since blood products began being treated and screened in 1985, infection among hemophiliacs has come to a virtual standstill. Unfortunately, seroconversions of spouses and girlfriends continue at a dismal rate.

The infection rate of heterosexual partners of persons with HIV infection or at recognized risk varies from under 10% to as high as 60%, according to data from 19 surveys. It is not clear whether these broad ranges reflect different levels of infectiousness, frequency or type of sexual encounter, cofactors such as genital ulcers, or the clinical status of the infected partner. To this group of heterosexual partners, CDC adds persons born in Haiti or Central Africa and transfusion recipients. Based on numbers of reported AIDS cases, the government epidemiologists guess that between 45,000 and 127,000 persons in this admittedly broad population are infected.

Lastly, the CDC team went after the hardest nut to crack: infection rates for the so-called general population. It is here that the largest gaps in knowledge occur, and because of that, CDC has been trying to figure out how to do a national seroprevalence survey (*Science*, 6 November 1987, p. 747). Until such a door-to-door study is undertaken (a completion date of June 1990 is mentioned in the report), CDC will continue to rely heavily on the well-reported rates of infection among military applicants and blood donors, which remain very low, at 0.14% and 0.02%, respectively. Surely, the epidemiologists warn, these rates are underestimated because both the military and blood banks make no secret of the fact that they do not want homosexuals or drug abusers among their ranks.

In addition to these two groups, CDC looked at surveys of three other populations. Since March 1987, the Department of Labor has tested 25,000 Job Corps participants, who are disadvantaged, often minority, youths. The study found 0.33% infected with HIV. At four "sentinel" hospitals, blood from 8668 patients was anonymously tested. Prevalence was 0.32%. Finally, the state of Massachusetts routinely screens all newborns for treatable metabolic disorders by taking a sample of blood from their heel shortly after birth. In 1986, Massachusetts added a test for HIV infection. Of the 30,708 specimens tested so far, 0.21% were positive for HIV.

Of the 142 million heterosexuals without identified risks, CDC estimates that 0.021%, or 30,000 people, harbor the virus. If one adds up the various populations, the grand total is between 945,000 and 1,400,000 persons presently infected, a figure remarkably close to the estimate made at the Public Health Service in 1986 which stated that between 1 and 1.5 million citizens were carrying the virus. Whatever good news one may glean from the CDC report, numbers like these provide little comfort. ■ WILLIAM BOOTH