
Intravenous Drug Use and AIDS Prevention

CHARLES R. SCHUSTER, PhD

Dr. Schuster is the Director of the National Institute on Drug Abuse, of the Alcohol, Drug Abuse, and Mental Health Administration, Public Health Service.

Tearsheet requests to NIDA, Room 10A-08 Parklawn, Rockville, MD 20857.

Synopsis

Research programs of the National Institute on Drug Abuse take a broad approach to investigating

the problems of intervention in intravenous drug use and its relation to the AIDS epidemic. Current prevention strategies are directed to reducing the rates of infection and the progression among the infected to clinical symptoms. Programs test alternative prevention models and focus on the epidemiology of the problem and on basic studies of specific high-risk behaviors. Ultimately, the problem requires community involvement to encourage behaviors which will reduce exposure on the part of drug users, their sexual partners, and their children.

INTRAVENOUS (IV) DRUG USE is a risk factor in 25 percent of all adult and adolescent cases of acquired immunodeficiency syndrome (AIDS) in the United States, and the percentage is growing. AIDS among heterosexual IV drug users is heavily concentrated along the East Coast, and has been reported in 50 States, the District of Columbia, and Puerto Rico.

Blacks and Hispanics are overrepresented among heterosexual IV drug users with AIDS. Blacks account for 12 percent of the U.S. population and 51 percent of heterosexual IV drug users with AIDS. While 6 percent of the population are Hispanic, they are 30 percent of the heterosexual IV drug users with AIDS.

The National Institute on Drug Abuse (NIDA), Public Health Service, estimates that there are about 1.1 to 1.3 million IV drug users in the United States. Between 70 and 90 percent of IV drug users are thought to share the use of injection equipment, with resulting high risk for contracting and transmitting AIDS.

The concern is not only for infection among drug users but also their sexual partners and their children. About 65 percent of those with AIDS who were born in the United States and who attribute the infection to heterosexual contact report having had a sexual relationship with an IV drug user. About 70 percent of pediatric patients with AIDS attributed to perinatal transmission (from mother to child during pregnancy or child-birth) are children of IV drug-using women or women who are sexual partners of IV drug users (1).

Surveys of IV drug users in 52 cities in 26 States show that the highest rates for those testing positive for human immunodeficiency virus (HIV) are in New York City and northern New Jersey (2). Serial seroprevalence studies among new admissions to treatment facilities in Baltimore, New York, Tampa, sites in southern California, and San Antonio are being conducted for NIDA's Addiction Research Center by Dr. Robert Lange. The rates of new admission seropositivity found in the study range from zero in Tampa to 29 percent in Baltimore and 60 percent in New York (3).

NIDA is conducting seroprevalence studies and gathering behavioral and medical data, including data on immunologic status, in several large and medium-sized cities. In some of these studies researchers are examining only those newly admitted to treatment programs. Others are following cohorts of IV drug users both in treatment and not in treatment over a period of years. Data from these studies will provide insights into which behavioral and biological factors are associated with changes in seropositivity from negative for HIV to positive, and progressing from positive for HIV but AIDS-asymptomatic to clinical symptoms of AIDS. Information should be available in 1989 on the progression of the infection in cities with varying prevalence rates.

Prevention Programs

NIDA plans broad-based AIDS prevention research programs in fiscal years 1988 and 1989 to provide information relevant to risk-reduction

'As was found in the New York population, characteristics of AIDS, its manner of transmission, and its common symptoms were well known to IV drug users. However, only about one-third of those interviewed knew how to sterilize injection equipment. Slightly more than a third believed incorrectly that those infected with HIV necessarily show signs and symptoms of infection. Only 57 percent of those interviewed were aware that an IV drug user's sexual partners and their children were at risk of exposure to AIDS.'

strategies for the IV drug-user populations. The goals of any AIDS intervention program are to reduce infection rates and decrease the rate of progress to clinical AIDS among those infected.

Reducing infection rates calls for several types of prevention programs aimed at reducing IV drug use. Prevention programs for IV drug users are intended for three groups, those at risk for drug use, those using but who want to stop, and those who are using who either do not want to or cannot stop. Objectives and strategies vary for each group.

NIDA has begun projects to research methods for helping to prevent the initiation of drug use, to expand outreach efforts to encourage IV drug users to enter treatment, to improve the effectiveness of existing drug abuse treatment modalities, and to demonstrate the efficacy of innovative approaches to drug abuse treatment. Research is being supported on interventions to reduce drug use, or at a minimum, changing high-risk needle-sharing behavior, and to encourage sterilization of injection equipment and the practice of "safer sex." For those who do not stop using IV drugs, programs are needed to encourage protective behaviors to reduce exposure to the virus, and to reduce exposure to cofactors that accelerate progression of the disease.

Longitudinal studies of cohorts of adolescents implicate tobacco and alcohol as substances which are gateways to marijuana and the harder drugs. This means that those who smoke tobacco and

drink alcohol are at greater risk of drug use than those who do not. Research has indicated that younger ages at onset of drug use are related to continued and problematic use of psychoactive substances in later life (4).

The High School Senior Survey, supported by NIDA, has sampled randomly 16,000 senior students and 10,000 graduates each year since 1975. Preliminary analysis of 1987 data shows that 57 percent report having tried illicit drugs, with a third having tried drugs other than marijuana.

Although many of the etiological studies related to the onset of drug use are correlational and not causal, several risk factors consistently have been found to substantially increase the likelihood of initiating substance abuse. Risk factors are found in three broad areas, personality patterns; family patterns; and attitudinal and behavioral characteristics, particularly association with youths who are the same age or older and involved with drugs. More investigation is needed into the sequence of events involving attitudinal and behavioral problems and the beginning of drug involvement, as well as the influence of previous and current factors on peer selection and drug use. Such information has helped define the problem of early drug use and has been incorporated in developing conceptual bases for primary prevention programs.

In the 1960s, many drug use prevention programs were school-based and focused on fear arousal. Although somewhat effective, the messages lacked credibility for the more knowledgeable and perhaps more at-risk students. More interpersonal and intrapersonal factors were included in prevention programs in the 1970s as a result of correlational and nondrug-related health behavior studies. These interventions were designed to address attitudes, beliefs, and values, as well as feelings of self-esteem, self-reliance, and alienation. The programs were affective in nature, rather than informational, and intended to help create a supportive climate in schools. In the 1980s, these programs were expanded to include skills training, decision making, analysis of behavioral choices, and identification of alternative behaviors in keeping with a person's values and beliefs about drug use.

NIDA programs encourage long-term evaluations of interventions to prevent starting the use of drugs, including tobacco and alcohol, and the progression to drug abuse and dependence. Intervention programs are offered in schools, worksites, and in the community, and focus on alcohol, tobacco, marijuana, cocaine, and other drugs.

The target substances for school programs are tobacco and alcohol because of the age groups involved. The purpose of the programs is to provide students with the social skills to resist pressures to smoke from peers, families, and advertising. The skills are expected to help deter or delay onset of cigarette smoking. Followup data for 2 and 3 years suggest positive program effects.

New approaches for prevention include community intervention, which seeks to intervene in all aspects of children's lives, provide consistent messages, and support nondrug use. Four currently funded NIDA projects are testing multicomponent programs that combine prevention strategies designed for use in schools, family groups, community organizations, and by print and broadcast media. Results from these projects will be forthcoming. NIDA is assessing the effectiveness of its prevention programs, and future program decisions will reflect the assessments.

Drug Abuse Treatment

A variety of treatment programs are available for those who wish to discontinue their use of drugs, but the number of treatment slots available to IV drug users is only about 148,000. Their effectiveness is coming under particular scrutiny because of the AIDS epidemic. A variety of long-term evaluation studies have been conducted to assess the outcomes of several treatment approaches, including drug detoxification, methadone maintenance, drug-free counseling offered in an outpatient setting, and drug-free counseling in a residential setting.

Post-treatment followup studies have shown the effectiveness of methadone maintenance, drug-free outpatient, and therapeutic community treatment. Significant improvement in behavioral outcomes was evident in the first year after treatment, and favorable outcomes have been shown to be stable for a period of years afterward. Outcomes for detoxification clients and others in treatment for less than 90 days were problematic, while those in treatment more than 90 days had more favorable outcomes. Less favorable outcomes for those with detoxification treatment were believed to result from the short duration of treatment, and consequent failure to engage the client in a therapeutic situation.

Recent research on treatment compliance has indicated that for IV narcotic abuse, high-dose methadone and take-home doses will decrease illicit drug use and improve compliance. Including

family members and significant others in treatment helps clients adhere to the treatment regimen and stay in treatment.

Research on aftercare to prevent relapse has shown the effectiveness of self-help groups in which ex-addicts act as resources to help one another through continuing contact and regular meetings to maintain their resolve to remain drug free. Both large- and small-scale studies are in progress to assess treatment and to study the treatment process. Other studies are following cohorts of drug abusers who entered treatment in the 1960s and 1970s. The studies are examining patterns of drug and alcohol use, drug use initiation and cessation, relapse, treatment history, stability of treatment outcome, and length of addiction. Cohorts of users of different types of drugs are involved in these studies. Most treatment programs are directed to the older, long-term drug user, principally users of opiates. Some studies are examining approaches to treat other forms of addiction and recently attention has focused on cocaine.

Recent studies of adolescents in treatment have found that these youngsters have presented such problems as academic and family difficulties and involvement with multiple substances, such as alcohol, marijuana, and prescription drugs. Treatment programs that include family members tend to be more effective in helping adolescents. Diagnosis of the problems of adolescents entering treatment requires refinement. NIDA currently is funding a number of studies to develop instruments and guidelines for drug-using adolescents.

AIDS Risk Reduction Programming

Risk reduction programming for IV drug users and their sexual partners needs to reach not only those in treatment but also those who do not wish to use treatment services. As with any health problem, disseminating information should be distinguished from strategies for changing behaviors.

In disseminating information, factual information about a given health problem is provided through one or more channels, such as electronic media, written materials, or orally in information sessions with different groups. There is usually no followup or attempt to influence attitudes or behaviors directly.

With strategies for changing behaviors, an assessment is made of the target population, their perceptions of the health problem, their associated behaviors, and their levels of performance of the

behaviors. A program based on this assessment is designed to disseminate information and to use strategies designed to modify attitudes and promote healthful actions. The knowledge-attitude-behavior triad is a commonly accepted basis for prevention programs.

A review of education programs directed towards AIDS prevention among IV drug users shows that most programs are concerned with information dissemination. Some include outreach workers who intervene in one-on-one relationships to address individuals' attitudes and behaviors. Because many program activities are not standardized or well documented, it is difficult to assess them from published reports. NIDA is funding an evaluation of such programs to learn more about their effectiveness.

Results of early studies conducted in New York and San Francisco have documented high levels of knowledge about AIDS among IV drug users (5). However, it has been demonstrated that knowledge of a health problem alone does not appear to be sufficient incentive to cause the individual at risk to alter the risk behavior. Friedman and associates interviewed 59 methadone patients in Manhattan regarding their knowledge of AIDS and their use of protective behaviors. More than 90 percent were knowledgeable about AIDS, but only 54 percent reported some change in their injection practices to reduce their exposure to the disease (6).

Assessments of the knowledge of AIDS and self-reported protective behaviors of IV drug users were carried out in a study supported by NIDA, the National Cancer Institute, and the New Jersey State Department of Health, in conjunction with a seroprevalence survey conducted in 1984 and 1985 in treatment programs in New Jersey. As was found in the New York population, characteristics of AIDS, its manner of transmission, and its common symptoms were well known to IV drug users. However, only about one-third of those interviewed knew how to sterilize injection equipment. Slightly more than a third believed incorrectly that those infected with HIV necessarily show signs and symptoms of infection. Only 57 percent of those interviewed were aware that an IV drug user's sexual partners and their children were at risk of exposure to AIDS (7).

Some programs, however, have been successful in changing drug injection behavior, and in enrolling users in drug treatment programs. In San Francisco, for example, community health outreach workers are distributing small bottles of bleach and instructions for cleaning injection

equipment, as part of a program with NIDA support. Prior to the program, 3 percent said they used bleach for this purpose. A year later 67 percent reported that they did so (8).

Behavior changes noted in programs not funded by NIDA have used other direct approaches. Ex-addict staff members of an outreach program in New Jersey developed a voucher system for treatment programs for IV drug users without the resources to pay. Distributing vouchers serves to measure contacts on the street as well as characteristics of those reached. The program reported that 80 percent of the first 1,000 vouchers were redeemed at detoxification programs. Of those redeeming vouchers, 40 percent had not previously been enrolled in treatment. Of the approximately 800 persons detoxified, 28 percent of those enrolled went on to longer treatment programs (9).

What data there are on self-reported protective behaviors among IV drug users indicate that simply dispensing information about risk factors has not been effective in altering high-risk behaviors. Data on the initiation of preventive behaviors are limited, since followup information about maintaining these behaviors generally is not being collected. Authors of these studies have been concerned more with describing behavior changes than with identifying the determinants, other than demographic characteristics and knowledge and attitude measures that differentiate between those that alter behaviors and those that do not. These studies are based primarily on self-reports at a given time rather than on measurement of changes over time.

IV drug users' resistance to behavior change, particularly to giving up drug use, has been shown in evaluation of treatment studies and acknowledged anecdotally (10). Despite extensive research in this area, little is known about factors contributing to favorable treatment outcomes or to other desired behavior changes. These so-called barriers to behavior change need to be explained conceptually and empirically before effective intervention strategies can be determined.

Suggested Prevention Strategies

AIDS prevention strategies for IV drug user programs do not have models comparable to the programs for other AIDS risk groups, such as gay men and hemophilia and transfusion patients. However, components from these programs, as well as other types of programs such as smoking cessation, seat belt use, family planning, and

health conditions like cardiovascular disease and cancer, can be incorporated into an intervention model.

The problem of IV drug use cuts across all social classes, educational status, ethnic groups, religions, and geographic areas. The possession of drugs of abuse or injection equipment is illegal in most States. IV drug use is often associated with other illegal or deviant behaviors. For some persons and groups it is a way of life, and such behaviors may be tied to their economic and social framework. Sexual behavior, independent of IV drug use, is defined by group norms, the reproductive behavior role, and individual sexual identity. Therefore, many personal, social, and cultural barriers must be overcome in order to alter high-risk drug use and sexual behaviors among heterogeneous populations. An intervention program should address multiple objectives and requires multi-level, highly integrated intervention.

NIDA has developed outreach intervention programs in cities with both high and moderate risks for AIDS. Six comprehensive outreach programs and 16 targeted programs were funded in fiscal year 1987, and additional programs will be added this year. Baseline data for IV drug users not in treatment and their sexual partners are now being collected as part of the outreach program activities. While the impact of these programs will not be realized for 1 to 3 years, it will be of significance to the national prevention effort.

Some general objectives of an intervention program could be (a) to set the scene in the IV-drug using community to prepare for forthcoming AIDS prevention efforts, (b) to overcome barriers to high-risk behavior change, and (c) to bring about high-risk behavior change among those in the community.

The first objective calls for devising strategies and the use of multiple community channels, such as broadcast and print media. Information objectives need not be limited to facts about HIV infection, but should present detailed instructions about needle cleaning and safer sex practices as well as the benefits of seeking drug abuse treatment. Media messages need to be simple, to the point, clear, and repeated. Media may be used to tell human interest stories about HIV infection that demonstrate that the problem is not limited to stereotypical users, but affects various people, their sexual partners and their children, with whom users can identify. Eliminating the differences between "them" and "us" increases perceptions of individual susceptibility and familiarity, redefin-

'The AIDS problem is not limited to gay men or IV drug users; whites, blacks or Hispanics; or the poor and uneducated. AIDS is a problem of communities, and group efforts must be made.'

ing the problem of AIDS as "our problem."

Legitimacy is lent to the intervention effort by the participation of community leaders with broad constituencies, including religious, labor organization, political, and other figures. On the local level, task forces or work groups may consist of community group leaders.

The second and third objectives require media support as well, but focus on small group and individual interventions based on theories of behavior change. Information materials and personal discussions in groups or by individuals can address the skills needed for behavior change, answer questions that arise, and provide the support needed for such changes. Groups that are identified with broad health, social, and community issues are more effective at this stage than those focusing on AIDS specifically. Finally, intervention mechanisms should try to reach individuals one on one, with hotlines and counseling services.

After raising the awareness and personal perceptions of susceptibility in a community, the next step is to provide the resources necessary to bring about behavior change. For IV drug users, these are drug treatment facilities, with aftercare components to reinforce the decision to give up drug use. Facilities for HIV testing and counseling, with followup and medical care, separate from treatment facilities, need to be available to all those within the community.

When interventions are implemented at the neighborhood level, messages need to be specific as to the needs of the residents. Small focus groups are helpful in developing these messages. Local "ownership" of intervention efforts will serve to enhance credibility and effectiveness.

Research Challenges

The AIDS problem is not limited to gay men or IV drug users; whites, blacks, or Hispanics; or the poor and uneducated. AIDS is a problem of

communities, and group efforts must be made. Clearly, until substance abuse is accepted as a public health problem, the problem of AIDS in the abusing population will continue to be addressed only by the Federal and State governments. In recognition of this situation, NIDA has developed an AIDS policy to help curb the spread of AIDS among IV drug users. Policy objectives include preventing and reducing IV drug use, developing information on unsafe injection practices, establishing HIV screening within drug abuse treatment programs, monitoring clinical epidemiology of AIDS in IV drug users, identifying cofactors to AIDS among IV drug users, and assessing the impact of HIV infection in sexual partners and children of IV drug users.


To assure that all potential data bases are tapped to help address these objectives, NIDA has created an environment in which the problem of IV drug use can be investigated and discussed by professionals not only from the substance abuse field, but also from the related areas of health education and promotion, cultural anthropology, biomedical science, and social science. NIDA has facilitated this interchange through workshops and conferences which provide direction for those researchers and NIDA policy makers.

NIDA has a leading role in attacking the problem of AIDS through well-defined and well-executed research. The results of these investigations are providing guidance for expanding intervention services and formulating policy, as well as the components of the knowledge base

essential to meeting the problem of AIDS and IV drug use.

References.....

1. Centers for Disease Control: Acquired immunodeficiency syndrome (AIDS). Weekly Surveillance Report, Jan. 4, 1988.
2. Centers for Disease Control: A review of current knowledge and plans for expansion of HIV surveillance activities: a report to the Domestic Policy Council. Nov. 30, 1987.
3. Lange, W. R., et al.: The geographic distribution of human immunodeficiency virus markers in parenteral drug abusers. Third International Conference on AIDS, Washington, DC, June 1987.
4. Kandel, D. R., and Logan, J. A.: Patterns of drug use from adolescence to young adulthood: I. Periods of risk for initiation, continued use, and discontinuation. Am J Public Health 74: 660-666 (1984).
5. Des Jarlais, D. C., Friedman, S. R., Stoneburner, R. L.: HIV infection and intravenous drug use: critical issues in transmission dynamics, infection outcomes, and prevention. Rev Infect Dis 10: 151-158, 1988.
6. Friedman, S. R., Des Jarlais, D. C., and Sothorn, J. L.: AIDS health education for intravenous drug users. Health Educ Q 13: 383-393, winter 1986.
7. Ginzburg, H. M., et al.: Health education and knowledge assessment of HTLV-III diseases among intravenous drug users. Health Educ Q 13: 373-382, winter 1986.
8. Watters, J. K.: Preventing human immunodeficiency virus contagion among intravenous drug users: the impact of the street-based education on risk behavior. Third International Conference on AIDS, Washington, DC, June 1987.
9. Jackson, J., and Rotkiewicz, L.: A coupon program: AIDS education and drug treatment. Third International Conference on AIDS, Washington, DC, June 1987.
10. National Institute on Drug Abuse: Relapse and recovery in drug abuse, NIDA Research Monogr 72, edited by F. M. Tims, and C. G. Leukefeld. Washington, DC, 1986.



"Each of us must realize that we are responsible for keeping AIDS out of our lives. We must learn about AIDS and must share what we know with our families."

— Eric Engstrom
AIDS Project Director
Minneapolis, MN

AMERICA
RESPONDS
TO AIDS

Call the AIDS Information line, 1-800-342-AIDS.

An Important Message from the U.S. Public Health Service
Centers for Disease Control