Housing is Health Care
Food is Medicine

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The Treatment Cascade

- Framework useful to identify challenges to realizing promise of ‘test and treat’ as strategy to improve health of PLWH AND reduce potential for continued transmission

- T & T will work only if engagement in treatment is timely and sustained, and uptake and efficacy of ARVs is high

- Barely 40% of diagnosed PLWH sustained in regular medical care, only ~25% on ARVs that result in viral suppression

- Not strictly medical issue – highlights need address contextual factors that pose barriers to sustained engagement in care and treatment success
OVERALL: Of the 1.1 million Americans living with HIV, only 25 percent are virally suppressed.
Housing and the Treatment Cascade

PLWH who are homeless or unstably housed:

• More likely to delay entry into care

• Experience discontinuous care – dropping in and out of care and/or changing providers often

• Not be receiving medical care that meets minimal clinical practice guidelines

• Less likely to be on ARVs

• Less likely achieve sustained viral suppression
Housing & Connection to Medical Care: NYC PLWHA

- No Reg Source HIV Care
- No Med Visits 6+ mos
- No ARV Medications
- Care Not Meet Practice Standards

- Stable
- Unstable
- Homeless
Housing Assistance Predicts Health Care Outcomes

- 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
• Systematic review of research literature 1996-2012
• 3900 articles, 104 eligible for review: Quantitative study, PLWHs, medical care or health outcome
• 32 papers examined access to HIV medical care and medications and service utilization
• 31 (97%) found worse HIV medical care outcomes among those who were homeless or unstably housed
• 24 (75%) reported statistically significant differences comparing homeless/unstably housed PLW and those with stable housing
Food, Nutrition and the Treatment Cascade

PLWHA who are food insecure are:

• More likely to drop out of care or regularly miss scheduled medical appointments
• Less likely to be on ARVs, less adherent to regimen
• More likely to report ER visits
• More likely to score low on measures of health functioning and quality of life
• Less likely to be viral suppressed
Need is Extensive

Need for Food and Nutrition Services, Service Use, and Food Insecurity among PLWHA in NYC and Tri-County

Need for food/nutrition services

Using food program services

Receiving foodstamps

Current food insecurity

Any indicator of NEED = Food insecurity, use of food/meal program, or SNAP client
Food insecurity and HIV/AIDS morbidity and mortality.

Housing Instability

Food Insecurity

Nutritional pathways
- Macronutrient/micronutrient deficiencies
- Food/ART interactions
- Obesity, lipodystrophy

Mental Health pathways
- Anxiety
- Depression
- Drug/alcohol use

Behavioral pathways
- ART non-adherence
- Missed clinic visits
- Tx interruptions

Worse Viral Suppression
- Lower CD4 count

HIV/AIDS Morbidity and Mortality

Food Need & Connection to Medical Care
NYC PLWHA

- Missed 2+ appointments
- Care not meet guidelines
- ER visits
- Detectable viral load

Food Secure
- Green

Food Insecure
- Blue

0
10
20
30
40
## Housing and Food Insecurity

<table>
<thead>
<tr>
<th>HOUSING STATUS</th>
<th>FOOD INSECURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeless</td>
<td>74%</td>
</tr>
<tr>
<td>Unstably Housing</td>
<td>75%</td>
</tr>
<tr>
<td>Stable Housing</td>
<td>39%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HOUSING SERVICES</th>
<th>FOOD INSECURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Housing Assistance</td>
<td>35%</td>
</tr>
<tr>
<td>Receiving Assistance</td>
<td>43%</td>
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</tbody>
</table>

Row percentages shown
PLWHA interviewed 2011-2012 (NYC n=688)
## Housing and Food/Nutrition Needs

<table>
<thead>
<tr>
<th>Needs</th>
<th>Need Neither OR</th>
<th>Need Both Housing &amp; FNS OR</th>
<th>AOR (^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missed 2+ appts</td>
<td>0.49***</td>
<td>2.16***</td>
<td>2.12***</td>
</tr>
<tr>
<td>ER visits</td>
<td>0.69**</td>
<td>1.91***</td>
<td>1.86***</td>
</tr>
<tr>
<td>Inpatient stay</td>
<td>0.70**</td>
<td>1.59**</td>
<td>1.35</td>
</tr>
<tr>
<td>Care meets guidelines</td>
<td>2.09***</td>
<td>1.47*</td>
<td>0.75</td>
</tr>
<tr>
<td>ARV medications</td>
<td>1.45**</td>
<td>0.75</td>
<td>0.71</td>
</tr>
<tr>
<td>Undetectable viral load</td>
<td>1.82**</td>
<td>0.68*</td>
<td>0.66*</td>
</tr>
<tr>
<td>Good health functioning</td>
<td>1.91***</td>
<td>0.79</td>
<td>0.51**</td>
</tr>
</tbody>
</table>

\(^1\) Controlling for age, gender, race/ethnicity, education, income, risk group, year of HIV dx, low mental health, current drug use, receipt of mh and AOD services, transportation need, transport services, case management, receipt of housing services, receipt of food/ nutrition services

\*p < .05  **p < .01  ***p < .001  
n= 834 PLWH interviewed 2002-2012, 2251 observations
# Predictors of Improved Engagement

<table>
<thead>
<tr>
<th>Service</th>
<th>OR</th>
<th>AOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Nutrition Services</td>
<td>0.76</td>
<td>2.54*</td>
</tr>
<tr>
<td>Housing Services</td>
<td>4.93*</td>
<td>14.79**</td>
</tr>
<tr>
<td>Both Housing &amp; FNS</td>
<td>1.78**</td>
<td>4.08*</td>
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</tbody>
</table>

Predictors of receiving HIV medical care that meets clinical practice guidelines among PLWH who did not have appropriate care at prior interview.

*\( p < .05 \)  **\( p < .01 \)  ***\( p < .001 \)  n= 526 PLWH interviewed 2002-2012, 820 observations

1 Controlling for age, gender, race/ethnicity, education, income, risk group, year of HIV dx, low mental health, current drug use, receipt of mh and AOD services, transportation need, transport services, case management, need for housing services, food insecurity
Policy & Practice Implications

• Data show strong relationship between housing, food 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 improve medical care and health outcomes among PLWH

• Food/nutrition needs are widespread among all PLWH esp those with unmet housing needs, as well as those receiving housing assistance

• Food assistance seldom resolves food insecurity; housing assistance often limits resources available for good nutrition

• Best medical care and health outcomes are seen by PLWH who receive ‘ADEQUATE’ housing AND food/nutrition assistance
HOUSING IS HEALTH CARE
"Giving drugs without food is like washing your hands and drying them in the dirt. “ Haitian Proverb
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The contents of this report are solely the responsibility of the Researchers and do not necessarily represent the official views of the U.S. Health Resources and Services Administration, the New York City or Westchester Departments of Health, PHS or the MAC AIDS Fund.

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