The University of San Francisco

USF Scholarship: a digital repository @ Gleeson Library | Geschke Center

Reducing 30-Day Hospital Readmission Among Mentally Ill Homeless Men with Substance Use Disorder

CHIBUOGWU UGBANA
cugbana@usfca.edu

Follow this and additional works at: https://repository.usfca.edu/dnp_qualifying

Part of the Nursing Commons

Reducing 30-Day Hospital Readmission Among Mentally Ill Homeless Men with

Substance Use Disorder

Chibuogwu Ugbana

School of Nursing and Health Professions, University of San Francisco

NURS 749A

Committee Chair: Dr. Trinette Radasa, PMHNP-BC, FNP-BC

Committee Member: Dr. Susan Mortell, DNP, RN, CNL

Abstract

Background: Psychiatric inpatient readmission of mentally ill homeless men is greater than that of the overall population. Substance use disorders co-occur with high prevalence in patients diagnosed with mental illness. For mentally ill homeless individuals discharged after inpatient treatment, substance use disorder negatively impacts health behavior, and medication non-compliant, resulting in hospital readmission.

Problem: In an acute care psychiatric facility in Northern California, the greatest readmission after inpatient hospitalization occurs at 53.9% in a week and 74.8% in two weeks of discharge. For homeless individuals, substance use disorder complicates personal problems and decreases the likelihood of a long-term exit from homelessness. As a result, hospital readmissions among the homeless population are higher than in the general population. One of the problems faced by this unit is frequent readmissions of the same group of homeless patients two to three times every month (24-36 times per year).

Methods: Implementing a nurse navigator program in the mental health unit is anticipated to improve the transition of care between the inpatient setting and the facility's other mental health outpatient clinics. The goal of this nurse navigator is to ensure that patients are medication compliant immediately after discharge from the inpatient unit and can keep outpatient appointments to support medication compliance.

Conclusion: Evidence from the published literature presented a compelling need to include follow-up care, comprehensive discharge planning, and nurse navigation.

Keywords: homelessness, hospital readmission, substance use disorder, nurse navigator, and discharge planning.

Reducing 30-Day Hospital Readmission Among Mentally Ill Homeless Men with

Substance Use Disorder

Homelessness can take various forms, from having no home or permanent dwelling place to being marginally housed, as in "sofa surfing" or living "rough" on the street, in an encampment, or a temporary shelter or hotel room. Substance use disorders are more prevalent in the homeless population than in the population at large (Stringfellow et al., 2016). Research on mental illness, homelessness, and substance use disorder show the interconnectedness of these conditions. Hospital readmissions of mentally ill homeless patients are also higher than for the general population. As a result, hospital readmission rates for homeless people are more significant than the overall population (Saab et al., 2016). For mentally ill homeless individuals discharged after inpatient treatment, substance use disorder exacerbates health, behavior, and medication non-compliance issues, often resulting in hospital readmission within 30 days. Nonadherence to psychiatric treatment is a common problem in individuals with a dual diagnosis of mental illness and substance use disorder (Maremmani et al., 2022).

Repeated readmissions have substantial financial implications for the hospital. The Hospital Readmissions Reduction Program of the Affordable Care Act compels the Centers for Medicare and Medicaid Services (CMS) to decrease reimbursement to hospitals with "excessive" readmissions. Under this law, hospitals cannot turn patients away based on their status (CMS, 2016). However, homeless individuals with substance use disorders have complicated personal problems that reduce the likelihood of a long-term exit from homelessness (Flanagan & Briggs, 2015). In addition, homeless patients with mental health conditions frequently return within 30 days to the emergency department (ED) to be readmitted (Lam et al., 2016). This manuscript reviews evidence from the published literature on reducing hospital readmission among

homeless mentally ill men with substance use disorder and proposes alternatives to standard practice in addressing this healthcare problem.

Background

A 19-bed acute psychiatric inpatient unit in the Central Coast area of Northern California experiences frequent readmissions of homeless patients with multiple diagnoses of mental illness and substance use disorder. One of the problems this facility faces is frequent readmission of the same homeless patients with substance use disorder two to three times every month. For example, a homeless patient may be admitted on a 5150, a 3-day psychiatric hold for either danger to self, danger to others, or gravely disabled. Homeless patients are typically hospitalized between five to seven days, unlike other patients, due to medication non-compliant post-discharge. In this hospital, patients are given medication prescriptions on paper and a list of homeless shelter addresses upon discharge.

The patients often do not fill their prescriptions even when they have specified a pharmacy location. When the discharged homeless patients start experiencing hallucinations, delusions, and paranoia, many will turn to illegal substances such as street versions of amphetamines (aka "crystal meth"), cocaine, heroin, and marijuana which may lead to overdose or worsen existing mental illness. These homeless patients often return to the emergency room (ER) complaining of suicidal/homicidal ideation and are readmitted to the mental health unit. Most of the time, the prescription written at discharge is still in their belongings, an indicates that non-compliance with discharge medications and possibly self-medication with illegal substances contribute to hospital readmission. Another problem with homeless individuals is insufficient discharge education. According to Lam et al. (2016), homeless patients presenting with mental

health conditions were more likely to return to the ED within 30 days and be readmitted to the hospital.

Generally, the homeless discharge practice at the psychiatric inpatient unit is to send patients out with a paper prescription but without close monitoring. The proposed solution is to establish a team approach with a psychiatrist, psychiatric nurse practitioner, nurse, and social worker. This solution involves creating a comprehensive discharge plan that includes placement for homeless individuals. It will also require a part-time, non-benefited position for a registered psychiatric nurse to visit the homeless patients in their encampments two to three days post-discharge.

Literature Review

Search Methodology

The PICOT question that guided the search methodology is: In homeless psychiatric patients recently discharged from the inpatient unit (P), how does weekly follow-up by a registered nurse (RN) (I) compared to no RN follow-up (C) affect medication compliance and hospital readmission rate (O) within three months (T)? A literature search was carried out in the Comprehensive Index of Nursing and Allied Health Literature (CIHAHL) and PubMed databases to identify evidence-based journal articles relevant to the PICOT question published between 2015 and 2021. The initial Boolean search terms in CINAHL were "*readmission* AND *mental illness* AND *homelessness* OR *substance abuse*."
Only *homeless* AND *readmission"* was used in PubMed. The initial search yielded 493 articles from CINAL and 160 from PubMed. The selection was narrowed by including only peer-reviewed research articles published in English-language medicine and nursing journals.

Further inclusion criteria were research design (randomized control trial, qualitative, quantitative, systematic, and meta-analysis), interventions, practice guidelines, and subject headings of homelessness and mental illness. With the inclusion criteria applied, 89 articles were candidates for review, of which 43 were duplicates. Seven studies were selected for inclusion in the review based on significance to the topic and relevance to the PICOT question. The studies were critically appraised with the Johns Hopkins Research and Non-Research Nursing Evidence-Based Practice appraisal tools, which provide criteria for evaluating the strength and quality of evidence (Dang & Dearholt, 2018). See Appendix for Evidence Table.

Integrated Review of the Literature

Early work by some scholars has pointed out that reducing hospital readmissions will make the healthcare system a profitable venture. For example, Bring et al. (2020) conclude that post-hospital medical respite care for homeless people in Denmark significantly improved cost-effectiveness after 6 to 12 months of collaborative solutions covering health, housing, and social welfare sectors. In addition, the researchers identified housing and shelter to prevent rehospitalization and meet the needs of those experiencing homelessness.

Likewise, in their randomized control trial, Botha et al. (2018) assessed the readmission rate for patients with severe mental illness in a developing country using a telephone-based intervention. Researchers identified the need for services incorporating a unique approach to support the distinct population of substance-using mental health services. These services will help in reducing hospital readmissions.

In a longitudinal randomized controlled trial by Currie et al. (2018), the authors identified economic impediments and social disparity as the cause of hospital readmission. Study findings indicated that timely post-discharge care is necessary but insufficient to reduce the risk of

readmission among the homeless and mentally ill. Currie et al. (2018) found no association

between timely outpatient follow-up and the likelihood of rehospitalization in the homeless,

mentally sick cohort. This study indicated a compelling need to address housing as an integral

component of hospital discharge planning. The researchers believed that providing universal

medical services in the provinces would reduce homeless readmissions in Vancouver, Canada.

A randomized control trial by Roos et al. (2018) investigated the use of specialized

mental healthcare services concerning costs for patients with serious mental illness in the first 12

months after discharge from a mental health hospital. The study compared community residential

aftercare to treatment with outpatient care provided by municipal health services. The results

showed that total costs for all mental health services for 12 months were 38.5% lower for

patients randomized to the CRA (mean differences − 23,071 EUR, 95% CI -45,450 to 3027, p =

.057) (Table 6). This was mainly due to lower inpatient costs which had a mean difference of −

17,741 EUR (95% CI -36,824 to 4503, p = .042) in favor of the intervention. Thus, the results

indicated that transferring patients from a mental hospital to community residential aftercare can

reduce total health services and costs. Importantly, although using fewer services, the point

estimate for the number of inpatient admissions and readmissions was 18 percent (− 0.9 entries)

and 42 percent (− 0.8 readmissions) lower in the intervention group, showing at least no major

worsening in the intervention group.

In a cross-sectional design, Chen et al. (2018) examined whether the local health

department's (LHD) roles in promoting mental health care were connected to reducing 30-day

readmission rates. The researchers used data sets for 2012 and 2013 collected from multiple

sources. Patients were provided with special preventive care like screening, case detection,

identifying and tracking vulnerable ones among the population in the study, and those not

following the treatment plan. In addition, the patients were monitored for adverse outcomes after discharge, and treatment was provided for resistant or complex cases. Results showed no significant difference in the relationship between LHDs provision in preventing mental health care services and the likelihood of having any 30-day readmissions.

DeCaporale et al. (2017), in a seven-week pilot study, incorporated behavioral health that involved an interdisciplinary team that worked with 17 patients following hospital discharge. In this study, patients' prescribed medications reduced an average of 15.5 patient compliance to 13.1 patient compliance on each team appointment. In addition, the results showed that 15 out of 17 individuals studied avoided hospital visits from 30 to 90-day intervals, reducing polypharmacy.

Wyer et al. (2016), in a non-research case study for quality improvement, examined nursing education in knowledge translation for reduced 30-day hospitalizations of patients with heart failure in a 201 -bed community teaching hospital in Northern Manhattan, New York City. Hospital staff who cared for heart failure (HF) patients attended a three-day innovative capacity-building conference in evidence-based health care from 2009 to 2011. The results showed a 30-day decrease in readmissions from 23.1% to 16.4% (adjusted OR = 0.64, 95% CI = 0.42–0.97) during the year following implementation. The intervention hospital experienced a significant fall in readmission rates for heart failure patients, while those at the nearby university hospital decreased minimally and non-significantly. Overall readmission rates at Allen Hospital did not vary during the same time interval (10.7% for 2010 and 10.4% for 2011). The result of the above case study shows that nursing education help to keep patient from readmission.

Clinical Implications

This manuscript explored evidence in the literature for reducing 30-day hospital readmission among homeless men with mental illness and substance use disorder. Evidence from the reviewed articles suggests that changes to current standard practice in post-treatment discharge of this population can reduce hospital readmission rates. For example, Roos et al. (2018) demonstrated the potential of community residential aftercare to partially reduce total health service consumption and costs by decreasing readmission rates. Other studies (Botha et al., 2018; Bring et al., 2020; Currie et al., 2018; DeCaporale et al., 201) produced positive outcomes of appropriate discharge follow-up, post-hospital placement, and special care and services.

All the articles consistently pointed toward having good discharge plans and placement services for discharged homeless patients to reduce hospital readmissions. However, limitations noted in some of the studies (Botha et al., 2018; Currie et al., 2018; Roos et al., 2018) were small sample sizes, possible flaws in the randomization of patients in controlled trials, and relatively short duration of follow-up data collection. In addition, (Currie et al., 2018) noted that current discharge planning fails to sufficiently detail the housing needs of patients upon discharge.

Proposed Interventions.

The DNP student's intervention to reduce 30-day hospital readmissions in homeless patients with mental illnesses involves providing medication at hand upon discharge in-house and re-training nurses for discharging homeless patients. Kessler & Bjorklund (2020) examined the impact of nurse-led medication education on adult patients discharged from a Midwest psychiatric veteran hospital. According to data obtained after the teaching, there was some improvement in the medication adherence rate by the patients who participated in the nurse-led

medication teaching. The results showed that self-reported medication adherence following nurse-led medication teaching was 73-85%.

In addition, patient education on the importance of medication adherence before release, combined with a teach-back technique/ method, in which the patient will verbalize the information received back to the discharge nurse. Furthermore, this process will link the communication disparity between the patient and the nurse.

Another proposed intervention is to provide follow-up care by making an outpatient appointment to see a psychiatric mental health nurse practitioner twice a week. Patients will be additionally offered subsequent visits by a psychiatric nurse "nurse navigator" for the first-week post-discharge. The nurse navigator's job will ensure that discharge medications are taken as prescribed, and that follow-up appointment are kept. For example, Bring et al. (2020) concluded that post-hospital medical respite care for homeless people in Denmark led to significant improvements in cost-effectiveness after 6 to 12 months of collaborative solutions covering health, housing, and social welfare sectors.

In addition, Bring et al. (2020) identified that proper housing and shelter can prevent rehospitalization and meet the needs of those experiencing homelessness. Likewise, in their randomized control trial, Botha et al. (2018) assessed the effect of a telephone-based approach on reducing hospital readmissions for patients with mental illness in third-world countries. Researchers identified the need for services that incorporate a unique system to support the distinct substance use population and mental health services. These services will help in reducing hospital readmissions.

Discussion

Implementing this nurse navigator project could reduce hospital readmissions of homeless patients diagnosed with mental illness and substance use disorder. Evidence from the articles reviewed suggests that changes to current standard practice in post-treatment discharge of this population can reduce hospital readmission rates. For example, Roos et al. (2018) demonstrated the potential of community residential aftercare to partially reduce total health service consumption and costs by decreasing readmission rates. Other studies (Botha et al., 2018; Bring et al., 2020; Currie et al., 2018; DeCaporale et al., 2017; Saab et al., 2016) produced positive outcomes of appropriate discharge follow-up, post-hospital placement, and special care and services.

Limitations

Project limitations are constraints on the DNP student's time and the homeless patients' inability to trust anyone outside their community. As a result, the DNP student experienced many setbacks in implementing this project. These problems could range from unconscious biases among nurses to the hospital management's initial lack of support, which will be mitigated by the DNP student working as the nurse navigator during project implementation.

Conclusion

This manuscript examines the evidence for reducing hospital readmission among homeless patients with substance use disorder. Homeless patients with mental illness and substance use disorders are hard to reach in the United States. Therefore, this paper reviewed evidence-based journal articles that reduce hospital readmission in this population. The evidence for best practices in discharge planning includes discharge follow-up support, re-training of nurses on homeless discharges, special services such as medical respite care, and placement. Provision of discharge medication at hand and recruiting a part-time nurse navigator to monitor

medication adherence the first two days of patient discharge from this unit will reduce short-term and long-term readmission. In addition, the research discussed in the literature review suggested that providing housing and follow-up care will help reduce hospital readmission within 30 days of discharge.

Reference

Botha, U.A., Koen, .L., Mazinu, M., Jordan, E., Njehaus, D.J.H.(2018). Brief report: A
randomized control trial assessing the influence of a telephone- based intervention
readmission for patients with severe mental illness in a developing country. *Community
Mental Health Journal*, *54*(2), 197-203.https://101007/s10597-016-0069.

Bring, C., Kruse, M., Ankarfeldt, M. Z., Brünés, N., Pedersen, M., Petersen, J., & Andersen, O.
(2020). Post-hospital medical respite care for homeless people in Denmark: A
randomized controlled trial and cost-utility analysis. *BMC health services research,*
20(1), 508.https://doi.org/10.1186/s12913-020-05358-4.

Chen, J., Novak, P., Barath, D., Goldman, H., & Mortensen, K. (2018). Local Health
Departments' Promotion of Mental Health Care and Reductions in 30-Day All-Cause
Readmission Rates in Maryland. *Medical Care*, 56(2), 153–16.
https://doi.org/10.1097/MLR.0000000000000850

Center for Medicare and Medicaid Services (2016). Hospital readmissions reduction program
(HRRP) CMS http://www.cms.gov/readmission.

Currie, L. B., Patterson, M. L., Moniruzzaman, A., McCandless, L. C., & Somers, J. M. (2018).
Continuity of care among people experiencing homelessness and mental illness: Does
community follow-up reduce rehospitalization? *Health Services Research*, *53*(5), 3400-
3415. doi:10.1111/1475-6773.12992.

Dang, D., & Dearholt, S. (2018). *Johns Hopkins nursing evidence-based practice: Models and
guidelines* (3rd ed.). Sigma Theta Tau International.

DeCaporale-Ryan, L. N., Ahmed-Sarwar, N., Upham, R., Mahler, K., & Lashway, K. (2017).
Reducing hospital readmission through team-based primary care: A 7-week pilot study

integrating behavioral health and pharmacy. *Families, Systems, & Health, 35*(2), 217-226. http://dx.doi.org/10.1037/fsh0000269

Flanagan, M. W., & Briggs, H. E. (2016). Substance abuse recovery among homeless adults in Atlanta, Georgia, and a multilevel drug abuse resilience tool. *Best Practices in Mental Health, 12(*1), 89-109.http://doi.org/89-109.

Kessler, J., & Bjorklund, P. (2020). Effect of an RN-Led Medication Teaching Initiative on Psychiatric Recidivism. Issues in Mental Health Nursing, 41(2), 146-153. 10.1080/01612840.2019.1636907.

Lam, C. N., Arora, S., & Menchine, M. (2016). Increased 30-day emergency department revisits among homeless patients with mental health conditions. *Western Journal of Emergency Medicine*, 17(5), http://dx.doi.org/10.5811/westjem.2016.6.30690.

Maremmani, A. G. I., Aglietti, M., Intaschi, G., & Bacciardi, S. (2022). Substance use/dependence in psychiatric emergency setting leading to hospitalization: Predictors of continuity of care. *International Journal of Environmental Research and Public Health*, 19(2), 760. MDPI AG. Retrieved from http://dx.doi.org/10.3390/ijerph19020760

Melnyk, B.M., & Fineout-Overholt, E. (2018). *Evidence-based practice in nursing & healthcare* (4th ed.). Lippincott Williams & Wilkins.

Roos, E., Bjerkeset, O., & Steinsbekk, A. (2018). Health care utilization and cost after discharge from a mental health hospital; an RCT comparing community residential aftercare and treatment as usual. *BMC Psychiatry*, *18*(1), 363. https://doi.org/10.1186/s12888-018-1941-2

Saab, D., Nisenbaum, R., Dhalla, I., & Hwang, S. W. (2016). Hospital readmissions in a

    community-based sample of homeless adults: A matched-cohort study. *Journal of*

    General Internal Medicine, *31*(9),1011-1018. https://doi.org/10.1007/s11606-016-3680-8

Stringfellow, E. J., Kim, T. W., Gordon, A. J., Pollio, D. E., Grucza, R. A., Austin, E. L.,

    Johnson, N. K., & Kertesz, S. G. (2016). Substance use among persons with homeless

    experience in primary care. *Substance Abuse*, *37*(4), 534–541.

    https://doi.org/10.1080/08897077.2016.1145616

Wyer, P., Stojanovic, Z., Shaffer, J. A., Placencia, M., Klink, K., Fosina, M. J., Lin, S. X.,

    Barron, B., & Graham, I. D. (2016). Combining training in knowledge translation with

    quality improvement reduced 30-day heart failure readmissions in a community hospital:

    A case study. *Journal of Evaluation in Clinical Practice, 22(*2), 171-179.

    https://10.1111/jep.12450 .

Evaluation Table

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses Feasibility / Conclusion(s) Recommendation(s)
1.)Botha, U. A., Koen, L., Mazinu, M., Jordaan, E., & Niehaus, D. J. H. (2018). Brief Report: A Randomized Control Trial Assessing the Influence of a Telephone-based Intervention on Readmissions for Patients with Severe Mental Illness in a Developing Country. Community Mental Health Journal, 54(2), 197-203. https://10.1007/s10597-016-0069-4							
The purpose of the study was to assess the effect of a post-discharge, telephone-based intervention on readmissions and DIH in patients with severe mental illness over one year.	A Randomized Control Trial	One hundred patients with severe mental illness were randomized to facilitate care Participants (male and female) from 18 to 59, with a well-known diagnosis of schizophrenia, schizoaffective disorder, or bipolar disorder at Stikland Hospital in Cape Town, South Africa.	Facilitated Care Group (FCG) Treatment as Usual Group (TUG). Clinical Global Impression (CGI) care facilitator (CF) Assertive Community Treatment (ACT)	Dependent variable: Drug use and relapse time. Independent variable: psychoeducation pre- and post-discharge), home-visits, phone-call reminders, making use of a transitional manager, and communication with primary care providers.	Data was analyzed for 43 (n = 43) participants in the FCG and 39 (n = 39) participants in the TUG. (p = 0.44) and DIH (p = 0.25) at 12-month follow-up. More than a third (34%) of participants in both groups had readmissions over the 12 months. TUG participants were severely ill at 12-month follow-up (23%	With the small sample size, the study was piloted as a single-site study in a high-pressure area and A. The study was not adequately powered. Two hundred twenty participants are needed to achieve a better result. Which was not feasible in the context of	Level of Evidence: Level I It is an experimental study. It is a randomized control trial. Strengths and Weaknesses members of the ACT Team provided the intervention itself. As existing caseloads and service limited such, inclusion rates. The sample size is small, implying that any conclusions drawn from the study should be interpreted with caution. In addition, it is conducted in one facility, which may lead to bias. Conclusion The study identifies the need for services that incorporate a unique approach to support the distinct population of substance-using mental health service users. There is no change between the two groups. Therefore, it is essential to

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses Feasibility / Conclusion(s) Recommendation(s)
					compared to 11% of the FCG participants), and fewer were not ill (21% compared to 35% of the FCG participants; $p < 0.05$). power analysis confirmed that the study is underpowered, and results should be interpreted as such	the service pressure	include other ways to monitor the length of stay. In addition, our results showed that participants in the FCG were more likely to have multiple readmissions. Recommendation additional research is needed, with a focus on cost, readmission.

Definition of abbreviations: Facilitated Care Group (FCG) Treatment as Usual Group (TUG). Clinical Global Impression CGI) care facilitator (CF) Assertive Community Treatment (ACT).

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) / Recommendation(s) /
2.) Bring, C., Kruse, M., Ankarfeldt, M. Z., Brünés, N., Pedersen, M., Petersen, J., & Andersen, O. (2020). Post-hospital medical respite care for homeless people in Denmark: a randomized controlled trial and cost-utility analysis. BMC health services research, 20(1), 508. https://doi.org/10.1186/s12913-020-05358-4.							
To assess the effect of post-hospital respite care for homeless people in Denmark.	Randomized controlled trial	Setting: The study was conducted from April to March 2016 on homeless men between 18 years and above. Ninety-six participants with similar demographic statistics. They are recruited from ten different hospitals in the capital region of Denmark. And were registered in 23 municipalities across Denmark, one came from Greenland, and 23 had an	Health-related quality of life (HRQoL), Quality-adjusted life-years (QALYs),	Independent variable: Costs in the primary analyses included all costs incurred at hospitals, general practitioners, RN and medical specialists, and prescription drugs and expenses related to services delivered in the municipalities and the medical respite care center. Dependent variable: it is the cost of unexpected expenses for Running expenses for healthcare Inpatient outpatient emergency department, day in the psychiatric	The three months cost for the control group showed an average of €4761 (p = 0.10) higher cost when compared to the intervention group. The is a significant difference when compared to 6 €8515 (p = 0.04) and 12 months €12, 603 (p = 0.03) expense.	After three months, the costs in the intervention group were on average €4761 lower per person than the costs in the control group. In the sensitivity analysis, in which we adjusted for covariates, the control group still had higher prices than the intervention group, but not significant.	Level of Evidence: Level I It is an experimental study. It is a randomized control trial. Strengths: This study demonstrated that it is possible to perform a pragmatic randomized controlled trial with a low attrition rate in this socially stigmatized population. This leads to new opportunities for creating evidence-based interventions in an area that is driven mainly by experience. Weaknesses: The study time is too short; it is unclear to expect fundamental changes in HRQoL in such a time as three months. Conclusion: This study shows that post-hospital medical respite care for homeless people in a Danish setting leads to significant cost-effectiveness after 6 and 12 months. After three months of follow-up, the differences in health care costs also suggested

| | | unknown city of residence, including 20 immigrants without a Danish social security number. And costs from nine municipalities equivalent to data from 52 individuals. | | ward, hospital days after inclusion and prescription drugs. | | | cost-effectiveness, bud did not reach statistical significance. This study informs policymakers and health professionals who work with homeless people. The researchers strongly suggest that post-hospital medical respite care should be implemented in similar health care settings. Recommendations: Additional resources are needed, with a focus on building more respite care for the homeless population. |

Definition of abbreviations: HRQoL: Health-related quality of life; QALY: Quality adjusted life years; RN: Registered nurse, care facilitator (CF), Assertive Community Treatment (ACT), Chronic medical conditions (CMCs), Confidence interval (CL)
adjusted pooled odds ratios (aPOR)

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) Recommendation(s) /
3.) Chen, J., Novak, P., Barath, D., Goldman, H., & Mortensen, K. (2018). Local Health Departments' Promotion of Mental Health Care and Reductions in 30-Day All-Cause Readmission Rates in Maryland. *Medical Care*, 56(2), 153–161. https://doi.org/10.1097/MLR.0000000000000850							

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) Recommendation(s) /
To examine whether local health departments (LHDs) active roles in promoting mental health are associated with reductions in 30-day all-cause readmission rates.	Cross sectional design	Multiple data sets were collected from numerous sources, from the year 2012 to the year 2013. These are from Maryland State Inpatient, the National Association of County and City Health Officials Profiles Survey, the Area Health Resource File, and US Census data,	Local health departments' (LHDs), International Classification of Disease (ICD), Healthcare Cost and Utilization Project (HCUP), Odd ratio (OR)	Dependent variable Rate of hospital readmission. Independent variables. -Preventive care screening -case detection, identifying, and tracking patient that is at high risk of those at high risk for deteriorating and those not sticking to the treatment plan -structuring follow-up, monitoring outcomes, providing targeted services for treatment-resistant or more complex cases	The results showed that LHDs' direct provision of mental health preventive care, services, and adults 65 and above (OR=0.61, P<0.001; OR=0.63, P<0.001; and OR=1.04, not significant). (ORs range, 0.69-0.74, P<0.001 for adults 18-64; and 0.57-0.59 for adults 65 and above). ORs of LHD activities were for adults 18-64 with substance use disorders (ORs range, 0.69-	The researchers found that hospitalized patients who reside in the communities where the local health department provides direct preventive mental health services are notably less likely to the hospital within 30 days of discharge. When compared to those in a community or city where they did not receive help or assistant from their local county health	Level of Evidence: Level I11 It is non-experimental study Strengths and Weaknesses Maryland state data were used, the findings may not generalize to other states in the United States. Conclusion The results suggest that Maryland LHDs that engage in mental health prevention, promotion, and coordination activities are expected to create benefits for residents and the health care system at large. Recommendation Additional research is needed to determine if these results are generalizable to other states. The extent to which LHD resources are used may reduce racial and ethnic health disparities in Medicaid.

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) Recommendation(s) /
					0.74, P<0.001) and adults 65 and above (ORs range, 0.66-0.67, P<0.05).	department.	

Definition of abbreviations: Local health departments' (LHDs), International Classification of Disease (ICD), Healthcare Cost and Utilization Project (HCUP), Odd ratio (OR

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) / Recommendation(s) /

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) / Recommendation(s) /
4.) Currie L. B., Patterson, M. L., Moniruzzaman, A., McCandless, L. C., & Somers, J. M. (2018). Continuity of care among people experiencing homelessness and mental illness: Does community follow-up reduce rehospitalization? *Health Services Research*, 53(5), 3400-3415. doi:10.1111/1475-6773.12992							
To find out if continuity of care and community follow-up reduces rehospitalization among people experiencing homelessness and mental illness.	Longitudinal randomized controlled trials	The study recruited four hundred ninety-seven participants to the Vancouver at Home based on a-prior criteria for homelessness and mental illness.	Provincial Medical Services Plan [MSP]: were records of all outpatient physician encounter and laboratory services in the province. The Vancouver at Home (VAH): is study recruited participants. Confidence interval (CL), Adjusted odd ratio (AOR)	Dependent variables: morbidity and mortality, rate of readmission within 30 days post-discharge. Independent variables: Clinical best practices timely outpatient follow-up posthospital discharge	The model indicates that neither outpatient medical services nor laboratory services within one week following discharge were associated with reduced likelihoods of hospital readmissions within two months (AOR = 1.17 [CI = 0.94, 1.46]) and six months (AOR = 1.00 [CI = 0.82, 1.23]). However, a marginally	Study findings show that a timely post-discharge plan is necessary but not enough to reduce the risk of readmission in this population.	Level of Evidence: Level I It is an experimental study. It is a longitudinal randomized control trial. Feasibility: The universal provision of medical services in the province reduces the role that economic disincentives may play in delivering care to patients who live in poverty. Strengths: The administrative data offered comprehensive medical records of both inpatient and community health care encounters during the five years before recruitment for most participants. Study participants are rigorously selected. Weaknesses: Data were available for only those that participated in the study. Most of the sample participants are white and male, with no female participants.

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) / Recommendation(s) /
					significant finding at 12 months (AOR = 1.24 [CI = 1.02, 1.52]) indicates that participants were more likely to be re-hospitalized if they received outpatient medical care within one week of discharge.		The current discharge planning fails to sufficiently detail the housing needs of patients leaving the hospital without directly addressing housing needs. There are insufficient resources to achieve recovery. Conclusion: Collaborative solutions spanning health, housing, and social welfare sectors are indicated to prevent rehospitalization Recommendation: The findings presented in this study indicate a compelling need to address housing as an integral component of hospital discharge planning.

Definition of abbreviations: Medical Services Plan (MSP), The Vancouver at Home (VAH), Confidence interval (CL), Adjusted odd ratio (AOR)

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
5) DeCaporale-Ryan, L. N., Ahmed-Sarwar, N., Upham, R., Mahler, K., & Lashway, K. (2017). Reducing hospital readmission through team-based primary care: A 7-week pilot study integrating behavioral health and pharmacy. Families, Systems, & Health, 35(2), 217-226. http://dx.doi.org/10.1037/fsh0000269							
To provide patients with biopsychosocial care following hospital discharge to reduce hospital readmission.	Pilot study	Team of doctors, case managers, and psychiatrist followed 17 patients after discharge in a pilot study. Rochester, New York, population.	Nurse care managers (CMs) medical assistant (MA) primary care providers (PCPs) Montreal Cognitive Assessment (MoCA)	Dependent variable Medication and readmission. psychosocial factors Independent variable Care provided by pharmacist, Doctors and case manager. Medication reduction. biopsychosocial therapeutic duplications and simplifying the medication regimen.	The average reduction of 2.4 medications per patient reflects a significant difference, t (16) = 3.2060, p ≤ .01.	The results showed that 15 out 17 individuals studied avoided readmission at 30 and 90-day intervals, and this study reduced polypharmacy.	Level of Evidence: Level III non-experimental studies only, It is based on pilot study non research. Strengths ability to effectively deliver post-discharge care the study was cost-effective. Weaknesses small sample size and nature of the data collected result in limitations to the findings the study was conducted with only Caucasians. More research needs to be undertaken on a large population Recommendation The initial success of this model and accompanying result make the researcher confident to recommend that other sites consider the adoption of similar protocols for their patients and staff.

Definition of abbreviations: Nurse care managers (CMs), medical assistant (MA), primary care providers (PCPs), Montreal Cognitive Assessment (MoCA)

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
6) Roos, E., Bjerkeset, O., & Steinsbekk, A. (2018). Health care utilization and cost after discharge from a mental health hospital; an RCT comparing community residential aftercare and treatment as usual. *BMC psychiatry*, *18*(1), 363. https://doi.org/10.1186/s12888-018-1941-2.							
To investigate the use of (special mental care services) for SMI in the first 12 months of discharge to the community	Randomized controlled trial	Setting: In the City of Trondheim (190,000 inhabitants), in central Norway. The MHH has 81 beds, half for acute admissions and half for long-stay patients. Total of 41 participants	community residential aftercare (CRA) mental health hospital (MHH), severe mental illness (SMI)	Independent variable: follow-up services after discharge. Psychiatric nurse in home support and weekly consultation by general practitioner. Dependent variable Cost and hospital readmission	The expense of mental health services for one year is 38.5% less than the randomized group. The mean difference is 95%confidense interval, p=0.57 due to low cost from inpatient hospitalization. In the intervention group, p =0.42	Residential aftercare without organized in-house activities can reduce total consumption of health services and costs without increased hospital admissions.	Level of Evidence: Level I It is an experimental study. It is a randomized control trial. The strength provided complete data on all participants. Weaknesses: Data The sample size was smaller than what was pre-planned The alternative explanation of baseline difference is flawed in the randomization and allocation process. Conclusion: The study came from a good source. Those transferring patients ready for discharge from a mental hospital to community residential aftercare without organized in-house activities can reduce total consumption of health services and costs without increased hospital admissions. Recommendations: more research is needed to conduct on a large population.

: Definition of abbreviations: mental health hospital (MHH), community residential aftercare (CRA), community mental health center (CMHC), Treatment as usual (TAU), length of mental hospital inpatient stay (LOS), Severe mental illness (SMI)

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility /Conclusion(s) / Recommendation(s) /
7.) Wyer, P., Stojanovic, Z., Shaffer, J. A., Placencia, M., Klink, K., Fosina, M. J., Lin, S. X., Barron, B., & Graham, I. D. (2016). Combining training in knowledge translation with quality improvement reduced 30-day heart failure readmissions in a community hospital: a case study. Journal of Evaluation in Clinical Practice, 22(2), 171-179. https://10.1111/jep.12450							
To train clinical staff in knowledge translation with quality improvement. On how to reduce readmissions within 30 days in a community hospital	No research designs. It is an evidenced based quality improvement journal	In Allen Hospital, a 201-bed community teaching hospital in Northern Manhattan, New York City,	Evidence-based practice (EBP), Knowledge translation (KT), Teaching Evidence Assimilation for Collaborative Health Care (TEACH), the knowledge-to-action (K2A) is a model of evidence-based practice, the electronic medical record (EMR), patients-interventions-comparisons-outcomes (PICO), The heart failure nurse coordinator (HFNC) is the person in charge of patient training at discharge. Heart failure (HF)	Dependent variables: readmission rate, heart failure and death. Independent variables: New bilingual patient education booklet. Provision of a scale for patients at discharge. Staff training and education. The 'teach back' program by HFNC.	Thirty-day HF readmissions reduced from 23.1% to 16.4% (adjusted OR = 0.64, 95% CI = 0.42–0.97) during the year following implementation. Equivalent rates in another hospital serving the same population but not part of the program was 22.3% and 20.2% (adjusted OR = 0.87, 95% CI = 0.71–1.08). Observance to given HF quality	A significant intervention decreases in hospital readmission rates for heart failure patients than those at the nearby university hospital has a minimal effect. Significantly. Generally, readmission rates at the Allen Hospital did not vary during the same time interval (10.7% for	Level of Evidence: Level V It is a quality improvement journal. It is based on experimental non research. Strengths They use an interdisciplinary group approach in the study, and it was evidence-based research that is replicable in other hospitals. Weaknesses The training program is based on the importance of enhancement projects to practice EBP learning and skill acquisition. There is limited statistical methodology. The data is not complete. Conclusion The hospital made some changes that led to a reduction in 30 days of hospital readmission, but it was not significant. There

					measures improved	2010 and 10.4% for 2011).	was no indication of a trade-off between averting readmission and mortality.

Definition of abbreviations: Evidence-based practice (EBP), Knowledge translation (KT), Teaching Evidence Assimilation for Collaborative Health Care (TEACH), the knowledge-to-action (K2A) the electronic medical record (EMR), patients-interventions-comparisons-outcomes (PICO), Heart failure nurse coordinator (HFNC) is the person in charge of patient training at discharge. Heart failure (HF)