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HIV PERSPECTIVES AFTER 25 YEARS

Integrating HIV Prevention Activities into the HIV Medical Care Setting: A Report from the NYC HIV Centers Consortium

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ABSTRACT *With the maturing of the HIV epidemic and availability of potent antiretroviral therapies in the US, priorities for HIV prevention have shifted from general population approaches to case finding, treatment, risk reduction and relapse prevention activities among those at greatest risk for acquiring or transmitting HIV infection. The challenges of this approach include ensuring access and adherence to HIV care and treatment and appropriate prevention activities to ensure adequate and sustained sexual and drug use risk reduction across diverse populations. Experience with approaches to address these issues, particularly in the context of primary care, has been limited. An agenda for future research and practice includes continued development and evaluation of interventions that can address this next generation of health care issues.*

KEYWORDS *HIV prevention, HAART, Risk reduction counseling, Sexual risk behavior, MSM*

RISK REDUCTION FOR PERSONS LIVING WITH HIV AS A NATIONAL HEALTH PRIORITY

In recent years, the public health infrastructure has begun to support incorporation of sexual and drug use risk reduction programs into the care of HIV-infected populations.[1,2] Until then, the vast majority of resources had been utilized for both HIV counseling and testing programs and for programs to reduce risk among those with the highest likelihood of acquiring HIV based on their drug use and sexual behaviors. The shift toward more emphasis on risk reduction with HIV positive individuals was parallel to several developments, including the maturing of the HIV epidemic past the peak of incline in number of cases, which produced a reduced

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sense of urgency related to general population-level transmission. Simultaneously, the funding and maintenance of large-scale and broadly focused programs for sustained behavioral risk reduction targeting uninfected persons at the population level became increasingly less feasible. These factors, coupled with documentation of ongoing risk behaviors among some persons aware of their HIV positive serostatus, documentation of cases of superinfection with multiple HIV strains and the growing recognition of the potential for transmission of drug-resistant HIV strains from these patients, support a national strategy which emphasizes (1) increased HIV testing, (2) prevention programs for those at greatest risk for acquiring HIV, and more recently, (3) risk reduction efforts for those who have tested positive for HIV and who are aware of their HIV-positive serostatus.[3]

Most behavioral research demonstrates that many individuals with HIV infection significantly reduce their sexual and drug use risk behaviors in the absence of additional risk reduction support once they are made aware of their HIV-positive serostatus.[4–7] However, for some people, the factors associated with higher transmission risk behaviors in HIV-infected populations are similar to the ones that exist among HIV seronegative populations,[8] so there is no reason to believe that an HIV diagnosis alone would necessarily provide the skills and motivation required to minimize risk behaviors on an ongoing basis. This contention is substantiated by reports of ongoing sexual risk behaviors across diverse HIV-infected populations encompassing substance users, men who have sex with men (MSM), women, adolescents, and HIV serodiscordant couples.[9–19] In addition to the barriers to safer sexual and drug use behavior that existed prior to a diagnosis, the person aware of his or her HIV status must also contend with issues surrounding disclosure and stigma, as well as quality of life issues surrounding the disease[20–22]; all issues with potential impact on sexual behaviors. In addition, sexual behavior, including sexual risk behavior, is a dynamic phenomenon that changes depending on individual and partner and other contextual factors.[23] Thus, those who may initially reduce their sexual risk behavior following their HIV diagnosis may still relapse into higher risk behaviors at a later time.

A set of unique factors in the era of highly active antiretroviral therapy (HAART) may be driving a more recent shift toward increased transmission risk behaviors among many different individuals living with HIV. Research with HIV-positive women, MSM, and drug users has documented increased risk behaviors after individuals initiate HAART regimens,[24–26] with these changes mediated by perceptions of reduced risk of HIV disease transmission and lower perceived severity of transmission associated with regimen use.[27–33] Findings suggesting that sexual and drug use risk behaviors are explained by perceptions of disease transmissibility versus actual indicators, such as HIV RNA viral load,[27] need also to be interpreted in light of HAART adherence patterns that change over time[34] and the associated risk for transmission of drug-resistant HIV.[35]

Those taking antiretroviral therapy at adequate levels to control levels of HIV RNA in genital fluids may be less likely to infect unprotected sexual partners.[36–38] As has been widely noted, however, HAART adherence needs to be sustained at high levels over long periods of time in order to control viral load and reduce the likelihood of development of resistant virus.[39–43] Of particular concern in this regard are studies that link lower levels of HAART adherence with higher levels of sexual risk behavior.[44–46] Both drug use and mental health issues may complicate this picture, with multiple studies showing that, without adequate identification and treatment, these populations may exhibit suboptimal levels of adherence to

regimens.[47–49] Although successful models exist to improve patient adherence to HAART through methods such as cognitive-behavioral approaches and the use of directly observed therapies,[50–52] little knowledge exists on the nature and type of behavior change program that might most effectively reduce the impact of perceptions of HAART on risk behavior or which combine both adherence support and sexual risk reduction.

Combined, these factors suggest that the majority of patients would benefit from professional support to help reduce behaviors that not only may result in HIV transmission, but also unintended pregnancies and infection with other sexually transmitted infections, including HIV-resistant superinfection.[53,54] Such an approach would ideally include identification of HIV seropositive persons early in the course of their infection, the provision of HAART both for their own health and to reduce transmission risk to partners[55] and focused risk reduction and relapse prevention to reinforce both the motivation and skills required to maintain risk reduction over time. Support should not only be offered early in the course of HIV treatment but should be reinforced and adapted to patient needs over time. Healthcare services generally address most of these issues but have often neglected ongoing risk reduction and relapse prevention counseling as part of routine care.

APPROACHES TO REDUCING RISK BEHAVIOR WITHIN THE CONTEXT OF HIV MEDICAL CARE

The HIV care setting, with a typically interdisciplinary approach to patient care, may be the ideal setting in which to address the complexities of the relationships between sexual and drug use risk behavior, HIV therapy, mental health and disease comorbidity, and the multitude of other social, psychological, and contextual factors that may be related to risk behaviors in this population. This perspective is reflected in current national recommendations for the implementation of risk reduction support to HIV-positive patients as part of standard of care practices that include screening for HIV transmission risk behaviors and provision of brief risk-reduction messages, in-depth behavioral intervention for those exhibiting ongoing risk behaviors, and notification and counseling of sexual and needle-sharing partners.[1] These recommendations are supported by preliminary evidence from a handful of studies demonstrating that risk reduction programs utilizing one or more of these approaches effectively yield short-term reductions in sexual risk behaviors.[56–64] Several evaluations of successful programs have incorporated theory-based approaches to behavior change such as Social Cognitive Theory.[56,57,60,61]

Successful transfer of technology from these more scientifically controlled trials to the typical clinical environment, however, requires consideration of a number of important factors. Based on our own experiences in delivering risk reduction messages to HIV-infected populations, common barriers to administration include questions related to the feasibility of implementation of risk reduction counseling in busy and often understaffed HIV care settings, the level of expertise needed to effectively administer risk reduction counseling, and appropriate timing, context, and content of risk reduction messages. In examinations of provider practices in HIV medical care clinics, over 70% of patients report ever being counseled about safer sexual behaviors.[65] In a study of provider practices in the HIV care setting, 60% reported counseling their new patients about HIV risk reduction, and 14% reported counseling more established patients.[66] In this study, provision of risk reduction messages was associated with perceived provider time constraints and

patient load. Given the extent of other services typically offered during an HIV care visit and the limited time and resources available to administer these services, it is apparent that time concerns may result in practices that include counseling for new patients but not ongoing risk reduction support.

Models of provider counseling that are currently being evaluated, such as the Centers for Disease Control's Prevention in Care Settings Demonstration Project, involve basic assessment of risk behavior at intake, followed by provider counseling that involves 1–2 min of positive reinforcement for patients reporting low levels of risk behavior and 3–5 min of counseling for patients reporting higher risk behaviors, coupled with referral for more in-depth counseling for higher risk patients. Alternatives to this approach could also include the involvement of care extenders such as stable HIV seropositive patients who can work with newer or higher risk patients to reinforce risk reduction efforts, the use of patient-led support groups, and partnerships with satellite clinics or service settings that could provide ongoing support and promote ongoing utilization of HIV care. This multilevel process allows the patient to hear provider recommendations for behavior change and allows for other health professionals in the clinic setting to tailor risk reduction messages to the overall needs and context of the patient's lifestyle. Clinic teams and community partnerships offer important strategies to deliver prevention and behavior change messages consistently in spite of institution-based resource limitations.

There are some other practical considerations regarding how best to utilize limited clinical resources to conduct risk reduction counseling. For instance, individuals who come to care often enough to receive ongoing counseling may be the ones less likely to need risk reduction support. This suggests that part of making risk reduction efforts most effective may include outreach to maintain patients in care so that they can receive adequate antiretroviral treatment and to ensure that mental health and other needs are addressed. A system of "triage" may also be beneficial for allocating resources, whereby those engaging in low levels of risk behavior receive nominal support and reinforcement, while those with a recent history of risk behavior become candidates for more in-depth outreach and prevention counseling.

The extent to which counseling is provided in the HIV care setting may also be limited by questions about the content of messages and the timing and nature of risk reduction services. There are several health behavior theories which have been shown to be important frameworks for guiding the content of risk reduction messages, including the Theory of Reasoned Action, Social Cognitive Theory, and the Health Belief Model.[67] In a consensus meeting involving the pioneers of these theories and several other leading theories of behavior and behavior change, three constructs were viewed as integral to any behavior change program. These include a (1) commitment or intention to engage in a given behavior, (2) removal of environmental or situational barriers, and (3) ensuring that the proper skills are in place to perform the behavior.[67] A positive intention or commitment to reduce risk behaviors is contingent on two factors. First, that the client perceives that the important people in their social networks, including their health care providers, exert social pressures to engage in a desired behavior and second, when the client perceives that by changing their behavior they will accrue more benefits than negative consequences.[68] Thus, clinics can put in place the necessary components for behavior change if they (1) help clients see the potential benefits to themselves and others of risk reduction and the potential consequences of not reducing risk behavior, (2) help them acquire the skills to reduce their behavior (e.g., how to use condoms correctly, how to negotiate condom use with partners, correct use and

disposal of needles, etc.), and (3) assist them in terms of removing environmental constraints to engaging in risk behavior reduction (e.g., access to sterile needles and condoms if clients continue to engage in drug use or sexual behaviors that involve HIV transmission risk). Specific skills and beliefs related to risk reduction behavior will vary as a function of the population being served, as well as to the specific life circumstances of the individual client. Additional research on how best to tailor behavior change strategies to these populations over time and in the context of a rapidly evolving epidemic is needed; some of these considerations follow.

NEEDS FOR BUILDING EVIDENCE-BASED APPROACHES TO RISK REDUCTION WITH HIV-POSITIVE POPULATIONS

Patients with Mental Health and Substance Use Issues Issues surrounding the prevention needs of patients with comorbid mental illness and substance use require additional attention. There is increasing evidence that rates of HIV infection are more prevalent among those with severe mental illness,[69] that those with both HIV and severe mental illnesses such as schizophrenia are more likely to be substance users,[70] and that alcohol use, substance use, and the presence of psychiatric disorders in HIV infected and uninfected people are all associated with increased sexual risk behavior.[71,72] In one nationally representative study of patients receiving HIV care, 40% reported using an illicit drug other than marijuana in the past 12 months, and nearly 50% screened positive for a psychiatric illness.[73] These conditions, especially if adequate mental health and substance abuse services and treatments are not provided, compromise an HIV-infected individual's ability to reduce their level of risk behavior.[15] Among individuals in care for HIV disease, co-occurring severe mental illnesses such as schizophrenia or bipolar disorder are relatively common complicating factors for clinical care and adherence to HIV treatments. In New Jersey, for example, 5.7% of Medicaid patients with HIV/AIDS had also been diagnosed with schizophrenia, and an additional 6.8% had been diagnosed with major affective disorders but not schizophrenia.[70]

Much research has demonstrated the ways in which the challenges of mental health and substance abuse problems and their treatment are inextricably intertwined with the challenges of HIV treatment. These studies show that when these comorbid conditions are treated, individuals receive more consistent HIV treatment. For example, persons with HIV who have depression have been shown to be more likely to receive HIV therapy if their depression is treated (based on analysis of filled prescriptions in healthcare claims histories).[48,74] Similarly, drug abuse treatment, among patients with a drug abuse history, has been shown to be associated with more consistent use of antiretroviral treatments.[75] Through their impact on viral load, these factors may help decrease the likelihood of HIV transmission during episodes of unprotected sex or needle-sharing. It is important to note, however, that the impact of substance abuse treatment alone on sexual and drug use risk behaviors may be limited,[76] thus highlighting the importance of comprehensive care models that integrate behavioral health services with medical treatment for HIV disease in order to assure that patients receive services and treatment for their mental health and substance abuse problems.[77,78] Spread of HIV among persons with severe mental illness poses a special challenge for bringing prevention into treatment. It may require attending first to the integration of mental health care with HIV care, support for HIV therapies and ongoing to adherence to therapies and then to the incorporation of prevention messages into these care

processes that are tailored to the special needs of individuals whose capacity for self-regulating risk-related behavior may be affected by major mental illness such as schizophrenia or bipolar disorder.

Mortality rates among HIV-infected IDUs with advanced immunosuppression have been shown to have decreased dramatically as a function of HAART, suggesting that benefits of HIV treatment have extended to this population.[79] Although these findings are encouraging, it is widely reported that a history of injection drug use, alcohol use, and other substance use is associated with lower adherence to HAART[80,81] and that this group is therefore at increased risk for antiretroviral drug resistance.[82,83] There is preliminary evidence that individuals with resistance may be at increased risk for engaging in higher levels of risk behavior[15] and that the prevalence of ART resistance is high among some populations.[82] Resistance testing among those with treatment failure, therefore, may be important for groups such as drug users who may be at increased risk for transmitting drug-resistant HIV strains to sexual and needle-sharing partners and may actually benefit all individuals prior to HAART initiation. Consideration of the context and timing of resistance testing and appropriate counseling in regard to such testing needs to be incorporated into risk reduction strategies. This can best be informed through an increased understanding of how to assist the HIV-positive patient in processing the complex interrelationships between adherence, resistance, and transmission.

Improving Access to and Utilization of HIV Care Identification of HIV and accompanying risk reduction counseling are important tools in reducing HIV transmission. Ongoing monitoring of the epidemic as it evolves is required so that those at highest risk are identified early in the course of infection. These issues will become more central as the use of rapid HIV testing increases in the United States. As such, routine, targeted testing to improve earlier identification of patients with HIV infection is a priority,[84] although such efforts need to also include removing barriers to accessing HIV care once the diagnosis occurs.[85,86] Similarly, providing risk reduction counseling in the context of HIV care may have behavioral implications beyond the index patient. Currently, HIV partner notification services tend to be centered around the time of an HIV-positive diagnosis, with little ongoing support for notification over the course of HIV patient care.[87] Given evidence that many persons with HIV infection acquire both HIV status unknown or HIV seronegative sexual partners after infection,[14,88] these issues need to be addressed. Incorporating support for disclosure and for voluntary partner notification in the context of risk reduction counseling may be an important but often overlooked tool in terms of increasing HIV testing rates among partners of HIV-infected individuals.

Improving Skills and Resources for Provision of Risk Reduction Counseling The effectiveness of risk reduction counseling in the HIV care setting would be enhanced by programs targeting improvements in provider skills and knowledge regarding how to discuss sexual and drug use risk behavior with their HIV-positive patients. In addition to time constraints discussed earlier, barriers to delivery of risk reduction messages may include perceptions that patients are not engaging in transmission risk behaviors, beliefs that prevention attempts will not result in behavior change, and lack of skills or reluctance to discuss sex and drug use issues.[89] From a practical standpoint, there needs to be better operationalization of effective risk reduction programs with HIV-positive patients that can be easily implemented and incorpo-

rated into health care environments. Guides for risk reduction practices that can be readily accessed and that are frequently updated as public health knowledge builds and evolves around this issue are important tools for implementing these types of programs, particularly for those settings that do not have staff with behavioral or counseling backgrounds. There is an increased likelihood that HIV-positive patients receiving care in clinics with written policies or guidelines related to prevention messages are more likely to receive risk reduction information.[90,91] Related to this need is consideration of mechanisms to increase reimbursements to health care providers for time spent in risk reduction counseling and referral.

Other Issues As the HIV epidemic continues to evolve, so must our understanding of how new technologies and treatment advances will influence decision making and behaviors surrounding unprotected sex and needle sharing. In addition to the evolving nature of HIV therapeutics, these considerations may grow to include microbicide use and, potentially, HIV vaccines. These concerns may also be relevant in the arena of comorbid infections such as HCV and HBV, although limited research exists on how perceptions of these infections may drive risk behaviors. In addition to the impact of new technologies on the course of disease, public health practitioners also need to be aware of how these changes are conceptualized by HIV patients and if and how these beliefs may factor into changes in risk behavior. Finally, all of these issues will require reevaluation as they are applied to resource-constrained settings; these types of programs will need to be assessed for their feasibility, acceptability, and effectiveness in settings outside of the US, where strategies and programs need to focus on those prevention approaches that are the most effective and cost-effective.

SUMMARY AND RECOMMENDATIONS

Although most people upon diagnosis with HIV infection will successfully modify their sexual and drug use behaviors as they relate to HIV transmission risks, there remain a substantial number who lack the skills or motivation to reduce their level of sexually transmitted infections acquisition and transmission risk on an ongoing basis. As a function of its ongoing interface with HIV-positive patients and its ability to deal with, in many situations, the multiple needs of the patient, the HIV clinical care setting is an important venue for providing ongoing risk reduction counseling. Although the issues surrounding risk behavior in the context of HIV infection are complex, preliminary evaluations of effectiveness suggest that relatively straightforward messages relating to risk reduction can produce at least short-term behavior change. To continue to ensure that these efforts are as effective as possible, ongoing clinic-based evaluation of these programs will help identify how best to tailor these programs. Quality Improvement Programs, such as those sponsored by the NYS AIDS Institute, offer an example of a system that can be used to implement performance measurement and use quality improvement methodologies that can result in improved health outcomes across diverse programs and which could be adapted to address these questions on a larger-scale basis.

Although there is some evidence that cognitive behavioral approaches to risk reduction in the HIV clinical setting can reduce transmission risk behaviors of HIV-positive persons, there are still many factors that have not been adequately addressed in terms of how best to implement these approaches. For these reasons,

we suggest several avenues for research. First, in order to best meet the needs of HIV-positive patients and their sexual partners, programs tailored to the needs of specific sub-groups of individuals living with HIV in both domestic and international settings need to be implemented and evaluated. To date, there is very little information available regarding how to tailor risk reduction programs to the needs of women, adolescents, minority and immigrant populations, persons with mental illness, incarcerated populations, or active substance users, nor has there been adequate documentation that clinic-based risk reduction programs are effective for reducing HIV transmission behaviors as they relate to injection drug use among HIV-seropositive IDUs.

Second, this area of research needs to continue to evaluate high-quality programs that address the needs of populations seen within diverse clinical settings, such as those providing mental health and substance abuse treatment and other types of venues that HIV-positive individuals may frequent outside of the medical care setting. Third, research programs should focus on how, when, by whom, and with what frequency these messages are best provided. Comparing theoretically based approaches to risk reduction will help maximize the effectiveness of messages while reducing the amount of burden placed on health care practitioners in busy settings. Fourth, further research needs to be conducted to assess how factors such as changes in treatment options, diagnoses with co-occurring illnesses and subsequent medication regimens, and cultural and personal factors impact attitudes toward implementing and maintaining safer behaviors over time. This includes how to best incorporate ongoing prevention among patients identified through point of care rapid HIV testing. Finally, the availability of guidelines that are readily available and easily updated would be an important resource for practitioners with limited time or lower perceived skills in risk reduction counseling. Standardized resources should include concrete delineation of the steps involved in risk reduction approaches along with brief scripts containing risk reduction messages. A research agenda focusing on these priority issues will help ensure the greatest impact of risk reduction efforts implemented as part of the overall approach to controlling HIV transmission and promoting a higher quality of life among those living with HIV infection.

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