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Introduction: New Dynamics of HIV Risk Among Drug-Using Men Who Have Sex With Men

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On March 1–2, 2004, the National Institute on Drug Abuse (NIDA) sponsored a workshop on "New Dynamics of HIV Risk Among Drug-Using Men Who Have Sex With Men." The workshop convened NIDA-funded researchers and experts from the Centers for Disease Control and Prevention to review scientific findings on the epidemiology and prevention of HIV/AIDS and other health and medical consequences of drug abuse among men who have sex with men (MSM). It had been 10 years or more since NIDA last hosted such a meeting, and it quickly became apparent that although much had changed, much had remained the same. The past decade of research has advanced our understanding of the behavioral, social, and environmental factors that influence HIV risk behaviors in this population and has informed the development of effective outreach and HIV prevention interventions for drug-using MSM. However, the steady progress made since the epidemic began in reducing risks and sustaining behavioral change among drug-using MSM appears to have slowed. Today, there are concerns that a resurgence of HIV/AIDS may be imminent, fueled in part by increasing indicators of high-risk behavior in this population. The CDC reported in 2003, for example, that after declining every year from 1990 to 2000, the rate of primary and secondary syphilis in the United States increased by 9.1% in 2001, and in 2002, by 12.4% over the increase seen in 2001.[1,2] Most of this increase is among MSM. For example, from 1998 to 2000, MSM in Chicago accounted for just 15% of syphilis morbidity, but since 2001, MSM have represented nearly 60% of syphilis cases in the city.[3] Moreover, a high rate of HIV co-infection has been reported among MSM involved in recent syphilis outbreaks, raising additional concerns about the magnitude and scope of new HIV infections.[1,2] Whether the increases in syphilis cases are specific to drug-using MSM is to be determined. Drug use can interfere with the ability and desire to practice safer sex.[4] Methamphetamine use, in particular, is considered highly prevalent among MSM and a cause of sexual risk taking within the gay male community.[4]

Over the 2-day workshop, participants discussed their research and findings and the implications for public health interventions to prevent and treat HIV/AIDS among drug-using MSM. Considerable time was devoted to what is known today about the risk behaviors of drug-using MSM, and how emerging patterns of drug

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use may affect the dynamics of risk and subsequent spread of the HIV infection. The workshop also focused on gaps in our understanding of the changing epidemiology, HIV risk behaviors, and prevention practices among MSM. For example, reports[5,6] suggest that use of such drugs as methamphetamine, Viagra, gamma-hydroxybutyrate (GHB), 3,4-methylenedioxymethamphetamine (MDMA), and ketamine is increasing among MSM, often during high-risk sexual activity,[7] but our knowledge is incomplete about predictors of use, the extent of use (i.e., "recreational" or addictive patterns of use), or the acute and chronic effects that these drugs may have, singly or in combination with other drugs, on the dynamics of HIV transmission or on the progression of HIV in persons already infected.[7] Moreover, the Internet has become an increasingly efficient venue for drug-using MSM to develop liaisons with others for drug use and sexual encounters.[4,9–11] Changing drug use patterns and Internet-mediated sexual encounters among MSM pose complex challenges for public health and HIV prevention science.[4,9–11] HIV preventive behavioral interventions have been demonstrably effective for many high-risk, drug-using MSM, but are not keeping pace with demographic and technological change[11] and may be failing.[11] Behavioral scientists, drug abuse researchers, and HIV prevention and treatment specialists have to do more, and to do it better, to improve outreach, HIV behavioral prevention interventions, and treatment approaches for drug-using MSM.

There were many highlights from the workshop, both from participant presentations and the discussion sessions. The rest of this introductory piece will review some of the highlights of the presentations and ensuing discussions of their implications for future research to understand the changing epidemiology of HIV/AIDS among drug-using MSM, and to improve how we apply that knowledge to develop more effective, durable, and sustainable HIV preventive behavioral interventions for this population. Ultimately, given the absence of an HIV preventive vaccine and no cure for HIV/AIDS, "we cannot abandon behavioral strategies, such as they are, because they are all we have" (p.874).[11]

The first session of the workshop focused on research that combines both qualitative and quantitative methods to examine patterns of drug use and sexual risk behaviors among MSM and the social and environmental contexts associated with such risk behaviors. Dr. Clatts presented findings[12] from his field-based, ethno-epidemiological research, which uses venue-oriented/targeted sampling and semi-structured interviews to examine lifetime and current exposure to drugs, drug injection, and interactions of drug use, sexual risks, and mental health among four groups of MSM, including young MSM club drug users, homeless young MSM, adult MSM speed users, and HIV-infected "POZ Party" MSM. Each group has been found to have persistently high prevalence of drug and sexual risk behaviors, despite numerous public health interventions to reach, engage, and facilitate HIV behavioral prevention in the overall MSM population.

Dr. Halkitis described his research[13] on methamphetamine use, the psychological correlates of use, and the relationship between methamphetamine use and HIV transmission among 450 club drug-using gay and bisexual men in New York City. He has found that methamphetamine and other club drug use is widespread among segments of the MSM community, and for many, is inextricably linked to high-risk sex. Predictors of methamphetamine use and sexual risk behavior are complex and multidimensional, and appear to be shaped by many interacting factors, including the social context, the HIV serostatus of participants, a variety of psychological factors, and peer and network characteristics.

Discussion of the session's presentations was led by Dr. Stall, who observed that much has changed since the San Francisco Men's Health Study and the AIDS

Behavioral Research Project conducted some 20 years ago, yet much has remained the same. Today, as in the past, new drugs have emerged, and MSM continue to use multiple drugs, often if not always during high-risk sex. As in the past, research today suggests that the particular drug may be less important than the socialization process that many MSM go through, where drug use is considered acceptable, expected, and essentially, the social norm. In large part, the socialization process for MSM is an initiation, not only into sexual practice, but also into substance use, such that the two in combination lead, almost inevitably, to increased risks for transmission of HIV and other sexually transmitted diseases (STDs).

The public health community has struggled to respond effectively to the intertwining epidemics of HIV and drug use among MSM, and continues the struggle today. Although there are no easy answers, it is time to think anew about the problem. One way of doing this may be to draw from multiple disciplines, combining expertise from the behavioral and social sciences, epidemiology and public health, clinical medicine, and molecular epidemiology, to develop improved HIV interventions for drug-using MSM.

The second session addressed drug-using MSM as bridges for HIV and other STDs to other populations. Dr. Miller summarized her research[14] on the diversity of the MSM experience in Bedford Stuyvesant, the largest Black community in New York City, where she interviewed and held focus groups with HIV-positive men, self-identified MSM, and women. Dr. Miller found that few Black men in this community self-identify as MSM, and in fact, that community norms and expectations seem to pressure Black MSM to appear and act heterosexual. Many of the men were knowledgeable about safe sexual practices but reported never using condoms when they had sex with women. Moreover, drug use in the past 30 days was considerable among these men: 75% used crack, 68% used heroin, 50% used cocaine, and 50% had injected drugs.

The next speaker, Dr. Williams, reviewed his study[15] of drug use and sexual behaviors of spatial bridgers, both local and intercity, in a network of drug-using male sex workers in Houston. He found significant differences between spatial bridgers and nonbridgers in the network, and between local and intercity bridgers, in the proportions and types of drugs used, in the numbers of sex-for-money partners, and in the frequency of drug use and sexual risk behaviors. These findings suggest that bridging within subgroups of drug-using male sex workers in a city, and bridging between such networks in different cities, may be critical vectors of HIV transmission into networks of individuals engaged in the sex trade.

The third speaker, Dr. Kral, described his research[16] in San Francisco on HIV prevalence and risk behaviors among 385 street-recruited MSM who also injected drugs (MSM-IDU). Compared to HIV-negative MSM-IDU, a substantial percentage of HIV-positive MSM-IDU reported both risky (unprotected) sexual and injection drug (syringe sharing) practices. Moreover, among the HIV-positive MSM-IDU, only 16% reported taking HIV antiretroviral medicines, and only ten percent reported being in drug treatment. These findings underscore the need for innovative developments in intervention research, combining, for example, outreach, HIV behavioral prevention, and drug treatment interventions. Dr. Kral recommends moving beyond a focus on individual risks for HIV/STDs to include interpersonal, social/cultural, structural, and contextual factors associated with high-risk sexual and injection drug behaviors, such as interventions designed to address ready access to speed and heroin in environments that condone sex-for-drug or money exchanges.

Dr. Fuller concluded the session by describing her research[17] to identify differences in HIV risk among MSM-IDUs and non-IDUs in New York City who are recruited

from other than gay-oriented venues. She reported that, among street-recruited MSM-IDUs and non-IDUs, IDUs were significantly more likely to be younger, non-black, report no condom use, have an IDU sex partner, and have sex with women. These findings suggest that sociodemographic, behavioral, and social factors may explain differences in HIV risk between MSM-IDUs and non-IDUs. Specifically, young MSM-IDU recruited from other than gay-oriented venues may mix with both high-risk sex and drug-using networks and be at particularly high risk for HIV and other blood-borne infections.

Discussion of the second session was led by Dr. Aral, who observed from her own work at the CDC that STD outbreaks, specifically of syphilis, have been increasing of late among MSM, suggesting that increases in HIV may be soon to follow. Whether this occurrence will depend on a number of factors, including the size of the MSM population, how it is distributed across risk categories, and importantly, the proportion of MSM who engage in each of the high-risk behaviors. It will also depend on whether this proportion is getting larger, smaller, or staying relatively stable, and on the rate of contact ("bridging") between high-risk individuals and the rest of the population.

Today, there appear to be at least four change agents that are impacting drug-using MSM simultaneously: Viagra is extending the length of the sexually active time period in a life course and is associated with increases in the number of high-risk sexual encounters. The Internet is collapsing the spatial and temporal distance between people, which can increase the rate of transmission of STDs. Frequency of sex work appears to be increasing among heterosexuals, and the same may be happening among MSM. Finally, antiretroviral therapy is extending the lives of HIV-positive MSM, many of whom remain sexually active. Yet, although the convergence of these and other factors may be important for understanding HIV risks among drug-using MSM, it is equally important to remember that MSM are diverse, and not at equal risk. Recognizing variations in risk among the diverse MSM population is important for formulating improved HIV interventions that are targeted, effective, and cost efficient.

The next session focused on poly-drug substance use and its role in high-risk sex among drug-using MSM. Dr. Colfax presented findings from his analysis[18] of 3,597 baseline sexual episodes reported by HIV-negative MSM participating in the EXPLORE study. After adjusting for participant and sex partner characteristics, and for background substance use, the analysis showed that substance use among MSM during sex is independently associated with risky sexual behavior. These findings underscore how important it is for HIV-prevention efforts to address the influence of both participant and partner substance use during sex on increased HIV risk, focusing in particular on heavy use of alcohol, poppers, amphetamines, and sniffed cocaine.

Dr. Diaz then presented data on stimulant (cocaine and crystal methamphetamine) use and its effects among Latino MSM in San Francisco. His research[19] involved interviews with 300 Latino men randomly selected from venues in the city who reported non-heterosexual self-identification and stimulant use in the past 6 months. It found that the majority of men reported weekly or monthly use of multiple types of stimulants, including crystal methamphetamine / speed, cocaine, and crack, usually for energy, sexual enhancement, social connection, coping with stressors, and focused productivity. A strong connection was found between stimulant use and sexual risk behavior, particularly among speed users. Most of the men acknowledged the negative consequences of stimulant use, including increased risk for HIV transmission, but also recognized the multiple and powerful roles that stimulants play in their personal, social, and sexual lives.

Dr Fernandez concluded the session by discussing her study[20] on the effectiveness and cost of the Internet versus face-to-face recruiting of Hispanic MSM who use drugs and engage in risky sexual behavior to participate in research. In just 2 months, the study had recruited 172 Hispanic MSM through the Internet for interviews. A majority (88.3%) had been tested for HIV, and 22.5% of those tested reported they were HIV-positive. Rates of both high-risk sex and poly-drug use in the past 6 months were also high, with almost 49% reporting use of a variety of club drugs, which was significantly associated with unprotected sex. The findings suggest that very high-risk Hispanic MSM can be recruited successfully through chat room dialogues, indicating the potential and power of the Internet for improving the effectiveness and reach of culturally appropriate drug use and HIV-prevention messages.

Discussion of the third session, lead jointly by Drs. Stall and Aral, focused on the problem of widespread poly-drug use among MSM. Each study found that MSM used multiple drugs, often, if not always, in connection to social situations where the environment is conducive to sexual liaisons. That many MSM in these studies are also HIV-positive underscores the need for HIV interventions that are seamless in offering both substance abuse and HIV treatment simultaneously. Antiretroviral use among HIV-positive, drug-using MSM is also an important issue that warrants further study. Little is known about the interaction of antiretroviral and illicit drugs, about the effects that illicit drugs may have on adherence to complex antiretroviral drug regimens, nor about the influence that antiretroviral and other drugs may have on perceptions of risk and vulnerability among drug-using MSM. Finally, as an entity in and of itself, the community holds great promise for community-wide HIV outreach prevention campaigns that focus on the diffusion of pro-social norms, positive behavior change, and preventing drug use and high-risk sexual behaviors.

The fourth session included presentations on mental health and drug use issues among MSM. Dr. Holmes described his research[21] to determine whether depression and/or posttraumatic stress disorder act as mediators between child sexual abuse and HIV-related sexual risk behavior in men. He found that men with histories of childhood sexual abuse are more likely to develop co-morbid depression/posttraumatic stress disorder, experience traumatic flashbacks and avoidance, and engage in serial non-intimate partnerships, rapid cycling of intimate partnerships, or a combination of both. Although these findings have implications for mental health counseling, they need to be confirmed with larger samples that address potential co-factors, such as drug use and abuse and social networks.

Dr. Shoptaw presented his research findings[22] on the comparative efficacy of outpatient behavioral drug abuse treatments (contingency management; cognitive behavioral therapy; combined contingency management and cognitive behavioral therapy; and gay-specific cognitive behavioral therapy) in reducing methamphetamine use, high-risk sexual behaviors, and depression ratings among methamphetamine-dependent MSM in Los Angeles. He found structural effects of treatment, with different types of behavioral drug therapies producing different rates of reductions of methamphetamine use and high-risk sexual behaviors. All of the therapies lead to significant reductions in drug use and unprotected sex during 1-year follow-up evaluations. Gains in psychiatric functioning were observed, with abstinence from methamphetamine corresponding to lower rates of depression. These findings indicate that behavioral approaches to reducing drug use among methamphetamine-dependent MSM may yield significant reductions in HIV transmission and improvements in psychiatric functioning.

The final session centered on interventions for drug-using MSM. Dr. Kanouse began by discussing his research[23] on recruitment approaches to enroll drug-using MSM into behavioral interventions. He found that a two-stage strategy, in which drug-using MSM are first recruited into discussion groups, is more cost-effective than direct advertising or referral for engaging this population to enroll in a behavioral risk-reduction intervention.

Dr. Patterson presented findings from his research[24] on differences in background and psychosocial characteristics and HIV risk behaviors among 261 HIV-positive MSM who used methamphetamine and other drugs. Compared to those who used methamphetamine and "lighter" drugs such as marijuana and poppers, those who also used cocaine, heroin, hallucinogens, or ketamine were younger, had used methamphetamine for fewer years, had more HIV-negative sexual partners and unprotected sex with these partners, had more negative self-perceptions, and were more impulsive. New HIV-intervention approaches are urgently needed for methamphetamine-using HIV-positive MSM who also use multiple other drugs and engage in very high-risk sexual behaviors with HIV-negative partners.

The final speaker, Dr. Irwin, described an ongoing randomized clinical trial[25] in New York City comparing two motivational interventions to reduce drinking/drug use and HIV-risk behaviors among HIV-negative MSM who have a diagnosed alcohol use disorder. He focused on the nature of the response to the extensive marketing and recruitment campaign that was undertaken to attract high-risk MSM to the study. Despite intensive efforts, the overall response was not nearly what had been anticipated, suggesting that more work is needed to augment clinical efficacy trials research and encourage treatment-seeking behaviors among drug-using MSM at risk for HIV transmission.

Drs. Stall and Aral lead the concluding discussion by reviewing the presentations in the final sessions and stressing the importance of the context in which these studies should be viewed. The epidemic of substance use among MSM has persisted for at least 30 years in the United States. These studies, and those presented in the prior sessions, make clear that this epidemic has evolved and changed, with different drugs being used in different ways. And always, drug use among MSM has been inextricably intertwined with sexual practice. Many of the MSM participating in these studies, as in other studies, associate substance use with sex, and many are HIV-positive or are at high-risk for HIV infection. Moreover, despite concerted efforts to improve recruitment, engagement, enrollment, and retention of drug-using MSM into HIV behavioral interventions, many MSM remain hard-to-reach, whereas others perceive HIV as less of a threat because of the availability of antiretroviral medicine, and still others relapse, drop out, or "burn out" from trying to sustain long-term behavioral change. This workshop highlighted the persistent epidemic of substance abuse and sexual risk behaviors among MSM throughout the United States. With recent outbreaks of syphilis and other STDs among drug-using MSM today, the warning signs are clear. It is time to focus our energies on new interventions for this population to disrupt the apparent trajectory of widespread HIV infections.

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