Housing / Lack of Housing and HIV Prevention and Care

Evidence and Explanations

Angela A. Aidala, PhD

Columbia University Mailman School of Public Health
Center for Homeless Prevention Studies

WOMEN AS THE FACE OF AIDS
IRIS HOUSE – NEW YORK CITY - JUNE 24, 2010
Evidence and Explanations

- Increasing evidence directs attention to the role of housing – or lack of housing - for the continuing HIV epidemic and associated health disparities.

- **Housing is a structural factor** - an environmental or contextual influence that affects an individual’s ability to avoid exposure to health risks, or avail of health promoting resources.

- Housing is unique as a contextual factor within which we live our lives – but also manifestation of broader, antecedent, structural processes of inequality and marginalization that are fundamental drivers of HIV vulnerability and poor outcomes among the infected.
Examining the Evidence

- Review findings from NYC and national studies conducted by Columbia researchers
- National Housing and HIV/AIDS Research Summit Series
- Search of published research literature
  - Pubmed and Medline – major data bases for medical / public health research
  - Search terms: (Housing or homelessness) and (HIV or AIDS)
  - Peer-reviewed research articles published 2005 to present
NYC & National Research Studies

Community Health Advisory & Information Network (CHAIN) Project

◊ Multi-stage probability sampling – designed to be representative of larger population of persons living with HIV/AIDS in NYC

◊ Includes 1661 PLWHA randomly recruited from clinics and agencies in 1994, 1998, 2002 and interviewed yearly

HRSA SPNS/ HUD HOPWA Multiple Diagnoses Initiative

◊ Interviews conducted with clients of programs throughout U.S. providing health and social services to low income PLWHA

◊ Baseline information from 3191 clients from 24 projects and follow-up data from 891 clients from 16 projects - 1996-2000
Housing & HIV Epidemiology

The patterns of disease and risk for disease and death in a population
Homelessness - a major risk factor for HIV infection

- Rates of HIV infection are 3 - 16 x higher among persons who are homeless or unstably housed compared to similar persons with stable housing

- 3% to 14% of all homeless persons are HIV positive (10 x the rate in the general population)

- Over time studies show that among persons at high risk for HIV infection due to injecting drug use or risky sex, those without a stable home are more likely than others to become infected

- Evidence indicates that housing challenges more problematic for women than men increasing risk for HIV
HIV - a major risk factor for homelessness

- 50% to 70% of all PLWHA report a lifetime experience of homelessness or housing instability
- 10% to 16% of all diagnosed PLWHA are literally homeless - sleeping in shelters, on the street, in a car, or in an encampment
- Twice as many are unstably housed, have housing problems, experience threat of housing loss
- Rates of housing instability are high in clinic samples as well as community samples
- In NYC no gender differences in housing need among PLWHA
Rates of Housing Need Remain High

As some persons get their housing needs met others develop housing problems

-- Loss of income due to progressive inability to maintain employment
-- Growing disparities between income and rent requirements
-- Relationship breakup including leaving abusive situations
-- Loss of spouse/partner to HIV related death or disability
-- Loss of shared housing options with disclosure of HIV
-- Disease progression requiring accessible facilities
-- Policy requirements that limit residency in publicly funded housing
Housing- a matter of life and death for Persons with HIV/ AIDS

- Homeless/ unstably housed PLWHAs have higher rates of opportunistic infections, HCV, other co-morbidities
- All-cause death rate among homeless PLWHAs is 5x the death rate for housed PLWHAs
- In NYC the death rate due to HIV/AIDS among adults in the shelter system is 7 - 9x the death rate due to HIV/AIDS among the general population
- Recent studies in San Francisco and Boston show similar pattern of excess mortality among homeless PLWHAs
Housing & HIV Prevention

Factors increasing or decreasing risk for disease
Housing status predicts HIV risk

- Multiple studies have shown a strong and consistent relationship between housing status and sex and drug risk behaviors
- Ex: Homeless or unstably housed PLWHA are 2 to 6 x more likely to use hard drugs, share needles or exchange sex than stably housed persons with the same personal characteristics and service use patterns
- Prevention interventions are much less effective for participants who are struggling with housing issues
- Studies show a ‘dose-relationship’ with the homeless at greater risk than the unstably housed, and both of these at greater risk than those with stable secure housing
Example:

### ODDS OF RECENT NEEDLE USE

<table>
<thead>
<tr>
<th></th>
<th>CHAIN SAMPLE</th>
<th>NAT’L SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate</td>
<td>Adjusted Odds Ratio</td>
</tr>
<tr>
<td><strong>STABLE HOUSING</strong></td>
<td>4%</td>
<td>2.87</td>
</tr>
<tr>
<td><strong>UNSTABLE HOUSING</strong></td>
<td>12%</td>
<td>2.51</td>
</tr>
<tr>
<td><strong>HOMELESS</strong></td>
<td>17%</td>
<td>4.74</td>
</tr>
</tbody>
</table>

1Odds of needle use past 6 mos by current housing status controlling for demographics, economic factors, risk group, health status, mental health, and receipt of health and supportive services

Note: All relationships statistically significant p< .01
### ODDS OF UNPROTECTED SEX

**CHAIN SAMPLE**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate</td>
<td>Adjusted Odds Ratio¹</td>
</tr>
<tr>
<td>STABLE HOUSING</td>
<td>13%</td>
<td>1.11</td>
</tr>
<tr>
<td>UNSTABLE HOUSING</td>
<td>15%</td>
<td>(1.11)</td>
</tr>
<tr>
<td>HOMELESS</td>
<td>16%</td>
<td>1.69</td>
</tr>
</tbody>
</table>

¹Odds of unprotected sex past 6 mos by current housing status controlling for demographics, economic factors, risk group, health status, mental health, health and supportive services

Note: All relationships statistically significant p< .05 except ( )=ns
Housing is HIV Prevention

• Overtime studies show a strong association between change in housing status and risk behavior change

• Ex: PLWHA who improved housing status reduced sex and drug risk behaviors by half while persons whose housing status worsened are 2-4 x as likely to exchange sex, have multiple partners

• Risk reduction associated with housing controlling for socio-demographics, drug use, mental health, health status, and receipt of health and supportive services

• Access to housing also increases access to appropriate care and antiretroviral medications which lowers viral load and reduces risk of transmission
# Predicting T2 Hard Drug Use

## National MDI Sample

<table>
<thead>
<tr>
<th></th>
<th>Started Drug use</th>
<th>Stopped Drug use</th>
<th>Adjusted Odds Ratio T2 Drug Use&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NO CHANGE</strong></td>
<td>7%</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td><strong>IMPROVED HOUSING</strong></td>
<td>2%</td>
<td>12%</td>
<td>0.47</td>
</tr>
<tr>
<td><strong>WORSE HOUSING</strong></td>
<td>9%</td>
<td>5%</td>
<td>1.38</td>
</tr>
</tbody>
</table>

<sup>1</sup> Odds of Time 2 drug use by change in housing status controlling for Time 1 drug use, Time 1 housing status, demographics, economic factors, risk group, health, mental health, and receipt of health and supportive services.

Note: All relationships statistically significant  \( p < 0.01 \)
## Predicting Unprotected Sex Last Intercourse

<table>
<thead>
<tr>
<th></th>
<th>Started Unprotected Sex</th>
<th>Stopped Unprotected Sex</th>
<th>Adjusted Odds Ratio T2 Unprotected Sex¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Change</strong></td>
<td>25%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td><strong>Improved Housing</strong></td>
<td>19%</td>
<td>15%</td>
<td>0.37</td>
</tr>
<tr>
<td><strong>Worse Housing</strong></td>
<td>25%</td>
<td>11%</td>
<td>(1.02)</td>
</tr>
</tbody>
</table>

¹Odds of Time 2 sex exchange by change in housing status controlling for Time 1 sex exchange, Time 1 housing status, demographics, economic factors, risk group, health, mental health, and receipt of health and supportive services.

Note: All relationships statistically significant p< .01 except ( ) =ns
Housing & Health Care Outcomes for PLWHA
Lack of stable housing = lack of treatment success

- Homeless PLWHA compared to stably housed:
  - More likely to delay entry into care and to remain outside or marginal to HIV medical care
  - Worse mental, physical & overall health
  - More likely to be hospitalized & use ER
  - Lower CD4 counts & less likely to have undetectable viral load
  - Fewer ever on ART, and fewer on ART currently
  - Less adherent to treatment regimen
Housing Status Predicts Access and Maintenance in Health Care

- Homeless/unstably housed PLWHA whose housing status improves over time are:
  - more likely to report HIV primary care visits, continuous care, care that meets clinical practice standards
  - more likely to return to care after drop out
  - more likely to be receiving HAART

- Housing status more significant predictor of health care access & outcomes than individual characteristics, insurance status, substance abuse and mental health co-morbidities, or service utilization
### Predicting T2 Medication Use
National MDI Sample

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted Odds Ratio T2 ARV</th>
<th>Adjusted Odds Ratio T2 ARV$^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NO CHANGE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>IMPROVED HOUSING</strong></td>
<td>3.21</td>
<td>6.22</td>
</tr>
<tr>
<td><strong>WORSE HOUSING</strong></td>
<td>(0.63)</td>
<td>(1.01)</td>
</tr>
</tbody>
</table>

$^1$ Odds of Time 2 antiretroviral medication use by change in housing status controlling for Time 1 ARV use, Time 1 housing status, demographics, economic factors, drug use, CD4, mental health, and receipt of medical and case management services.

N= 192. Relationships statistically significant $p \leq 0.05$ except ( )=ns.
### Access to Medical Care: CHAIN NYC

<table>
<thead>
<tr>
<th>HOUSING NEED</th>
<th>Any Medical Care</th>
<th>Continuity of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>HoUSING ASSISTANCE</td>
<td>(0.78)</td>
<td>0.83 *</td>
</tr>
<tr>
<td>Low mental health functioning</td>
<td>(0.86)</td>
<td>(0.85)</td>
</tr>
<tr>
<td>Current problem drug use</td>
<td>(0.84)</td>
<td>(0.98)</td>
</tr>
<tr>
<td>Mental health services</td>
<td>1.94***</td>
<td>(1.12)</td>
</tr>
<tr>
<td>Substance abuse treatment</td>
<td>(0.91)</td>
<td>(0.97)</td>
</tr>
<tr>
<td>Medical case management</td>
<td>(1.40)</td>
<td>(0.89)</td>
</tr>
<tr>
<td>Social services case management</td>
<td>2.30***</td>
<td>(1.17)</td>
</tr>
</tbody>
</table>

Adjust odds ratios also controlling for age, ethnicity income, poverty neighborhood, risk exposure group, date of HIV diagnosis, date of cohort enrollment, t-cell count, insurance status.

N=1651 individuals, 5865 observations, 1994 - 2007
Increasing the Odds of Accessing HIV Primary Care

- Housing Need
- Housing Services
- Low Mental Health
- Mental Health Services
- Current Drug Use
- Drug Treatment
- Medical Case Mgmt
- Soc Svc Case Mgmt
Housing and HIV Care
Gender Differences

- Women living with HIV/AIDS compared to men:
  - Homeless/ unstable housing at time of diagnosis increases risk for delayed entry into HIV care
  - Housing need associated with lack of HIV primary medical care, inadequate or inconsistent care
  - Women with children report higher rates of disruption in care (no care for 6+ months)
  - Receipt of housing assistance associated with access to care and re-entry into care after drop out
Explanation of Findings
Need to understand the causal direction and the mechanisms linking housing and behaviors that put people at risk for HIV infection and/or poor medical care outcomes.

Does housing status influence individual risk behaviors and medical care outcomes, or are findings evidence of self-selection of “risky persons” into conditions of homelessness?

RISKY PERSON MODEL:
- Risky Dispositions/Personality
- Risky Behaviors: Drug use, Risky sex, Illegal activities
- HIV Infection
- Unstable Housing
OPPOSING MODEL: STRUCTURAL CONTEXTS OF RISK

• Growing awareness that focus on individual level factors not sufficient – need address structural factors

• **Structural factor** - an environmental or contextual influence that affects an individual’s ability to avoid exposure to health risks, or avail of health promoting resources

◊ Housing is itself a structural or **contextual factor** within which we live our lives – but also manifestation of broader, antecedent, more global structural factors

◊ The same **fundamental causes** put persons at risk for poor health and for unstable/inadequate housing: political contexts, inequality of opportunities and conditions, social processes of discrimination and social exclusion
Direct and Indirect Effects of Housing

✧ Lack of stable, secure, adequate housing:
  -- Lack of protected space to maintain physical and psychological well-being
  -- Constant stress producing environments and experiences
  -- Neighborhoods of disadvantage and disorder
  -- Compromised identity and agency
  -- Press of daily needs - barrier to service use when available
  -- Structuring the private sphere – lack of housing is barrier to forming stable intimate relationships
RISKY CONTEXTS Model

- Economic Marginalization
  - Pervasive Risk
    - Competing Needs
    - Few Personal Resources
    - Few Community Resources
  - Barriers to service use
    - Demoralization
    - Depression
    - Anxiety
  - HIV infection
    - Risky Behaviors
      - Drug use
      - High risk sex

Social Exclusion
Policy & Practice Implications

• Data show strong relationship between housing and risk and medical care outcomes, regardless of other personal characteristics, health status, or service use variables.

• Improving access to housing is a promising structural intervention to reduce the spread of HIV as well as improve the lives of infected persons and the communities in which they live.

• Housing is a strategic target for intervention by addressing more proximal consequences of broader economic, social, political or policy barriers that affect prevention and health care.

• Expensive but offset by social and economic costs of poor health, inappropriate medical treatment, and treatment failure among growing numbers of persons living with HIV/AIDS or at high risk of infection.
HOUSING IS PREVENTION AND CARE
ACKNOWLEDGEMENTS

- The CHAIN research was made possible by a series of grants from the US Health Resources and Service Administration (HRSA) under Title I of the Ryan White Comprehensive AIDS Resource Emergency (CARE) Act and contracts with the New York City HIV Health and Human Services Planning Council through the New York City Department of Health, and Public Health Solutions (formerly MHRA) of New York City.

- The national, multi-site research project was an inter-agency collaboration between the U.S. Health Resources and Services Administration (HRSA), Special Projects of National Significance (SPNS) Program, and the U.S. Department of Housing and Urban Development (HUD), Housing Opportunities for Persons with AIDS (HOPWA) Program of the Division of HIV/AIDS Housing.

- Additional funding for risk behavior analysis, and the Housing & Health Study was provided by the Behavioral Intervention Research Branch, Division of HIV/AIDS Prevention, National Center for HIV, STD, and TB Prevention; U.S. Centers for Disease and Prevention (CDC).

- Thanks go to Dr. Gunjeong Lee for assistance with statistical analysis; and to CHAIN interviewers and CHAIN study participants without whom this research would not have been possible.

- The contents are solely the responsibility of the Researchers and do not necessarily represent the official views of the U.S. Health Resources and Services Administration, HUD, CDC, the City of New York, or Public Health Solutions.