Structural Interventions for HIV Prevention in the United States

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Background: Structural interventions change the environment in which people act to influence their health behaviors. Most structural interventions research for HIV infection has focused on developing countries, with the United States receiving substantially less attention. This article identifies some social determinants of HIV vulnerability in the United States and structural interventions to address them.

Methods: Review of the medical, public health, and social science literature.

Results: Evidence supports widespread implementation of a number of structural interventions in the United States clearly proximate to HIV, including comprehensive sex education, universal condom availability, expanded syringe access for drug users, health care coverage, and stable housing. Sociological plausibility supports evaluation and implementation of other interventions that target social determinants more distal but of relevance to HIV, such as initiatives to eliminate racial and ethnic disparities in criminal sentencing, to promote early childhood education and to decrease poverty.

Conclusions: Structural interventions that address social determinants of HIV infection may be among the most cost effective methods of preventing HIV infection in the United States over the long term.

Key Words: HIV, structural interventions, United States

(*J Acquir Immune Defic Syndr* 2010;55:S132–S135)

INTRODUCTION

In July 2010, the Obama Administration released the first National HIV/AIDS Strategy for the United States. The strategy targets and coordinates the nation's response to the domestic HIV epidemic. With its goals of reducing new HIV infections, increasing access to care and improving health outcomes for people living with HIV infection, and reducing HIV-associated health disparities, the strategy envisions a United States "where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socioeconomic circumstances, will have unfettered access to high quality, life-extending care, free from stigma and discrimination."[1]

This vision reflects an understanding increasingly shared by public health researchers and practitioners that social determinants—the conditions in which people are born, live, work, and age[2]—are critical influences on health and that these determinants, which are shaped by the distribution of money, power, and resources, can be influenced in positive ways. Structural interventions for HIV prevention attempt to affect these determinants by changing the environment in which individuals engage in health-related behaviors.[3] Evidence suggests that interventions that address the contextual factors that influence people's behavior are more successful than interventions that focus solely on individuals and ignore the larger context.[4] In addition, financial analyses show that structural changes, although costly, may have the greatest effect over the long term in reducing the number of new HIV infections, and yielding other social benefits, such as improvements in economic productivity and advances in human rights.[5]

Structural interventions for HIV prevention typically involve at least one of the following: effecting policy or legal changes; enabling environmental changes; shifting harmful social norms; catalyzing social and political change; and empowering communities and groups.[6,7] Interest in structural interventions has grown in recent years, but most research and programmatic efforts in this realm have focused on developing countries.[8–10] We argue, however, (as have others[11–13]) that much can be done in the United States to address key social determinants of the nation's epidemic and help achieve both the goals and the vision of the National HIV/AIDS Strategy by implementing structural interventions of various types. After identifying some key social determinants, we outline examples of structural interventions to address them. Some of these have been well described elsewhere; others may seem more novel in their connection to HIV/AIDS.

SOCIAL DETERMINANTS UNDERPIN THE US HIV EPIDEMIC

Substantial evidence documents the role of social determinants in health outcomes at the individual level and community level.[14] Macroeconomic and social forces, such as poverty, racism, sexism, and homophobia, help fuel HIV

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epidemics, although the pathways between these forces and HIV infection are complex and not always clear.[15–19] The US epidemic—with its disproportionate impact on gay and other men who have sex with men (MSM), people of color, drug users, and people living in the South—concentrates HIV among groups that often overlap demographically and geographically and share some core social determinants of infection.

More than half of new HIV infections in the United States (53%) occur among gay and other MSM.[20] Homophobia and homonegativity promote HIV transmission. Negative attitudes about homosexuality have been translated into legal and policy restrictions on sexual behaviors (eg, sodomy) and relationships (eg, marriage) among gay people. These restrictions tend to marginalize and exclude gay people and drive their relationships underground. Thus, many MSM do not publicly identify (or self identify) as "gay," or seek HIV prevention and sexual health information services targeted to gay communities. Internalized homonegativity has been associated with unprotected anal intercourse, a major route of HIV transmission, particularly for gay and other MSM.[21]

About 12% of new HIV infections in the United States occur among injecting drug users.[20] Lack of access to sterile needles and syringes and addiction treatment programs contributes to the spread of HIV among injectors, their sex partners, and others within their social/sexual networks.[6] Although harm reduction services markedly decrease HIV incidence and prevalence,[22] their availability is limited, in large part because of the ban on the use of federal funds to support syringe exchange programs that existed under US law until January 2010 and the persistent shortage of addiction treatment and substitution therapy programs.[6] Despite the fact that drug misuse and addiction are fundamentally biological, psychological, and social problems manifest at the individual level, society dictates the availability of programs and services to combat them. Resistance to harm reduction efforts is ideological and political; the United States has adopted a no-tolerance approach, aggressively criminalizing drug use but with relatively little public health response.

Criminalization of drug users and the war on drugs have helped make US incarceration rates the highest in the world;[23] about 1% of Americans were incarcerated in jail or prison in 2007.[24] Blacks and Hispanics are imprisoned at dramatically disproportionate rates—not only because of the war on drugs, which has targeted blacks,[25] but also because of pervasive ongoing racial disparities in sentencing related to many other types of convictions.[26] High incarceration rates disrupt sexual partnerships, impoverish individuals and communities, and alter the ratio of men to women that, together, help drive sexual network patterns, and ultimately increase the vulnerability of communities and individuals to HIV infection.[16]

HIV prevalence is higher in the United States among people who are poor than among those who are not poor.[27] A number of pathways link poverty and HIV infection.[16] For example, poverty decreases health care access, which can increase the duration of treatable sexually transmitted diseases, which facilitate HIV transmission.[28] Targeted marketing of crack cocaine to poor neighborhoods[29] increases residents' risk of exposure to crack use and exchange of sex for drugs. Poverty increases the risk of unstable housing and homelessness, which in turn increase likelihood of HIV risk behaviors.[30]

STRUCTURAL INTERVENTIONS TO TARGET SOCIAL DETERMINANTS

A number of structural approaches effect policy–legal changes, enable environmental changes, shift harmful social norms, catalyze social and political change, or empower communities and groups to address social drivers that fuel HIV in the United States. Some are well researched and documented by strong empirical evidence, and others have sociological plausibility[19] but have not yet been connected as directly to HIV/AIDS.

Structural Interventions With Evidence of Efficacy

Comprehensive Sex Education With Access to Male and Female Condoms

Sex education is an essential HIV prevention strategy, and access to accurate sexual health information is a fundamental human right.[31,32] Comprehensive sex education programs include respectful acknowledgement of gender and sexual diversity, and health promotion and disease prevention information and access to the tools to engage in safer sex (ie, condoms). Such programs have frequently met with opposition at federal, state and local levels despite their effectiveness in decreasing risky sexual behaviors (promoting delayed initiation of intercourse, reduced frequency of intercourse, decreased number of sex partners) among young people.[33,34] Nevertheless, broad implementation of comprehensive sex education and condom availability through, for example, contingent funding policies ought to and can be put in place now as a structural intervention with potential for significant impact in reducing both gender and racial disparities in HIV rates.

Syringe Exchange Programs

Syringe exchange programs, a harm reduction intervention, aim to reduce risk of disease transmission in the context of continued drug use. These programs, usually initiated by community-based organizations and advocates, have demonstrated efficacy in reducing HIV transmission,[35,36] are cost-effective,[37,38] and do not promote injection drug use.[39] However, wider implementation of syringe exchange programs in the United States has been limited by the previous long-standing ban on the use of federal funds to support them, by state and local legal and regulatory restrictions, and, at times, by local community opposition.[39] The recent policy–legal change allowing federal funding of syringe exchange programs and the guidance documents developed by federal agencies for the use of such funds themselves constitute a structural intervention that should have significant impact on drug-use–driven HIV and hepatitis epidemics in the United States and should mitigate some of the racial disparities in HIV infections.

Health Care Availability

Health care availability and quality are important social determinants of health.[14] Disparities in access to health care are much greater in the United States than in other

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industrialized countries and contribute to the dramatic racial and ethnic disparities in rates of chronic diseases, including HIV.[40] In 2008, 46.3 million people in the United States (15.4% of the population) lacked health insurance.[41] Health care reform, a structural intervention that was finally enacted in 2010, should substantially reduce the number of uninsured persons. Effective health care involves access to services and medications shown to be effective, such as HIV testing and antiretroviral therapy.

Stable Housing

A growing body of evidence indicates that provision of stable housing is an effective strategy for both reducing HIV-associated risk behaviors and increasing access to care and adherence to antiretroviral medications.[42,43] Guaranteed housing, provided through laws and subsidies, would not only affect a substantial number of the estimated 3.5 million people in the United States who experience homelessness annually[44] but would also decrease morbidity from HIV/AIDS and numerous other chronic diseases.

Sociologically Plausible Structural Interventions

Most of the structural interventions mentioned above target immediate conditions of social life that increase vulnerability to HIV and its negative health outcomes. Few evaluated interventions actually target the social determinants that underlie those conditions—that is, those that render people homeless or drug addicted in the first place.[45] Nevertheless, there is substantial sociological plausibility that addressing these upstream factors would decrease the domestic HIV epidemic.

For example, as noted earlier, the high incarceration rates in the United States that contribute to the domestic HIV epidemic, especially among blacks and Hispanics, are maintained in part by pervasive and ongoing racial disparities in sentencing.[26] One of the stated goals of the Department of Justice's Strategic Plan for fiscal years 2007 through 2012 is to ensure fair and efficient administration of justice.[46] Yet none of the objectives selected to achieve this goal involves addressing sentencing disparities. While passage of legislation decreasing sentencing disparities between crack and powder cocaine convictions constitutes a major step forward,[47] incarceration's impact on HIV and a host of other societal problems makes elimination of the persistent racial bias in sentencing for *all crimes* an obvious target.

Early childhood academic enrichment programs can lead to improved mental health outcomes, higher socioeconomic status, and lower rates of participation in crime.[48–50] Health outcomes have improved after income supplementation.[51,52] Investments in disadvantaged children and adults can reduce crime and improve economic productivity, realizing positive economic returns.[53] Given the pathways that link low educational attainment, poverty, incarceration, and HIV in the US epidemic, such investment would likely decrease not only HIV infection rates but also other disease outcomes.

Similarly, structural interventions that decrease poverty should be evaluated and implemented. Microfinancing and cash-transfer interventions have been tested in developing countries[10] and, to a much lesser degree, in the United States.[54] Projects are currently being piloted in the United States as structural interventions to decrease the economic dependency that promotes high-risk behaviors and resultant HIV infection (Kevin Fenton, personal communication, July 8, 2010).

CONCLUSIONS: IMPLEMENTATION AND RESEARCH

Addressing the social determinants of the domestic HIV epidemic through widespread implementation of structural interventions, although essential, is not without scientific and political challenges. Establishing the evidence base for the efficacy and effectiveness of such interventions requires seriously embracing this approach as a legitimate research pursuit and expanding efforts beyond the traditional biomedical and behavioral research paradigms. Research must clearly trace the pathways between social determinants and HIV infection and develop new methodologies to develop and test structural interventions to disrupt these pathways.[6,9] Given the scope and scale of this research, it will require development and strengthening of collaborations among communities, academia, government, and the private sector.[12] Findings from such research will help convince the public, policy makers, and funders that understanding and successfully addressing the social and structural determinants of HIV infection in the United States will ultimately save money and help us achieve the goals of the National HIV/AIDS Strategy.

ACKNOWLEDGMENTS

We thank Drs. Victor J. Schoenbach, Paul A. Godley, Kevin A. Fenton, and Myron S. Cohen for their insightful comments.

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