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## Evaluation of an Elopement Risk Assessment Tool in an Acute Inpatient Psychiatric Hospital

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**Evaluation of an Elopement Risk Assessment Tool in an Acute Inpatient Psychiatric  
Hospital**

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B. S. Nursing, Maryville University, 2014

A Dissertation Submitted to The Graduate School at the University of Missouri-St.  
Louis  
in partial fulfillment of the requirements for the degree  
Doctor of Nursing Practice with an emphasis in Psychiatric-Mental Health

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## Evaluation of an Elopement Risk Assessment Tool in an Acute Inpatient Psychiatric Hospital

Persons admitted to inpatient psychiatric facilities often pose an imminent risk to themselves or others, a situation which could be exacerbated should they leave treatment prematurely (Bowers, Simpson, & Alexander, 2005). Eloping, often used interchangeably with absconding, has been defined by Brumbles and Meister (2013) as “the unauthorized absence of a patient from a mental health facility without permission” (p. 3). These events can have detrimental effects on patient outcomes as well as nursing staff, the general public, and to the facility (Bowers et al., 2005). While Bowers et al. (2005) state that most elopements do not result in harm to the patient, others have found that there is risk of suicide and other forms of self-harm (Cullen et al., 2015; Shah & Ganesvaran, 2000). Elopement has also been linked to increased length of stay, delay of treatment, and medication non-compliance by the patient (Bowers, Jarrett, Clark, Kimimba, & McFarlane, 1999; Muir-Cochrane & Mosel, 2008). Regarding staff, elopement causes adverse emotional effects, such as anxiety, fear, and embarrassment, as well as an increased work (Bowers et al., 2005; Clark, Kiyimba, Bowers, Jarrett, & McFarlane, 1999). As a result of patient elopement, the general public can suffer from harm to others perpetrated by the eloper, increased support for the stigma against mental illness, and time and expense needed for police involvement (Bowers et al., 2005; Cullen et al., 2015). In addition, the psychiatric facility that houses an eloper may experience a decrease in confidence of their ability to properly care for patients and resulting loss of revenue, as well as potential for litigation should the patient cause harm to self or others after an elopement event (Bowers et al., 2005; Cullen et al., 2015). The need to curtail

elopement from mental health facilities is great for not only the patient's sake, but for that of the facility, its staff, and the general public.

A new elopement risk assessment was implemented at an inpatient psychiatric hospital with the desired goal to reduce elopement events by 10 percent and standardize assessments and interventions. The purpose of this quality improvement project is to evaluate the implementation of an elopement risk assessment in an inpatient psychiatric facility. The aim of this study is to determine the effect of an elopement risk assessment tool in reducing the occurrences of elopement from an inpatient psychiatric facility. This project will seek to answer the following question: In patients 18 years and older who are admitted to the acute care inpatient psychiatric facility what is the effect of implementing an elopement risk assessment? The primary outcome measure is the rate of elopement before and after implementation of the elopement risk assessment. Secondary outcome measures are the percentage of patients that were assessed for risk of elopement. In tandem with this, if assessed and identified a moderate or high risk, the interventions implemented, and for those that eloped, the trends of risk factors for elopement?

### **Literature Review**

A search of the literature was performed using databases CINAHL, ERIC, Health and Psychosocial Instruments, MEDLINE, PsyARTICLES, PsyInfo, and PubMed. Search parameters were the same for all databases. Two separate searches were performed. The first search utilized search terms "elope\* or abscond\*" and "intervention or strategies or best practices" and "inpatient or hospitalization or 'hospitalized patients,'" and the second with search terms "elope\* or abscond\*" and "risk factors or contributing factors or predisposing factors" and "inpatient or hospitalization or

‘hospitalized patients’’. Search mode was BOOLEAN/Phrases, and limiters included English language and publication dates of 2009 through 2019. There is a significant gap in the literature and very few published articles were found in the last five years, therefore, the search had to go back further than is optimal. The combined databases resulted in 103 articles, reducing to 61 articles after duplicates were removed. Due to the small number of limiters, many articles were eliminated based on title alone, to be further narrowed down after reading abstracts. Articles were eliminated based on topic relevance, such as those pertaining to violence, restraint and seclusion, or suicide attempts rather than elopements or that took place in locations other than psychiatric facilities. Studies that took place in inpatient psychiatric facilities and specifically looked at elopement events, risk, characteristics, or motives were included. The final result of the literature search was 19 articles to be included in this review.

Patients that elope often exhibit similar characteristics. The mean age of elopers is in their thirties (32 to 38 years of age) (Culen et al., 2015; Martin, McGeown, Whitehouse, & Stanyon, 2008; Mosel, Gerace, & Muir-Cochrane, 2010; Muir-Cochrane & Mosel, 2009; Muir-Cochrane et al., 2011; Sheikhmoonesi, Kabirzadeh, Yahyavi, & Mohseni, 2012; Yasini, Sedaghat, Esfe, & Tehranidoost, 2009). Males are approximately 1.4 times more likely to elope than females (Culen et al., 2015; Gerace et al., 2015; Martin et al., 2018; Mosel et al., 2010; Muir-Cochrane & Mosel, 2009; Sheikhmoonesi et al., 2012; Simpson, Penney, Fernane, & Wilkie, 2015; Yasini et al., 2009). While most studies only included patients admitted under involuntary commitments, Mezey, Durkin, Dodge, and White (2015) included both voluntary admissions and involuntary commitments, finding involuntarily committed persons were more likely to elope. Mental

health staff also associated involuntary commitment with a risk of eloping due to a feeling of being trapped or confined (Meehan, Mansfield, & Stedman, 2019). Following this line of thought, those with longer durations of stay are at higher risk for elopement (Culen et al., 2015; Gerace et al., 2015; Mezey et al., 2015; Yasini et al., 2009). Of those studies that included diagnosis in their results, most found some form of psychotic disorder, such as schizophrenia, schizoaffective disorder, or a mood disorder with psychosis, as the primary diagnoses of those that elope (Culen et al., 2015; Gerace et al., 2015; Martin et al., 2018; Mosel et al., 2010; Muir-Cochrane & Mosel, 2009; Muir-Cochrane et al., 2011; Sheikhmoonesi et al., 2012). However, Yasini et al. (2009) found that bipolar disorder was the leading diagnosis of elopers and Simpson et al. (2015) found those with personality disorders were most likely to elope. Other diagnoses associated with elopement attempts include learning disabilities, autism spectrum disorder, and dementia or other cognitive disorders. (Barnard-Brak, Richman, & Owen, 2018; Culen et al., 2015; Newcomb & Hagopian, 2018) Additionally, co-morbid substance use disorder is often a commonality in elopers (Martin et al., 2018; Sheikhmoonesi et al., 2012; Simpson et al., 2015; Yasini et al., 2009).

Patients who elope have different motivations which can be grouped into four broad categories; goal-oriented, frustration, symptomatic motivation, and impulsivity or opportunity (Martin et al., 2018). Goal-oriented elopements may include those with a desire to use substances, important life events happening, a perceived need to protect other persons or possessions, or a driving need to locate or accomplish something (Martin et al., 2018; Meehan et al., 2019; Mezey et al., 2015; Sheikhmoonesi et al., 2012; Simpson et al., 2015). Frustration with treatment regimens, doctors, staff, and length of

stay, as well as feeling bored, trapped or fearful of others may motivate patients to elope (Gerace et al., 2015; Meehan et al., 2019; Mezey et al., 2015; Sheikhmoonesi et al., 2012; Simpson et al., 2015). Symptomatic motivations for elopement include those who elope secondary to psychosis or cognitive impairments (Martin et al., 2018; Meehan et al., 2019; Mezey et al., 2015; Sheikhmoonesi et al., 2012; Simpson et al., 2015). Finally, some elopements occur due to patient impulsivity or opportunity, such as an unlocked door or window (Martin et al., 2018; Meehan et al., 2019; Sheikhmoonesi et al., 2012).

In addition to patient motivations to elope, there are multiple precursors which may raise a red flag for healthcare staff that potentially indicate an impending elopement attempt. These precursors are patient behaviors observed by staff. A trend of non-compliance with treatment, such the refusal of medications or therapy and denial of illness have been seen in those that elope (Culen et al., 2015; Meehan et al., 2019; Simpson et al., 2015). Mental health staff observed that those feeling as though they do not need treatment, demanding discharge, or verbalizing intent to elope were at higher risk of eloping (Meehan et al., 2019; Simpson et al., 2015). Defiant or agitated behaviors such as inpatient substance use or verbal aggression may also be seen in those with a propensity to elope (Culen et al., 2015; Simpson et al., 2015). Behaviors such as checking doors, closely following staff near exits, and packing bags may indicate impending elopement attempts (Meehan et al., 2019). Having a history of attempts at or successful elopements are also a precursor to future attempts (Culen et al., 2015; Meehan et al., 2019; Mosel et al., 2010; Muir-Cochrane & Mosel, 2009; Muir-Cochrane et al., 2011; Simpson et al., 2015).

In an effort to prevent elopement, assessments and/or policies may be used when granting leave from acute inpatient or forensic psychiatric hospitals. In two separate studies, an assessment and/or policy was determined to be necessary due to occurrences of failure to return from leave (Meehan et al., 2019; Simpson et al., 2015). Meehan et al. (2019) worked with a facility in Queensland Australia, who had reduced their absconsion rate to 3.9 per 1000 patient days after locking facility doors, utilizing staff input to develop a checklist to be used when determining if a patient should be granted leave in an effort to further reduce these rates. The checklist consisted of six domains, including history of absconding, substance use, behavioral and verbal cues, lack of engagement, and changes in mental state. While the checklist had not yet been implemented during the study, a majority of staff surveyed (71.4%) believed the checklist would help to decrease absconding events, while the remaining 28.6% wanting to see the checklist in use before deciding (Meehan et al., 2019). Simpson et al. (2015) developed a policy requiring multi-disciplinary team input and a Leave Application Form to be utilized before granting patients privileges. Prior to the implementation of the Leave Application Form, the forensic hospital had an absconsion rate of 17.8% (Simpson et al., 2015). The Leave Application Form assessed risk based on substance use problems, prior supervision failure, lack of insight, negative attitudes, unresponsiveness to treatment, and noncompliance with remediation attempts. The application also addressed ways to mitigate risk, patient view on previous failures, behavior changes, and impact of not granting leave. The implementation of the policy and application resulted in 40% decrease in absconding events (Simpson et al., 2015). No studies were found that assessed for elopement risk from locked facilities that did not permit patients to leave the

premises as part of their treatment plan. While there is little data to build upon, it can be surmised that improved risk assessment is the key to reducing or eliminating elopement events from inpatient psychiatric facilities.

The Plan-Do-Study-Act (PDSA) cycle quality improvement model was employed to test change during this study. The PDSA cycle is a four-stage revolving process that can be utilized to test interventions, rapidly assess effects, and adapt changes as necessary (Johnson & Sollecito, 2020). Stage one, the Plan, asks what is trying to be accomplished and why, who the stakeholders are, where and when the change needs to happen, what actions can be taken to affect improvement, and how can the change be implemented (Johnson & Sollecito, 2020). In the Do stage, the plan is implemented, and data is collected at specific intervals (Johnson & Sollecito, 2020). Both accomplishments and problems need to be recorded as they will frame the Study stage of the cycle. The Study stage answers the questions, was change affected, was it the outcome that was expected, and what was learned (Johnson & Sollecito, 2020). The final stage, Act, is when any changes to the plan that may be needed are addressed, as well as if the change is sustainable (Johnson & Sollecito, 2020).

## **Methods**

### **Design**

This quality improvement project utilized an observational descriptive design aimed to measure the impact of a new elopement risk assessment in identifying elopement risks and deterring elopement. A retrospective chart review was performed for the time frame of March 9, 2020 through April 30, 2020, after the assessment was

implemented. The results were then compared to March 9, 2019 through April 30, 2019 to assess for change in elopement attempts or occurrences.

### **Setting**

The quality improvement project was performed at an acute care inpatient psychiatric hospital in a Midwestern metropolitan area serving patients age 12 and above. The inpatient psychiatric hospital, serving those with acute mental health crisis, consists of four separate units, three adult and one adolescent. All units are locked, with patients on two adult and the adolescent unit being able to visit the cafeteria and gym under staff supervision. The hospital serves patients from around the region, including those living in urban, suburban, and rural communities. There is a significant portion of the population that identifies as homeless and are uninsured. There are approximately 74 beds with an average length of stay being three to five days. Due to the length of stay there are an average of 355 admissions per month.

### **Sample**

A convenience sample of patients age 18 and above who were admitted to the inpatient psychiatric hospital was used for the project. Participants included those who were both voluntary and involuntarily admitted to the hospital, males and females, and ranged in age from 18 through 88 years old. Adolescents, age 12 through 17 were excluded from the study.

### **Approval Process**

Ethical approval was obtained from University of Missouri – St. Louis’ and the facilities’ Institutional Review Boards. Additional approvals were obtained from

University of Missouri – St. Louis’ Graduate School and the projects doctoral committee. There were minimal risks and no ethical considerations involved in the study.

### **Data Collection & Analysis**

Data was collected via retrospective chart review; data was coded numerically, and no patient identifiers were recorded. Data collected on patients included legal status, diagnosis, history of elopement, documented risky behaviors such as testing or stalking doors or following closely behind staff exiting the unit, and documented demands to leave, disorientation, or poor decision-making ability. Additionally, information on interventions such as restrict to unit orders and elopement precautions were collected.

Data analysis was completed in Microsoft’s SPSS program. Descriptive statistics were used to analyze project data and Chi-squared tests were used to assess project outcomes. Due to the small number of cases, Fischer’s Exact test was utilized for most of the outcomes.

### **Procedures**

During chart audits conducted by facility leadership during the summer of 2019, it was noticed that patients were randomly and excessively being placed on elopement precautions. Coupled with a lack of standardized interventions, this caused staff to be lackadaisical about the possibility of occurrences of elopement. Additionally, after several elopements it was determined that a more efficient assessment and standardized interventions were needed. Thus, a proposal was made to the Specialty Council in September 2019 to implement a new elopement risk assessment tool. The EPIC team was consulted in December 2019 to build a new flowsheet for the elopement risk assessment tool. Due to delays in the EPIC build, a smart phrase was created in EPIC, the electronic

medical record (EMR), by the Nurse Manager and was implemented by the unit on March 9, 2020.

A team of stakeholders, including facility leadership and Specialty Council, were contacted to discuss evaluation of this program. Following IRB, doctoral committee, and graduate committee approval, data was collected. Two months following implementation of the risk assessment, using a retrospective chart review, data was collected to determine the effectiveness of the program. As there is no standardized reporting procedure for elopements, data had to be extracted using supervisor report notes to identify incidents and a chart review of those of eloping or attempting to elope was conducted to identify risk factors for March and April 2019. Data was then extracted from supervisor report notes to identify incidents of elopement and a chart review of all admitted patients was performed to identify risk factors and interventions being used for March and April 2020, after implementation of the assessment.

## **Results**

### **Assessment of Elopement Risk**

There were 469 patients admitted to the inpatient psychiatric hospital between March 9, 2019 and April 30, 2019. Of these 469 patients, none were assessed for risk of elopement as there was no standardized assessment tool. Between the time frame of March 9, 2020 and April 30, 2020, there were 407 admissions. During this period, 397 patients (97.5%) were assessed for elopement risk.

### **Implemented Interventions**

There were five possible interventions available to be assigned based on level of risk determined by the assessment. These interventions were restricting to unit,

elopement precautions, photograph on EPIC, strategic bed placement, and communication to the treatment team. Due to the Covid-19 pandemic, all patients were restricted to their respective units, so this intervention was not used in the analysis.

During the review period, there were 69 patients assessed as a moderate elopement risk. Of these patients, 28 (40.6%) were placed on elopement precautions, two (2.9%) had their photograph in EPIC, six patients (8.7%) had their beds strategically placed on the unit, and level of risk was communicated to the treatment team for 52 (75.4%) patients. The elopement risk assessment yielded 60 patients at high risk for elopement. Of these patients, forty-two (70%) were placed on elopement precautions, eight (13.3%) had their photograph placed in EPIC, 12 (20%) were recorded as having their beds strategically placed on the unit, and level of risk was communicated to the treatment team for 53 (88.3%) of the patients (see Appendix C: Figure 1 and Table 1).

### **Rate of Elopement and Implemented Interventions**

Prior to the implementation of the elopement risk assessment, during the period of March 9, 2019 and April 30, 2019, eight (2%) of the 469 patients eloped from their units. During the period of March 9, 2020 and April 30, 2020, after the assessment was implemented, a total of four patients (1%) of the 407 admitted patients, eloped from their respective units. Utilizing a Chi-Squared test, implementation of the elopement risk assessment resulted in a statistically significant change from the pre-implementation period in elopement rates ( $p = 0.001$ ).

Each of the four patients, that eloped between March 9, 2020 and April 30, 2020, were on at least one of the interventions for elopement risk reduction which are restrict to unit (due to COVID-19, this intervention was often not recorded as no patients were

allowed off unit), elopement precautions, photograph in EPIC, strategic bed placement, and risk level communicated to the treatment team. Three (75%) of the patients had been placed on elopement precautions, two (50%) had their photograph placed in EPIC, none had documented strategic bed placement, and all four patients were documented as having their risk level communicated to the treatment team (see Appendix D: Figure 2)

### **Trends in Risk Factors**

The purpose of the elopement risk assessment was to assist staff in realizing risk for and preventing possible elopement events. The assessment looked at specific risk factors the patient possesses and assigned a value to the level of risk. A Chi-Squared test was completed on the frequency the risk factors were present in those who eloped, however, due to the small number of cases, a Fisher's Exact Test was run. Risk factors included in the elopement assessment tool included; patient having a legal guardian, involuntary commitment status, diagnosis of one or more of the following: psychotic disorder, bipolar disorder, personality disorder, substance use disorder, dementia, cognitive disorder, autism disorder, or intellectual disabilities, disorientation, having a history of elopement from this or another facility, exhibiting risky behaviors such as checking doors, closely following staff near exits, and packing bags, those demanding discharge, having poor decision making abilities, and excessively worrying over events or belongings outside of the hospital. Statistical significance for risk factors in those that eloped were found for involuntary commitment status ( $p = 0.004$ ), diagnosis of cognitive disorder ( $p = 0.048$ ), disorientation ( $p = 0.005$ ), and exhibiting risky behaviors ( $p = 0.022$ ) (see Appendix E, Table 2)

### **Discussion**

Patient elopement from an inpatient treatment program can result in detrimental effects to the patient, the public, and the facility. There is little research to be found that looks at risk factor assessment and intervention that may reduce the occurrence of these events. This quality improvement project assessed the impact of a new elopement risk assessment tool at an inpatient psychiatric hospital. After the hospital implemented the risk assessment tool, they saw a 50% decrease ( $p = 0.001$ ) in elopement events between March 9, 2020 and April 30, 2020 as compared to March 9, 2019 through April 30, 2019.

As there were no prior studies found on elopement risk assessments from a locked inpatient psychiatric hospital, there are no results to compare those found during this project. However, as in other studies, trends in certain risk factors were found. Mezey et al. (2015) found that person admitted under an involuntary commitment were more likely to elope, as was found in this project. Research by Barnard-Brak et al. (2018) and Newcomb and Hagopian (2018) found diagnoses associated with elopement to include cognitive disorders and disorientation, similarly the results of this project show those characteristics statistically significant. Risky behaviors such as checking doors, closely following staff near exits, and packing belongings were found to be a precursor to elopement in this quality improvement project as well as a study conducted by Meehan et al. (2019).

Most risk factors related to diagnosis, as seen in previous studies, were not found to have statistically significant bearing on events during the time frame for this project. This could be the result of the short timeframe of the review period reflecting a patient population that was less diverse than would be seen over a longer period. However, while

not statistically significant, three of the four persons who eloped during the project's review period had a diagnosis of a psychotic disorder which follows with previous study findings (Culen et al., 2015; Gerace et al., 2015; Martin et al., 2018; Mosel et al., 2010; Muir-Cochrane & Mosel, 2009; Muir-Cochrane et al., 2011; & Sheikhmoonesi et al., 2012). The fourth eloper was diagnosed with a personality disorder which was found to be the leading diagnosis of those that elope in a study by Simpson et al. (2005).

Behavioral risk factors were also less predictive than would have been expected based on previous studies. Another explanation for these variances could be that the assigned interventions successfully prevented those with certain characteristics and/or behaviors from eloping.

Interventions assigned to patients based on their risk assessment varied to some degree, especially for those with a moderate risk score. Regarding the strategic bed placement, there are a limited number of beds that are appropriate for those with moderate or high risk assessment. Therefore, while staff was instructed to "consider" strategic bed placement for moderate risk and all high-risk patients should have been strategically placed, they were often unable to accommodate this intervention. As far as a photograph being placed in EPIC, the iPads used to facilitate this intervention had to be allocated to other uses due to the COVID-19 pandemic. In instances where patients with moderate or high risk were not placed on elopement precautions or the risk level was not conveyed to the treatment team, this was simply error on the part of the assessing nurse.

### **Limitations**

While a statistically significant decline in elopement occurrences appears to be present after the implementation of the risk assessment tool, there are several limitations

to the project. The first limitation is the short timeframe of the review period, which resulted in a small number of cases with which to assess trends in risk factors and usefulness of interventions. Another limitation is lack of record keeping for elopement events. As there is no standardized method of recording elopement events, the data was solely gathered from supervisor notes derived from verbal information passed from one shift to the next. If a supervisor neglected to record the information on the census sheet, it is not included in the data. An additional limitation appears to be lack of in-depth education for staff on the utilization of the risk assessment tool. The only education was delivered via a clinical practice bulletin the day before implementation.

### **Recommendations**

Given the limitations discussed above, changes to the current procedures surrounding the risk assessment and elopement event, as well as future studies are recommended. A formal reporting procedure for elopement events, as well as patient and staff debriefings, with readily available documentation, are recommended. Possibly, a feature the facility could incorporate into EPIC would help to track elopement events. Future studies into the effectiveness of the assessment tool and interventions should encompass a longer timeframe to ensure a study group fully representative of the population served and that time of year is not a factor. Finally, improved education, including how to obtain proper background information and a rationale for each intervention, to improve consistency should be considered.

### **Implications for Practice**

The hospital's implementation of an elopement risk assessment increased awareness of the staff to possible elopement events and factors that may cause them. By

isolating a patient's motivation to elope, staff can work to help them feel safety in remaining inpatient. This may be able to carry over into other areas of treatment and adherence to treatment plans. The safety of patients, staff, and the general public can be improved by preventing those with an acute need for psychiatric intervention from eloping off the unit. Additionally, the elopement risk assessment tool has the potential to be adaptable to not only other inpatient psychiatric facilities but could be useful in other hospital settings where elopements may occur, such as the emergency department or various inpatient units. Further research into validity and reliability of the tool are necessary to determine this.

## References

- Barnard-Brak, L., Richman, D. M., & Owen, D. C. (2018). Assessing wandering risk among individuals with Alzheimer's disease and dementia: A pilot study. *Psychogeriatrics, 18*, 388-392. doi: 10.1111/psych.12336
- Bowers, L., Jarrett, M., Clark, N., Kiyimba, F., & McFarlane, L. (1999). Absconding: Outcome and risk. *Journal of Psychiatric and Mental Health Nursing, 6*, 213-218.
- Bowers, L., Simpson, A., & Alexander, J. (2005). Real world application of an intervention to reduce absconding. *Journal of Psychiatric and Mental Health Nursing, 12*, 598-602.
- Brumbles, D., & Meister, A. (2013). Psychiatric elopement: Using evidence to examine causative factors and preventative measures. *Archives of Psychiatric Nursing, 27*(1), 3-9. doi: 10.1016/j.apnu.2012.07.002
- Clark., N., Kiyimba, F., Bowers, L., Jarrett, M., & McFarlane, L. (1999). Absconding: Nurses views and reactions. *Journal of Psychiatric and Mental Health Nursing, 6*, 219-224.
- Culen, A. E., Jewell, A., Tully, J., Coghlan, S., Dean, K., & Fahy, T. (2015). A prospective cohort study of absconsion incidents in forensic psychiatry settings: Can we identify those at high risk?. *PLoS One, 10*(9), 1-16. doi: 10.1371/journal.pone.0138819
- Gerace, A., Oster, C., Mosel, K., O'Kane, D., Ash, D., & Muir-Cochrane, E. (2015). Five-year review of absconding in three acute psychiatric inpatient wards in Australia. *International Journal of Mental Health Nursing 24*, 28-37. doi: 10.1111/inm.12100

- Johnson, J. & Sollecito, W. A. (2020). *Continuous quality improvement in health care* (5<sup>th</sup> ed.). Burlington, MA: Jones & Bartlett Learning.
- Martin, K., McGeown, M., Whitehouse, M., & Stanyon, W. (2018). Who's going to leave? An examination of absconding events by forensic inpatients in a psychiatric hospital. *The Journal of Forensic Psychiatry and Psychology*, 29(5), 810-823. doi: 10.1080/14789949.2018.1467948
- Meehan, T., Mansfield, Y., & Stedman, T. (2019). Development of a checklist to aid in the assessment of 'failure to return' from approved leave by acute inpatients. *International Journal of Mental Health Nursing*, 28, 989-996. doi: 10.1111/inm.12604
- Mezey, G., Durkin, C., Dodge, L., & White, S. (2015). Never ever? Characteristics, outcomes and motivations of patients who abscond or escape: A 5-year review of escapes and absconds from two medium and low security forensic units. *Criminal Behaviour and Mental Health* 25, 440-450. doi: 10.1002/cbm.1928
- Mosel, K. A., Gerace, A., & Muir-Cochrane, E. (2010). Retrospective analysis of absconding behavior by acute care consumers in one psychiatric hospital campus in Australia. *International Journal of Mental Health Nursing*, 19(3), 177-185. doi: 10.1111/j.1447-0349-2009-00660.x
- Muir-Cochrane, E., & Mosel, K. A. (2008). Absconding: A review of the literature 1996-2008. *International Journal of Mental Health Nursing*, 17(5), 370-378. doi: 10.1111/j.1447-0349.2008.00562.x

- Muir-Cochrane, E., & Mosel, K. (2009). A retrospective analysis of absconding behaviors by psychiatric inpatients in one psychiatric hospital campus in Australia. *Journal of Psychiatric and Mental Health Nursing, 16*, 211-213.
- Muir-Cochrane, E., Mosel, K., Gerace, A., Esterman, A., & Bowers, L. (2011). The profile of absconding psychiatric patients in Australia. *Journal of Clinical Nursing, 20*, 706-713. doi: 10.1111/j.1365-2702.2010.03553.x
- Newcomb, E. T., & Hagopian, L. P. (2018). Treatment of severe problem behaviour in children with autism spectrum disorder and intellectual disabilities. *International Review of Psychiatry, 30*(1), 96-109. doi:10.1080/09540261.2018.1435513
- Sheikhmoonesi, F, Kabirzadeh, A., Yahyavi, S. T., & Mohseni, B. (2012). A prospective study of patients absconding from a psychiatric hospital in Iran. *Medicinski Glasnik, 9*(2), 345-349.
- Simpson, A. F., Penney, S. R., Fernane, S., & Wilkie, T. (2015). The impact of structured decision making on absconding by forensic psychiatric patients: Results from an A-B design study. *BMC Psychiatry, 15*(103), 1-13. doi: 10.1186/s12888-015-0474-1
- Yasini, M., Sedaghat, M., Esfe, A. R., & Tehranidoost, M. (2009). Epidemiology of absconding from an Iranian psychiatric centre. *Journal of Psychiatric and Mental Health Nursing, 16*, 153-157.

Appendix C: Figure 1

Percentage of Interventions Implemented for Moderate and High-Risk Levels

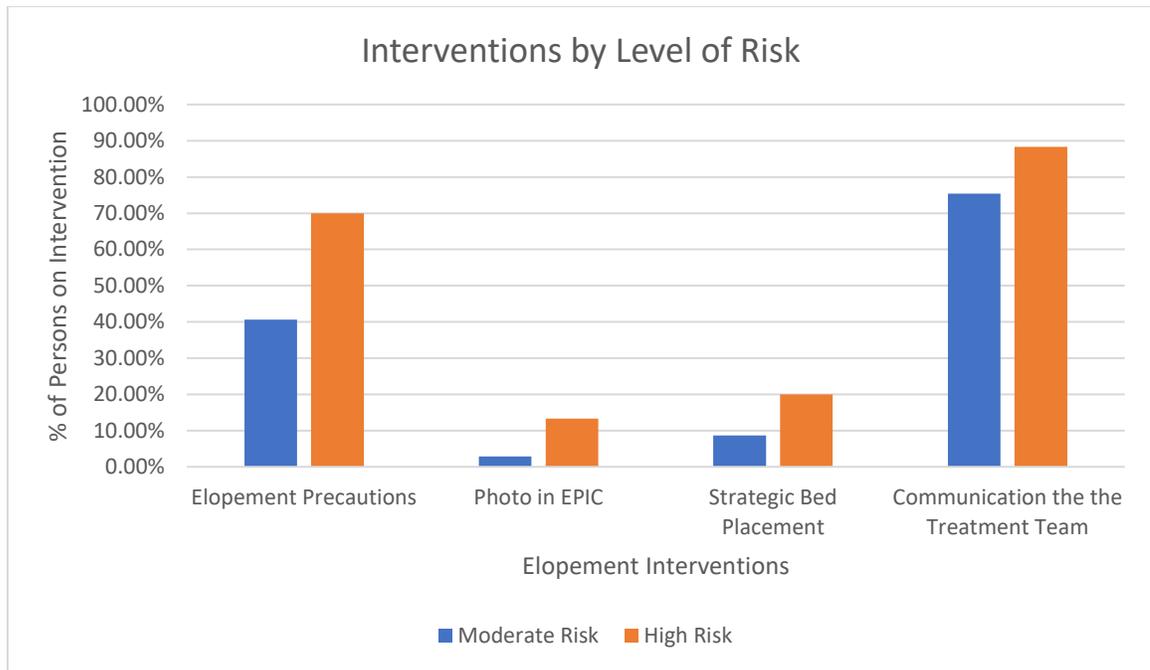


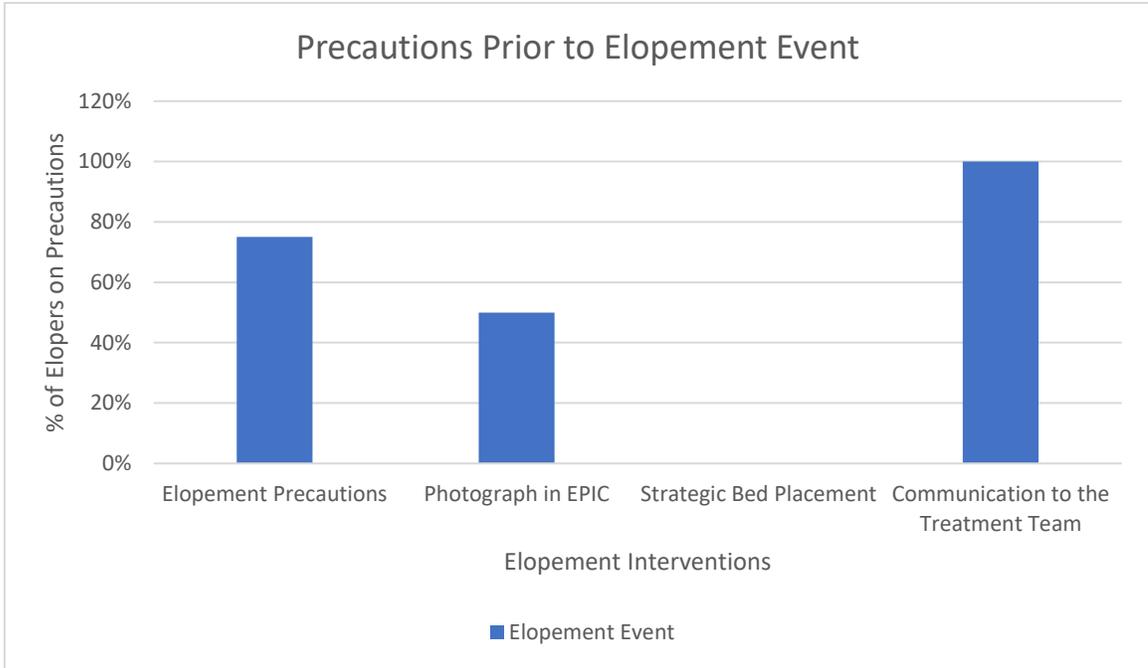
Table 1

Chi-Squared for Relationship Between Level of Risk and Interventions Implemented

Intervention	Value	Significance
Elopement Precautions	142.193	0.000
Photograph in EPIC	5.786	0.055
Strategic Bed Placement	36.817	0.000
Communication to the Treatment Team	30.132	0.000

Appendix D: Figure 2

Percentage of Precautions Implemented Prior to Elopement Event



## Appendix E: Table 2

## Fisher Exact Test of Trends of Risks Factors and Elopement Events

<b>Risk Factor</b>	<b>Exact Significance (1—sided)</b>
Legal Guardian	0.878
Involuntary Commitment	0.004
Psychotic Disorder Diagnosis	0.100
Bipolar Disorder Diagnosis	0.339
Personality Disorder Diagnosis	0.485
Substance Use Disorder Diagnosis	0.683
Dementia Diagnosis	0.980
Cognitive Disorder Diagnosis	0.048
Autism Disorder Diagnosis	0.923
Intellectual Disabilities Diagnosis	0.878
Disoriented	0.005
History of Elopement Attempt	0.183
Exhibiting Risky Behaviors	0.022
Demands for Discharge	0.249
Poor Decision Making	0.363
Excessive Worry Over Outpatient Events or Belongings	0.971