BRIEF REPORT

Factors Associated with Rapid Readmission Among Nevada State Psychiatric Hospital Patients

Christopher Owen Moore[1] · Sheniz Moonie[1] · Julia Anderson[1]

Abstract

Rapid readmission (RR) of psychiatric patients within 30 days of discharge places a costly burden on state psychiatric facilities and may indicate suboptimal service provisions. Information regarding variables associated with RR of psychiatric patients is limited, particularly in Nevada. This study attempts to identify factors associated with RR at a Nevada state psychiatric hospital. Participants included 7177 patients admitted between May 2012 and April 2014. Using logistic regression, all admissions were reviewed and rapid readmits compared to counterparts who were not readmitted within 30 days. Nevada suffers from budget cuts in mental health care spending because of recent economic crisis and severe lack of bed space. This study demonstrates that it may be possible to reduce rates of costly RR by focusing on those with a history of RR and modifiable factors including social and financial support, as well as reliable and stable housing.

Keywords Rapid readmission (RR) · Psychiatric patients · Statistical analysis · Mental health care spending · Southern Nevada · Modifiable factors

Introduction

Recently, there has been increased government and media attention on the continuity of care from inpatient to outpatient psychiatric services. This issue is demonstrated in the state of Nevada, through practices such as patient dumping; when a hospital transfers a patient to a different facility or turns the patient away due to inability to pay for services (IRMI 2018). Allegations of patient dumping by Rawson-Neal Psychiatric Hospital (RNPH) catapulted Southern Nevada Adult Mental Health Services (SNAMHS) into the national spotlight in 2016. Prior to this, SNAMHS received several citations in 2013 due to the increased scrutiny and in response special attention was paid to the area of discharge

✉ Sheniz Moonie
  sheniz.moonie@unlv.edu

  Christopher Owen Moore
  moorec38@unlv.nevada.edu

  Julia Anderson
  anderj14@unlv.nevada.edu

[1] Epidemiology and Biostatistics Program, School of Community Health Sciences, University of Nevada, Las Vegas, 4505 South Maryland Parkway, Las Vegas, NV 89154-3063, USA

planning. Providing improved discharge plans has led to increased lengths of stay, but negative impacts on available bed space, which contributes to a backup of patients in local emergency rooms. Totals are estimated to be 180 patients across the Las Vegas valley at any given time (SNAMHS, unpublished data). This led administrators at the Division of Public and Behavioral Health (DPBH) to look more closely at super-utilizers of mental health services to curb over-utilization of inpatient services and to provide more appropriate, lower cost outpatient services such as medication clinics, outpatient counseling, service coordination, and housing (DPBH 2014).

Rapid readmits (RR), patients readmitted to a hospital within 30 days of discharge, present a huge financial cost to psychiatric hospitals. These individuals take up bed space, may be representative of poor care or lack of appropriate service provision, and most importantly, may be preventable (Korkeila et al. 1998; Sfetcu et al. 2017). Bed capacity continues to be an ongoing concern in Clark County. As of 2014, individual hospitals declared short-term internal disasters due to high numbers of psychiatric patients waiting in ERs and the rerouting of ambulances to other hospitals (Amaro 2014). This situation is a result of policies that require patients to be medically-cleared prior to being admitted to state-run psychiatric facilities. This results in

diversion of psychiatric patients to local emergency rooms for clearance. The clearance process in emergency rooms tends to be cumbersome, involving the evaluation of psychiatric symptoms, a thorough history, physical examination, as well as neurologic and mental exams (Emembolu and Zun 2010). Due to the nature of emergency rooms, these evaluations and exams are typically rushed. Several protocols have been developed to aid in this process, but few hospitals have implemented this process as standard (Emembolu and Zun 2010). Further, patients with insurance or Medicare/Medicaid benefits may be admitted to private psychiatric facilities; however, patients without benefits end up waiting for beds to become available. Those with Medicare and Medicaid make up 16.0% and 14.4%, respectively, of patients readmitted with mood disorders (Axis 1 disorder) and 19.9% and 20.4%, respectively, of patients with schizophrenia (Axis 2 disorder) (Heslin and Weiss 2015). This process may take several days and result in a patient being stabilized and released from the ER rather than receiving inpatient care. Several studies have previously considered RR to inpatient facilities, but there is a lack of information available about the variables associated with RR of psychiatric patients to state-operated inpatient facilities in Nevada.

The few studies that have been performed on demographic factors in relation to RR show clear disparities between insurance status, gender, age, and diagnosis of Axis 1 or Axis 2 disorders (Heslin and Weiss 2015; Pedersen and Aarkrog 2001). It is likely that the factors associated can be assessed more thoroughly during the emergency room medical clearance process, or the psychiatric hospital clearance process, in hopes of preventing or reducing the number of rapid readmits. Due to the transient nature of Las Vegas, Nevada and the diverse population, it is hypothesized that the sample collected will align with the published data and be generalizable for other cities of similar size facing RR problems. The objectives of this study include identifying specific factors associated with RR at a southern Nevada state psychiatric hospital, determining if the factors associated with RR differ based on number of historical rapid readmits, and understanding the relationship between length of stay and ensuing readmission.

Methods

Participants

The study population comprised adult patients, > 18 years of age, admitted to an acute inpatient psychiatric unit at RNPH in Las Vegas, Clark County, NV between on May 1, 2012–April 30, 2014. During this time, RNPH had 12,068 total admissions from 7177 patients. Of these patients, 14.5% (n = 1043) experienced at least one RR, which

accounted for a total of 18.4% (n = 2220) of all admissions (2220/12,068 total admissions = 18.4%). Nearly 60% of patients experienced between one and three RRs during this time period. This study was inclusive of all admissions for a 2-year period.

Measurement

RR is defined as an unplanned readmission that takes place within 30 days of discharge from the index (initial) admission. For this study, each readmission was only tied to the immediately preceding admission regardless of the number of admissions that took place within any 30-day period. Two sets of analyses were performed: the first set of analyses included all admissions (RRs compared with non-RRs) and the second set of analyses only included each patient's index admission (index RR compared to no RR). Based on a literature review and ease of access to the electronic medical record (EMR) used by RNPH, 24 risk factors/variables were chosen that may be associated with RR. Data on age, number of RRs, previous lengths of stay, and number of days to readmission were collected as continuous variables and later recoded into nominal variables to facilitate between group comparisons in multivariate analyses. All other variables were analyzed as categorical: sex (male/female), veteran status (yes/no), SSI/SSDI (yes/no), Medicaid/Medicare (yes/no), employment (yes/no), medication compliance (strong/weak), support (yes/no), substance use diagnosis (yes/no), financial resources (yes/no), legal history (yes/no), marital status (single/married/divorced/separated/widow), race/ethnicity (Hispanic/non-Hispanic/unknown), Axis 1 diagnosis (psychotic/bipolar/mood/substance use/other), Axis 2 diagnosis (personality/cognitive/developmental/other), homeless status (on the streets/homeless shelter/not homeless/other), discharge living arrangement (homeless shelter/private residence/agency arranged/other setting/on the street/jail facility), financial needs (yes/no), financial stability (strength/weakness), housing needs (yes/no), and stabile housing (strength/weakness). Data on admissions, demographic variables, and potential risk factors for RRs, were extracted from the EMR system utilized by the DBPH. To minimize error, only one Information Technology Professional (ITP) from the DPBH was identified to aid in data extraction and upload into Excel. Data were de-identified to protect patient confidentiality. To decrease the odds of data entry error, a random selection of 5% of all admissions was compared to the medical record and evaluated for data entry consistency. SPSS software version 22 was for analyses.

Data Analysis

Statistical analyses were used to determine what factors were significantly associated with RR and which of these

factors change as frequency of RR increases. Descriptive statistics included frequency distributions for the independent variables (24 factors) in relation to the dependent variable (RR yes/no). Bivariate analyses were utilized to determine whether there was a significant association between the predictor variables and RR. A multiple logistic regression model was built with variables found to have significant associations with RR in bivariate analyses (inclusion cutoff = $p < 0.05$). Non-parametric Kruskal–Wallis tests were performed to determine if between group differences existed among independent variables with three or more categories. Differences between two groups were assessed using the Mann–Whitney U test. The cut-off for inclusion in multivariate models was $p < 0.05$, except for variables that included ≥ 4 groups. Those variables with ≥ 4 groups were subject to Bonferroni correction and analyzed for significance. Potential outliers were maintained.

To determine whether previous length of stay was associated with time to readmission, analyses were conducted using Kruskal–Wallis tests with post-hoc testing and Bonferroni correction, as appropriate. Multinomial logistic regression models and Kruskal–Wallis tests were performed, using length of stay (independent variable) and number of days to readmission (dependent variable).

IRB Approval

Approval was obtained from the UNLV Institutional Review Board (IRB) for all research activities conducted throughout the duration of the study.

Results

Variables were assessed for multicollinearity using the variance inflation factor (VIF) and Tolerance diagnostics and did not reveal any significant collinearity issues between any of the variables. Data extracted from RNPH EMRs identified a total of 7177 admitted patients for a total of 12,068 admissions over a 2-year period from May 1, 2012–April 30, 2014. Patients included in the study were predominantly male (60.7%), white (55.4%), not of Hispanic or Latino ethnic origin (83.3%), between the ages of 25 and 54 (73.1%), never been married (60.0%), and most identified as heterosexual (39.1%).

Diagnosis

The most common Axis I diagnosis by disorder type included psychotic disorders (39.2%) and mood disorders (30.0%). Most patients did not have an Axis II diagnosis, the diagnosis was deferred, or was unknown (80.2%). Of those with known Axis II diagnoses, the most prevalent were personality disorders (14.5%).

Financial and Living Resources

Most patients reported having financial resources (57.8%), did not report having social security disability insurance (SSI/SSDI) (61.7%), or access to Medicare/Medicaid benefits (37.1%), those with access were disproportionately represented among rapid readmits. Even though most patients had some access to financial resources, many still had financial needs (42.4%), or a combination of financial/housing need (59.6%). Patients who lived with family (13.6%) and patients with a home, or private residence (39.1%), or those employed at the time of admission (6.8%) were less likely to be rapid readmits. Patients that lived alone (23.4%), lived in homeless shelters (81.3%), those without a support system in place (74.8%), a history of legal troubles or previous substance abuse diagnoses (61.3% and 59.9%), and who experienced periods of medication non-compliance (72.9%) were more likely to have been RR.

Factors Associated with Rapid readmission

Twenty-four factors for RR were identified and bivariate analyses performed using simple logistic regression on the variables listed in the methods section. Two sets of analyses were performed, the first for all admissions and the second for the first admission only. Bivariate analyses of risk factors on all admissions demonstrated significance for all factors ($p < 0.05$), except veteran status and sexual orientation. In addition, there were non-significant findings for financial stability, financial need, and financial/housing needs. If the variables that were significant in bivariate analyses, these were included in the multivariate analysis for further testing.

First Admission Only Analysis

Certain risk factors were found to be significant ($p < 0.05$) when the first admission was included in the analysis. These risk factors include living with non-relatives or alone, individuals lacking a support system, and diagnosis with a bipolar disorder all had increased odds of RR (OR ≥ 1.2). Individuals with an Axis I diagnosis other than substance use, psychotic, mood, or bipolar disorders were less likely to be RR (OR 0.604, 95% CI [0.441, 0.828]). The final model, was only able to explain 10.0% of the variability in the dependent variable. Never having been married, living in a homeless shelter, a history of legal issues, and an Axis I psychotic disorder were significant risk factors for RR. Conversely, receiving SSI/SSDI was protective against RR. Sex, age, medication compliance, housing stability, and Axis II diagnosis, did not reach significance when analysis was limited

to each patient's first admission. Between group differences were demonstrated for all independent variables except for length of stay and sexual orientation in analyses of each patients first admission only.

Multivariate analyses limited to the index admission for each patient demonstrated fewer significant findings and explained far less of the variability in number of RRs. Results from multinomial logistic regression on the index admission only show that persons living with non-relatives or in a homeless shelter have 1.5 increased odds of RR (95% CI [1.083, 2.062]; [1.224, 2.012]). Those living alone (95% CI [1.083, 2.062]), or with an Axis I psychotic disorder RR (95% CI [1.029, 1.576]) had over 1.2 increased odds of were at increased odds of having one admission during the study period. Increased odds of having two to three RRs were noted for persons living on the street (OR 4.517, 95% CI [1.425, 14.318]), and having a history of legal problems (OR 1.472, 95% CI [1.129, 1.919]) and lacking a support system (OR 1.601, 95% CI [1.180, 2.172]) were also significant. In contrast, persons ≥ 55 years, not having SSI/SSDI benefits, and individuals with an Axis I primary diagnosis other than a mood, psychotic, bipolar, or substance use were all at reduced odds. Although they were significantly associated with number of RRs when all admissions were included, sex, marital status, medication non-compliance, housing stability, financial needs, and substance use were not significantly associated when only the first patient admission was included.

Individuals living in a homeless shelter, a history of legal troubles, having an Axis II cognitive or developmental disorder, or having Medicare/Medicaid benefits were at increased odds of having four or more rapid readmits. Persons over 55 years of age, or having SSI/SSDI benefits were at reduced risk of being in the highest level of RRs. Sex, marital status, medication non-compliance, housing stability, financial needs, and substance use were not significantly associated when only the first patient admission was included.

All Admission Analysis

Controlling for covariates and including all admissions using multiple logistic regression, a different outcome was revealed. In analyses including all admissions, those persons at higher risk for RR during the study period included individuals aged 35–44, who had 1.19 times the odds of RR (95% CI [1.005, 1.418]), while individuals divorced or never married had ≥ 1.3 times the odds of RR (95% CI [1.059, 1.772]; [1.110, 1.795]). Those living in a homeless shelter or other residential or institutional setting had ≥ 1.2 increased odds of RR (95% CI [1.180, 1.760]; [1.082, 1.510]). Individuals with a history of legal problems experienced 1.2 increased odds of experiencing RR (95% CI [1.142, 1.442]), along with medication non-compliant individuals with 1.339

increased odds of RR (95% CI [1.144, 1.567]). Those who lacked stable housing had some 1.4 increased odds of RR (95% CI [1.240, 1.599]), while those with a substance use or psychotic disorder diagnosis experienced 1.171 increased odds of RR (95% CI [1.046, 1.311]; [1.030, 1.334]). In contrast, females, persons ≥ 55 years, those on SSI or SSDI, and persons without a specified Axis II diagnosis were at reduced risk for RR. Sex, age, medication compliance, housing stability, and Axis II diagnosis, were significant when all admissions were included.

Several factors were shown to be associated with frequency of RR when all admissions were included in multivariate analyses using multinomial logistic regression. Between group differences were demonstrated for at least two groups in analyses using Kruskal–Wallis tests of all admissions for the 24 variables of interest. The final frequency of the RR model, including data on all admissions, accounted for 27.7% of the variability in the dependent variable according to the R^2. Factors significantly associated with number of rapid admissions (p-value < 0.05) included: ages 25–34 or 35–44, divorced/separated and having never married, living with non-relatives/alone, residing in a homeless shelter, or residential/institutional setting/on the street, a history of legal problems, medication non-compliant, lacking a support system, stable housing as a weakness, demonstrating financial needs, or having a psychotic or substance use diagnosis. Persons aged 45–54 are at decreased odds of having four or more RRs, compared to those with SSI/SSDI and Medicaid/Medicare who demonstrate reduced risk at various levels of RR, along with individuals who have an Axis I diagnosis besides mood, psychotic, or substance use disorder. Further, those who do not have a specific Axis II diagnosis also experience reduced risk depending on number of readmissions.

A combination of reduced and increased odds is demonstrated at various levels of RR (1 RR, 2–3 RRs, and 4+ RRs) for the following individuals: females, widowed persons, and those diagnosed with bipolar disorders. Individuals living in a homeless shelter (OR 2.188, 95% CI [1.716, 2.788]), those with a history of legal troubles (OR 1.877, 95% CI [1.602, 2.199]), having an Axis II cognitive or developmental disorder (OR 1.424, 95% CI [0.978, 2.076]), or having Medicare/Medicaid benefits (OR 1.137, 95% CI [0.861, 1.502]) were at increased odds of having four or more rapid readmits. Persons over 55 years of age, or having SSI/SSDI benefits were at reduced risk of being in the highest level of RRs.

The Impact of Length of Stay on Time to Readmission

The relationship between previous length of stay and number of days until readmission was evaluated using Kruskal–Wallis tests and multinomial logistic regression.

This test demonstrated differences among length of stay groups. Post-hoc analyses revealed significant differences between patients who were hospitalized for ≤3 days versus stays of 11–30 days ($=7.079$, $p=0.008$), hospitalizations for 4–10 days differed from those hospitalized for 11–30 days ($\chi^2=7.135$, $p=0.008$) as well as those hospitalized for ≥30 days ($\chi^2=4.730$, $p=0.030$). These results indicate that persons with higher lengths of stay have lower RR rates. Hospitals continually try to minimize the length of stay to save money over time, however, studies have shown an inverse relationship between length of stay and hospital readmission (as length of stay increases, time to readmission decreases) (Kaboli et al. 2012). Kruskal–Wallis tests also showed that sex, veteran status, living situation, homeless status, support system, financial and housing stability, financial and/or housing needs, primary Axis I diagnosis, and number of RRs may have an impact on time to readmission following discharge ($p<0.001$).

Discussion

The goals of this study aimed to identify which factors were associated with RR in Las Vegas, NV, if differences existed between patients based on number of RRs, and if length of stay impacted time to readmission. Significant differences existed between patients who had been rapidly readmitted at least once during the study period in comparison to those who had not, and factors associated with RR were found when patients were categorized by number of RR. Individuals who had been RR two or three times demonstrated significant differences in 11/24 risk-factors and patients with four or more RRs exhibited significant differences in 13/24 risk-factors. Previous length of stay was also found to contribute significantly to time to readmission in multivariate analyses, indicating that longer stay times reduced the likelihood of RR; however, it was not a significant contributor to the final model. Analyses of factors associated with RR were first run with all admissions included and then run again separately for the first admission only. Many of the factors associated with RR are quite fluid in this community. The most important factors positively associated with RR in both analyses were having never been married, living in a homeless shelter, a history of legal problems, and diagnosis of a psychotic disorder. Many of these findings are consistent with previous studies which have found significant associations between RR and being single or having a diagnosis of schizophrenia or psychosis (Fennig et al. 1999; Thompson et al. 2003).

Placement in group housing is an alternative to living in a shelter, which calls into question whether provision of housing would have the desired effect of reducing readmission. HelpHopeHome is a Las Vegas, NV based community project that focuses on ending homelessness in the city while also providing the necessary tools for the homeless community (HelpHopeHome 2018). The lack of stable housing, financial resources, and community support all help drive the RRs occurring in the city, therefore, the total number of homeless utilizing the HelpHopeHome project should be examined. Further, although marital status is not considered a modifiable factor, ensuring that patients have access to a case manager may provide alternative support. Programs such as Homeless to Home, supported by Catholic Charities of Southern Nevada, offer housing, case management, job training resources, as well as food and clothing when available (Catholic Charities of Southern Nevada 2018). The data demonstrate that a lack of stable housing, living alone, and lack of support system all place patients at higher odds of RR. This is consistent with previous studies that identify lack of social and family support as well as inadequate community supports as risk factors for RR (Cuffel et al. 2002; Klinkenberg and Calsyn 1996). Provision of social support may have an important impact on keeping psychiatric patients in the community for longer periods of time and, thus, reduce rates of RR.

Patients who did not receive supplemental security income or social security disability income (SSI/SSDI) benefits demonstrated reduced risk for RR in both analyses, which one study supports (Moran et al. 2000). Although it would seem logical that access to financial support and the increased stability it affords would be helpful in preventing RR, it may be that those individuals on SSI/SSDI tend to suffer from more severe psychiatric illness and experience acute episodes more often than those who do not have access to these benefits.

In comparison to those who were not RR, patients with four or more admissions, the highest risk group, were more likely to live in a homeless shelter and to have a history of legal problems and less likely to lack SSI/SSDI benefits or be over 55 years of age. Younger age has been associated with frequent readmission in several studies (Rosca et al. 2006; Webb et al. 2007; Martinez-Ortega et al. 2012). Patients with two to three RRs were significantly more likely than those who were not RRs to live on the streets, lack a support system, receive a psychotic disorder diagnosis, and have a history of legal problems. Among those with one RR, those with an Axis I psychotic disorder diagnosis were at increased risk for readmission within 30 days; in contrast, those without SSI/SSDI benefits and lacking a known diagnosis on Axis II in comparison to those with personality disorder diagnoses were at reduced risk for RR. Previous studies have similarly identified those with psychotic and personality disorders as being at higher risk of frequent hospitalization (Kastrup 1987; Havassy and Hopkin 1989; Lewis and Joyce 1990; Martinez-Ortega et al. 2012).

History of previous and frequent admission was the factor most consistently demonstrated as significantly associated with readmission (Cuffel et al. 2002; Thompson et al. 2003; Durbin et al. 2007; Zhang et al. 2011; Moss et al. 2014). In this study, total number of RRs explained far more of the variability in RR than any other variable in simple logistic regression ($R^2 = 0.078$), and an early multivariate model including number of RRs explained 59.7% of the variability. However, it was decided not to include number of RRs as it tended to drown out other variables in the model.

Patients were more likely to not adhere to prescribed medication regimens as the number of RRs increased. This finding is in alignment with a study that found medication non-adherence to be strongly associated with admission frequency (Haywood et al. 1995). This is important from a clinical perspective as those with higher numbers of admissions should be reviewed for medication compliance issues and considered for placement in intensive programming, such as Assisted Outpatient Treatment, an outpatient program which mandates treatment with psychiatric medications and can be helpful in reducing readmission rates (Munetz et al. 1996).

Number of RRs demonstrated the largest impact on time to readmission as evidenced by its contribution to the overall model. Patients who had been RR between one and three times were less likely to be readmitted more than 30 days after discharge than those who had not been RR. Patients who had four or more RRs were less likely to be readmitted in eight days or more. This suggests that RRs are more likely to be readmitted closer to discharge, while patient's RRs are more likely to be readmitted much later. Time to readmission has been demonstrated to be shorter among high frequency RRs in other studies (Oyffe et al. 2009; Moss et al. 2014).

The size of the population included in this study is one of the principal strengths of the study design and is further strengthened by multiple analyses that include all admissions and the index admission for each patient. Both strategies may invite some bias into the study, however, significant findings in both analyses suggest that associations are real and not purely the result of study bias. Overall, this study yields useful knowledge for the state of Nevada and will be a useful addition to the existing public health body of knowledge on RR. This study is limited, because the variables extracted from the electronic medical records, which are useful and practical from the perspective of a public health agency, but fails to rule out alternative explanations of the results that may be garnered from a thorough record review. Random and systematic error may also present a problem in terms of diagnosis, where some diagnoses are likely to be avoided because they fail to meet admission criteria. Another concern is misclassification. Much of these data are gathered at the time of admission, and many patients are acutely psychotic at the time which may have resulted in recording incorrect information. Finally, missing data are problematic. Patients were lacking data for at least one factor, which necessitated the inclusion of a group representing missing data for most variables and introduces some bias.

Public Health Implications

The results of these analyses indicate opportunities for integration among public health and clinical staff working in mental health. Providing supportive services such as case management and stable housing may have an impact on successful community living as evidenced by the results of the analyses included in this study. Implementing a standardized protocol for the clearance process in emergency departments or psychiatric hospitals could also help decrease the amount of RR in the city. Case managers can help ensure that clients make it to outpatient appointments, which may increase compliance. Facilitating family involvement may also help reduce RR rates. Results also suggest that having a stable home with familial support can provide a positive impact on psychiatric patient stability. In 2017, there were just over 10,000 caseloads between the Nevada Division of Public and Behavioral health (DPBH) clinics, compared to > 14,000 in 2016 (DPBH 2017).

Further research on RR should focus on several different areas. It is critical that future work focus on risk factors that are most modifiable. As such, future studies should examine whether enrollment in various community-based programs result in reduced RR. Finally, it would be beneficial to consider whether providing financial and social supports reduces rates of RR and if there is a cumulative effect when patients participate in multiple programs and services. It is also important that studies attempt to look at inter-hospital differences to sort out which interventions are effective and to see how implementation impacts the effectiveness of interventions.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

References

Amaro, Y. (2014). Inundated by the mentally ill, valley emergency rooms close to ambulances. Retrieved Mar 25, 2014 from *Las Vegas Review Journal*. http://www.reviewjournal.com/news/inundated-mentally-ill-valley-emergency-rooms-close-ambulances.

Catholic Charities of Southern Nevada. (2018). Homeless to home. Retrieved Mar 24, 2014 from https://www.catholiccharities.com/service_details/homeless-to-home/.

Cuffel, B. J., Held, M., & Goldman, W. (2002). Predictive models and the effectiveness of strategies for improving outpatient follow-up under managed care. *Psychiatric Services, 53*, 1438–1443.

Division of Public and Behavioral Health (DPBH). (2014). Lake's Crossing Center. Retrieved May 6, 2014 from http://mhds.state.nv.us/index.php?option=com_content&view=article&id=30&Itemid=56.

Durbin, J., Lin, E., Layne, C., & Teed, M. (2007). Is readmission a valid indicator of the quality of inpatient psychiatric care? *The Journal of Behavioral Health Services & Research, 34*(2), 137–150.

Emembolu, F. N., & Zun, L. S. (2010). Medical clearance in the emergency department: Is testing indicated? *Primary Psychiatry, 17*(6), 29–34.

Fennig, S., Rabinowitz, J., & Fennig, S. (1999). Involuntary first admission of patients with schizophrenia as a predictor of future admissions. *Psychiatric Services*, *50*(8), 1049–1052.

Havassy, B. E., & Hopkin, J. T. (1989). Factors predicting utilization of acute psychiatric inpatient services by frequently hospitalized patients. *Hospital Community Pscyhiatry, 40*(8), 820–823.

Haywood, T. W., Kravitz, H. M., Grossman, L. S., Cavanaugh, J. L. Jr., Davis, J. M., & Lewis, D. A. (1995). Predicting the "revolving door" phenomenon among patients with schizophrenic, schizoaffective, and affective disorders. *American Journal of Psychiatry, 152*(6), 856–861.

HelpHopeHome. (2018). Help Hope Home: Ending homelessness in Southern Nevada. Retrieved Feb 10, 2018 from http://helphopehome.org/.

Heslin, K. C., & Weiss, A. (2015). Statistical brief: Hospital readmissions involving psychiatric disorders, 2012. *Healthcare Cost and Utilization Project, 189*, 1–17.

International Risk Management Institute, Inc. (IRMI). (2018). Patient dumping. Retrieved Feb 10, 2018 from https://www.irmi.com/term/insurance-definitions/patient-dumping.

Kaboli, P. J., Go, J. T., Hockenberry, J., Glasgow, J., Johnson, S. R., & Rosenthal, G. E., et al. (2012). Associations between reduced hospital length of stay and 30-day readmission rate and mortality: 14-year experience in 129 veterans affairs hospitals. *Annals of Internal Medicine, 157*(12), 837–845.

Kastrup, M. (1987). The use of a psychiatric register in predicting the outcome "revolving door patient". *Acta Psychiatrica Scandinavica, 76*, 552–560.

Klinkenberg, W. D., & Calsyn, R. J. (1996). Predictors of receipt of aftercare and recidivism among persons with severe mental illness: A review. *Psychiatric Services, 47*, 487–496.

Korkeila, J. A., Lehtinen, V., Tuori, T., & Helenius, H. (1998). Frequently hospitalised psychiatric patients: A study of predictive factors. *Social Psychiatry and Psychiatric Epidemiology, 33*, 528–534.

Lewis, T., & Joyce, P. R. (1990). The new revolving door patients: Results from a national cohort of first admissions. *Acta Psychiatrica Scandinavica, 82*(2), 130–135.

Martinez-Ortega, J. M., Gutierrez-Rojas, L., Jurado, D., Higueras, A., Diaz, F. J., & Gurpegui, M. (2012). Factors associated with frequent admissions in a general hospital in Spain. *International Journal of Social Psychiatry, 58*(5), 532–535. https://doi.org/10.1177/0020764011413061.

Moran, P. W., Doerfler, C. A., Scherz, J., & Lish, J. D. (2000). Rehospitalization of psychiatric patients in a manageed care environment. *Mental Health Services Research, 2*(4), 191–198.

Moss, J., Li, A., Tobin, J., Weinstein, I. S., Harimoto, T., & Lanctot, K. L. (2014). Predictors of readmission to a psychiatry inpatient unit. *Comprehensive Psychiatry, 55*(3), 426–430.

Munetz, M. R., Grande, T., Kleist, J., & Peterson, G. A. (1996). The effectiveness of outpatient civil commitment: A conceptual model. *Psychiatric Services, 47*, 1251–1253.

Nevada Division of Public and Behavioral Health (DPBH). (2017). Minutes of the meeting of the assembly committee on health and human services, Seventy-Ninth Session, February 15, 2017. Retrieved Nov 18, 2017 from https://www.leg.state.nv.us/Session/79th2017/Minutes/Assembly/HHS/Final/173.pdf.

Oyffe, I., Kurs, R., Gelkopf, M., Melamed, Y., & Bleich, A. (2009). Revolving-door patients in a public psychiatric hospital in Israel: Cross sectional study. *Croatian Medical Journal, 50*(6), 575–582.

Pedersen, J., & Aarkrog, T. (2001). A 10-year follow-up study of an adolescent psychiatric clientele and early predictors of readmission. *Nordic Journal of Psychiatry, 55*, 11–16.

Rosca, P., Bauer, A., Grinshpoon, A., Khawaled, R., Mester, R., & Ponizovsky, A. M. (2006). Rehospitalizations among psychiatric patients whose first admission was involuntary: A 10-year follow-up. *Israel Journal of Psychiatry and Related Sciences, 43*(1), 57–64.

Sfetcu, R., Musat, S., Ciutan, M., Scintee, G., Valdescu, C., Wahlbeck, K., & Katschnig, H. (2017). Overview of post-discharge predictors for psychiatric re-hospitalisations: A systematic review of the literature. *BMC Psychiatry, 17*, 227–242.

Thompson, E. E., Neighbors, H. W., Munday, C., & Trierweiler, S. J. (2003). Length of stay, referral to aftercare, and rehospitalization among psychiatric inpatients. *Psychiatric Services, 54*, 1271–1276.

Webb, S., Yaquez, L., & Langdon, P. E. (2007). Factors associated with multiple readmission to a psychiatric hospital. *Journal of Mental Health*, *16*(5), 647–661. https://doi.org/10.1080/09638230701494845.

Zhang, J., Harvey, C., & Andrew, C. (2011). Factors associated with length of stay and the risk of readmission in an acute psychiatric inpatient facility: A retrospective study. *Australian and New Zealand Journal of Psychiatry, 45*, 578–585.