Health Care Utilization and Permanent Supportive Housing

The Current Literature and Pilot Findings from Open Door in Lubbock, TX

Logan Adams, MD
Andrea Omojola, MPH, MDiv

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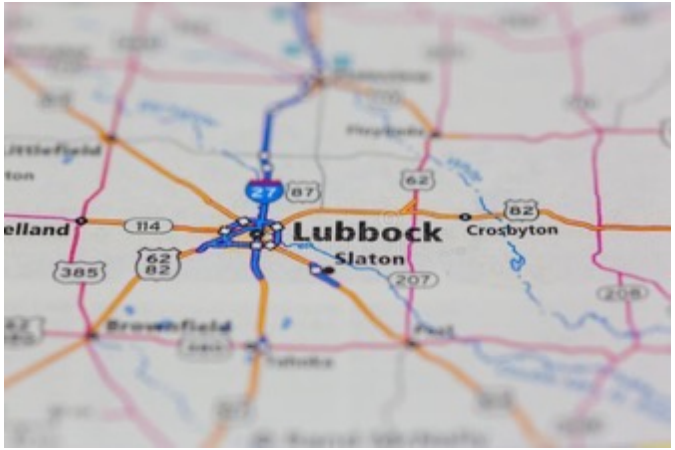
Road Map

1. Burden of illness and mortality in homeless-experienced adults
2. Health service utilization patterns of homeless-experienced adults
3. Permanent supportive housing and Open Door
4. Study findings of health care utilization
5. Implications of our findings
6. National literature on housing, health, and service utilization



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Disclosures

1. Financial: None
2. No lived experience of homelessness

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Burden of Disease

Chronic Conditions
- Heart Disease
- Cancer
- Infectious disease (HIV, HCV)
- Traumatic brain injuries (~40-50%)

Psychiatric Disease
- Substance use disorders
- Suicide rate
- Trauma, PTSD
- Anxiety and depression

Exposures
- Skin conditions (cellulitis, lice, scabies, trench foot)
- Violence

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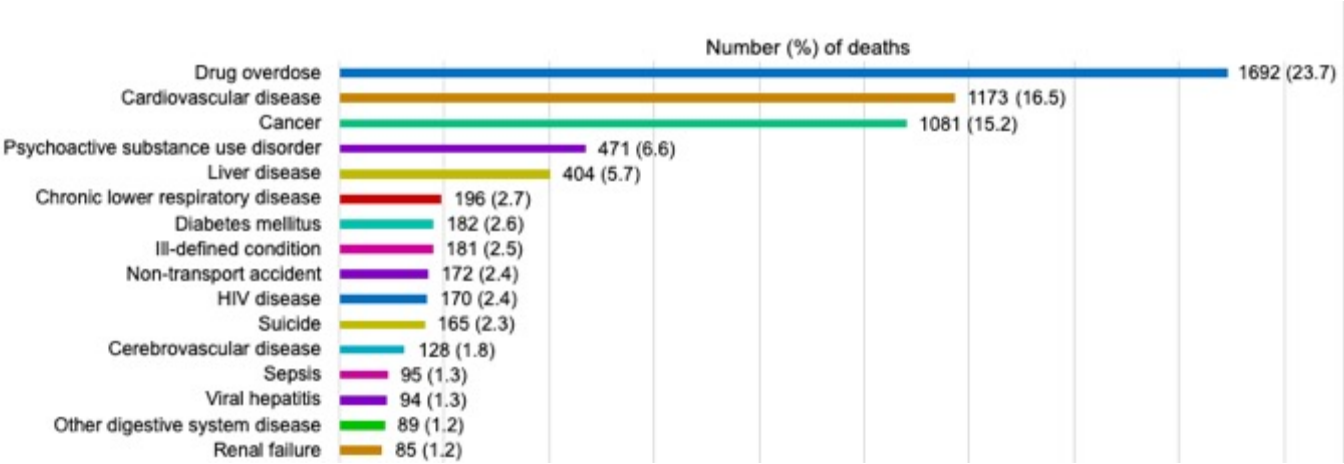
Mortality

- **3 to 4 fold higher mortality** than the general population
- Leading causes of death:



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Dickens K, Fine D, Adams L, et al.. *Unpublished.* 2022

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	Male	Female
Drug Overdose	12.5 – 21.8	17.7 – 20.5
Cardiovascular Disease	1.4 – 2.3	1.0 – 3.9
Cancer	1.2 – 1.7	0.9 – 1.3
Liver disease	4.6 – 5.0	3.7 – 9.3

Mortality rate ratio comparing homeless-experienced adults to general population

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Dickens K, Fine D, Adams L, et al. *Unpublished.* 2022

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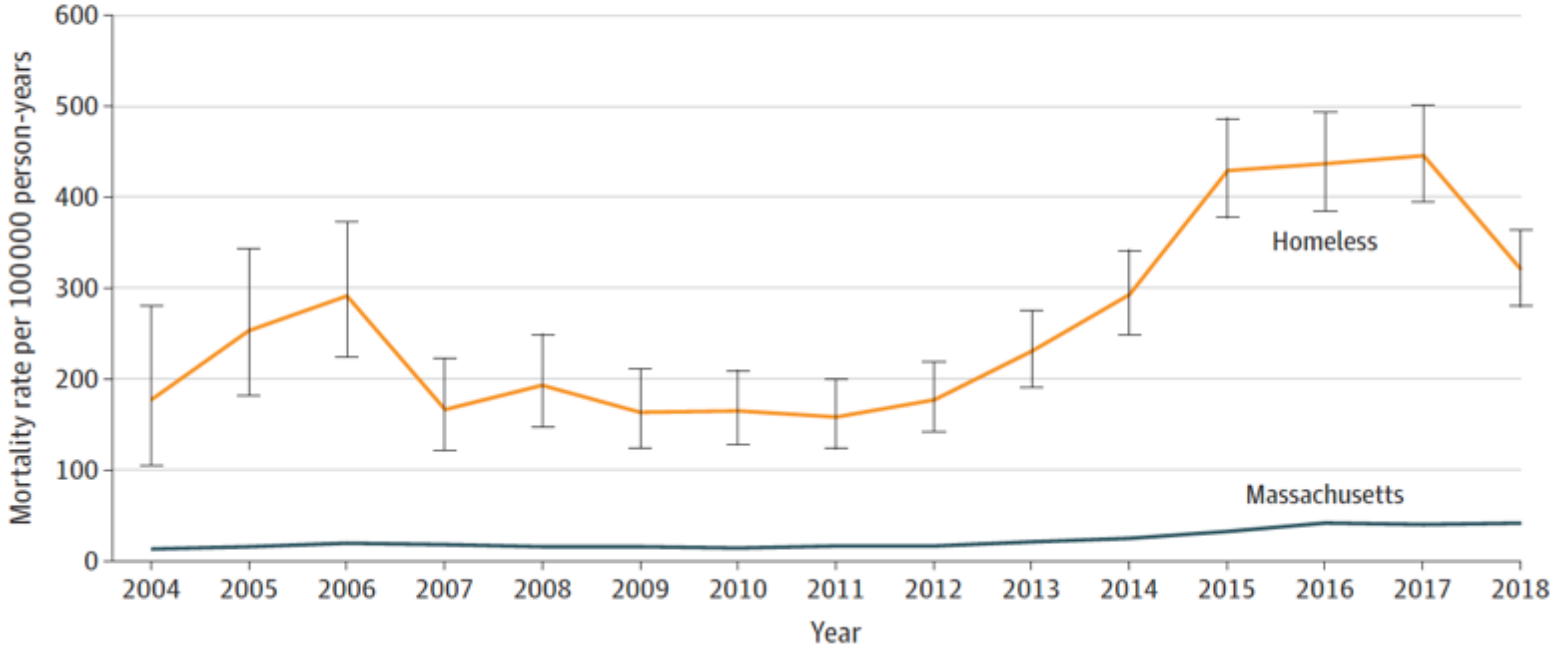
Figure 1. Drug Overdose Mortality in the Boston Health Care for the Homeless Program (BHCHP) Cohort vs the Massachusetts Adult Population From 2004 to 2018



Fine D, Dickens K, Adams L, et al. *JAMA Open*. 2022

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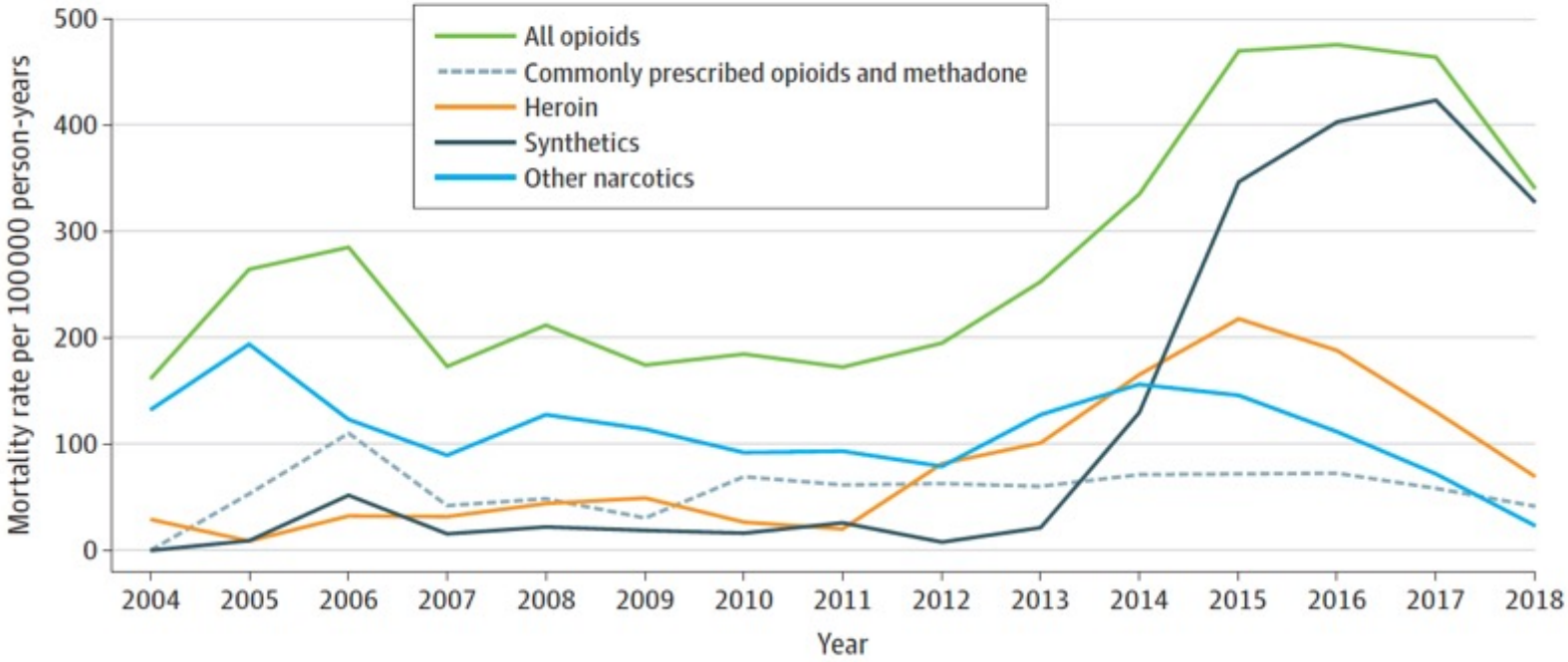
Figure 3. Opioid-Involved Mortality in the Boston Health Care for the Homeless Program Cohort by Type of Opioid Involved From 2004 to 2018



Fine D, Dickens K, Adams L, et al. *JAMA Open*. 2022

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Utilization

- 30 day re-admissions nearly double the national average
- 4 times the rate of average Medicaid recipient in Emergency Department (ED) utilization
- $2036 per month per person compared to $568

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Racine MW, Munson D, Gaeta JM, Baggett TP. *Med Care*. 2020

Bharel M, Lin W-C, Zhang J, O'Connell E, Taube R, Clark RE. *Am J Public Health*. 2013

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“Super utilization”

- 4 or more uses per year
- Study of 2578 homeless patients using the ED
  - ~ 8% super utilizers - accounted for 55% of all ED visits of entire cohort
  - Poorer health, severe comorbid psychiatric and substance use

Kushel MB, Vittinghoff E, Haas JS. *JAMA*. 2001

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Open Door Permanent Supportive Housing

Andrea Omojola, MPH, MDiv

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Permanent Supportive Housing

Umbrella term for long term housing + supportive services

Housing First Approach

- Paradigm shift starting in the 90s
- Lower barrier than traditional approach
- Case management + other wrap around services
- Now a best practice for addressing and ending homelessness

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PSH at Open Door

Our mission is to cultivate community, opportunity, and restoration with people experiencing poverty, homelessness & sex trafficking.

Est – 1997 501(c)3 – 2011

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PSH at Open Door

- Housed 81 as of Sep 2022
- Goal to 85-90 by Dec 2022
- HUD Funded + Housing Authority
- Staff of 11:

  Director, Lead Case Managers, Case Managers, Patient Navigator, Housing Support Advocate, Administrative Assistant

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PSH at Open Door

- Housing those experiencing chronic homelessness:
  - At least 1 year or repeated episodes of homelessness
  - And a disabling condition (physical, mental illness, substance use disorder)
- Triaged based on vulnerability and acuity (VISPDAT)

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Health Care Utilization After Housing

Logan Adams, MD

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Methods

Health care utilization 2 years before and after a housing intervention

First 40 housing participants approached to participate
26 consented to study
- 5 were excluded due to incomplete data
  - 1 died shortly after housing
  - 1 left the program
  - 3 with inconsistent/unreliable records
- 21 included in analysis

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Methods

- Data Collection:
  - 2 major health systems: county and private
  - Dates and type of encounter
    - Emergency department (ED) visits with ambulance documentation
    - Inpatient days: medicine and psychiatry
    - Outpatient visits: any primary care, subspecialty care, psychiatry, surgery

- Statistical Analysis:
  - Wilcoxon signed-rank test: dependent data and assumption of normality not present
  - Analysis using Microsoft Excel v16.47 and STATA/IC v16.1

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Results

Demographics:

- Mean age: 50
- Male: 76%

Race/ethnicity:

- White: 53%
- Latinx: 35%
- Black: 6%

95% of cohort remained housed for entire 2 year period

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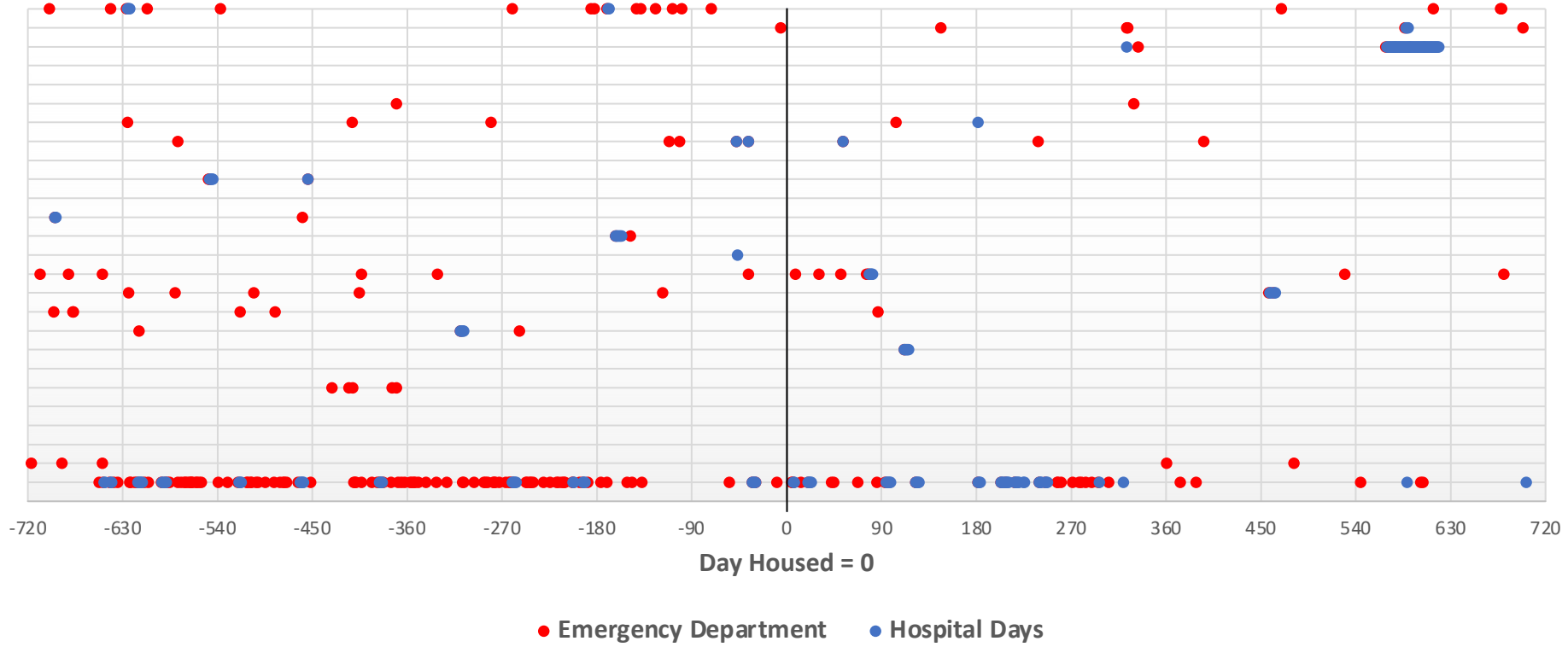

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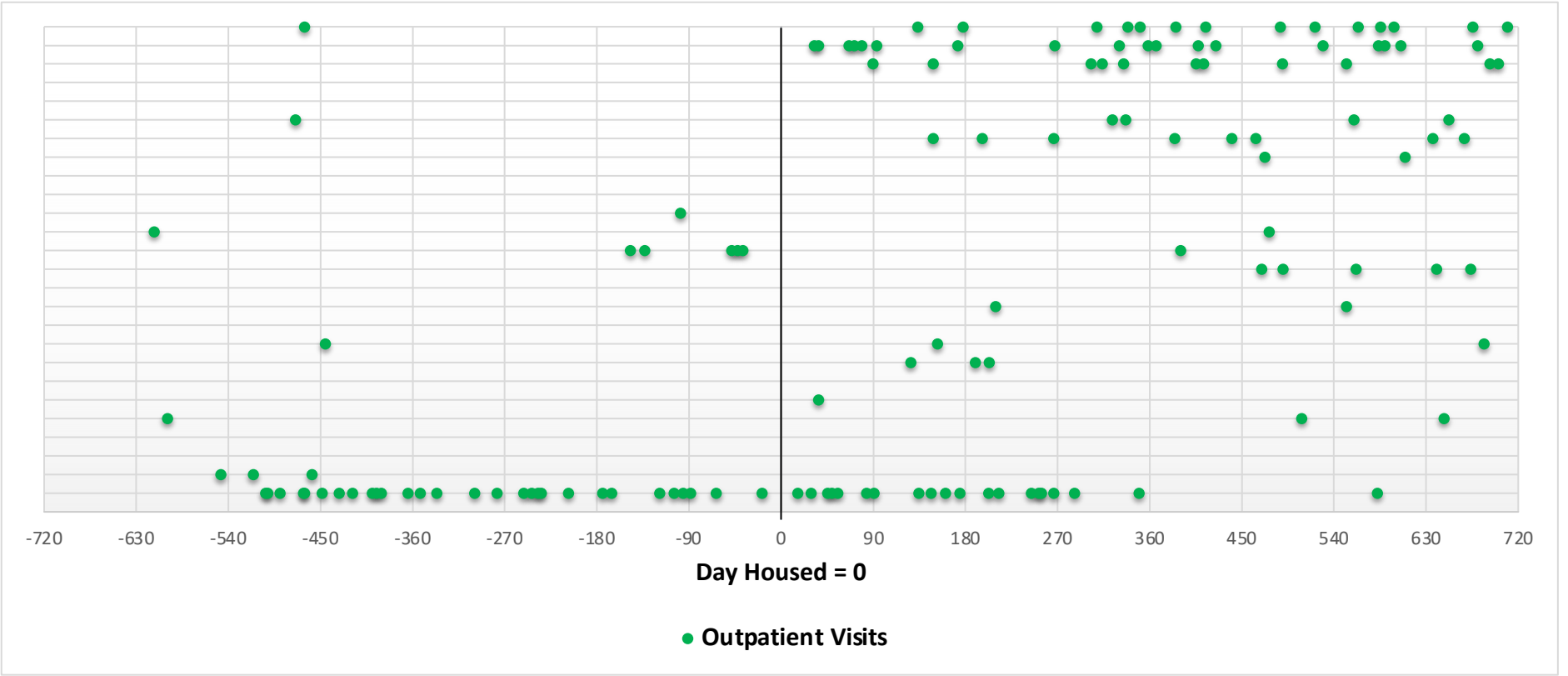

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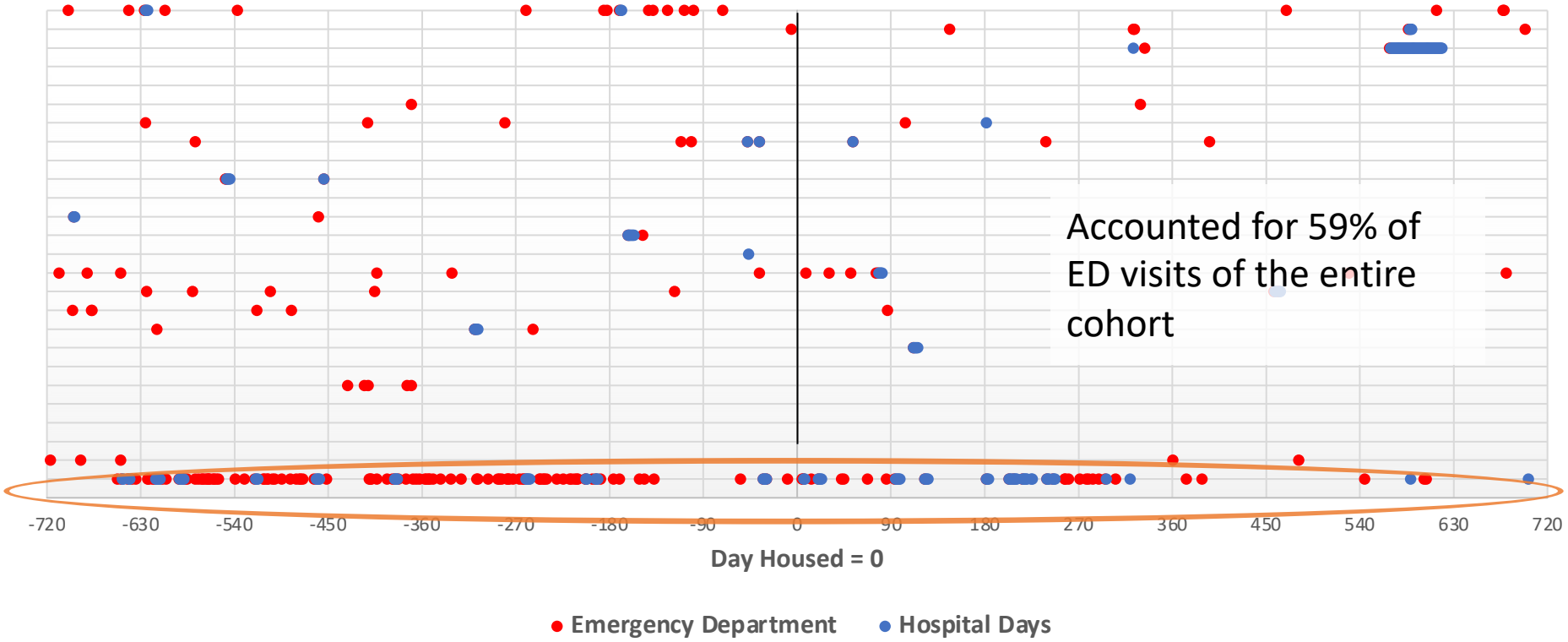

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Results

Emergency department visits decreased from 1.5 to 0.7 uses per year – a 2 fold decrease

Ambulance use decreased by 4 fold from 1.1 to 0.3

Outpatient visits increased by 3.75 fold from 0.5 to 1.8

No significant change for inpatient days

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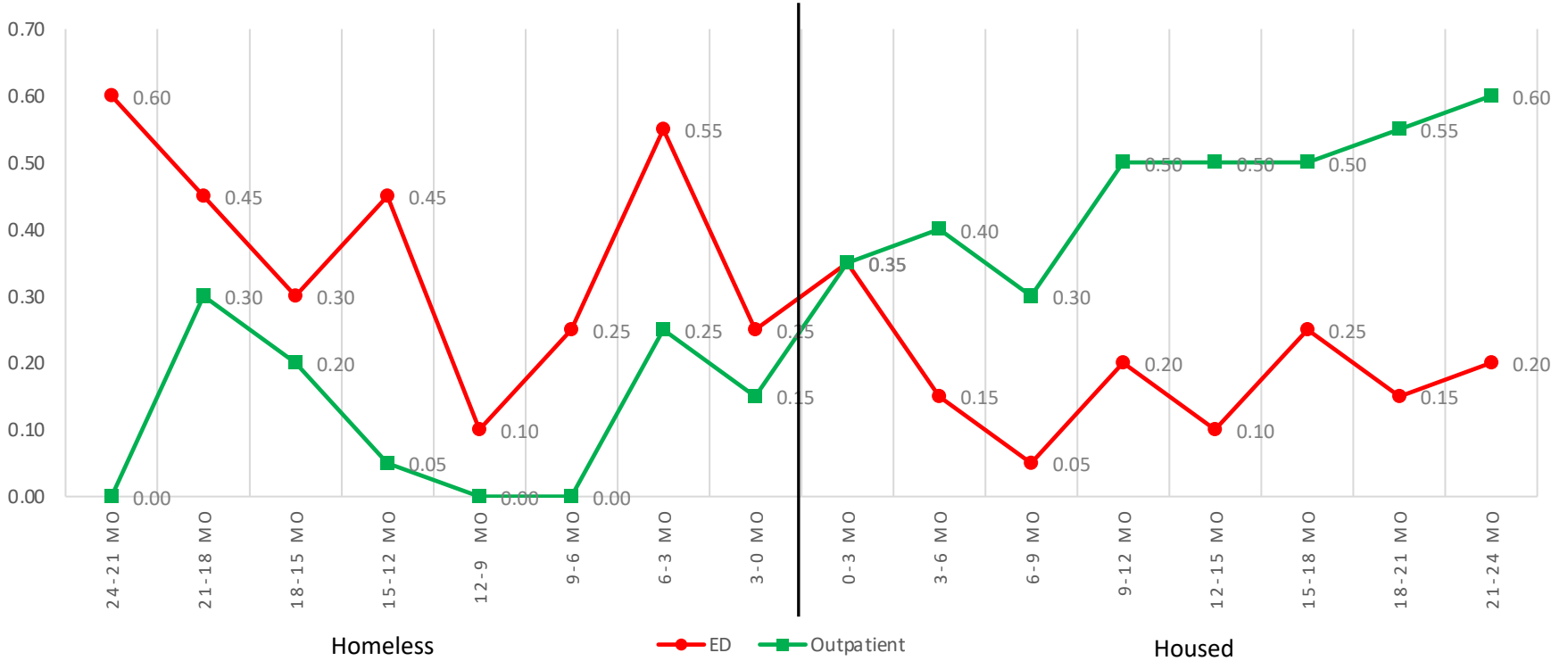

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Results with outlier

ED visits decreased by ~3x (63%) from 3.9 to 1.45

Ambulance use decreased by ~3x (66%) from 2.3 to 0.74

Outpatient visits increased ~ 2x (100%) from 1.1 to 2.2, trending to significance

No significant change for inpatient days

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Discussion

95% remained housed after 2 years

ED use decreased by half after housing

- Relative reduction 1.5 uses/year to 0.7
- Maybe dramatic in higher utilization cohort (4 to 1.5)
- Ambulance use reduced by 75%

Outpatient visits increased after housing

- Stability to connect to care
- Key: supportive services
  - Patient navigation services and wellness clinic

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Supportive Services at Open Door

Andrea Omojola, MPH, MDiv

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Case Management Overview

- “Wrap Around” services provided
  - Access to clothing, assistance with government agencies, connection to other social services, etc.
  - Connecting to physical and mental health care services and insurance
  - Connecting to a Primary Care Provider (PCP)
  - Meeting the client WHERE THEY ARE

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Case Management Overview

- Meeting the client where they are means
  - Prioritizing open communication
  - Asking a lot of questions and listening

    What is happening, what are they feeling and can your primary care physician help?
  - Understanding and accepting whatever decision the client ultimately makes (i.e. client has a right to self-determination)

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Case Management Overview

- Client Example

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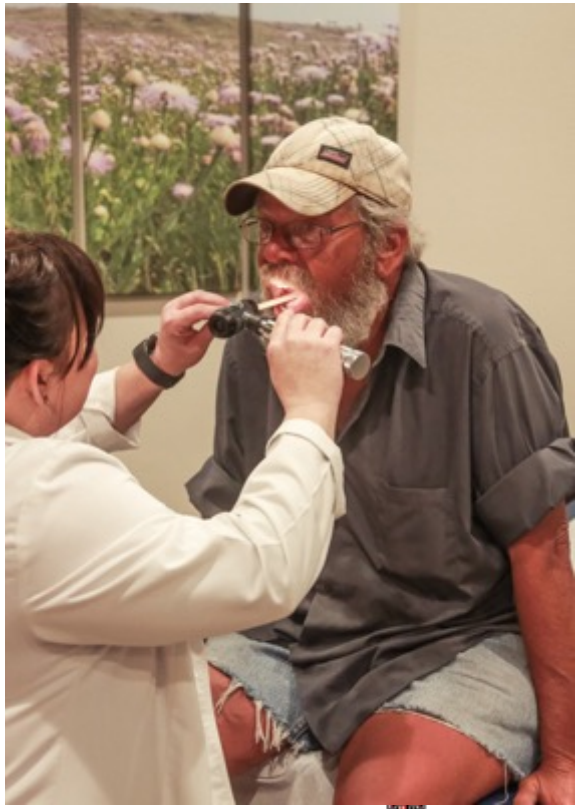
Case Management Overview

- Patient Navigation & Clinical Support
  - Built the clinic with a grant from local hospital and currently only serves PSH
  - Staffing has evolved
    Nurse Practioner → LPN → EMT
  - Less focused on direct care and more on connection to existing services
  - Partnership w/local hospital Patient Navigation for robust offerings as well with more acute patients



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National Literature on Permanent Supportive Housing

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National Literature on Permanent Supportive Housing

Who is your population?

Ex. Transitional vs chronic homelessness

What are you measuring?

Many different PSH models

What is the outcome?

- Days housed
- Health outcomes
- Utilization/cost

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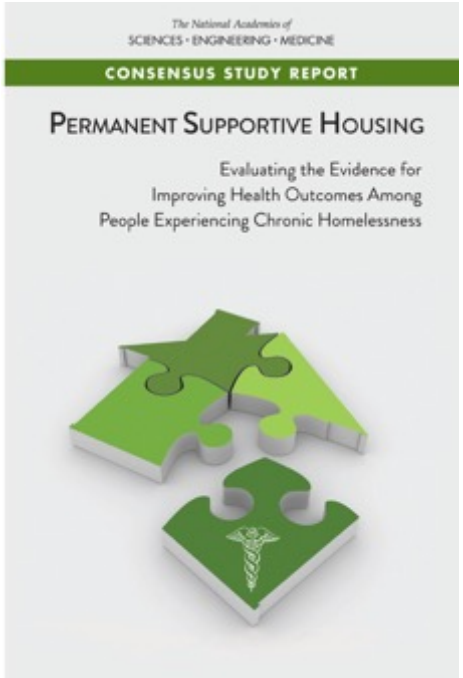
National Academies of Science, Engineering, and Medicine

"To what extent have permanent supportive housing programs improved health outcomes and affected health care costs in people experiencing chronic homelessness"



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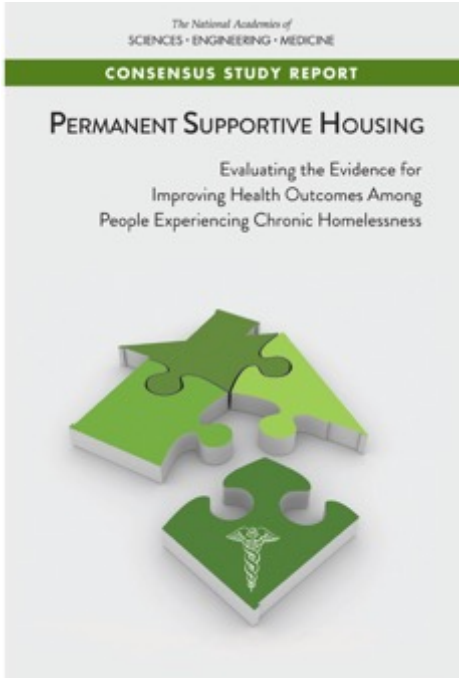
Conclusion…. It is complex

- Variability in PSH models
- Studies very hard to do
- Lack of literature on health outcomes
  - May improve HIV control
- Cost effective?
  - Pre-post/quasi experiment show benefit
  - 3 large scale RCT - with minimal or no benefit



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San Francisco

Randomized Control Trial
423 participants

Permanent supportive housing

- Housing + robust CM services

Care as usual

- 72% congregated, 28% Scattered site
- Average of Average of 72d wait prior to housing
- Data sources: claims data from the county: county funded health care, criminal justice, and shelter services; death certificates

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Raven MC, Niedzwiecki MJ, Kushel M. Health Serv Res. 2020

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San Francisco

Randomized Control Trial
423 participants

Permanent supportive housing

- Housing + robust CM services

Care as usual

Outcomes

- 86% entered housing (vs 36% in the control)
- 93% remained housed for the entire study period
- Decrease in psychiatric ED use and increase in mental health outpatient visits
- No change in medical ED use or admission
- No difference in mortality (~15% died on each group)

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Raven MC, Niedzwiecki MJ, Kushel M. Health Serv Res. 2020

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Toronto

At Home/Chez-Soi – Pragmatic Randomized Trial
Toronto
578 participants

High need

Housing + medical teams *vs* usual care

- Reduction in # ED use and hospitalizations

Moderate need

Housing + case management *vs* usual care

- No change in ED use
- Increase in hospitalizations

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Lachaud J, Mejia-Lancheros C, Durbin A, et al. *J Urban Heal*. June 2021

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Evidence for Housing and Health?

Health outcomes:

- In select populations (HIV and alcohol use disorder)

Emergency department and medical service use:

- Many variables
- May have reduction

Remaining housed:

- **YES**

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Evidence for Housing and Health?

Bottom line:

- Housing is **essential** to health
- Supportive services are key
- Level of supportive services to meet the need of clients

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Systems of care

Tailored systems of care

- Street medicine
- Homeless respite care
- Shelter based clinics
- PSH medical partnerships

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Systems of care

Benefits:

- Reduce ED utilization and hospital re-admissions

- Easier access, better relationships with health care providers, and fewer adverse experiences

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Kertesz SG, deRussy AJ, Kim Y, et al. Comparison of Patient Experience Between Primary Care Settings Tailored for Homeless Clientele and Mainstream Care Settings. *Med Care*. April 2021

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Summary

- Homeless-experienced adults have high burden of morbidity and mortality
- Resultant utilization is high
- PSH works! Over 90% still housed years later. Full stop.
- PSH with medical care does reduce utilization
- Need for partnerships with health care in PSH to provide low threshold care

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Co-Authors and Acknowledgements

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