What's New in Homeless Health Care?
An Annotated Bibliography of Selected Research Studies, 01/01/17 – 03/31/18

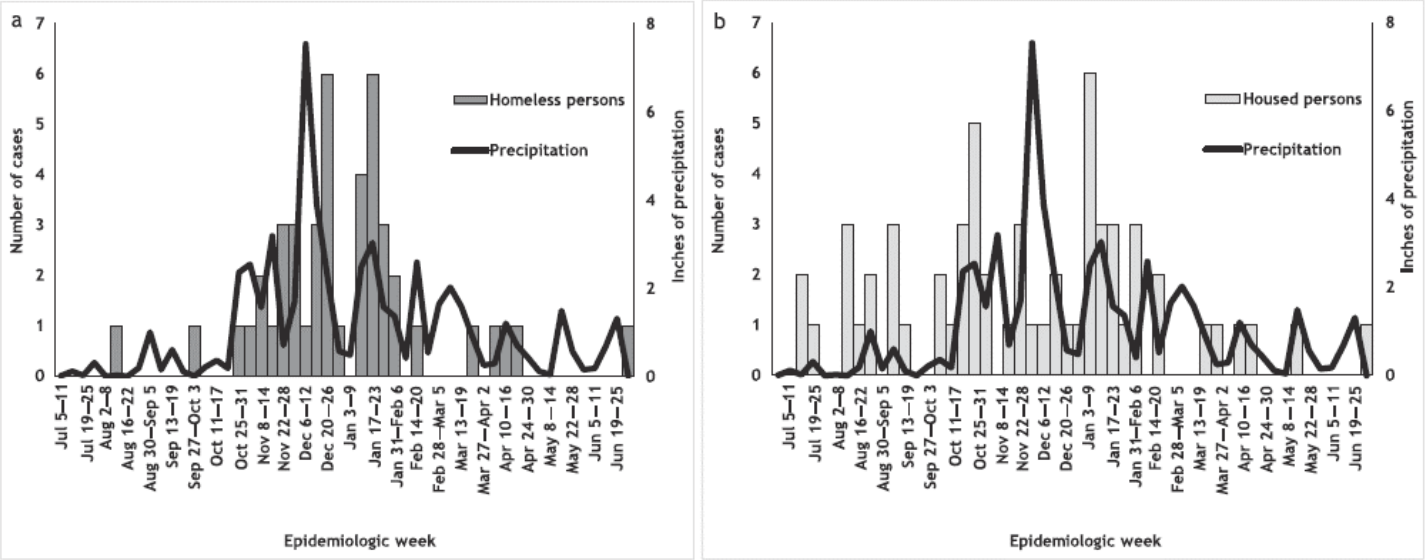
I. Health Status

Travis P. Baggett

Heavy precipitation as a risk factor for shigellosis among homeless persons during an outbreak – Oregon, 2015-2016

Hines JZ, Jagger MA, Jeanne TL, West N, Winquist A, Robinson BF, Leman RF, Hedberg K
J Infect 2018;76(3):280-285.

Summary: The authors analyzed epidemiologic data on 105 cases of *Shigella sonnei* infection identified among Oregon residents between July 2015 and June 2016. Ninety-six percent of cases occurred in the Portland metropolitan area, and 43% experienced homelessness during the week before illness onset. Eighty-four percent of *Shigella* cases among homeless people occurred during Oregon's rainy season (November – March), whereas 62% of cases among housed people occurred during the rainy season. In analyses that controlled for multiple variables, increasing rainfall was associated with increasing *Shigella* infections in homeless people but not in housed people.



Why we chose this paper: This study uses classic outbreak investigation methods and epidemiologic analyses to illustrate how environmental conditions can adversely impact the health of homeless populations and facilitate the spread of enteric infections, presumably by exacerbating poor sanitation, increasing crowding in shelters and encampments, and contaminating untreated water sources. Public health agencies and homeless service providers can use this information to raise awareness about these risks and take steps to mitigate them during adverse weather episodes through concerted efforts at improving hand sanitizing and other hygiene practices in congregate settings.

Related papers:
Mosites E, Frick A, Gounder P, Castrodale L, Li Y, Rudolph K, Hurlburt D, Lecy KD, Zulz T, Adebanjo T, Onukwube J, Beall B, Van Beneden CA, Hennessy T, McLaughlin J, Bruce MG. Outbreak of Invasive Infections From Subtype emm26.3 Group A Streptococcus Among Homeless Adults-Anchorage, Alaska, 2016-2017. *Clin Infect Dis* 2018;66(7):1068-1074.

Powell KM, VanderEnde DS, Holland DP, Haddad MB, Yarn B, Yamin AS, Mohamed O, Sales RF, DiMiceli LE, Burns-Grant G, Reaves EJ, Gardner TJ, Ray SM. Outbreak of Drug-Resistant Mycobacterium tuberculosis Among Homeless People in Atlanta, Georgia, 2008-2015. *Public Health Rep* 2017;132(2):231-240.

Connors WJ, Hussen SA, Holland DP, Mohamed O, Andes KL, Goswami ND. Homeless shelter context and tuberculosis illness experiences during a large outbreak in Atlanta, Georgia. *Public Health Action* 2017;7(3):224-230.

Physical, Psychological, Social, and Existential Symptoms in Older Homeless-Experienced Adults: An Observational Study of the Hope Home Cohort
Patanwala M, Tieu L, Ponath C, Guzman D, Ritchie CS, Kushel M
J Gen Intern Med 2018;33(5):635-643.

Summary: The authors assessed physical, psychological, social, and existential symptoms in a community-based cohort of 283 older homeless adults (median age 59 years; 76% male; 82% Black) in Oakland, California. Participants endorsed a median of 6 physical symptoms, with joint pain, fatigue, back pain, and trouble sleeping being most common. Psychological symptoms were also highly prevalent, with 47% reporting moderate to severe depression and 36% reporting anxiety. About 40% endorsed loneliness, and 27% had high levels of regret about past life experiences. Factors associated with moderate to high physical symptoms included female sex, childhood abuse, cannabis use, having ≥2 chronic health conditions, anxiety symptoms, hallucinations, and loneliness.

Why we chose this paper: This paper makes an important contribution toward understanding the multiple dimensions of symptoms experienced by older homeless adults. In particular, loneliness – the subject of a recent awareness-raising campaign by the former US Surgeon General because of its impact on mortality and functional decline – was especially common in this study sample and was strongly associated with a high burden of physical symptoms.

Related paper:
Hurstak E, Johnson JK, Tieu L, Guzman D, Ponath C, Lee CT, Jamora CW, Kushel M. Factors associated with cognitive impairment in a cohort of older homeless adults: Results from the HOPE HOME study. *Drug Alcohol Depend* 2017;178:562-570.

Suicidal Self-Directed Violence Among Homeless US Veterans: A Systematic Review
Hoffberg AS, Spitzer E, Mackelprang JL, Farro SA, Brenner LA
Suicide Life Threat Behav 2017 Jul 21. doi: 10.1111/sltb.12369. [Epub ahead of print]

Summary: The authors conducted a systematic review of studies published between 1990 and 2015 to examine suicidal self-directed violence among homeless US veterans and to identify suicide prevention strategies for this population. Nineteen studies met the inclusion criteria. The prevalence of suicidal ideation varied depending on the timeframe used: 1.3% current, 7% past week, 12-18% past month. The prevalence of suicide attempt followed a similar pattern: 0-6% past month, 31-32% past 5 years, 15-47% lifetime. One high-quality study found that the rate of suicide death among homeless veterans (81 per 100,000) was more than 2 times higher than that in non-homeless veterans (36 per 100,000), and a second study similarly found that veterans involved in VA homeless services had nearly 2 times higher odds of dying by suicide than other veterans. No studies of suicide prevention strategies for homeless veterans were identified.

Why we chose this paper: Although most of the studies identified by this systematic review were deemed to be at moderate or high risk of bias, this paper is the first to systematically assess this important clinical and public health issue. It sheds light on the prevalence of suicidal thoughts and behaviors among homeless veterans, suggests a potential role for standardized screening and assessment, and draws attention to the need for studies of preventive interventions.

Related paper:
Sinyor M, Kozloff N, Reis C, Schaffer A. An Observational Study of Suicide Death in Homeless and Precariously Housed People in Toronto. *Can J Psychiatry* 2017;62(7):501-505.

Residential eviction and exposure to violence among people who inject drugs in Vancouver, Canada
Kennedy MC, McNeil R, Milloy MJ, Dong H, Kerr T, Hayashi K
Int J Drug Policy 2017;41:59-64.

Summary: The authors analyzed longitudinal data from two cohorts of adults (median age 43 years; 34% female; 59% Caucasian) who use drugs in Vancouver, Canada. Twenty-four percent of participants reported being evicted at least once during a median follow-up of 67 months. Forty-six percent of females and 50% of males reported experiencing physical or sexual violence over the study period. In analyses that adjusted for drug dealing, residential eviction was associated with about 2-fold higher odds of experiencing violence among both females and males.

Why we chose this paper: This study adds to a growing body of literature documenting the adverse health effects of residential eviction, which was very common in this study of people who use drugs. The findings suggest a need for critical time interventions to avert housing loss in this population and to help promote their physical safety in the aftermath of an eviction.

Related paper:
Pilarinos A, Kennedy MC, McNeil R, Dong H, Kerr T, DeBeck K. The association between residential eviction and syringe sharing among a prospective cohort of street-involved youth. *Harm Reduct J* 2017;14(1):24

Prevalence and predictors of substance use disorders among homeless women seeking primary care: An 11 site survey
Upshur CC, Jenkins D, Weinreb L, Gelberg L, Orvek EA
Am J Addict 2017;26(7):680-688.

Summary: The authors assessed the prevalence of substance use disorders in a random sample of 780 female patients (mean age 44 years; 42% Black) who completed self-administered surveys at 11 Health Care for the Homeless (HCH) programs in 9 states. The prevalences of alcohol use disorder (17.3%) and drug use disorder (24.1%) were about 4 times higher and 12 times higher, respectively, than the corresponding prevalences among adult women in the US general population. A parallel chart review of randomly selected medical records of female patients at the same clinic sites found generally lower prevalences of substance use disorders and psychiatric diagnoses than those estimated through the in-person surveys.

Why we chose this paper: This study provides an important update on the prevalence of substance use disorders among homeless women and illustrates how the HCH Practice-Based Research Network can be used to clarify the health needs of HCH patients. The chart review aspect of the study raises the possibility that substance use disorders might be underdiagnosed or undercaptured in clinical practice.

Related paper:
Kim JE, Flentje A, Tsoh JY, Riley ED. Cigarette Smoking among Women Who Are Homeless or Unstably Housed: Examining the Role of Food Insecurity. *J Urban Health* 2017;94(4):514-524.

“I love having benzos after my coke shot”: The use of psychotropic medication among cocaine users in downtown Montreal
Motta-Ochoa R, Bertrand K, Arruda N, Jutras-Aswad D, Roy É
Int J Drug Policy 2017;49:15-23.

Summary: The authors used intensive ethnographic methods to collect 500 hours of observational field notes on 50 street-involved people (two-thirds male; predominantly white and French-speaking) who use cocaine, of whom 25 also participated in in-depth interviews, in downtown Montreal, Canada. Most individuals also used other illicit drugs besides cocaine, including two-thirds who injected heroin. Although participants were initially reluctant to discuss the use of medications for “crazies,” the researchers eventually learned that almost all used some type of psychotropic medication regularly, including over two-

third who used benzodiazepines, over half who used quetiapine, and one-third who used antidepressants. Over three-quarters obtained these medications through prescriptions. Participants reported that psychotropic meds served several functions: 1) as “downers” from a cocaine high (e.g. benzodiazepines, quetiapine, trazodone, pregabalin), 2) as enhancers of opioids (e.g. benzodiazepines) or cocaine (e.g. clonidine, methylphenidate), 3) as reducers of opioid withdrawal (e.g. benzodiazepines), 4) as an alternative “high” by themselves (e.g. benzodiazepines [“rivotrips”]), and 5) as medication for mental or physical problems (e.g. benzodiazepines, quetiapine, antidepressants).

Why we chose this paper: Polysubstance use is often the rule rather than the exception among street-involved individuals who use drugs. This study sheds light on the perceived functions of psychotropic medications within this complex milieu and reinforces the need for careful risk assessment before prescribing certain medications (e.g. benzodiazepines, quetiapine) in clinical practice while underscoring the legitimate unmet need for psychiatric treatment among many of these individuals.

Related paper:
Bozinoff N, Wood E, Dong H, Richardson L, Kerr T, DeBeck K. Syringe Sharing Among a Prospective Cohort of Street-Involved Youth: Implications for Needle Distribution Programs*. AIDS Behav* 2017;21(9):2717-2725.

Predictors of Mortality in Older Homeless Veterans
Schinka JA, Curtiss G, Leventhal K, Bossarte RM, Lapcevic W, Casey R
J Gerontol B Psychol Sci Soc Sci 2017;72(6):1103-1109.

Summary: The authors examined mortality patterns over 11 years of follow-up in a sample of 3,620 older homeless veterans (mean age 59 years; 60% white) who were admitted into VA transitional housing programs in 2000-2003. Each participant completed a standardized questionnaire at the time of program entry. Thirty-five percent of the sample died during the follow-up period. Unemployment, alcohol dependence, history of hospitalization for alcohol use disorder, having a serious health issue, and being ≥60 years old increased the risk for death, while non-white race, drug dependence, and dental problems appeared to be protective. Although these 8 variables were each significant predictors of mortality, they did not perform well enough statistically as a group to justify their use for risk-stratifying individual patients in clinical practice.

Why we chose this paper: Although several studies have examined mortality among US homeless populations, this paper is one of the first to systematically assess potential predictors of mortality using self-reported health measures. While the risk factors identified in this study cannot be recommended for use as a clinical prediction tool, they provide important insights about high-risk features that should be examined in future studies.

Related paper:
Aldridge RW, Story A, Hwang SW, Nordentoft M, Luchenski SA, Hartwell G, Tweed EJ, Lewer D, Vittal Katikireddi S, Hayward AC. Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *Lancet.* 2017 Nov 10. pii: S0140-6736(17)31869-X.

Unstable Housing and Caregiver and Child Health in Renter Families
Sandel M, Sheward R, Ettinger de Cuba S, Coleman SM, Frank DA, Chilton M, Black M, Heeren T, Pasquariello J, Casey P, Ochoa E, Cutts D
Pediatrics 2018;141(2). pii: e20172199.

Summary: The authors surveyed 22,324 publicly insured or uninsured families from renter households with children ≤48 months old in 5 urban health care settings across the US. Twenty-seven percent had been behind on rent in the past year, 8% had moved 2 or more times in the past year, and 12% were currently or previously homeless, with relatively little overlap among these adverse housing conditions. In analyses that controlled for multiple variables, each of these housing situations was associated with worse child health

outcomes, worse caregiver health, higher odds of caregiver depression, and a higher burden of other material hardships (e.g. food insecurity), as compared to families living in stable housing.

Why we chose this paper: This paper draws attention to the serious health implications of homelessness and housing instability for both caregivers and children. The minimal overlap among the 3 adverse housing conditions examined in this study suggests that failure to assess each of these dimensions of housing insecurity among low-income families may miss a considerable number of people living in hardship who may be at risk for poor health outcomes.

Related paper:
Barnes AJ, Gilbertson J, Chatterjee D. Emotional Health Among Youth Experiencing Family Homelessness. *Pediatrics*. 2018;141(4).

Baggett TP, Berkowitz SA, Fung V, Gaeta JM. Prevalence of Housing Problems Among Community Health Center Patients. *JAMA* 2018;319(7):717-719.

Prevalence of Human Immunodeficiency Virus, Hepatitis C Virus, and Hepatitis B Virus Among Homeless and Nonhomeless United States Veterans
Noska AJ, Belperio PS, Loomis TP, O'Toole TP, Backus LI
Clin Infect Dis 2017;65(2):252-258.

Summary: The authors examined the prevalence of HIV, HCV, and HBV among 242,740 veterans (mean age 50 years; 39% Black; 89% male) engaged in VA homeless services nationally in 2015, and compared the findings to those among 5,424,685 non-homeless veterans. The population prevalences (percent with positive tests among everyone in the population, regardless of whether they were tested) of HIV (1.5%), HCV (12.1%), and HBV (1%) were about 3, 4, and 2 times higher than the corresponding prevalences among non-homeless veterans. The prevalence of HIV and HCV was about 3 times higher in homeless men than in homeless women. The population prevalence of HIV/HCV co-infection (0.45%) among homeless veterans was 6 times higher than the co-infection prevalence among non-homeless veterans.

Why we chose this paper: This is the most comprehensive assessment of HIV, HCV, and HBV prevalence among homeless veterans to date. It reinforces previous findings in both veteran and non-veteran settings that homeless people experience higher rates of these infections than non-homeless individuals, emphasizing the importance of screening and access to treatment.

Related paper:
Williams SP, Bryant KL. Sexually Transmitted Infection Prevalence among Homeless Adults in the U.S.: A Systematic Literature Review. *Sex Transm Dis* 2018 Jan 4. doi: 10.1097/OLQ.0000000000000780. [Epub ahead of print]

A Review of the Literature on LGBTQ Adults Who Experience Homelessness
Ecker J, Aubry T, Sylvestre J
J Homosex 2017 Dec 5:1-27. doi: 10.1080/00918369.2017.1413277. [Epub ahead of print]

Summary: The authors systemically reviewed published studies on LGBTQ adults experiencing homelessness to better understand prevalence, pathways into homelessness, support needs, targeted programming, and exits out of homelessness. Of 16 articles that met the inclusion criteria, all but one was published after the year 2000 and most were published within the past 10 years. The majority of studies focused on gay cisgender males. LGBTQ prevalence estimates varied widely depending upon the context, ranging from 5-9% in 4 Canadian studies to 30% in a San Francisco study. Most studies of LGBTQ adults have focused on HIV prevalence or on LGBTQ adults with HIV. A few studies examined mental health concerns in this population, and several studies found high rates of substance use. Only 2 intervention studies – both involving case management approaches – have been conducted among LGBTQ adults experiencing homelessness, with mixed findings. No studies have specifically addressed pathways into or out of homelessness among LGBTQ adults.

Why we chose this paper: The scientific literature on LGBTQ adults experiencing homelessness remains relatively nascent. Existing studies suggest a high burden of HIV, substance use, and mental health concerns, but future research should expand understanding of other health and social issues in this population, particularly among lesbians, bisexual cisgender females, and transgender and gender non-conforming adults experiencing homelessness.

Related paper:
Abramovich A. Understanding How Policy and Culture Create Oppressive Conditions for LGBTQ2S Youth in the Shelter System. *J Homosex* 2017;64(11):1484-1501.

II. Health Care / Interventions

Kate Diaz Vickery

Characteristics of adherence to methadone maintenance treatment over a 15-year period among homeless adults experiencing mental illness
Parpouchi M, Moniruzzaman A, Rezansoff SN, Russolillo A, Somers JM
Addict Behav Rep 2017;6:106-111.

Summary: Authors assessed the adherence of 78 homeless adults with mental illness on methadone maintenance treatment before they joined the Vancouver At Home study (Housing First trials). They used pharmacy and insurance data over 15 years to estimate the medication possession ratio (MPR; the ratio of days in supply of the medicine over total days in study period). They examined differences in MPR by a variety of socio-demographic and health characteristics. 78/433 (18%) of all study participants were on methadone. 40% were women; 60% identified as White; 72% had Hep B, C, or HIV; 74% had severe mental illness; and 81% used $\geq$2 substances in the past month. Overall, adherence was less than 50% (mean MPR=0.47). Those who had never married and those with daily drug use had the lowest adherence. Those with severe mental illness had significantly better adherence.

Why we chose this paper: Opiate use disorder is highly prevalent in people who are homeless and comes with a high risk of death. Methadone maintenance treatment is an effective therapy but is often difficult to access. This study reinforces other findings that people with severe mental illness adhere to medication better but suggests that more work is needed to expand access to this treatment and improve delivery of therapy to better support adherence among people who are homeless.

Related papers:
Wenzel SL, Rhoades H, Harris T, Winetrobe H, Rice E, Henwood B. Risk behavior and access to HIV/AIDS prevention services in a community sample of homeless persons entering permanent supportive housing. *AIDS Care* 2017;29(5):570-574.

Kennedy DP, Osilla KC, Hunter SB, Golinelli D, Maksabedian Hernandez E, Tucker JS. A pilot test of a motivational interviewing social network intervention to reduce substance use among housing first residents. *J Subst Abuse Treat* 2018; 86: 36-44.

Wallace B, Barber K, Pauly BB. Sheltering risks: Implementation of harm reduction in homeless shelters during an overdose emergency. *Int J Drug Policy* 2018;53:83-89.

Comparing different technologies for active TB case-finding among the homeless: a transmission-dynamic modelling study
Mugwagwa T, Stagg HR, Abubakar I, White PJ
Sci Rep 2018;8(1):1433.

Summary: Authors from the UK modeled the effectiveness of different technologies for screening homeless people with TB with a mobile unit. Specifically, they compared (i) chest X-ray (CXR) vs. (ii) swab testing

(GeneXpert, which take 90 minutes to run) vs. (iii) CXR followed by swab testing with and without support from enhanced case management to determine need for referral to hospital for diagnosis/treatment of TB. They used a technique called transmission-dynamic mathematical model to show health (as measured in quality adjusted life years), TB burden, and cost while taking into account differences based on disease prevalence and resistance patterns, size of the homeless population, patient willingness to await test results, and treatment adherence. They describe how screening and treatment approaches should vary according to the prevalence of TB and the burden of multi-drug resistance and conclude it is important to use enhanced case management to ensure high rates of treatment adherence and completion. Active case finding is efficient when TB prevalence exceeds 78/100,000 and 46% of drug sensitive TB cases and 33% of multi-drug resistant TB cases complete treatment. This threshold increases to 92/100,000 if additional enhanced case management increases treatment completion to 85%.

Why we chose this paper: This paper uses state-of-the-science mathematical modeling to allow for a complex assessment of the many factors at play during TB outbreaks in the homeless community. It was published in a very high level scientific journal (*Nature*) and offers practical implications to HCH and public health teams considering population-wide strategies to respond to TB outbreaks.

Related papers:
Parriott A, Malenkinejad M, Miller AP, Marks SM, Horvath H, Kahn JG. Care Cascade for targeted tuberculosis testing and linkage to Care in Homeless Populations in the United States: a meta-analysis. *BMC Public Health* 2018;18:485.

Silva EN, Pereira ACES, Araújo WN, Elias FTS. A systematic review of economic evaluations of interventions to tackle tuberculosis in homeless people. *Rev Panam Salud Publica* 2018;42:e40. https://doi.org/10.26633/RPSP.2018.40

Unstable Housing and Diabetes-Related Emergency Department Visits and Hospitalization: A Nationally Representative Study of Safety-Net Clinic Patients
Berkowitz SA, Kalkhoran S, Edwards ST, Essien UR, Baggett TP
Diabetes Care 2018;41(5):933-939.

Summary: While the negative impact of homelessness on diabetes outcomes is known, authors in this study used data from a nationally representative survey 1,087 community health center patients with diabetes to demonstrate the impact of unstable housing on emergency department (ED) and hospital use. Unstable housing, defined as lack of money for rent/mortgage, moving 2+ times in a year, or staying somewhere without paying rent, was found in 36% of respondents (an additional 1.2% were overtly homeless—in shelters or sleeping outside). Those with unstable housing had over five times the chance of having a diabetes-related ED visit or hospitalization than those with stable housing. They also found that only 0.9% of unstably housed people with diabetes got help with housing from their health center.

Why we chose this paper: This study contributes new evidence to support the impact of unstable housing, apart from overt homelessness, on diabetes-related health care use. This helps to build a policy case for large number of people and large health care costs associated with the spectrum of unstable housing. It also emphasizes the need to expand from screening for social determinants of health into developing systems to respond to the housing needs of patients who are screened.

Related papers:
Axon RN, Gebregziabher M, Dismuke CE, et al. Differential impact of homelessness on glycemic control in veterans with type 2 diabetes mellitus. *J Gen Intern Med* 2016;31:1331–1337.

American Diabetes Association. Promoting health and reducing disparities in populations. Sec. 1. In: Standards of Medical Care in Diabetes 2017. *Diabetes Care* 2017;40(Suppl.1):S6–S10.

Achieving Drug and Alcohol Abstinence Among Recently Incarcerated Homeless Women: A Randomized Controlled Trial Comparing Dialectical Behavioral Therapy-Case Management With a Health Promotion Program
Nyamathi AM, Shin SS, Smeltzer J, Salem BE, Yadav K, Ekstrand ML, Turner SF, Faucette M
Nurs Res 2017;66(6):432-441.

Summary: This study focuses on a key transition moment for a very high-risk group—women exiting jail or prison who are homeless with known substance use—and examines if a specific case management model using dialectical behavioral therapy (DBT-CM) can support abstinence from drugs and alcohol. Designed as a randomized control trial at four sites in California, 130 people were given either the DBT-CM or standard health promotion in sessions for 12 weeks. DBT-CM participants had two to three times the chance of being sober from drugs and alcohol (by urine testing and self-report; OR=2.6 and 3.1 respectively). Women with non-white race and depression were less likely to remain abstinent from drugs.

Why we chose this paper: Substance use and incarceration are important factors that heavily interact with homelessness. This intervention recognizes this, developed an intervention that appears to have important impacts. Furthermore, the intervention is unique in its tailored approach to women.

Related paper:
Upshur CC, Jenkins D, Weinreb L, Gelberg L, Orvek EA. Homeless women's service use, barriers, and motivation for participating in substance use treatment. *Am J Drug Alcohol Abuse*. 2018;44(2):252-262.

A 6-Month Prospective Trial of a Personalized Behavioral Intervention + Long-Acting Injectable Antipsychotic in Individuals With Schizophrenia at Risk of Treatment Nonadherence and Homelessness
Sajatovic M, Ramirez LF, Fuentes-Casiano E, Cage J, Tatsuoka C, Aebi ME, Bukach A, Cassidy KA, Levin JB
J Clin Psychopharmacol 2017;37(6):702-707.

Summary: This study was a six-month, single arm (no controls) trial that examined the impact of an approach called customized adherence enhancement combined with long-acting injectable antipsychotics for recently homeless people with serious mental illness. They found that among 30 participants receiving support from a social worker and long-acting injectable antipsychotics, adherence to injections was 93%. Oral medication adherence, self-rated symptom and functional assessments also improved; there were no significant extrapyramidal side effects although serious events included a fall and worsened alcoholic hepatitis both requiring hospitalization.

Why we chose this paper: Serious mental illness is common among homeless adults yet there are few established treatments for this group. Combined behavioral support and long-acting injections may offer a model that could be delivered in shelter settings to improve health and social outcomes in this group.

Long-acting Reversible Contraception Among Homeless Women Veterans With Chronic Health Conditions: A Retrospective Cohort Study
Gawron LM, Redd A, Suo Y, Pettey W, Turok DK, Gundlapalli AV
Med Care 2017;55 Suppl 9 Suppl 2:S111-S120.

Summary: Researchers at the Veteran’s Administration (V.A.) created a longitudinal, matched cohort of women Veterans who were housed (46,391) vs. ever-homeless (41,747) using health system data from 2002-2015. They described demographic and health characteristics and use of long-acting reversible contraception. They found higher rates of military sexual trauma, medical, mental health, and substance use disorders among ever-homeless women Veterans. Overall, use of long-acting reversible contraception was higher in ever-homeless vs. housed women: 9.3 vs. 5.4% and even higher among younger women Veterans with recent military experience: 14.1% vs. 8.2%.

Why we chose this paper: This large-scale study highlights the complex needs of women experiencing homelessness. It highlights the intertwined risks of homelessness, sexual trauma, chronic physical and

behavioral health conditions, and reproductive health. The findings have important implications for non-Veteran women about the likely acceptability of long-acting contraception should insurance coverage and access be improved.

Related papers:
Gawron LM, Pettey WBP, Redd AM, Suo Y, Gundlapalli AV. Distance to Veterans Administration Medical Centers as a Barrier to Specialty Care for Homeless Women Veterans. *Stud Health Technol Inform* 2017; 238: 112-115.

Alhusen JL, Norris-Shortle C, Cosgrove K, Marks L. "I'm opening my arms rather than pushing away:" Perceived benefits of a mindfulness-based intervention among homeless women and young children. *Infant Ment Health J* 2017; 38(3): 434-442.

Holtrop K, Holcomb JE. Adapting and Pilot Testing a Parenting Intervention for Homeless Families in Transitional Housing. *Fam Process* 2018 Jan 24. doi: 10.1111/famp.12341.

Patient-aligned Care Team Engagement to Connect Veterans Experiencing Homelessness With Appropriate Health Care
Gundlapalli AV, Redd A, Bolton D, Vanneman ME, Carter M, Johnson E, Samore MH, Fargo JD, O'Toole TP. *Med Care* 2017 Sep;55 Suppl 9 Suppl 2:S104-S110.

Summary: This study presents a systematic evaluation of the impact of the V.A.'s patient centered medical home model for tailored to the unique needs of homeless Veterans (the Homeless Patient-aligned Care Teams, H-PACT) on health care utilization. Authors used a "difference-in-differences" approach to compare rates, over 18 months, of ED, primary care, and other outpatient visits among homeless Veterans receiving H-PACT (n=3,981; enrolled) both to homeless Veterans at those same sites without H-PACT assignment (n=24,363; unenrolled) and homeless Veterans at sites with no H-PACT and no PACT assignment (n=23,542; usual care). They found that H-PACT-enrolled Veterans were more likely to be older, white males who were not married and were less likely to have been in combat; they had higher chronic disease burdens than other groups. H-PACT enrollees had a significant decrease in ED use compared to usual care groups especially among high users of the ED (2+ ED visits/6 mo.). H-PACT enrollees demonstrated a significant increase in the proportion of ED care visits that were not preventable/avoidable in the 6 months after enrollment, but had stable rates of primary care, mental health, social work, and substance abuse visits over the 12 months.

Why we chose this paper: The V.A. has been conducting a sweeping effort to end Veteran homelessness which has included tailored efforts to engage homeless Veterans in primary care. This study is the largest trial of patient engagement in homeless health care. Lessons from the V.A. provide a wealth of evidence-based learnings to the U.S. about homelessness and how organization of primary care can improve engagement.

Related papers:
O'Toole TP, Johnson EE, Borgia M, Noack A, Yoon J, Gehlert E, Lo J. Population-Tailored Care for Homeless Veterans and Acute Care Use, Cost, and Satisfaction: A Prospective Quasi-Experimental Trial. *Prev Chronic Dis* 2018;15:E23.

O'Toole TP, Johnson EE, Aiello R, et al. Tailoring care to vulnerable populations by incorporating social determinants of health: the veterans health administration's "Homeless Patient Aligned Care Team" program. *Prev Chronic Dis* 2016;13:150567.

Identifying Homeless Medicaid Enrollees Using Enrollment Addresses
Vickery KD, Shippee ND, Bodurtha P, Guzman-Corrales LM, Reamer E, Soderlund D, Abel S, Robertshaw D, Gelberg L
Health Serv Res 2017 Jul 3.

Summary: Authors of this study used enrollment addresses on Medicaid forms to identify non-Veteran homeless people in a cohort of very low-income enrollees in urban Minnesota. They constructed a directory of address responses consistent with homelessness including shelters, homeless service centers, county government buildings, the general delivery address (consistent with holding mail at the post office), and free text responses. They compared time-stamped addresses to a housing question on a psychosocial needs assessment and found good alignment of the address measure with self-report of a shelter use or homelessness (specificity of 79-97% depending on address combination used). The measure was not as useful to rule-out homelessness (sensitivity 30-76%).

Why we chose this paper: This article is the latest in a series of articles attempting to find a reliable measure of homelessness within administrative data and the first to use Medicaid claims. This offers a population-wide marker that does not require screening and has useful implications for targeted outreach and risk-adjustment.

Related papers:
Bejan CA, Angiolillo J, Conway D, Nash R, Shirey-Rice JK, Lipworth L, Cronin RM, Pulley J, Kripalani S, Barkin S, Johnson KB, Denny JC. Mining 100 Million Notes to Find Homelessness and Adverse Childhood Experiences: 2 Case Studies of Rare and Severe Social Determinants of Health in Electronic Health Records. *J Am Med Inform Assoc* 2018;25(1):61-71.

Oreskovic NM, Maniates J, Weilburg J, Choy G. Optimizing the Use of Electronic Health Records to Identify High-Risk Psychosocial Determinants of Health. *JMIR medical informatics* 2017;5(3):e25, doi:10.2196/medinform.8240.

Zech J, Husk G, Moore T, Kuperman GJ, Shapiro JS. Identifying Homelessness Using Health Information Exchange Data. *J Am Med Inform Assoc* 2015;75(3): 20541–20546.

Quality Health Care for Homeless Children: Achieving the AAP Recommendations for Care of Homeless Children and Youth
Charterjee A, So M, Dunleavy S, Oken E
J Health Care Poor Underserved 2017;28(4):1376-1392.

Summary: Authors surveyed HCH sites serving children about their practices with regard to 2013 recommendations for optimal care of homeless children from the American Academy of Pediatrics. Almost half (77/169, 46%) of eligible sites responded. Guidelines most commonly self-reported by clinic leaders as followed included screening for homelessness, offering shelter-based care, helping children apply for Medicaid, connecting patients to some community-based services (90% or more of respondents). Most sites addressed underlying causes of homelessness, transportation assistance, and made collaborative care plans taking into account barriers. However, only 48% of sites offered patients support for all four community-based services deemed relevant by authors (TANF, SNAP, WIC, and legal aid). Optimization of acute care to resolve patient concerns and address comprehensive needs whenever possible was only done in half of responding sites. Models to predict the number of guidelines followed showed significance only with regard to federally qualified health center (FQHC) status whose sites reported 73% higher delivery of guidelines than non FQHC sites.

Why we chose this paper: The health needs of homeless children are an important and under-studied area of homeless research. This article highlights important recommendations that could lead to improved care for these children.

Related paper:
Chelvakumar G, Ford N, Kapa HM, Lange HLH, McRee AL, Bonny AE. Healthcare Barriers and Utilization Among Adolescents and Young Adults Accessing Services for Homeless and Runaway Youth. *J Community Health* 2017;42(3):437-443.

A Randomised Controlled Trial of Evidence Based Supported Employment for People Who have Recently been Homeless and have a Mental Illness
Poremski D, Rabouin D, Latimer E
Adm Policy Ment Health 2017;44 (2):217-224.

Summary: This Canadian study is the first trial of a specific approach to supported employment (known as Individual Placement and Support [IPS]) among people with mental illness who have been homeless. It was conducted within the Montreal-based At Home/Chez Soi study and involved 45 participants in the intervention arm and 45 in the comparison arm (typical case management with some employment encouragement). In adjusted results, the IPS participants had a higher rate of competitive employment than controls and were more satisfied with available services. This was especially true during periods when measurement confirmed high fidelity to IPS intervention protocols.

Why we chose this paper: With the current U.S. focus on possible work requirements within Medicaid programs, this novel trial was an important example of how supported employment programs can help individuals overcome barriers of mental illness and homelessness. This is especially true when embedded within intensive case management, Housing First, and universal insurance coverage.

III. Housing

Stefan G. Kertesz

Supportive housing for chronically homeless individuals: Challenges and opportunities for providers in Chicago, USA
Quinn K, Dickson-Gomez J, Nowicki K, Johnson AK, Bendixen AV
Health Soc Care Community 2018;26(1):e31-e38.

Summary: Major changes in US homeless-focused policy have involved a strong push to communities to enact “Housing First.” Operationally that means the US Department of Housing and Urban Development has pushed communities to push their HUD homeless dollars to renting units, rather than paying for services. HUD has pushed getting clients into rental units. In 2014, this research team interviewed 32 administrators and 33 direct service providers in Chicago to ask how they are getting work done at this time in this context. Respondents emphasized ways in which the HUD priorities had proven effective in pushing the community to house more vulnerable people, but introduced problems because the new tenants often had serious health and social problems. Other sources of funding to address the service problems were conspicuously lacking and the tenants themselves didn’t necessarily want help. The HUD push toward “coordinated entry” did reduce the tendency of community agencies to “cream” for the easiest clients but it also meant some very challenging customers were sent to agencies not equipped to assist them at all. Finally, making housing units “permanent” (a core Housing First concept) also meant that there was more and more limited ability to assist new people who were emerging as chronically homeless, given that the rental markets were not good in Chicago, and new supportive housing units were not coming online.

Why we chose this paper: This article provides a powerful and generalizable description of basic pressures occurring in every major city in the US that seeks to carry out widely embraced Housing First policies at a time of unfavorable rental markets, limited housing resources, and even more limited service resources to help the people who have been unable to succeed in the economy of 2018. Certain follow-on necessities for long-term success (long-term remediation of the rental market, provision of services) are nearly absent from US public discourse today.

Health in the Tenderloin: A resident-guided study of substance use, treatment, and housing
Chang, JS
Soc Sci Med 2017:176: 166-174.

Summary: This scholar collected qualitative interviews, including guided walking tours, from 20 women residing in supportive housing in San Francisco’s famous Tenderloin district, an area known for its long

history of stigmatized populations and activities, including people with drug and alcohol problems and people who are homeless. The author coded their reflections about their living and recovery in the Tenderloin environment, understanding that the neighborhood itself reflects a long series of social decisions of the city and its resources. Four themes emerged. First, while drug users are in every neighborhood, the marketplace's dealers, buyers, police investigations, are transferred into this one neighborhood. That sets up challenges for people whose only project-based supportive housing is in that particular neighborhood. Second, a variety of factors including services, drugs, and the available rental units keep formerly homeless women "tethered" to this neighborhood and restricted to their rooms when they are afraid or unable to go out. Third, part of living in this social area is to be policed, watched, and surveilled. Standard expectations of privacy and decency are sacrificed. Fourth, the women mostly affirmed a strong personal and emotional bond to the neighborhood despite these downsides.

Why we chose this paper: Clinicians and policymakers respond to people in terms of policies built around their designated diseases, disabilities, resources and vices. But the policy response very often reflects specific physical environments that reflect a series of social choices our cities and counties and rental markets have already made. The consequences of those unexamined choices often involve a degree of violence, invasion and risk for the people whose lives are influenced and shaped by social policy. This may be referred to as structural violence.

Impact of a New York City supportive housing program on Medicaid expenditure patterns among people with serious mental illness and chronic homelessness
Lim S, Gao Q, Stazesky E, Singh TP, Harris TG, Levanon Seligson A
BMC Health Serv Res 2018;18(1):15.

Summary: When housing interventions are subject to cost analysis, it's common to note that there are savings in the health care system as people gain housing. One defensible view from the literature is that savings are most likely to be achieved when effort is put into housing the people who had the highest health care expenditures before housing was offered. But that particular inference is not always tested very carefully, and the classification of cost can be a bit off-base when people sometimes get classified as "high cost" based on one bad hospitalization instead of an overall pattern of costly care over a period of time. These authors looked at New York City Medicaid costs for people who did qualify for supportive housing (based on dual diagnosis, or based on homelessness with severe mental illness), where roughly half were placed in a New York housing program and half were not. They classified Medicaid costs over 2 years before the qualification date to create 6 natural groups. At the low end there were people who had little Medicaid expense because they didn't have Medicaid coverage much of the time ("Very Low Coverage"). There were several more groups in rising levels of use, all the way to "high users" who over 2 years accrued an average of $149,000 in Medicaid expenditure. When comparing people who were placed in housing to people who were not, the Medicaid savings were present for just 3 of the 6 groups: "Very Low Coverage", "Emerging Users" and "Second-Highest Use." That "high user" group did not show a savings. The authors inferred that the high use group might just be too sick to offer a savings as a result of housing. The very low coverage group turned out to be a group that would eventually gain Medicaid and accrue significant costs, often for psychiatric care, and housing placement seemed to have reduced the magnitude of that cost, by comparison.

Why we chose this paper: This is a comparative observational study and not a trial. It doesn't exactly prove that housing only saves Medicaid expenses for one group and not another. But it hints that one commonly accepted truth (that money is saved on the extremely costly who are housed) might not be quite right. And in some settings, there are people with previously low health costs who might well become quite costly if housing is not an option.

Effects of comorbid substance use disorders on outcomes in a Housing First intervention for homeless people with mental illness
Urbanoski K, Veldhuizen S, Krausz M, Schutz C, Somers JM, Kirst M, Fleury MJ, Stergiopoulos V, Patterson M, Strehlau V, Goering P.
Addiction 2018;113(1):137-145.

Summary: A “Housing First” approach to permanent supportive housing involves offer of subsidized housing without elaborate prerequisites related to sobriety or participation in treatment. The approach should include provision of services selected and driven by priorities of the client. Many large studies, including a major trial from Canada, have shown that the Housing First achieves better housing outcomes than more typical “usual care” in a community. There remains a debate about whether the approach “works” for people with active substance use disorders. This study is a secondary analysis of that Canadian trial, where over 2000 individuals were randomized to a Housing First approach versus “Treatment as Usual” in 5 different Canadian communities. What makes this analysis a bit different from many is that the authors divided their analysis into two parts. They ran the analyses for people who did have substance use disorders and separately for people who did not. The authors assessed housing outcomes, as well as secondary outcomes such as community functioning, mental health symptoms, and general quality of life. Housing First obtained better outcomes compared to Treatment as Usual for Housing Stability, Community Functioning and Quality of Life. Even when looking just at the people with substance use disorder, Housing First was superior to Treatment as Usual. In this sense, Housing First “works for people with addiction.” But on the other hand, substance use disorder still had adverse effects. People with substance use disorder did worse on both Housing Stability and Community Functioning compared to people who had no substance use disorder, regardless of what trial intervention they received.

Why we chose this paper: This study highlights that defenders and naysayers on Housing First are both right. It clearly works for people with addiction (compared to treatment as usual). But people with addiction problems tend to do worse in Housing First programs compared to people who don’t have addiction.

Mismatch Between Homeless Families and the Homelessness Service System
Shinn M, Brown SR, Spellman BE, Wood M, Gubits D, Khadduri J
Cityscape 2017;19(3):293-307.

Summary: Half a million people each year experience homelessness as a family according to statistics from 2015, and the January 2017 Point-in-Time count found 185,000 persons in families with children to be homeless. In the Family Options Study, nearly 2300 homeless families were randomly assigned to have priority access to certain community based resources that they appeared eligible to receive, although the families still had to qualify through formal evaluation by the program, and in some instances find a unit. Previous reports found that 83% of families assigned to a housing subsidy actually got one and used it, while under 60% of families directed to transitional housing or “rapid rehousing assistance” (typically short-term financial support) used it. This new paper looked closely at the drop-off from being found to be “likely eligible” for a service to actually using it. For transitional housing, 71% of people screened appeared to be eligible but only 33% overall moved in at all. Even with short-term subsidies 91% seemed eligible while just 51% used them and moved into an apartment. Two limitations were evident. Families often could not take up the transitional housing they were qualified for because the right sized unit simply was not available, or it was located too far away from work or family, or it required splitting off the male members of the family. Housing choice vouchers, when offered, were readily taken up, but they were subject to constrained availability. Even with vouchers for rent, families could not always find a rentable unit.

Why we chose this paper: This paper highlights the way in which families that are homeless live something like a pinball game existence, bouncing between promised options that in the end often prove unwilling or unable to account for them. Paraphrasing the authors, homeless system interventions systematically screen out the families they are designed to serve.

Snapshots of other notable papers on housing:

A Randomized Trial Examining Housing First in Congregate and Scattered Site Formats
Somers JM, Moniruzzaman A, Patterson M, Currie L, Rezansoff SN, Palepu A, Fryer K
PLoS One 2017;12(1):e0168745.

Brief summary: In this randomized trial of congregate housing first versus scattered-site housing first and Treatment as Usual, both congregate and scattered-site performed better than treatment as usual for housing outcomes. But congregate housing outperformed scattered-site hosing for some of the other health-related outcomes.

Outcome Trajectories among Homeless Individuals with Mental Disorders in a Multisite Randomised Controlled Trial of Housing First
Adair CE, Streiner DL, Barnhart R, Kopp B, Veldhuizen S, Patterson M, Aubry T, Lavoie J, Sareen J, LeBlanc SR, Goering P
Can J Psychiatry 2017;62(1):30-39.

Brief summary: Among people in a randomized trial of Housing First compared to Treatment as Usual the housing outcomes varied considerably among individuals with some quickly achieving housing and others not doing so. These patterns or “trajectories” of housing varied across the two trial groups, with 73% of HF participants achieving stable housing and 43% of the TAU group doing that. There was lots of variability among participants in the trajectory of housing, and factors such as aboriginal status, total time homeless, health and psychiatric symptoms tended toward a less successful housing trajectory, while substance use problems was a factor that, surprisingly, did not have such an effect.

How do Housing Subsidies Improve Quality of Life Among Homeless Adults? A Mediation Analysis
O'Connell M, Sint K, Rosenheck R
Am J Community Psychol 2018 Mar 1. doi: 10.1002/ajcp.12229. [Epub ahead of print]

Brief summary: Increases in the number of days housed, size of social network, and availability of emotional support appear to mediate improvement in quality of life and account for 71% of the benefit attributable to having a rent subsidy

Social Network Decay as Potential Recovery from Homelessness: A Mixed Methods Study in Housing First Programming
Golembiewski E, Watson DP, Robison L, Coberg JW 2nd
Soc Sci (Basel) 2017 Sep;6(3).

Brief summary: Qualitative interviews demonstrated a strengthening in the quality of relationships with family and housing providers and a shedding of burdensome and abusive relationships. These results suggest network decay is a possible indicator of participants' recovery process as they discontinued negative relationships and strengthened positive ones.

Permanent Housing for Child Welfare-Involved Families: Impact on Child Maltreatment Overview
Fowler PJ, Schoeny M
Am J Community Psychol 2017;60(1-2):91-102.

Brief summary: This study compares outcomes for families referred to housing subsidies plus case management versus housing subsidies alone. Families assigned to subsidies had slightly better but nonstatistically significantly better outcomes for minor assault and neglect, but caregiver psychological aggression was high regardless of housing condition. There was “no evidence” according to the authors that the higher risk families benefitted more from permanent supportive housing.

Effect of Housing First on Suicidal Behaviour: A Randomised Controlled Trial of Homeless Adults with Mental Disorders
Aquin JP, Roos LE, Distasio J, Katz LY, Bourque J, Bolton JM, Bolton SL, Wong JY, Chateau D, Somers JM, Enns MW, Hwang SW, Frankish JC, Sareen J; At Home/Chez Soi Investigators
Can J Psychiatry 2017;62(7):473-481.

Brief summary: In this randomized controlled trial, Housing First did no better than treatment as usual in regard to suicidal behavior