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HIV, Homelessness, and Public Health: Critical Issues and a Call for Increased Action

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Abstract Homelessness and housing instability are significant public health issues that increase the risks of HIV acquisition and transmission and adversely affect the health of people living with HIV. This article highlights the contributions of selected papers in this special issue of *AIDS and Behavior* and considers them within the broader context of prior research on the associations between housing status and HIV risk, use of HIV medical care, adherence to HIV treatment, and the physical health of HIV-seropositive persons. Special recognition is given to the roles of interrelated health problems, such as substance abuse, poor mental health, and physical and sexual abuse, that often co-occur and exacerbate the challenges faced by those who are homeless or unstably housed. Taken as a whole, the findings indicate a critical need for public health programs to develop strategies that address the fundamental causes of HIV risk among homeless and unstably housed persons and, for those living with HIV, contribute to their risk of disease progression. Such strategies should include "mid-stream" and "upstream" approaches that address the underlying causes of these risks. The successful implementation of these strategies will require leadership and the formation of new partnerships on the part of public health agencies. Such efforts, however, may have significant effects on the individuals and communities most affected by HIV/AIDS.

Keywords Homeless persons · Housing · HIV infections · Unsafe sex · Health services utilization · Public policy

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The articles in this special issue of AIDS and Behavior add further evidence that homelessness should be treated as a major public health problem confronting the United States. Prior research has repeatedly shown that homelessness is associated with a wide range of chronic health problems (including substance abuse and mental illness), physical and sexual violence, and infectious diseases such as tuberculosis and HIV infection (Aidala and Sumartojo 2007; Institute of Medicine 1988; Krieger and Higgins 2002; O'Toole et al. 2004; Zolopa et al. 1994). This special issue represents a major contribution to existing knowledge and highlights two key public health threats: (1) the associations between homelessness and behaviors that increase individuals' risk of acquiring HIV or transmitting it to others, and (2) the links between housing status and the health and well-being of persons living with HIV.

The conditions that lead to homelessness for some individuals, coupled with the numerous challenges of being homeless, result in a substantially higher risk of HIV acquisition. Persons who are homeless or unstably housed have HIV/AIDS infection rates that are three to nine times higher than stably housed persons (Allen et al. 1994; Culhane et al. 2001; Estebanez et al. 2000; Zolopa et al. 1994). These elevated infection rates are attributable to a range of behaviors that are associated with HIV risk

including substance use, injection drug use, multiple sex partners, and unprotected sex with casual partners (Aidala et al. 2005; Allen et al. 1994; Burt et al. 2001; Culhane et al. 2001; O'Toole et al. 2004). For example, in this issue, Wenzel et al. (2007) found that African American and Hispanic women who were homeless were much more likely to have had multiple sex partners in the prior 6 months than were housed women, in part because of the effects of physical violence and substance abuse.

Similarly, other studies in the special issue (Coady et al. 2007; Eastwood and Birnbaum 2007; DesJarlais et al. 2007; German et al. 2007; Henny et al. 2007; Salazar et al. 2007) illustrate how lack of housing operates as a contextual or environmental influence that interacts with other risk factors such as substance use, risky sexual and injection practices, sexual abuse, physical violence, poor mental health, and sex work. Not only does homelessness contribute to existing levels of risk, the longitudinal data reported by Elifson et al. (2007) show that persons who are unstably housed are less likely than their housed peers to reduce their HIV risk. This finding has important implications for HIV prevention efforts as it shows, as many have believed for some time, that it is more difficult to motivate behavior change in people who are struggling with the myriad of challenges associated with being homeless or unstably housed. This does not mean, however, that persons who are unstably housed cannot change their risk behavior. As discussed below, research has shown that behavioral interventions can significantly reduce risk behavior in this population.

Studies in this special issue and elsewhere also provide important insights into the especially difficult circumstances faced by homeless persons living with HIV that affect their risk behaviors and ability to maintain good health over time. The higher levels of HIV observed in the blood of unstably housed persons living with HIV compared to those who are stably housed (Kidder et al., in press; Knowlton et al. 2006) has ominous implications for the health of unstably housed people living with HIV and increases their biological potential to transmit HIV to others. High viral load may indicate advanced HIV disease, and persons with higher viral loads are more likely than those with low or undetectable viral loads to efficiently transmit HIV during risky sexual or drug injection behaviors (Montaner et al. 2006).

Access to regular medical care, use of effective antiretroviral medications, and high rates of antiretroviral adherence are all important for reducing HIV viral load. Unfortunately, homeless persons living with HIV are: (1) more likely to delay entering HIV care, (2) more likely to have poorer access to regular HIV care, (3) less likely to receive optimal antiretroviral therapy, and (4) less likely to adhere to therapy than stably housed persons (Aidala et al. 2007; Kidder et al., in press; Leaver et al. 2007; Smith et al. 2000). Many of these differences likely result from the competing needs faced by homeless persons, poverty, and the instability that being without permanent housing causes in people's lives. Some physicians may also contribute to the poor health status of homeless persons living with HIV by prescribing suboptimal antiretroviral regimens or withholding antiretroviral treatment because they are concerned that homeless persons cannot adequately adhere to medical appointments and medication dosing schedules (Kidder et al. 2006; Loughlin et al. 2004).

Even though homeless patients may be at greater risk of poor adherence, many can achieve levels of adherence that are comparable to housed populations (Bangsberg et al. 2000; Royal et al. 2006; Moss et al. 2004). Homeless and unstably housed persons living with HIV have been shown to significantly benefit from HIV treatment, even when adherence is less than perfect (Bangsberg 2006; Bangsberg et al. 2000; Kidder et al. 2006), and health care providers should not deprive these patients access to this life-saving treatment (Bangsberg and Moss 1999). This perspective is consistent with public health guidelines that specifically state that "no patient should automatically be excluded from antiretroviral therapy simply because he or she exhibits a behavior or characteristic judged by the clinician to indicate a likelihood of nonadherence" (CDC 2002, p. 7). As they would with other patients, health care providers should routinely assess and encourage adherence in homeless and unstably housed persons living with HIV and actively work with them to develop strategies for achieving and maintaining high levels of adherence.

Taken as a whole, the available research makes it readily apparent that access to adequate housing profoundly affects the health of Americans who are at-risk for or living with HIV. Sadly, much of the public health community has been slow to recognize this fact and take action to address it (Breakey 1997; Krieger and Higgins 2002). It is likely that there are numerous reasons for this inaction, including a failure to recognize the powerful connection between homelessness and multiple health threats, a tendency for public health programs to have a single focus rather than an integrated approach to addressing closely related health problems, a disconnect between housing and public health efforts that is inherent in the separate funding streams and organizational structures that typically support these activities, and a sense that homelessness is too big of a problem for public health programs with limited budgets to take on. Although it is true that there are many complex challenges to improving public health's response to homelessness, the articles in this special issue provide a great deal of hope that these challenges can be overcome and provide much needed direction for moving the field forward.

A critical step that public health programs should take is to expand their HIV prevention efforts to intervene with, and provide services to, persons who are homeless or unstably housed. As the studies in this issue demonstrate, homeless persons living with HIV are at considerable risk for multiple health threats that negatively affect their health and increase the risk of HIV transmission to others. These multiple risks make this population an especially important one for intervention efforts. Prior research has shown that providing risk reduction interventions in shelters serving homeless and runaway youth can lead to reductions in substance use and risky sex (Rotheram-Borus et al. 1991). Several other interventions have been shown to significantly reduce risk behavior among people living with HIV (Lyles et al. 2007), and it is likely that these can be successfully adapted for those who are inadequately housed.

In addition to interventions that reduce risk behavior, public health programs should also ensure that people living with HIV are linked to adequate medical care. Case management is one strategy that can facilitate access to and maintenance in care (Gardner et al. 2005) and has been shown to improve antiretroviral adherence and immune function (Kushel et al. 2006). Integrated models of health care and service provision, in which a range of infectious diseases, chronic illnesses, and mental health and social service needs are addressed, can play an especially important role in engaging and maintaining homeless and unstably housed persons in care (Douaihy et al. 2005; Nyamathi et al. 2005). Various models for creating integrated systems of care already exist and may guide local communities in the planning and implementation of their own integrated systems of care (e.g., Gordon et al. 2007; Nyamathi et al. 2005; O'Connell et al. 2005).

Reaching those who are homeless or unstably housed is complicated by the fact that homelessness is often a transitory state. Furthermore, housing is multidimensional and many individuals experience different forms of housing instability that increase their risk for multiple health threats (Scott et al. 2007; Weir et al. 2007). Many at-risk members of this population may not be reached through programs that only provide shelter or other forms of assistance to those who are currently living on the street. Even when they are reached, many homeless and unstably housed persons may not be recognized as such in HIV prevention programs, research, and disease or behavioral surveillance systems. Including a brief assessment of housing status as part of screenings conducted in public health programs and clinics may be useful for identifying homeless and unstably housed individuals who are at increased risk for multiple health threats. Collecting data about housing status in ongoing research and surveillance efforts represents a low-cost strategy that also has the potential to yield significant benefits by expanding the existing research literature.

Interventions that motivate individuals to eliminate HIV-risk behaviors, remain connected to care, and adhere to treatment regimens face an uphill battle as long as participants or clients remain homeless or unstably housed. Ultimately, such efforts may be more successful if they are based on "mid-stream" and "upstream" approaches (Satcher 2006) that address community-level influences and policies that negatively affect the ability of at-risk individuals to obtain safe and healthy housing. These influences include the cost and limited availability of prevention and medical services, poverty, racism, and other forms of discrimination. Much remains to be learned about the most efficient ways to influence these factors, but it is clear that we must address these factors that perpetuate risk and ill health among the homeless and other disenfranchised populations.

Funding and implementing programs that assist individuals with obtaining permanent housing and maintaining them in housing represent specific structural interventions that may yield substantial benefits (Fenton and Imrie 2005; Sumartojo 2000). The results of Project Independence (Dasinger and Speiglman 2007) demonstrate that even modest amounts of rental assistance can make it possible for HIV-seropositive people who were at risk of becoming homeless to remain in their homes. The impressive finding that 96% of participants in Project Independence were still housed 2 years later, compared to 10% of persons not enrolled in the project, is a powerful illustration that even a relatively small investment has the potential for a very substantial public health benefit.

The ability of modest and more ambitious investments in housing to improve the health of persons living with HIV and prevent transmission to others is a critical issue for public health. Cross-sectional studies and longitudinal observations of persons living with HIV have shown that moving into stable housing is associated with engagement in medical care, positive health outcomes, and reduced risk behavior (Aidala et al. 2005; Leaver et al. 2007). These studies do not, however, provide definitive proof of the effectiveness of housing as a public health intervention because of possible biases associated with the receipt of housing services. Many housing programs require that individuals be drug-free in order to obtain and keep housing benefits, which may bias comparisons of health status and risk behavior. The ability to obtain housing may also be differentially determined by client need or by the skill, persistence, or other characteristics of persons seeking housing services. The results of the Housing and Health Study (Kidder et al. 2007) should provide data that address at least some of these limitations. Although outcome data are not yet available, it is reassuring to see the high follow-up rates (85% at 18 months) achieved in this study. It is even more exciting to see the cost analysis presented by

Holtgrave et al. (2007), showing that this approach has the very real potential to be cost effective or even cost saving. Obtaining the data to support the cost effectiveness of housing as a public health intervention has the potential to play a major role in shaping not only the future public health response to the HIV epidemic but could also have a substantial impact on housing policy in the United States and elsewhere.

As important as data showing the cost effectiveness of housing as an HIV intervention would be, it is essential that we not lose sight of the fact that housing is a fundamental human right (Thiele 2002) and that housing plays a major role in a wide range of health problems. Public health agencies have an important role to play in ensuring that vulnerable populations have access to the basic essentials of healthy living including access to good nutrition, clean air and water, and adequate housing. Ensuring equitable access to these essential building blocks of good health will require leadership and sustained effort from public health agencies, housing providers, homeless and unstably housed persons, and their advocates. In order to effectively bring about change at the local, state, and national levels, agencies and organizations will have to expand existing coalitions and reach out to new partners with whom they may not have worked with closely in the past. By forging new partnerships, new opportunities can be created to ensure that basic human rights and public health needs are both satisfied. We expect that the data in this special issue will be an important catalyst for forming new partnerships, shaping the goals and activities of these partnerships, and strengthening the empirical basis of efforts to improve the health of homeless and unstably housed persons in the United States and abroad. Clearly, the time to act is now.

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