Progress in HIV Reduction And Prevention Among Injection and Non-Injection Drug Users

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Abstract

Substantial progress has been made in reducing HIV among injection drug users (IDUs) in the United States, despite political and social resistance that reduced resources and restricted access to services. The record for HIV prevention among noninjecting drug users is less developed, although they are more numerous than IDUs. Newer treatments for opiate and alcohol abuse can now be integrated into primary HIV care; treatment for stimulant abuse is less developed. All drug users present challenges for newer HIV prevention strategies (eg, “test and treat,” nonoccupational postexposure prophylaxis and pre-exposure prophylaxis, contingency management, and conditional cash transfer). A comprehensive HIV prevention program that includes multicomponent, multilevel approaches (ie, individual, network, structural) has been effective in HIV prevention among IDUs. Expanding these approaches to noninjecting drug users, especially those at highest risk (eg, minority men who have sex with men) and incorporating these newer approaches is a public health priority.

Keywords

HIV; noninjection drug use; injection drug use; prevention; contingency management; treatment; epidemiology

National data has consistently estimated that 20.1 million Americans use illicit drugs. Of those, roughly 1.2 million inject drugs, a practice that has been recognized for its role in HIV transmission, accounting for 11% of HIV infections. Among injection drug users (IDUs) in the United States, the HIV rate has been estimated to be 28%. Addressing the challenge of the HIV epidemic in injectors was made difficult by powerful political and social resistance (eg, zero tolerance campaigns) that dampened access to important resources for drug users. However, during this period, the US Public Health Services developed and disseminated a hierarchy of prevention. Briefly, its first tier called for abstinence, which could be facilitated through treatment for drug abuse. For those IDUs who could not or would not quit drug use, a second tier advised using sterile syringes and disposing of them safely. The third tier, a recommendation applicable when sterile injection equipment was unavailable, was disinfection with bleach. These messages have been successfully
implemented by combining interventions at individual, community, and policy levels\(^9\) that promoted education through community outreach as well as HIV testing; behavioral interventions\(^10\); drug abuse treatment,\(^11\) including opioid agonist therapies\(^12\); and syringe exchange programs,\(^13\) which were later supplemented by providing for syringe access through pharmacies\(^14,15\) (Figure 1). Concerns about the potential for syringe access to encourage initiation of drug use among youth and to increase drug use, needle sharing, and crime, proved unfounded.\(^13\) Even before the availability of antiretroviral therapy, HIV prevalence and incidence among injection drug users declined.\(^16–18\) The purpose of this brief review is to discuss newer approaches to HIV prevention strategies and potential implementation challenges for prevention both among noninjecting drug users (NIDUs), sometimes mistakenly referred to as “recreational users,” who have received insufficient attention for HIV prevention, and among IDUs—framed within consideration of hurdles encountered in the prevention hierarchy of IDUs.

**NON–INJECTING DRUG USERS (NIDUs)**

HIV risk and prevalence as well as transmission rates vary widely among NIDUs using crack, cocaine, methamphetamine, alcohol, and pills as well as noninjected heroin, but may be relatively high because of the co-occurrence of drug use with sexual risk behaviors (eg, unprotected sex, multiple partners, and survival sex) and the overlapping of social network risk groups.\(^19–22\) These associations have been dramatic, especially among men who have sex with men (MSM).\(^23–26\)

**Approaches to Screening and Prevention**

Targeted interventions with outreach specialized to reach types of NIDUs according to drug of choice may be necessary given different behavioral patterns of drug use. However, in general, NIDU interventions should be comprehensive in their ability to serve multiple risk groups (eg, drug users, MSM) with multiple risk factors (eg, drug use, sex, mental health).\(^27\) For example, multicomponent interventions such as MP3 (Methods for Prevention Package Programs) and Screening, Brief Intervention, Referral and Treatment (SBIRT)\(^28\) need to include approaches along with wraparound services to be comprehensive in addressing drug users’ multiple, complex needs (eg, relating to sex, mental health, homelessness, and infectious and chronic disease).\(^29\) Current efforts in the United States are focused on reaching and engaging minority men who have sex with men (MSM), who have particularly high rates of HIV infection.\(^30,31\) In this population as in others, interventions need to go beyond “test and treat” (TNT) to assess and address drug use issues, including polydrug use.\(^32\) In a broader sense, incarceration and neighborhood factors that have been shown to influence availability and opportunity for drug use also need to be considered in addressing drug-related concerns.\(^15,33\)

**WHERE ARE WE NOW?**

Especially with the advent of antiretroviral therapies, the spectrum of HIV prevention in drug users has broadened to include TNT; nonoccupational postexposure prophylaxis (nPEP); and pre-exposure prophylaxis (PrEP). These interventions need to be tailored to ensure that they are accessible and feasible for drug users and incorporated on multiple levels (eg, individual, community, and structural).

**Test and Treat**

TNT aims to reach virtually everyone in the US population and treat HIV infection with antiretroviral medications, an intervention that would presumably reduce population viral loads and HIV incidence.\(^34\) For NIDUs and IDUs alike, the success of TNT requires the ability to reach this more elusive population at higher risk of HIV exposure and to retain
them in a program of frequent testing and treatment. TNT could be expanded outside conventional hospital, clinic, and emergency room settings to include those who attend drug treatment and IDUs who have developed rapport with syringe exchange programs and pharmacies. However, among hard-to-reach groups where HIV is making inroads, the purported benefits of TNT may be suboptimal without explicit strategies to incorporate HIV testing into a broad range of facilities on a widespread basis; to reach drug users who do not access services and are likely at highest risk of HIV exposure; to train health care workers to communicate effectively with and engage this population; to optimize approaches to maintain adherence to antiretroviral treatment, especially for those outside drug-abuse treatment; and to ensure that all those at risk for HIV exposure have access to all needed services.

nPEP and PrEP for IDUs

Elsewhere in this issue, nPEP and PrEP in general have been discussed. Data are sparse on nPEP for drug users in general and for IDUs in particular, and results of PrEP trials in IDUs are not yet available. Should the data show effectiveness, the next challenge will be to appropriately disseminate information via street outreach strategies. Although some view nPEP and PrEP for IDUs and NIDUs with trepidation because of valid concerns over drug toxicities, drug users’ ability to adhere to treatment, and the potential for development, within individuals, of drug resistance that would subsequently limit potential treatment options, it is feasible to integrate provision of these drugs into drug treatment programs and pharmacies, where there is the ability to frequently perform HIV testing and linkage to providers to monitor patients. Additional infrastructure is needed to attract and engage both IDUs and NIDUs.

Substance Abuse Treatment

Substance abuse treatment has been a mainstay for HIV prevention among drug users. For opiate abuse and dependence, methadone and now buprenorphine/naloxone are established treatments, which have the advantage of unchallenged integration into primary HIV care. The greater challenge has been the ability to produce effective substance abuse treatment for stimulant abuse. Several pharmacotherapies have been tested, and others are in the pipeline. For treatment of methamphetamine abuse, little or no benefit has been seen in trials for bupropion and modafinil, but efforts continue, with newer agents such as varenicline under investigation. The experience to date with pharmacologic treatment for cocaine and crack is similarly disappointing; the promise of antidepressants and carbamazepine has not been realized, but examination of newer drugs is ongoing. With the slower progress on pharmacologic treatments for methamphetamines and other stimulants, the most promising approach to date has been cognitive behavioral therapy with contingency management. As has been shown for IDUs, treatment combinations on multiple levels (eg, individual pharmacotherapy and behavioral change) are needed not only to reduce drug use but also to successfully target and maintain integration of NIDUs into social services.

Alcohol, the most widely used drug, is also associated with sexual risk for HIV infection. Rapid screening tools for alcohol abuse and dependence have been developed, yet only half of HIV-infected problem drinkers discuss their predicament with their HIV care providers. Given the association of problem drinking with increased risk of HIV transmission and acquisition, screening for alcohol use needs to be more widely incorporated into HIV care and research. A number of pharmacologic treatment options for alcohol misuse are being studied, including naltrexone and disulfiram. Yet no standard pharmacologic therapies for alcohol abuse and dependence exist. Techniques of Motivational Interviewing (MI) could possibly be effectively provided in primary HIV care settings.
effectiveness has been demonstrated only as a multisession intervention,, limiting its feasibility in many primary HIV care settings, where staff face many competing demands. This suggests that modifications are needed in the structure of MI content and its requirement for health care provider involvement. Telephone counseling alone (or possibly as an adjunct to MI) has shown some promise for problem drinkers.54

Contingency management and conditional cash transfer are two iterations of another approach to substance abuse treatment and HIV prevention that has been used for some time.55 There is resistance to the idea of “rewarding” drug users, but available data from prospective studies suggest that this approach improves otherwise costly follow-up without increasing drug use.56

CONCLUSIONS: FROM STIGMATA TO REDEMPTION—MAKING EFFECTIVE INTERVENTIONS POSSIBLE

Multilevel, multicomponent interventions among IDUs have been successful at reducing HIV incidence and provide a model for more broadly addressing HIV prevention. Yet challenges remain—not only for IDUs but for the much larger population of noninjectors. Drug use needs to be approached comprehensively to reach and provide options for those who do not or cannot quit drugs. Further, going beyond specific programs into the policy choices that create resources to ensure access to services and support for adherence to the evidence-informed, health supporting protocols are currently available is warranted. Practical strategies to overcome problems of access and adherence include utilizing our standard tools of 1) education, to increase knowledge about behaviors that can prevent HIV infection at the individual and community levels; 2) HIV testing in nontraditional settings (eg, pharmacies) to reach drug users whose activities put them at high risk of HIV exposure; 3) behavioral interventions that not only address drug use–associated behaviors and health problems but also HIV risk behaviors, to lure and integrate drug users who are members of other overlapping risk groups; 4) drug treatment, which should be expanded, especially in communities where access is now poor and in primary HIV care settings; and, for IDUs, 5) syringe access, to increase access to sterile equipment. It is a combination of these strategies applied simultaneously on individual, community, and policy levels that have been successful in reducing HIV incidence and prevalence among drug users to date, and it is these strategies that researchers, community members, and policy makers should work to expand for use and application of upcoming HIV interventions.

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REFERENCES


Figure 1.
Multilevel HIV prevention hierarchy, past and present. *SEP denotes syringe exchange programs.