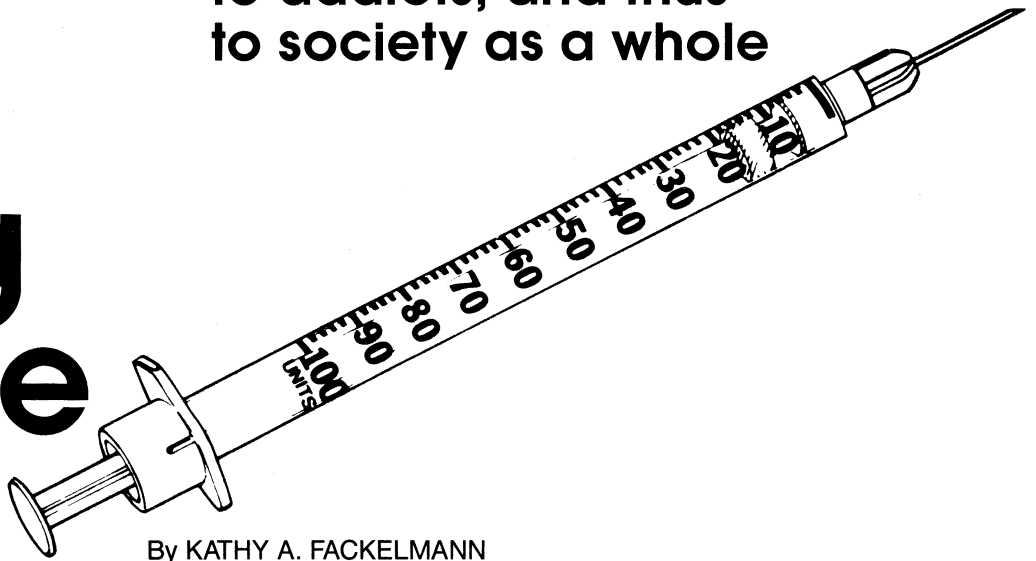


# HIV and IV Drug Abuse

AIDS poses a growing threat  
to addicts, and thus  
to society as a whole



By KATHY A. FACKELMANN

**W**hen a National Research Council committee recommended last month that government officials launch sterile-needle programs to combat the spread of AIDS among intravenous drug abusers, it highlighted the scientific community's concern about the growing AIDS epidemic in a group that now suffers about one-quarter of all U.S. AIDS cases and serves as the primary link in transmitting the disease to the general population.

Indeed, say some AIDS experts, public health officials must focus on curbing the spread of AIDS among addicts. While educational campaigns have helped reduce the infection rate among male homosexuals, intravenous drug abusers have largely ignored their AIDS danger and have continued high-risk behaviors that threaten themselves, their sexual partners and their unborn children. Many IV drug users share needles, and a needle contaminated with the AIDS-causing human immunodeficiency virus (HIV) readily passes it on.

"Infection among IV drug abusers is continuing to occur at a very steady rate," warns Richard E. Chaisson, who last July became director of the AIDS service at Johns Hopkins University School of Medicine in Baltimore. By 1991, the U.S. Public Health Service predicts, a cumulative total of 72,900 addicts will have contracted AIDS, compared with 23,366 reported so far.

In the United States, nearly 70 percent of heterosexual adults infected with HIV got the virus through an IV connection, according to the Feb. 8 report from the

National Research Council. Female addicts can pass HIV to their unborn children, and 75 percent of all reported pediatric AIDS cases occur in cities where AIDS is prevalent among drug abusers, the report notes. Babies born with AIDS are perhaps the most tragic aspect of the epidemic; many are abandoned in hospitals because their mothers are terminally ill with AIDS.

Concerned about the rising AIDS rate among addicts and its social and economic implications, scientists are exploring how changes in drug-related behavior can alter an addict's risk of AIDS. They are conducting studies to determine the number of HIV-infected drug users and experimenting with programs that teach drug users how to avoid infection.

AIDS patients, and especially intravenous drug abusers, will place an enormous drain on the nation's resources during the next five years, say public health officials. The RAND Corp. of Santa Monica, Calif., estimates AIDS hospital care alone will cost \$37 billion from 1986 to 1991. An estimated 46 percent will fall on public health programs and hospital systems supported by tax dollars.

Homosexual and bisexual males currently make up 62 percent of the 87,188 AIDS cases reported in the United States since mid-1981. Heterosexual IV drug users account for 20 percent, and homosexual drug users another 7 percent. Although those two figures continue to escalate, they may in fact underestimate the extent and mortality of AIDS among addicts.

"Official AIDS statistics greatly under-

estimate the amount of HIV-related death among drug users; they are probably missing about half," asserts Don C. Des Jarlais of the New York State Division of Substance Abuse Services. Des Jarlais, Rand L. Stoneburner of the New York City Health Department and their colleagues note in the Nov. 11 *SCIENCE* that New York City death certificates recorded 1,197 AIDS deaths among addicts from 1982 to 1986. The researchers found evidence suggesting another 2,520 addicts died of AIDS-related illness during the same period but went unrecorded as AIDS deaths because the victims failed to meet the full federal criteria for the disease (SN: 11/12/88, p.311).

"If we're off by 50 percent [in estimating AIDS among addicts], it greatly impacts our ability to project the epidemic's impact," Stoneburner says.

**C**ocaine may play a greater part in the epidemic than experts had suspected. New findings from San Francisco suggest HIV is spreading at an alarming rate among cocaine injectors there, particularly among black addicts.

At the University of California, San Francisco, Chaisson and his colleagues interviewed 633 heterosexual IV drug users and tested them for HIV infection. They found black addicts at higher risk of getting AIDS: 26 percent of black drug abusers tested positive for HIV, compared with 10 percent of Hispanic and 6 percent of white drug users. Interviews revealed that blacks favored injecting cocaine rather than heroin or other IV drugs.

Forty-seven percent of the blacks injected cocaine, compared with 30 percent of the white and 37 percent of the Hispanic IV drug users. Chaisson and his co-workers describe their findings in the Jan. 27 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

Cocaine increases an addict's odds of contracting the virus. Cocaine injectors are in even more jeopardy than heroin addicts because they tend to shoot up more frequently and are more likely to share needles. Cocaine, a stimulant, can create an even greater craving than heroin, making cocaine injectors less likely to worry about using a clean needle, Chaisson says. In fact, the San Francisco study found cocaine injectors more likely than other IV drug users to routinely visit shooting galleries, where addicts share dirty needles. The researchers found that 31 percent of daily cocaine injectors had used drugs in a shooting gallery during the previous year, compared with 15 percent of IV drug users who had never used cocaine.

Many addicts who would have used heroin 10 years ago are switching to cocaine or a combination of cocaine and heroin. "Cocaine is now playing a major role among injectors in Chicago," says Wayne Wiebel, an epidemiologist at the University of Illinois' Chicago campus. Poor-quality heroin and access problems have driven Chicago addicts to switch, which could mean an increased AIDS incidence if San Francisco's pattern holds true, he says.

**F**urther research needs to be done to identify the behavioral traits that put addicts at greater AIDS risk, Wiebel says. In a study of 1,000 Chicago street addicts, he and his co-workers showed that the incidence of HIV infection can vary from neighborhood to neighborhood. Wiebel found that 15.6 percent of Chicago's south side addicts tested positive for HIV, compared with 29.5 percent on the west side and 19.1 percent on the north side. Most drug users don't travel across town to purchase drugs, preferring to buy and use them nearby, Wiebel notes. That fact may keep the virus relatively contained in one area, until an HIV-infected addict moves to another neighborhood, he says.

Epidemiologists note that the spread of HIV among IV drug users nationwide hasn't been uniform. New York City has the highest rate of HIV infection, with 60 percent of tested addicts infected. Newark, N.J., follows close behind with 50 percent. Chicago's numbers appear somewhat less daunting: Wiebel's study shows a citywide infection rate of about 21 percent among IV drug users. Up to 24 percent of San Francisco's addict population tests positive for HIV. Yet in a number of cities, including New Orleans and Minneapolis, drug communities remain

virtually pristine, with only about 1 percent of addicts infected.

Public health officials want to prevent New York's AIDS problem from going national. There the virus' rampant spread threatens to "overwhelm" the city's health care system, according to an AIDS task force appointed by Mayor Edward I. Koch. "It's too late in New York and New Jersey, [but] I think this country is finally starting to wake up," says Andrew R. Moss, an epidemiologist at San Francisco General Hospital and a coauthor of Chaisson's study. "We don't want to become another New York," agrees Vernon Shorty, executive director of Desire Narcotics Rehabilitation Center in New Orleans.

Many cities plan aggressive action to avoid an AIDS nightmare. "Interventions have to target the front wave of the epidemic," Wiebel says. His team sends community recruits onto the Chicago streets to preach the message of condoms and clean needles. Tapping people who live in the neighborhood is a key part of the strategy.

Will drug users listen to a potentially lifesaving public health message? Some public health officials argue that addicts are so enthralled by their high that they won't take the time to disinfect their syringes. New York's Des Jarlais disagrees. Most addicts fear HIV and will try to follow clean-needle guidelines to avoid infection, he says. Wiebel agrees. Many addicts deny their risk of AIDS, he says, but once presented with the facts, many do change their habits.

Several studies cited by the National Research Council panel suggest drug users have heard the message about AIDS. New York City scientists interviewing addicts in treatment programs found most had adopted some sort of prevention strategy. Some reported sharing needles with fewer people, while others cut down on drugs or used only clean needles.

In New Jersey, a 1985 AIDS education program led to a surprising result: Outreach workers sent to teach addicts how to disinfect needles found that many drug users wanted help getting off drugs entirely. The state provided addicts with treatment vouchers and got a response rate of more than 85 percent.

The National Research Council panel recommends drug-treatment-on-demand for the estimated 1.3 million Americans who inject illicit drugs, echoing a proposal put forth last summer by the Presidential Commission on the HIV Epi-



University of California, San Francisco

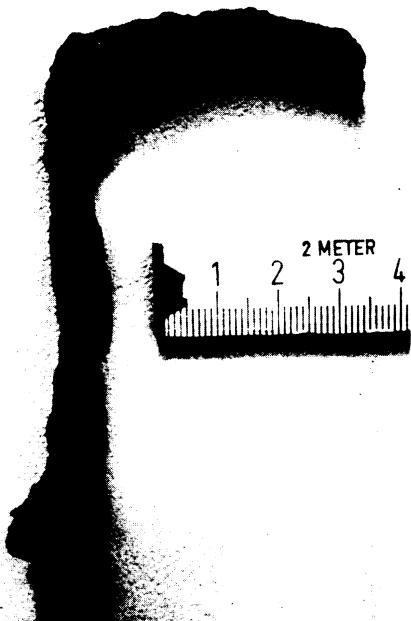
*An IV drug abuser gets a blood test that detects antibodies to the AIDS virus.*

demic (SN: 6/11/88, p.372). The National Institute on Drug Abuse (NIDA) estimates about 148,000 intravenous addicts are in treatment programs at any one time, and some U.S. cities report treatment waiting lists of six months or longer.

Earlier this month, NIDA and the Food and Drug Administration proposed regulations aimed at curbing the spread of HIV by getting more heroin abusers into methadone treatment programs. The proposal would allow more clinics to dispense methadone, a synthetic narcotic that stops heroin craving. But critics believe the program may be largely ineffective because methadone doesn't block cocaine addiction. Chaisson's study found cocaine injection was common among addicts undergoing methadone treatment.

**F**or addicts who can't or won't stop taking drugs, the National Research Council panel suggests that cities and states follow the lead of New York City, where officials started a clean-needle pilot study last November. Under that program, addicts turned away from full treatment programs get a clean needle and instructions on disinfecting it for reuse. Only two addicts showed up on the first day of the program, but New York City Health Commissioner Stephen C.

*Continued on p. 171*



Above, a work team at the start of the Kelheim excavation in July 1987. Late Iron Age artifacts appeared about 22 inches below the modern ground surface. At left, an iron key recovered during the excavation.

Nevertheless, according to Wells, the 1987 finds as well as recent discoveries in and around Kelheim by German archaeologists point to a powerful link between the iron industry and the emergence of a full-fledged urban center.

Considering what is known about European society at the beginning of the second century B.C., Wells suggests the union of iron and oppidum was brokered by an all-too-human trait: the desire to accumulate wealth.

This acquisitive urge took shape in European communities with no allegiance to emperors or kings. According to Caesar in his *Gallic Wars*, authority did not exist beyond "tribal groups" whose centers of power were the oppida. Caesar's conquest of Gaul from 58 to 51 B.C. succeeded so well because scattered tribal chieftains offered no unified resistance to his armies.

But more than a century earlier, in 181 B.C., Rome established a port at the head of the Adriatic Sea to open lands to the north to trade. Samples of what the Romans had to offer are found at Kelheim and other oppida — Roman wine jugs, bronze and silver vessels, fine pottery and gold and silver jewelry. Much of the jewelry was melted down to fashion local coins and ornaments, Wells says.

In return, the Romans most likely coveted large quantities of iron objects. Inscriptions scratched on the walls at an oppidum in modern-day Austria list the transactions of Roman merchants for locally produced metal objects, including iron. The inscriptions date to around the time of Christ, Wells says, and appear to describe long-standing trade practices. Archaeologists have not, however, found such inscriptions at Kelheim.

As increasing numbers of people from

surrounding communities established iron-producing operations in Kelheim, valuable objects may have been stockpiled and the wealth of the chieftain and other "elites" may have surged, Wells suggests. Thus, the massive wall may have been constructed as protection from occasional raids led by neighboring oppida chieftains bent on obtaining exotic Roman goods without bothering to trade for them.

While this scenario seems plausible, given the present state of archaeological knowledge, it remains only a general outline of the social forces at work in Late Iron Age Europe. For example, Bettina Arnold of Harvard University maintains

*Continued from p. 169*

Joseph says the program has since grown steadily to 62 participants and will meet its year-long goal of 200 enrollments.

The pilot has drawn heated criticism from those who say free access to needles will boost drug abuse.

One such critic is Harry W. Haverkos, chief of the clinical medicine branch at the National Institute on Drug Abuse. "There are hazards involved with that program," Haverkos argues. "If you have more needles, you have the potential that more people will use those needles."

Scientists defending the program contend no connection exists between needle access and drug use. As Chaisson sees it, people don't start to use heroin or cocaine simply because they find a discarded needle on the street. "People use drugs. The needles are a means of injecting them," he says.

The National Research Council panel agrees with Chaisson. "Current studies indicate that safer injection programs are not associated with increases in IV drug use and do lead to large-scale risk reduction among IV drug users," the report says. The committee points to a 1987 Amsterdam study that found no increase in drug users after the distribution of 700,000 free needles.

the larger oppida such as Kelheim probably were less densely populated than smaller oppida. "The really big cultural changes at that time may have been taking place at the smaller sites," she says.

Whatever the case, interesting parallels exist between the Late Iron Age and the Industrial Revolution in the early 19th-century United States, Wells contends. In both cases, he asserts, new industries sparked great increases in the production of material goods and led to the creation of commerce-based communities.

At Kelheim, Wells adds, "one is tempted to imagine an early Pittsburgh, where the fortunes of the entire community revolved around the production and trade of iron."

If the analogy fits, he says, future work at the site will establish that prehistoric villages dotting the countryside near Kelheim provided much of the labor for the booming iron industry as well as much of the food and other essential resources required by the oppidum.

But the sheer size of Kelheim and other Late Iron Age cities tests the mettle of curious scientists. A prime example is Manching, another Bavarian oppidum about the size of Kelheim. German archaeologists have excavated 22 acres over 30 years of work at Manching. Says Wells, somewhat wistfully, "They still haven't scratched the surface." □

Louisiana's experience may lend support to clean-needle programs. Clinic director Shorty attributes New Orleans' low rate of HIV infection to the fact that addicts can purchase syringes in drug stores without a prescription. In most states, people need a doctor's order to buy needles. The availability of needles keeps New Orleans free of shooting galleries, contends Shorty.

For the future, addiction experts argue firmly that aggressive intervention can minimize the spread of AIDS among drug abusers. The ultimate goal is to get addicts to stop taking drugs; but that is a slow process, and in the meantime anti-AIDS efforts must proceed, Chaisson says. Yet clean-needle programs and increased educational efforts require public support — a commodity that may be difficult to generate.

"Americans and politicians are very timid about showing any compassion toward intravenous drug abusers," says Chaisson. Panel chairman Lincoln E. Moses of Stanford University calls the matter urgent, noting that AIDS is expected to kill 50,000 in the United States in 1991. "Our committee believes that the public health threat posed by AIDS is so great," he says, "that we must find ways to overcome social and cultural taboos that stand in the way of improved AIDS prevention — and we must do so quickly." □