EVIDENCE INTO ACTION: HOUSING IS HIV PREVENTION AND CARE

Policy Paper from the North American Housing and HIV/AIDS Research Summit Series 2011

"First, we need to let science guide our efforts....Facts are stubborn things and we need to keeping putting them out there...." [1]

OVERVIEW

To prevent and treat HIV/AIDS in North America, we must end homelessness and housing instability for people living with and at risk of HIV infection. Prevention and care efforts that focus on changing individual behaviors are doomed to fail for persons who lack access to a proven, cost effective health intervention – a safe secure place to live.

Combination antiretroviral therapy (ART) can effectively manage HIV disease and dramatically reduce ongoing HIV transmission – yet in North America where ART is relatively easy to access, the ongoing 30-year AIDS crisis is marked by stalled prevention efforts and worsening HIV health disparities. These health inequities are driven by poverty, place, and other structural factors that "shape and constrain" individual behaviors.

According to a large and growing body of research, housing status has a direct, independent, and powerful impact on HIV incidence and on the health of people living with HIV/AIDS. Homelessness and unstable housing are consistently linked to greater HIV risk, inadequate HIV health care, poor health outcomes and early death. In fact, housing status is a stronger predictor of HIV health outcomes than demographics, mental health, substance use, or use of other services. Whatever factor makes someone vulnerable to HIV infection – homelessness magnifies the risk. Whatever factors lead to disparities in care – for women, for youth, for sexual minorities, for people of color, for those who experience mental illness, addiction, violence, abuse or incarceration – housing instability amplifies these disparities in tragic and avoidable ways.

Housing instability is a significant social driver of HIV health inequities in North America that can be addressed by investing in housing interventions. Housing supports create stability and help connect people to care – improving health, reducing behaviors that lead to HIV transmission, and sharply cutting the cost of avoidable emergency room visits and inpatient care. Innovative "low-threshold" housing models achieve these results regardless of all other co-occurring behavioral issues. Health care savings realized by preventing HIV infections and reducing use of crisis care can offset all or part of the cost of housing, making housing assistance a cost-effective HIV prevention and care intervention. In fact, public action to address the unmet housing needs of persons living with HIV/AIDS costs far less than inaction.

The published evidence on the effectiveness of housing assistance as HIV health care is more substantial than the evidence for many widely accepted health care interventions.[2] Yet housing supports are still considered an "ancillary" HIV service rather than a core prevention and health care intervention. Given what we know about the impact of housing on HIV prevention and care,

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[1] U.S. Secretary of State Hillary Rodham Clinton, Remarks on "Creating an AIDS – Free Generation," National Institutes of Health, November 8, 2011.

[2] Remarks given at North American Housing and HIV/AIDS Summit IV by Dr. David Holtgrave, Johns Hopkins Bloomberg School of Public Health, June 2009, Washington, D.C.

providing stable housing for people with or at high risk of HIV is a moral/human rights issue, a public health issue, and an issue of fiscal responsibility. We need a new policy and practice paradigm: one that recognizes housing interventions as a core HIV health activity, and builds a strong bridge between the housing and health sectors. The housing sector must be a key partner in any serious effort to reduce health inequities, and the health sector must invest in housing as a cost-effective, evidence-based HIV prevention and care strategy.

Following the evidence: the Housing and HIV/AIDS Research Summit Series

The HIV/AIDS Research Summit Series – spearheaded by the U.S. National AIDS Housing Coalition (NAHC) [3] and the Ontario HIV Treatment Network (OHTN)[4] – provides a dynamic, interdisciplinary forum to synthesize and disseminate research on the role of housing in HIV prevention and care, and to discuss evidence-based housing policy and practice. The sixth North American Housing and HIV/AIDS Research Summit, held September 21-23, 2011, in New Orleans, Louisiana, brought together over 300 researchers, policy makers, service providers and people living with HIV/AIDS from across the United States, Canada, the Caribbean and Mexico. It was convened by NAHC and the OHTN in partnership with the U.S. Department of Housing and Urban Development (HUD) Offices of HIV/AIDS Housing (OHAH)[5] and Policy Development and Research (PD&R).[6] Academic partners included the Johns Hopkins Bloomberg School of Public Health, the Tulane University School of Public Health and Tropical Medicine and the Mexican Instituto Nacional de Salud Pública (National Institute of Public Health).

Summit products include:
- the November 2007 special "Housing and HIV" issue of the journal *AIDS & Behavior*
- online Summit Series resources including issue fact sheets
- a searchable database of over 300 peer-reviewed journal articles on the relationship of housing status and HIV health outcomes.

See www.hivhousingsummit.org.

Summit VI – *Eliminating HIV Health Disparities* – focused on the potential of housing interventions as a strategy to reduce inequities in HIV transmission and health outcomes. Participants shared new findings and worked across disciplines to translate the evolving evidence on housing and health into concrete action strategies to inform policy, practice and ongoing research. [7] This paper summarizes the key research findings and their policy implications.

[3] The National AIDS Housing Coalition, Inc (www.nationalaidshousing.org) is a 501(c)(3) organization formed in 1994 to assert the fundamental right of all persons living with HIV/AIDS to decent, safe, affordable housing and supportive services that are responsive and appropriate to their self-determined needs.

[4] The OHTN (www.ohtn.on.ca) is an independently incorporated, not-for-profit organization funded by the AIDS Bureau, Ontario Ministry of Health and Long-Term Care. The OHTN acts as a collaborative network of people living with HIV/AIDS, health care providers, consumers, researchers, community-based organizations and government, with a mandate to provide leadership and to advance policy relating to the optimal treatment and care of people living with HIV in Ontario.

[5] The Office of HIV/AIDS Housing (OHAH) works with other HUD offices to ensure that all HUD programs and initiatives are responsive to the special needs of people with HIV/AIDS. One of the primary functions of OHAH is to administer the federal Housing Opportunities for Persons with HIV/AIDS (HOPWA) program through providing guidance and oversight.

[6] The Office of Policy Development and Research (PD&R) supports HUD's efforts to help create cohesive, economically healthy communities. PD&R is responsible for maintaining current information on housing needs, market conditions, and existing programs, as well as conducting research on priority housing and community development issues. The Office provides reliable and objective data and analysis to help inform policy decisions.

[7] Summit VI action strategies can be found at www.hivhousingsummit.org. NAHC and the OHTN engaged Virginia Shubert of Shubert Botein Policy Associates (www.shubertbotein.com) to help plan the Summit VI program and to prepare this policy paper. NAHC and OHTN are solely responsible for the accuracy of the statements, opinions, and interpretations contained in these materials. Such statements, opinions, and interpretations do not necessarily reflect the views of the U.S. Government or the views of the U.S. Department of Housing and Urban Development.

HOUSING NEED DRIVES HIV HEALTH DISPARITIES

The North American HIV epidemic is increasingly concentrated in low income and marginalized communities. (ONAP 2010; PHAC 2010) Members of racial, ethnic and sexual minorities account for the majority of people living with HIV/AIDS, new HIV infections, new AIDS diagnoses, and AIDS deaths. (Prejean, et al. 2011; PHAC 2010) In Canada, Aboriginal people and people from HIV-endemic countries are disproportionately represented in the HIV epidemic. (PHAC, 2010) In the U.S., Blacks account for only 14% of the population but 44% of new HIV infections, and the HIV infection rate among Black women is 15 times the rate of infection among White women. (CDC, 2011) In the U.S., young people (ages 13 to 29) are at particular risk where they accounted for 39% of new infections in 2009. (Prejean, et al. 2011) In Mexico and the Caribbean, mobile populations and persons displaced by economic conditions or natural disasters are often excluded from care, and experience high rates of HIV infection, morbidity and mortality. (Boucicaut & Ghose, 2011; Infante, 2011)

Recent U.S. research points to poverty – not race – as the most significant factor contributing to HIV health inequities. According to U.S. Centers for Disease Control and Prevention (CDC) surveillance data, heterosexual men and women in 23 major U.S. cities living below the poverty line are twice as likely to have HIV infection (2.4%) as those living above it (1.2%), and other social determinants of health—including homelessness, unemployment, and low education level—are also independently associated with HIV infection. (Denning & Dinenno, 2010)

Housing is the greatest unmet need of people with HIV

Housing instability is a key marker of extreme poverty, and is both a cause and an effect of the ongoing AIDS crisis in North America. Rates of HIV infection among homeless persons are as much as 16 times higher than in the general population (Denning & Dinenno, 2010; Kerker, 2005; Roberson, 2004; Culhane, 2001), and at least half of all persons living with HIV report experiencing homelessness or housing instability following diagnosis. (Aidala, et al., 2007; Bacon, et al., 2010)

Housing is consistently cited as the greatest unmet need of North Americans living with and at high risk of HIV. (NAHC, 2011; Bacon, et al., 2010) In the U.S., at least 140,000 households living with HIV have a current unmet housing need . (NAHC 2009) For example, 38 % of people living with HIV/AIDS surveyed for an Alabama statewide needs assessment reported being unstably housed after diagnosis, and almost 30% of Black males and 20% of Black females living with HIV in Alabama had experienced chronic homelessness in the last three years. (Bennett & Hiers, 2011) Almost half (42%) of a large cohort of persons living with HIV in Ontario have difficulty meeting housing costs, and one in three are at risk of losing their housing. (Bacon, et al., 2010)

Housing instability = greater HIV risk and poor health outcomes

Housing status is also a key determinant of worsening HIV health disparities. Among persons at greatest risk of HIV infection (e.g., men who have sex with men, persons of color, homeless youth, people who inject drugs, and impoverished women), those who lack stable housing are significantly more likely to acquire HIV over time. (Marshall, 2009; Denning & DiNenno, 2010; Marshall, 2011) Even in communities of concentrated poverty, the rate of new HIV infections is almost twice as high (1.8 times) for persons with a recent experience of homelessness, compared to those with stable housing. (Denning & Dinenno, 2010)

For people living with HIV, homelessness and unstable housing are strongly associated with inadequate HIV health care, poor health outcomes and early death. (Wolitski, et al., 2007) Compared to their peers who are stably housed, persons living with HIV who lack stable housing:

are more likely to delay HIV care; have poorer access to regular care; are less likely to receive optimal antiretroviral therapy; and are less likely to adhere to therapy (Kidder, et al., 2007; Aidala, et al., 2007; Leaver, et al., 2007). Homeless people with HIV experience worse overall physical and mental health than their housed counterparts, have lower CD4 counts and higher viral loads, and are more likely to be hospitalized and use emergency rooms. (Kidder, et al, 2007) Homelessness is independently associated with HCV/HIV co-infection (Rourke, et al. 2011), and the death rate due to HIV/AIDS is seven to nine times higher among homeless persons than in the general population. (Kerker, 2005; Walley, et al, 2008; Schwarcz, et al., 2009)

Why is housing so critical? Because having a safe secure place to live is fundamental to the basic activities of daily living. When one is homeless or facing housing instability, immediate survival takes priority over other activities and choices. The stresses of the environment are relentless. Violence is ubiquitous, and stable intimate relationships are all but impossible. Homelessness degrades one's very identity.

The most vulnerable persons also face the greatest risk

People living with HIV who are members of marginalized groups and those with co-occurring needs are most heavily affected by both housing loss and HIV health disparities. Aboriginal people living with HIV/AIDS in Ontario are three times more likely than their Caucasian counterparts to have experienced homelessness, and are only half as likely to be on anti-retroviral therapy. (Monette, et al. 2011) More than half of HIV-positive inmates released and then re-incarcerated in the San Francisco jail system in a 12-month period were homeless in the month preceding re-incarceration, and 59% of those with a history of antiretroviral use were not taking HAART. (Clements-Nolle, et al., 2008) Among people who inject drugs in a Canadian setting where HIV care is free, only homelessness and frequent heroin use were significantly negatively associated with ART adherence after adjusting for sociodemographics, drug use, and clinical variables. (Palepu, et al. 2011) An ongoing study of U.S. veterans living with HIV shows that 42% have experienced homelessness, 11% are currently homeless (compared to fewer than 1% for veterans in general), and (controlling for other factors) HIV-positive veterans who have experienced homelessness are significantly less likely to adhere to HAART and are more likely to be hospitalized than housed veterans living with HIV. (Ghose, et al., 2011; Gordon, et al., 2007) A large multisite study of people receiving HIV care in eight U.S. urban centers found that 43% of persons triply diagnosed with HIV, substance use and mental health issues currently lacked stable housing. (Conover, et al. 2009)

To stop HIV, we must address structural barriers to prevention and care

We have the tools to end AIDS in North America. HIV infection can be effectively managed with combination antiretroviral therapy, and exciting new research shows that successful therapy also dramatically reduces ongoing HIV transmission. ((NIAID, 2011) Yet in the U.S. and Canada there has been no significant decline in the number of new HIV infections and large numbers of HIV positive persons remain outside of care. In the U.S., over 20% of HIV-positive persons are unaware they are infected, nearly half of all persons who have tested positive for HIV are not engaged in regular care, and only 19% of Americans living with HIV have a viral load that has been driven to undetectable levels by combination therapy. (Gardner, et al. 2011) In Canada, where people with HIV have access to publicly funded health care including HIV medications, there has still been no appreciable effect on the number of new diagnoses each year, and a significant proportion of people with HIV are not in care. (PHAC, 2010)

These facts highlight the limited success of conventional HIV interventions that seek to influence knowledge, attitudes and behaviors, and underscore the need to intervene to influence social or "structural" determinants of health that perpetuate inequities. (CDC, 2010) Progress in reducing HIV-related morbidity and mortality will require structural approaches – policies or programs that

aim to change the conditions in which people live –applied in combination with individual behavioral or medical interventions. As Dr. Kevin Fenton of the CDC recently observed, "We need to address larger environmental issues, such as poverty, homelessness and substance abuse, which are well beyond the traditional scope of HIV intervention. Addressing those is as essential to HIV prevention as providing condoms." (LA Times, 2010)

Housing status is a key social determinant of HIV health outcomes, and one that is amenable to intervention. (Auerbach, 2010; Gupta, et al., 2008) A substantial body of research supports the need for urgent action to address the unmet housing needs of North Americans living with HIV and those most at risk for acquiring HIV infection. "Structural factors can be influenced but until they are, individuals in many settings will find it difficult to reduce their risk and vulnerability." (Gupta, et al., 2008)

HOUSING IS HIV PREVENTION AND CARE

Housing assistance is an effective HIV health care intervention. Consistent findings show that an increase in housing stability is significantly associated with better health-related outcomes in studies examining housing status and HIV transmission, risk behaviors, medication adherence, and utilization of health and social services. (Leaver, et al., 2007; Wilson, et al. 2011; Marshall, 2011)

Housing is HIV medical care

Receipt of housing assistance is among the strongest predictors of accessing HIV primary care, maintaining continuous care, receiving care that meets clinical practice standards, and entry into HIV care among those outside or marginal to the health care system. (Aidala, et al., 2007) Homeless persons with HIV who received a housing placement were twice as likely to achieve an undetectable viral load as a matched comparison group that remained homeless. (Buchanan, et al. 2009) Injection drug users with stable housing were 1.5 times more likely to access highly active antiretroviral therapy (HAART) than those who lacked stable housing, and among IDUs on treatment, those with stable housing were almost 3.7 times more likely to achieve viral suppression. (Knowlton, 2008) In fact, housing status is a more significant predictor of health outcomes than individual characteristics such as demographics, drug and alcohol use, and receipt of social services. (Kidder, et al. 2007; Aidala, et al., 2007)

Stable housing also appears to improve survival. The San Francisco Department of Public Health compared mortality over a five-year period for homeless people with AIDS who received supportive housing through the Department's Direct Access to Housing (DAH) program (n=70) and those who did not (n=606). There were two deaths among persons who received DAH supportive housing, and 219 deaths among those who were not housed. After adjusting for potentially confounding variables, supportive housing was independently associated with an 80% reduction in mortality. (Schwartz, et al., 2009)

Housing assistance improves health regardless of co-occurring behavioral health issues. Low-threshold, harm reduction housing interventions have repeatedly been shown to enable vulnerable persons to establish stability, improve health outcomes, and reduce risk behaviors, especially when coupled with on-site supports. (Wolitski, 2010; Larimer, 2009; Sadowski, 2009)

In fact, housing status is perhaps the most important factor in determining an HIV-positive person's access to health care, their health outcomes, and how long they will live. A recent study by Riley, et al., which empirically ranked factors that affected the health status of HIV-infected homeless and unstably housed women, found that unmet subsistence needs (i.e., food, hygiene, shelter) had the strongest effect on overall physical and mental health. In this population, an inability to meet basic subsistence needs had at least as much effect on overall health as adherence to antiretroviral

therapy, suggesting that "advances in HIV medicine will not fully benefit indigent women until their subsistence needs are met." (Riley, et al., 2011)

Housing is HIV prevention

Housing status also independently predicts behaviors that transmit HIV, after adjusting for other factors that influence risk such as substance use, mental health issues and access to services. (Kidder, et al., 2008; Aidala, et al., 2005). Among extremely low-income HIV-positive persons coping with multiple behavioral issues, those who are homeless or unstably housed are two to six times more likely to use hard drugs, share needles or exchange sex than stably housed persons with the same personal and service use characteristics. (Aidala, et al., 2005) Data gathered by the CDC from 8,075 persons with HIV show that, compared to stably housed persons with HIV and controlling for other factors, persons with HIV who lack stable housing are: 2.9 times more likely to engage in sex exchange; 2 times more likely to have unprotected sex with an unknown status partner; 2.3 times more likely to use drugs; and 2.75 times more likely to inject drugs. (Kidder, et al., 2008)

Housing instability itself appears to magnify HIV risk for vulnerable populations. Female transgender youth in Chicago and Los Angeles with a history of homelessness were 4.4 times more likely to have engaged in sex work. (Wilson, et al., 2009) A large study of homeless men found that HIV risk was directly related to the severity of housing need, with sexual risk behavior more frequent among those who were living on the street or in an abandoned building. (Stein, 2009) A review of the literature shows that housing status is consistently associated with sexual- and injecting-related HIV risk behaviors among persons who inject drugs: injection drug users who are homeless and unstably houses have higher rates of HIV infection and increased risk of HIV seroconversion. (Marshall, 2011) Homelessness plays an important role in the transmission of HIV and sexually transmitted diseases among street-involved youth, and is associated with significantly lower levels of condom use and greater numbers of sexual partners. (Marshall, 2009)

Housing instability is a barrier to reducing HIV risk. Counseling, needle exchange and other proven HIV prevention interventions are less effective among people who are homeless or unstably housed than among those who are housed. Unstably housed needle exchange participants are twice as likely to report high-risk receptive needle sharing than stably housed participants. (Des Jarlais, et al., 2007) Female drug users with unstable housing conditions report higher levels of HIV drug and sex-related HIV risk behavior than their housed counterparts, and their levels of behavioral change over time are lower. (Elifson, et al., 2007)

For homeless and unstably housed persons, housing is a proven HIV prevention intervention. Persons who improve their housing status reduce risk behaviors by as much as half, while persons whose housing status worsens are as much as four times as likely to engage in behaviors that can transmit HIV. (Aidala, 2005) Indigent women with a federal housing voucher were only half as likely to engage in risky sexual behaviors as a matched group of homeless women – in part because housing appeared to protect against victimization by physical violence. (Wenzel, 2007) Perhaps most importantly, housing assistance improves access and adherence to antiretroviral medications, which lowers viral load and can reduce the risk of transmission to a partner by as much as 96%. (NIAID, 2011)

Housing interventions improve health outcomes and cut costs

Two random controlled trials – the first of their kind to examine housing as an independent determinant of health – have linked housing assistance to improved health outcomes for homeless and unstably housed persons living with HIV and other chronic health conditions, and to sharp reductions in avoidable health care costs:

- The Housing and Health (H&H) Study, conducted by the U.S. Centers for Disease Control and Prevention (CDC) and the HUD Housing Opportunities for People with AIDS (HOPWA) program, assessed the impact of immediate access to HOPWA housing vouchers on the physical health, mental health and HIV risk behaviors of homeless and unstably housed people living with HIV/AIDS. The study included 630 HIV-positive participants in three cities – Baltimore, Chicago and Los Angeles, between 2006-2008. At the end of the 18-month study period, only 18% of participants who got study vouchers remained homeless or unstably housed, compared to 49% of the comparison group. Despite high levels of baseline connection to case management (93%) and regular health care (85%), health outcomes improved dramatically with housing stability – including a 35% reduction in emergency room visits, a 57% reduction in the number of hospitalizations, and significantly improved mental health status.[8] Even stronger differences were found in analyses that compared study participants who experienced homelessness during the follow-up period with those who did not. After controlling for socio-demographic variables, substance use, and physical and mental health status, those who experienced homelessness were 2.5 times more likely to use an emergency room, 2.8 more likely to have a detectible viral load at follow up, reported significantly higher levels of perceived stress, and were more likely to report unprotected sex with a negative/unknown status partner. (Wolitski, et al., 2010)

- In an 18-month randomized controlled trial, the Chicago Housing for Health Partnership (CHHP) – an integrated system of housing and supports for individuals with chronic medical illnesses who are homeless upon discharge from hospitalization – compared hospitalizations, hospital days, and emergency department visits among housed participants and a comparison group of chronically ill homeless persons who continued to receive "usual care" (i.e., emergency shelters, family and recovery programs). Among the one-third of CHHP study participants living with HIV/AIDS, those who received housing upon discharge from the hospital were almost twice as likely at 12 months to have an undetectable HIV viral load compared to HIV-positive participants randomly assigned to "usual care." (Buchanan, et al. 2009) Overall, CHHP participants were three times more likely to achieve stable housing at 18 months than the usual care group (66% vs. 21%), with significantly fewer housing changes (2 vs. 3). This stability translated into significantly improved health outcomes. Controlling for a range of individual and service variables, housed participants had 29% fewer hospitalizations, 29% fewer hospital days, and 24% fewer emergency department visits than their "usual care" counterparts. (Sadowski, et al., 2009)

HOUSING IS AN EFFECTIVE COST CONTAINMENT STRATEGY

Housing assistance for people living with HIV and other chronic illnesses not only improves health but is also a key cost containment strategy. People coping with homelessness are frequent users of expensive crisis services including shelters, jails, and avoidable emergency and hospital care. (City of Toronto, 2006; Flaming, 2009). For the chronically ill, many with co-occurring conditions, housing instability translates into poor health outcomes, inappropriate health care utilization and mounting public costs.

Improved housing stability reduces public costs

CHHP cost analyses show that improved housing stability for chronically ill persons reduces emergency, inpatient and nursing home care costs by amounts that more than offset the costs of the housing intervention. Compared to "usual care," the CHHP housing program generated average annual net public cost savings of over $6,000 per person. (Basu, et al., 2011) Evaluation of a Seattle

[8] Over 50% of "usual care" comparison group members secured stable housing during the 18-month study period. This "cross-over" limited the ability to identify significant differences between the intervention and control groups. However, as housing stability improved for the group as a whole, so did health outcomes.

program for homeless people with chronic alcohol addiction showed that a "Housing First" supportive housing model created stability and reduced alcohol consumption, and decreased health costs (53%), sobering center use (87%) and county jail bookings (45%) compared to a matched group who remained homeless. (Larimer, 2009) The Toronto Streets to Homes Post-Occupancy study found that housing with appropriate supports not only improved quality of life for formerly homeless individuals but also resulted in significant reductions in the use of costly emergency, health and justice services. (City of Toronto, 2006) A large-scale study commissioned by the Los Angeles Homeless Services Authority examined a wide range of public costs among 10,193 homeless persons in Los Angeles County, including 1,007 who were able to exit homelessness via supportive housing. The average public costs for impaired homeless adults decreased 79% when they were placed in supportive housing. Most savings in public costs came from reductions in outlays for avoidable crisis health services, with the greatest average cost savings realized among persons with HIV/AIDS who moved from homelessness into housing. (Flaming, 2009)

These analyses demonstrate the cost effectiveness of housing assistance for persons with chronic illness even before taking into account the costs of HIV treatment failure and heightened HIV risk among people who are homeless. Each new HIV infection prevented through increased housing stability saves over $300,000 in lifetime medical costs. (Schackman, 2006)

Housing interventions are good value for money

Groundbreaking H&H Study cost analyses are the first to determine the "cost-utility" of housing as an HIV risk reduction and health care intervention – the measure used by health economists to compare the "value for money" of health care interventions. The cost-utility of the H&H intervention is a function of the cost of the services provided, HIV transmissions averted, medical costs saved, and quality-adjusted life years saved. Findings show that housing is a cost-effective HIV health care intervention, with a cost per quality-adjusted life year (QALY) of $35,000 to $62,000, in the same range as widely accepted health care interventions such as kidney dialysis ($52,000 to $129,000 per QALY) and screening mammography ($57,000 per QALY) – and far less expensive than HIV pre-exposure prophylaxis (PrEP) ($298,000 per QALY). (Holtgrave, 2011; see also Holtgrave, et al., 2007)

New cost findings presented for the first time at the recent 2011 North American Housing and HIV/AIDS Research Summit underscore the cost-effectiveness of housing as HIV health care. A NYC Department of Health and Mental Hygiene study of health utilization among homeless and unstably housed people with HIV found that – although these individuals had good connections to HIV health providers and attended regular primary care visits – 77% had visited an emergency room in the last six months and 56% had an inpatient hospital stay. Researchers concluded that "lack of stable housing may underlie persistent HIV-related health problems" for these individuals. (Towe, 2011)

The ongoing study of people living with HIV enrolled in the San Francisco Department of Public Health "Direct Access to Housing" (DAH) program showed that the housing intervention dramatically reduces avoidable healthcare spending. An analysis of public healthcare utilization by HIV-positive residents (hospital, ER, inpatient, skilled nursing facility) two years before and two years after placement in the DAH low-threshold permanent supportive housing program revealed that the 13% of HIV positive residents who were "high users" (>$50,000/year in healthcare costs) accounted for 73% of total healthcare costs for the group. While use of outpatient services (predominantly primary care) increased after placement in housing, use of expensive institutional care declined significantly. Median healthcare costs for high users dropped from $100K/year per person prior to housing to just $1,819/year per person after placement. Significantly, net healthcare costs dropped dramatically for the group as a whole following entry into supportive housing, with cost reductions among high users of health care generating savings that more than offset housing costs for all HIV-positive residents. (Bamberger, 2011)

USING EVIDENCE TO DRIVE POLICY AND PRACTICE

Housing assistance is a strategic intervention that can reduce health inequities by addressing both HIV/AIDS and other vulnerabilities such as race and gender, extreme poverty, mental illness, chronic drug use, incarceration, and histories of exposure to trauma and violence, as well as homelessness. Moreover, housing assistance decreases health disparities while reducing overall public expense and/or making better use of limited public resources. This evolving body of research on HIV and housing has profound implications for the broader affordable housing and healthcare agendas, paving the way for new housing policies and practices as public health interventions.

Yet at the current time, affordable housing is completely out of reach for many households living with HIV. There is not a single county in the U.S. where a person who on relies on federal disability benefits can afford even a studio apartment. (NLIHC, 2011) Available housing resources can meet only a fraction of actual need. The U.S. federal Housing for Persons with HIV/AIDS (HOPWA) program is funded to serve less than 30% of homeless and unstably housed Americans living with HIV. Despite its position in the world as a developed and wealthy nation, Canada has no coordinated national strategy to ensure access to adequate and affordable housing. In many North American communities HIV-specific housing supports are tied to a diagnosis of advanced HIV disease and/or extreme poverty – which further limits access to housing.

Both the U.S. National HIV/AIDS Strategy and Opening Doors: the Federal Strategic Plan to Prevent and End Homelessness recognize housing as an HIV prevention and care intervention, and call for policies and practices that incorporate housing assistance as a critical component of care. Yet, as noted in the HUD National HIV/AIDS Strategy implementation plan, "the provision of housing has not been clearly understood as a key element in community approaches to HIV prevention and care." Implementation of these two strategies and of the U.S. Affordable Care Act presents a critical opportunity to ensure that HIV-specific housing-based interventions become a core health activity.

Now that we have solid evidence of the effectiveness and cost-utility of housing as an HIV prevention and care intervention, how do we translate this knowledge into public policies and interventions that are scaled to meet real need?

Housing and HIV/AIDS Research Summit participants have identified at least four intermediate goals necessary to bring about the shift to evidence-based HIV housing policy and practice:

Use HIV/AIDS housing research to raise the profile of housing as a public health issue.
"Hard" health care markers like CD4 and viral load have made it possible to rigorously track the health impact of housing interventions, and this research provides critical data to inform the delivery of health services, including initiatives to control the unsustainable growth in health care spending. Many HIV/AIDS housing programs have pioneered innovative approaches to address the co-occurring medical, substance use and mental health needs of the people they serve. Research findings provide important empirical evidence that homeless and unstably housed persons with lifelong chronic care needs, including those who are mentally ill and/or chemically dependent, can achieve better health outcomes if provided with necessary housing and supports.

Communicate the public policy objectives of housing supports across systems.
Current systems for health care, mental health, criminal justice, child welfare, and substance use treatment fail to incorporate housing resources as a key component, and different service systems struggle in isolation to manage high costs and service demands. Progress on structural interventions is limited by the disconnect between those who pay for health care services and those who implement structural interventions that reduce illness. Better budgeting methods are

necessary to measure the fiscal impact of housing interventions, including evaluation metrics that cut across cost centers and take into account the fact that much of the public "savings" from housing investments occur in public health and medical spending. As a recent Institutes of Medicine report on barriers to HIV care observed, "successful management of patients experiencing multiple, interacting conditions requires, in addition to appropriate medical care, the availability of comprehensive and flexible services, such as transportation, medication adherence programs, and dietary and housing assistance, which generally are not reimbursable by health care financing programs." (IOM, 2011)

Support housing assistance as a primary HIV prevention intervention for at-risk groups.
Rates of homelessness are high among persons at greatest risk of HIV infection due to substance use, mental illness, intimate partner violence, and other vulnerabilities. While it is difficult to estimate total housing need among people at risk, at least one-half of homeless persons in any community fall into one or more of these highest-risk categories, and research indicates that the condition of homelessness itself places all persons who lack stable housing at increased risk of HIV infection. To prevent new infections, we should support housing assistance for homeless and unstably housed persons at risk of HIV infection.

Adopt a public health approach that reduces barriers to housing.
Many people living with and at risk of HIV infection and other chronic conditions are barred from housing resources due to stigma, eligibility requirements, and/or the co-occurring issues, such as histories of incarceration and active drug use, that make them most vulnerable. For this subset of homeless persons, providing housing and on-site services without requiring abstinence or treatment is significantly more cost-effective than allowing them to remain homeless. A public health approach would: lift public housing exclusions based on status, such as a history of incarceration or active drug use; promote housing for chronically ill persons regardless of disease stage, active substance use, or minimum income; and ensure the availability of assistance to overcome barriers to housing access and stability, including barriers related to immigration status.

CONCLUSION

Given the weight of the evidence, we must act now to meet the housing needs of persons living with and at high risk of HIV. Access to safe, affordable housing is a moral/human rights issue, a public health imperative and an issue of fiscal responsibility. This is especially true in the case of persons living with HIV. As the U.S. Institutes of Medicine recently noted, "HIV's communicable nature and the very high personal and financial costs associated with each new infection add significant public health and economic components to the considerations of social justice that necessarily accompany policies that affect the provision of HIV care." (IOM 2011)

Current efforts to expand access to health care, to change the individual behaviors that put people at risk of acquiring HIV infection, and to reduce the public and private costs of avoidable crisis care simply will not succeed without stable housing. "Although some individually oriented interventions have shown results in reducing risk behavior, their success is substantially improved when HIV prevention addresses the broader structural factors that shape or constrain individual behavior, such as poverty and wealth, gender, age, policy, and power." (Dean & Fenton, 2010) Summit Series participants call on international, national, state and local policy makers to join with us to promote an evidence-based, public health approach to the housing needs of people living with and at high risk of HIV infection.[9]

[9] Go to http://nationalaidshousing.org/2008/07/endorseconference/ to endorse the *International Declaration on Poverty, Homelessness and HIV/AIDS* developed by a global coalition.

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