Housing and HIV in San Francisco: 2.0

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Outline

• Overview of Direct Access to Housing
  o Able to evaluate difference between housing types
• Summary of past studies
  o Mortality
• Engagement into treatment
• Impact of nursing services on health utilization
• Progress towards ending homelessness in US
• Summary
SF Health Dept’s Housing

• Direct Access to Housing- 1490 units in 39 buildings
  o 6 buildings (N=510; 33%) with nurses
• Tailor housing to the needs of an individual
• Initially SRO, now new buildings
• Priority to people with multiple disabilities
• 7.6% HIV+
• Housing first, harm reduction, supportive housing
Mortality DAH vs Regular Care
1996-2003
Death rate Le Nain vs. Mission Creek 2006-2011

Le Nain death %
MCSC death %
Engagement after testing +*

- All HIV + in 2009-2010 in San Francisco
- N=862
- Less likely to connect to care w/in 6 months
  - Lack of health insurance, unknown housing, MSM/IDU
- More likely to connect to care w/in 6 months
  - Known homelessness
- Less likely to achieve UD viral load
  - Known homelessness, MSM/IDU, un-insured

* Muthulingam et al, Acquir Immune Defic Syndr, 5/1/13
Overview of HIV/AIDS & DAH

- Of all AIDS cases diagnosed in SF from 1996-2006, 9.8% were homeless at diagnosis.*
- A greater proportion of the homeless visit the ED than the general population
- A small proportion of the homeless accounts for the majority of acute care use.
- These “high utilizers” tend to have co-morbid mental illness, substance abuse, and physical health problems.
- These three diagnoses in combination are called “tri-morbid”, or “triple diagnosis”


Hypotheses

1. Those who live in DAH buildings with on-site nursing show a decrease in health care utilization compared to people living in non-nursing buildings.

2. Those who are the sickest will have the greatest reduction in utilization while under nursing care.
Methods

DAH cohort from 2007 - 2013 cross-matched with AIRES (n=1,573)

* 243 people were matched (15.4%)
* 26 people excluded
* A random sub sample of 151 was reviewed

- Before vs. after comparison of individuals (nest case-cohort design)

- Comparison of buildings with nursing to those with support staff only
Cohort Demographics

- Mean age at DAH placement is 46.9 years

- Racial composition: 37% white, 37% black, 13% hispanic, 4% other (Asian, Hawaiian, Indian), 9% decline to state

- Males comprise 70%, female 14%, and transgender 16% (71% of which are male to female transition)

- Mortality while in DAH =4 (2.6% of cohort)
Substance Abuse Demographics

Those with *any* substance use in their history = 112 (74%)

- Alcohol = (34%)
- Stimulants = (56%)
- Opiates = (23%)
- Opiates on methadone maintenance = (4%)
- Other substance use pattern = (9%)
Risk factor: Triple Diagnosis

People with triple diagnoses are the sickest and hardest-to-care-for patients.

Medical diagnoses, mental health, & substance abuse are each independently correlated with ED visits (p<.05).

Substance use: nearly 1 ED visit per year (p<.02; 95% CI:[.10 - 1.12])
Risk Factor: Triple Diagnosis (N=74)
Risk factor: Triple Diagnosis

People with triple diagnoses are placed into buildings with on-site nursing more often (even though nurse buildings are a minority of overall units).
Mean ED visits/year before and during DAH by on-site nursing

- No nursing
  - ED visits/year before DAH
- Nursing
  - ED visits/year as DAH tenant
Mean ED visits per year

Before DAH compared to during DAH

ED visits/year before DAH
ED visits/year as DAH tenant

No triple dx | Triple Dx
No nursing | Nursing

No triple dx | Triple Dx
No nursing | Nursing
Mean ED visits per year
Before DAH compared to during DAH

ED visits / year

n = 27
average = 5.9

n = 47
average = 1.7
A difference of **4.2 ED visits** per person per year

![Box plot showing mean ED visits per year before and during DAH compared to before and during DAH for groups with and without nursing and triple dx.](image)

- **n = 27**, average = 5.9
- **n = 47**, average = 1.7
Mean ED visits per year and substance use
Before DAH compared to during DAH

ED visits/year before DAH  |  ED visits/year as DAH tenant
---|---
No nursing
No use  |  substance use
Nursing
No use  |  substance use
Cost difference

An ED visit = $540

Yearly reduction in ED visits = 4.2

For 100 people, the cost reduction in ED visits is $226,800

A full time Nurse costs $100,000

The net cost reduction is $126,800 / year for 100 people

= 1,268$ per person per year
Yearly cost savings per person on ED visits in buildings with Nursing (USD$)

- Cost of a full-time Nurse

Yearly cost difference ($) vs. Number of persons

- No triple dx
- Triple Dx
Yearly inpatient days before and after DAH

Nursing sites compared to non-nursing sites

<table>
<thead>
<tr>
<th>No nursing</th>
<th>Nursing</th>
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<tbody>
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<td><img src="image.png" alt="Graph" /></td>
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- **inpt days/year before DAH**
- **inpt days/year during DAH**

Graphs by Nursing
Conclusions

• HIV+ homeless people with triple diagnosis are more likely to be placed in nursing units
• HIV+ people with triple diagnosis have greater reduction in healthcare utilization when placed in building w/ nurses.
• The driving force in increased utilization of people with triple diagnosis is substance use
• Having more than 36 PLWH with triple diagnosis in a building with a nurse will pay for the cost of the nurse in reduction in ED visits alone.
Number of Homeless Veterans in 5 Communities with Greater than 40% reduction 2010-2012

- Hennepin
- Lexington
- Tacoma
- Fort Worth
- Birmingham

Measured

Projected
Utah Annualized Chronic Homeless Count: 2005-2012

Source: 2012 Utah Homeless Point-In-Time Count
Veterans in Minneapolis/Hennepin County 2009 - 2011

- 2009: 267
- 2010: 224
- 2011: 177
- 2012: 126

(total veterans)
Common aspects of “positive outliers”

- Common values and philosophy of practice, strong leadership, housing first, harm reduction
- High level of communication (HIPPA busters)
- Use of data to inform policy and measure success

Targeting
Conclusions

• Housing plus access to healthcare reduces mortality for PWLA
• More beautiful housing reduces healthcare costs and mortality
• On-site nursing services targeting complex PLWHA saves healthcare expenditures
• Housing should be tailored to treat each individual just like any other medical treatment
Gratitudes

• NAHC
  o Nancy Bernstine, Ginny Shubert
• USICH
  o Jennifer Ho, Barbara Poppe, Josh Leopold
• SF DPH
  o Sandy Schwartz, Mitch Katz
• Housing and Urban Health
  o Marc Trotz, Margot Antonetty, Susan Poff, Kim Pelish, Joanna Bauer, Ashley McKenna, Saima Shah, Lara Salee, Corrin Buchanan, Wolfgang Stuwe
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