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Addressing the Medical Consequences of Drug Abuse

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When people hear the words "consequences of drug abuse," they usually think of addiction, crime, and other social disruptions. However, the most immediate, extensive, and long-lasting problems caused by drug abuse, both for individuals and for society, are often medical in nature. For example, known drug-abuse-related health problems and resulting lost productivity alone cost our society more than \$33 billion each year.

Illicit drugs directly cause many medical problems. Stimulants such as cocaine and methamphetamine increase the heart rate while constricting the blood vessels; in susceptible individuals, these two actions together set the stage for cardiac arrhythmias and strokes. The club drug methylenedioxymethamphetamine (MDMA, also called "ecstasy"), which many users mistakenly believe to be safe, has caused malignant hyperthermia, permanent kidney damage, and death. MDMA also damages serotonin nerve fibers in the brain. Heroin can cause a life-threatening kidney condition called focal glomerulosclerosis. The list continues: NIDA research has shown that almost every drug of abuse harms some tissue or organ.

The circumstances and behaviors associated with drug abuse add to the adverse impacts on health. Inadequate housing and poor nutrition, common accompaniments of drug abuse, can increase exposure to diseases and reduce ability to fight off infections. Injecting drug use promotes blood clots, severe skin infections, and blood-borne infections including life-threatening endocarditis, viral hepatitis, and HIV/AIDS. Abuse of some drugs is associated with impulsive sexual activity that elevates individuals' risks for acquiring and transmitting HIV/AIDS and other sexually transmitted diseases.

The hepatitis C virus (HCV) is another blood-borne pathogen that is easily transmitted through contaminated drug injection paraphernalia. In some NIDA-funded studies nearly two-thirds of individuals have acquired HCV within 1 year of beginning injection drug use. Screening studies have found that 70 to 90

percent of individuals in some drug-injecting populations are infected and at risk for developing chronic liver inflammation and hepatic cancer or liver failure requiring transplantation.

Many of the health consequences of drug abuse also have implications for the health of the non-drug-abusing public. Tuberculosis (TB) is an important example. Chronic drug abusers have higher rates of TB infection and disease than the general public, largely because inadequate nutrition, HIV/AIDS, and other factors lower their resistance. Reducing this high prevalence by screening and treating infected drug abusers is an important strategy in efforts to control TB in the Nation.

NIDA-sponsored research, much of it carried out under the auspices of the Institute's Center on AIDS and Other Medical Consequences of Drug Abuse, has made crucial contributions to understanding drug-related behavioral risks in the spread of infectious diseases and to reducing the incidence and impact of HIV, HCV, and TB among drug abusers and other at-risk populations. For example, research has shown that, contrary to what was once assumed, individuals who enter treatment for their drug abuse and receive appropriate management and followup can adhere to the complicated, lengthy medication regimens necessary to control these diseases. This is an extremely important finding, since finishing the entire regimen is crucial to successful treatment and also to prevent the growth of resistant viral or bacterial strains that can withstand currently available medications and potentially give rise to devastating epidemics.

NIDA-supported research has also demonstrated that drug abusers are willing and able to change their behaviors to prevent HIV transmission. For example, researchers have documented reductions in HIV risk behaviors among drug abusers who were contacted by a 21-site community-based prevention outreach program. Significant numbers of drug abusers stopped injecting or lowered their frequency of injecting, stopped reusing syringes or started disinfecting syringes, and entered treatment as a result of the outreach activities.

While we now know that chronic drug abusers can comply with medication regimens, we also know that a large percentage of them do not. Thus we still need to learn much more about both adapting medication regimens for drug abusers and techniques for increasing their adherence. Moreover, some illicit drugs and drug abuse medications can interact with medications used for treating diseases, resulting in possible loss of efficacy and adverse effects. An extremely important interaction can take place, for example, between methadone and the protease inhibiting drugs that are currently the most effective treatments for HIV infection. The

result can be ineffectiveness and increased toxic side effects from one or both drugs. In some cases, the presence of a protease inhibitor has inhibited the processing of methadone sufficiently to cause patients to develop symptoms of withdrawal. The identification of such interactions and development of alternative regimens is a high NIDA priority.

As the issue of drug-and-medication interactions illustrates, the approaches to drug abuse and its medical consequences must be integrated if optimal results are to be achieved. A NIDA-supported project at Montefiore Hospital in The Bronx, New York, has demonstrated that offering drug abuse treatment and primary care services at the same site can reduce the occurrence and severity of medical consequences of drug abuse. In what appears to be another very promising intervention, NIDA is evaluating the use of mobile health vans that reach out to drug abusers with both treatment and primary care. In 9 cities, vans are regularly visiting poor and medically underserved neighborhoods with concentrated populations of drug abusers. Each is staffed and equipped to provide drug abuse counseling and referral, vaccinations and screening for common and dangerous diseases, prevention education, and limited primary care. For patients with complicated medical conditions, the vans also provide referrals to local hospitals and clinics. During the 4 years that the mobile vans have been in service, their staff has seen drug abusers gradually develop the confidence to come forward for care, then start to bring friends and family members with them. Novel approaches such as these are only first steps toward fully integrating drug abuse and overall medical treatment for chronic drug abusers-but as always, the first steps are critical to get the momentum started.

NIDA NOTES - Volume 15, Number 1

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