

Research News

Since the National Institute on Drug Abuse (NIDA) was founded in 1974, international research and training activities have been a vital part of its mission. During fiscal year 2005, NIDA provided support for more than 200 international research projects in 48 countries. NIDA also supported 61 international research projects through interagency funding agreements with the Fogarty International Center, the National Institute of Allergy and Infectious Diseases, the National Institute of Child Health and Human Development, and the National Institute of Mental Health.

This issue of *NewsScan* highlights NIDA-supported studies involving international collaborations that were published in a special supplement to *Drug and Alcohol Dependence* in April 2006. In addition, a summary of three NIDA international programs designed to foster research collaboration through fellowships and exchange initiatives is provided.

Economic, Political Challenges Can Drive Drug Abuse, HIV

The World Health Organization reports that more than 15 million people globally have been diagnosed with drug abuse disorders and that injection drug use in particular takes place in 136 nations. The United Nations Office on Drugs and Crime reports that 13.2 million people inject drugs and that up to 10 percent of all HIV infections are attributable to injection drug use.

Dr. Steven Gust, director of NIDA's International Program, and his colleagues authored an overview of the research presented in a special supplement to *Drug and Alcohol Dependence*. They report that the co-occurring epidemics of drug abuse and HIV are a major public health issue in many countries, especially in areas with economic and political challenges.

The articles in the supplement consist of three themes: 1) the explosive nature of the HIV epidemic, particularly in areas where drug abuse is driving HIV transmission rates, such as South Central Asia; 2) the close relationship between HIV prevention and treatment and drug abuse prevention and treatment; and 3) the need for more widespread implementation of low-cost drug abuse interventions that reduce HIV risk, offering promising mechanisms to curtail the epidemic.

- **WHAT IT MEANS:** Drug abuse and HIV/AIDS are widespread and interconnected.

Researchers working together can reduce the global burden imposed by the dual epidemics of drug abuse and HIV by implementing drug abuse interventions.

Dr. Gust published this article, along with Dr. Erin Winstanley of the Johns Hopkins Bloomberg School of Public Health and Dr. Steffanie Strathdee of the University of California-San Diego School of Medicine.

New Research Examines Disclosure Norms and Risk Behaviors Among Young Hungarian Drug Injectors

New NIDA-funded research finds strong HIV and hepatitis disclosure norms and increased risk behaviors among young Hungarian injection drug users (IDUs). Disclosure norms refer to people's beliefs that others are disclosing their infection status.

A team of scientists from the National Development and Research Institutes in New York assessed knowledge, norms, and risk behaviors related to HIV and hepatitis prevalence among young IDUs in Budapest, Hungary. The researchers recruited 29 IDUs to participate in semistructured interviews or focus groups. Interviews explored participant drug abuse and HIV and hepatitis awareness. Focus group participants discussed a shortened version of the interview guide, with questions examining local drug abuse and HIV and hepatitis awareness.

Overall, the IDUs perceived themselves at low risk for HIV infection, but at high risk for hepatitis. Few were aware that HIV could be transmitted sexually or perceived themselves at high

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risk through sexual exposure. The researchers also found strong HIV and hepatitis disclosure norms—a common trust that partners would disclose their infection status—among injection and sex partners. Although injection filters were often reused as a backup drug supply, young Hungarian IDUs placed great emphasis on the use of sterile syringes. Additional risk behaviors included unprotected sex and the sharing of other injection paraphernalia. Participants expressed positive attitudes towards HIV and hepatitis testing, but reported that testing sites are hard to find and those available often do not supply results.

- **WHAT IT MEANS:** The finding of strong disclosure norms among Hungarian IDU networks suggests that interventions targeting these networks may be an appropriate prevention approach among IDUs in Hungary. Additionally, this study highlights the need for HIV testing services in Hungarian drug treatment programs and health institution settings.

Dr. V. Anna Gyarmathy and colleagues published these study findings.

Ukrainian Injection Drug Users Respond To Risk Behavior Intervention, But Many Continue Habits

A study assessing the value of intervention among injection drug users (IDUs) in Ukraine indicates that while some responded to interventions that reduced behaviors that contribute to the spread of HIV/AIDS, continued risky injection practices among many may help spread the infection even further, particularly among younger IDUs.

The scientists who conducted the research recruited 100 IDUs each from Kiev, Odessa, and Makeevka/Donetsk to assess factors associated with needle-related risk behaviors as well as predictors of continued high-risk behavior following intervention efforts. The intervention tested was based on the Indigenous Leader Outreach Model, in which former IDUs serve as outreach workers across the target population. Following a baseline interview, outreach workers met with the participants an average of seven times over the course of five months to increase awareness of HIV/AIDS, assess risk behaviors, reinforce risk reduction practices, and encourage prevention advocacy.

Six months after the baseline interview, almost 90 percent of the participants were questioned again. Significant reductions were observed on every risk variable measured including: number of times injected drugs during the past 30 days (from 46.7 percent to 22.8 percent), having used a preloaded syringe during the past 30 days (from 53.5 percent to 21.9 percent), having used a common container during the past 30 days (from 19.7 percent to 11.2 percent), having used a dirty needle or syringe during the past 30 days (from 19 percent to 6 percent), and having given a used needle or syringe during the past 30 days (from 35.1 percent to 12.1 percent). However, at least one-quarter of participants continued to engage in at least one of the primary risk behaviors assessed, with younger participants more likely to engage in these behaviors.

- **WHAT IT MEANS:** Injection drug use and HIV infection rates have escalated in Ukraine since the breakup of the Soviet Union. This study shows that although many IDUs responded to the prevention intervention, they continue to be at risk for spreading HIV/AIDS because they may not decrease all risk behaviors. Younger IDUs appear more likely to abuse drugs from a common container or inject drugs with a used needle or syringe.

Dr. Robert Booth, of the University of Colorado Health Sciences Center, and his colleagues published these findings.

Drug Abuse–HIV Connection Evident in Brazil

An analysis of data from five clinical studies confirm that poverty, low educational attainment, and injection drug use remain risk factors for HIV infection, and identify smoking crack cocaine as a new risk factor in Porto Alegre, Brazil. Porto Alegre is the sixth largest city in Brazil, with a population of 1.5 million.

The researchers divided the 1,449 subjects from the studies—primarily young males with low education and income levels—into four categories based on their pattern of drug abuse: injection drug users (IDUs); crack smokers; frequent drug abusers (abusing alcohol or marijuana a few times per week or daily in the past 30 days, or inhaling cocaine at least once in the past 30 days); and those who infrequently abused alcohol, marijuana, or cocaine.

A statistical review of the data shows that the presence of HIV was different across the four groups: 57.1 percent of IDUs, 26.5 percent of crack smokers, 14.9 percent of frequent drug abusers, and 11.7 percent of infrequent drug abusers were HIV positive. More than half of IDUs and almost two-thirds of crack smokers had less than a seventh-grade education. Crack smokers had the lowest incomes, and IDUs had lower incomes than frequent or infrequent drug abusers.

- **WHAT IT MEANS:** This report suggests that the same factors that contribute to HIV infection seen in countries in the Northern Hemisphere—poverty, low education, and drug abuse—also exist in southern nations. The high associations between HIV infection and injection drug use, and between HIV and smoking crack suggests the need to focus intervention efforts on these two practices.

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Dr. Flavio Pechansky, of the Center for Drug and Alcohol Research at Federal University of Rio Grande do Sul in Porto Alegre, was the lead author of the study.

Study Identifies Factors Associated With HIV Infection, Heroin Addiction, In Malaysian Men

Researchers from Yale University School of Medicine and the Substance Abuse Center in Muar, Malaysia, report that the factors significantly associated with HIV infection among Malaysian, heroin-dependent men undergoing drug abuse treatment include lifetime injection drug use, lifetime needle sharing, Malay ethnicity, and failure to use condoms consistently.

In the study, 177 male participants undergoing treatment for heroin addiction responded to questionnaires that assessed frequency and severity of drug abuse and sexual risk behaviors associated with HIV transmission. They also underwent physical examinations and were tested for the presence of HIV, hepatitis B, and hepatitis C, and were given chest x-rays to assess the presence of tuberculosis.

Almost 76 percent of the men in the study reported a lifetime history of injection drug use. The results also showed a high prevalence of HIV (19.2 percent), hepatitis C (89.9 percent), and radiologic evidence of tuberculosis (15.7 percent). Almost 42 percent admitted lifetime needle sharing and fewer than eight percent used condoms consistently. Participants of Malay ethnicity were three times more likely to be infected with HIV as Chinese men.

- **WHAT IT MEANS:** Malaysia is experiencing severe problems with heroin addiction and HIV infection. The high prevalence of HIV infection and the association between HIV infection and specific risk behaviors seen in this study point to the importance of developing, evaluating, and distributing research-based treatments for heroin addiction and HIV risk reduction interventions. The results also support the importance of HIV risk reduction counseling that focuses on reducing injection drug use, needle sharing, and unprotected sex.

Dr. Richard Schottenfeld of Yale University School of Medicine and his colleagues published this study.

Drug Abuse on the Mexico–U.S. Border: Implications for HIV/AIDS Transmission

An analysis of admissions data from substance abuse treatment programs shows increased abuse of methamphetamine and crack cocaine along the U.S.–Mexico border. Abuse of these drugs is a risk factor for HIV/AIDS, either from drug-influenced risky sexual behavior or from sharing injection equipment. Researchers from the University of Texas at Austin analyzed trends in drug treatment admissions collected from national data sets along both sides of the U.S.–Mexico border as well as from a NIDA-funded survey along the Texas border.

According to the data, methamphetamine treatment admissions have increased in both countries and methamphetamine abuse is a major problem in the western states on both sides of the border, with a notable increase in smoking ice. Though researchers found little change in cocaine admissions, the type of cocaine abused did change—abuse of powder cocaine decreased, and smoking crack increased. Additionally, heroin was identified as the primary drug for clients admitted to treatment on the Mexican side of the border, with 94 percent of all heroin admissions practicing injection drug use. Overall, methamphetamine was the most dominant drug on the Pacific end of the border. Heroin admissions dominated the center portion of the border, and cocaine admissions were high on the eastern end of the border, nearest to the Gulf of Mexico.

- **WHAT IT MEANS:** This study is the first to examine drug treatment data on the U.S.–Mexico border. In addition to demonstrating increased methamphetamine and crack-cocaine abuse, these findings suggest that drug abusers living near the U.S.–Mexico border may be at increased risk for HIV/AIDS. Additional research is needed to better understand drug abuse and HIV/AIDS risk factors in populations near the border.

Dr. Jane Carlisle Maxwell and colleagues published these findings.

HIV Transmission and Syringe-Sharing Practices Among Injection Drug Users in Dar es Salaam, Tanzania

New NIDA-funded research identifies increased risk of HIV transmission among injection drug users (IDUs) in Dar es Salaam.

The NIDA-funded research team examined residual blood samples from used syringes collected from 73 heroin IDUs living in Dar es Salaam, Tanzania. Because participants were not willing to undergo HIV testing, counseling, or learn their status, syringes were tested instead of individuals. None of the respondents who agreed to bring in a syringe was asked specific questions about his or her degree of needle sharing. An additional 82 drug abusers from separate drug-abuse networks in different neighborhoods were recruited to discuss drug abuse practices, social relationships among drug abusers, and drug-abuse norms in Dar es Salaam.

Fifty-seven percent of the blood samples from seven different neighborhoods collected by the researchers tested positive for HIV antibodies. Among the syringe samples that tested positive were those from one neighborhood within two kilometers of the city's center—90 percent of these samples tested positive for HIV antibodies. Semistructured interviews in the form of informal discussion groups among IDUs confirmed that syringes were widely shared, with more than half of these respondents reporting either needle sharing or observing needle sharing among others. Additional responses included needle sharing in groups of three and four, with one participant reporting as many as 10 individuals sharing one needle.

- **WHAT IT MEANS:** This is the first study to examine syringe-sharing practices among IDUs in Dar es Salaam, Tanzania. These findings highlight the pervasive nature of HIV transmission among needle-sharing IDUs in East Africa and suggest serious risk for HIV transmission and infection in neighborhoods near the city center of Dar es Salaam. Additional research is needed to develop tailored prevention programs for IDUs in Dar es Salaam and other urban sub-Saharan African communities.

Dr. Sheryl McCurdy, of the University of Texas Health Science Center at Houston, led this study.

NIDA International Programs Foster Opportunities for Global Cooperation

One of the many ways NIDA supports international research collaboration is through the Distinguished International Scientist Collaboration Awards (DISCA) and the U.S. Distinguished International Scientist Collaboration Awards (USDISCA). Both awards provide support to senior scientists during research exchange visits of one to three months so that applicants and their research partners can cooperate on new research methods and techniques; conduct data analysis; prepare joint research reports or proposals; or work together on basic, clinical, and applied research on drug abuse. The binational teams must propose an innovative approach, clearly define their expected product or outcome, and submit a final report to NIDA. The application deadline is January 1, 2007.

NIDA also provides assistance in the form of fellowships. The NIDA Humphrey Drug Abuse Research Fellowship is an ongoing 10-month, midcareer, nondegree fellowship that provides mentored academic study at a preeminent U.S. university; a minimum six-week research affiliation and professional experience with a NIDA-supported scientist; additional professional development activities that help the recipient establish personal relationships with NIDA grantees and NIDA officials who are interested in continued collaboration; and tuition, a stipend for books and living expenses, round-trip travel, health insurance, an allowance to support professional development activities, and participation in the national Hubert H. Humphrey Fellowship seminar in Washington, DC.

The INVEST Drug Abuse Research Fellowship combines postdoctoral research training in the United States with professional development activities and grant writing guidance. This 12-month fellowship provides rigorous postdoctoral research training with a NIDA grantee at a U.S. institution; professional development activities that help the recipient establish personal relationships with NIDA grantees and NIDA officials who are interested in continued collaboration; and a stipend for living and personal expenses, round-trip travel, and an allowance to cover the cost of health insurance and professional development activities. NIDA is also seeking research mentors to host international scientists for this fellowship. The annual application deadlines are April 1 and October 1.

For more information about these fellowship and award programs, go to www.international.drugabuse.gov.

For more information about any item in this *NewsScan*:

- Reporters, call Sara Rosario Wilson at 301-443-6245.
- Congressional staffers, call Geoffrey Laredo at 301-594-6852.

The National Institute on Drug Abuse (NIDA) is a component of the National Institutes of Health, U.S. Department of Health and Human Services. NIDA supports most of the world's research on the health aspects of drug abuse and addiction. The Institute carries out a large variety of programs to ensure the rapid dissemination of research information and its implementation in policy and practice. Fact sheets on the health effects of drugs of abuse and other topics are available in English and Spanish. These fact sheets and further information on NIDA research and other activities can be found on the NIDA home page at www.drugabuse.gov.

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