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RESEARCH ARTICLE

UTILIZING A MULTIDISCIPLINARY TEAM APPROACH TO REDUCE FALLS IN THE INPATIENT PSYCHIATRIC UNIT

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ABSTRACT

Falls during hospitalization are a major health care concern (Higaonna, 2014; Shmueli *et al.*, 2014) even more so for inpatient psychiatry (Blair and Waszynski, 2013; Irvin, 1999; Vaughn *et al.*, 1993). The purpose of this quality improvement project was to decrease falls and falls with injury on an adult inpatient psychiatric unit. The project had three key aims: 1) decrease falls and fall-related injuries in a cost-effective manner, 2) enhance communication by embedding the Falls Risk Liaison Nurse (FRLN) within a multidisciplinary team, and 3) increase nursing staff engagement and, promote critical thinking and behaviour. A tool was developed and utilized to capture fall risk-related information. It included the amount of psychotropic medication used in the last 24 hours, vital signs, clinical presentation/complaints, and nursing judgment. The medication profile of these patients was evaluated for appropriate adjustment. At the conclusion of a six-month project, the inpatient psychiatric unit fall rate was reduced from 4.22/1000 patient days to 2.24/1000 patient days. The fall rate with injury was reduced from 0.60/1000 patient days to zero. These results confirm that the multidisciplinary approach was effective in reducing the fall rate and falls with injuries.

INTRODUCTION

Falls during hospitalization are a major health care concern (Higaonna, 2014; Shmueli *et al.*, 2014). Fall rates for patients admitted to inpatient psychiatry units have historically been reported to be high when compared to other acute care units (Blair and Waszynski, 2013; Irvin, 1999; Vaughn *et al.*, 1993). The possibility of patient injury related to high fall rates impacts on cost of hospitalization and length of stay. Tools to identify fall risk have been developed for psychiatry including the Edmonson Psychiatric Fall Risk Assessment Tool (Edmonson, Robinson and Hughes, 2011) and the Wilson-Sims Falls Risk Assessment Tool (Van Dyke *et al.*, 2014). However, neither of these incorporates the impact of psychotropic medications and medical co-morbidities affecting many patients in acute inpatient psychiatric units. Dosing (total dosing including PRNs), rapid titration of medication to manage the patient's acute psychiatric symptoms and frequency of medication adjustment within 24 hours have been shown to correlate with falls (Chan *et al.*, 2013; Graham, 2012). Although the literature clearly reports that psychotropic medications impact falls, hospital standards for managing these falls typically do not incorporate the additional risk posed by their use. A study of psychiatric inpatients reported that medical co morbidities actually led to a decrease in the

likelihood of injurious falls (Chan *et al.*, 2013). The authors postulated that hospital policy requiring heighten fall surveillance of patients on the psychiatric unit with medical illnesses (e.g., hypertension, diabetes) contributed to the decrease. Another identified gap is the limited evidence about fall risk factors and interventions to reduce non-elderly adult falls in inpatient psychiatric units, even though fall rates in these younger patients are reportedly higher (Knight and Coakley, 2010; Poster *et al.*, 1991). Rausch and Bjorklund (2010) found that the use of a Psychiatric Liaison nurse on general care inpatient units improved fall rates by 25%. However, the improvement project did not consider imbedding a PLN in psychiatric units. The purpose of this quality improvement project, which employed a multidisciplinary team of physicians, nurses, pharmacists, social workers, occupational therapists, and activity therapists, was to implement practices to decrease the high rate of falls on an acute adult inpatient psychiatric unit at one academic hospital in the Midwest. To reach the institution's goal of rate of falls 2.0/1000 patient days, this project used a unique strategy for risk identification and team communication. The falls team defined three key project goals: 1) decrease falls and fall-related injuries in a cost-effective manner; 2) enhance communication within the team by embedding a Falls Risk Liaison Nurse (FRLN) within a multidisciplinary team; and 3)

increase nursing staff engagement while promoting critical thinking and behaviour.

METHODS

IRB Statement: Our institution's review board classified this initiative as a quality improvement project not requiring IRB oversight. Nursing staff were expected to implement the practices as part of their routine patient care. Falls and falls-with-injury data from June through December, 2014, were taken as a baseline prior to implementation of the project. The model of Define, Measure, Analyse, Improve, and Control (DMAIC) Christopher, Trotta, Yoho, Strong and Dubendorf, 2014) was used to guide the project. DMAIC is the Six Sigma quality improvement methodology that focuses mainly on process rather than outcome. The reasoning is that focusing on processes results in more effective and long-lasting solutions to the problem (Table 1).

Table 1. DMAIC Model Steps

Define	Delineate the objectives of a quality improvement project
Measure	Develop of a data collection plan
Analyse	Determine possible causes or factors that contribute to the problem
Improve	Find a solution to the problem and test for effect
Control	Implement the solution/quality improvement project and determine if the project goals/expectations were met

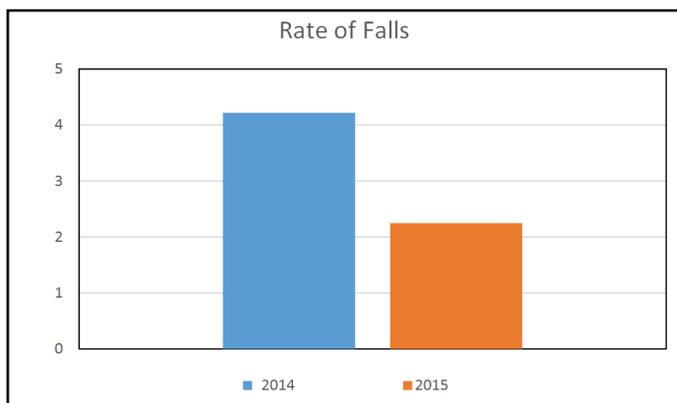


Figure 1

The falls team systematically integrated the model of DMAIC in planning and implementing the project. The team agreed to support consistent utilization of institutional fall prevention policy standards that included keeping the bed low and locked and the floor clutter free. Moreover, the team addressed additional risk-specific interventions such as vision deficits and/or using a walker. Pre-intervention unit data for June through December, 2014, found the rate of falls to be 4.22/1000 patient days and falls with injury 0.60/1000 patient days. Additional data extracted from the medical records of patients who had fallen included: age; gender; history of falls; electroconvulsive therapy (ECT) treatment; injuries; and changes in medications within the 48 hours prior to a fall. Patients aged 18-50 years had 27 falls, while those older than age 50 had 16 falls. Falls data revealed that the young adult patients fell most with 17 falls in the 21-30 age group. More females 19/33 than males fell. Most of those who fell (28/33) had a medical comorbidity. Based on the analysis of data and the literature review, the falls team developed a tool, the Falls Daily Patient Report Form, and established, the role of the Fall Risk Liaison Nurse (FRLN). The Falls Daily Patient Report Form focused on risk factors specific to the individual patient

and included: whether more than two psychotropic medications were given in the last 24 hours dosages administered; clinical presentation/patient complaints/staff observation and symptoms such as dizziness or disorganization; fall risk factors determined by the institution's fall risk scale; vital signs and orthostatic blood pressure, when indicated; medical comorbidities; Positive and Negative Syndrome Scale (Kay *et al.*, 1967) score and agitation time frame; and a nurse's clinical assessment of the patient's fallrisk. The FRLN role was defined as one filled by a bachelor prepared nurse who would also be a consistent member of the inpatient psychiatric multidisciplinary team. The unit's Clinical Care Coordinator assumed the position. Each weekday morning, the FRLN would review the chart and the Falls Daily Patient Report Form, provided by the midnight charge nurse, of all patients identified as having a high fall-risk. The FRLN then would share the information during multidisciplinary care conferences. This facilitated team discussion and creation of an individualized plan to address patient-specific fall prevention strategies. The FRLN would be responsible for communicating and collaborating the plan with the bedside and charge nurses. The design included daily assessment of the high-risk patients was assessed by the FRLN to monitor for change in fall risk. In consultation with the patient's RN, the FRLN would critically evaluate the need for a sitter and provided an opportunity to discuss alternatives, such as a bed assignment closer to the nursing station, mobility aids, and fall prevention reminder signs in the room and/or on the door. Such productive discussions created opportunities for just-in-time staff education, engagement of nurses in the plan of care, and promotion of critical thinking and clinical reasoning. Once the patient's fall risk factors were stabilized, and/or the sitter was discontinued, the FRLN was responsible for reassessing for up to 24 hours and updating the multidisciplinary team on the implementation of each patient's fall risk plan. Staff education was conducted using 1:1 teaching and group presentations during shift change and staff meetings by the falls team. The role of the staff nurse was to complete the Falls Daily Patient Report Form and pass it on to the upcoming shift nurse. Night shift nurses were to collate and ensure completion of the forms and have them ready in the morning for the FRLN's review.

RESULTS

Most medication changes took place within the first week of admission. More fall incidents occurred during that time. All but one fall incident took place within 48 hours of a medication change. Longer patients stay correlated with fewer changes in their psychotropic medications and fewer falls. Lavsa, Fabian, Saul, Corman, and Coley (2010) proposed that typical and atypical antipsychotics, atypical antidepressants, Lithium, benzodiazepines, non benzodiazepines sleep aids i.e., Zolpidem, anticonvulsants or mood stabilizers are associated with falls. Of the 43 patients with a fall incidence, 33 were already on fall precautions. More falls occurred in the general milieu (19), followed by those occurring in patients' rooms (18), and the bathrooms (6). Most falls occurred during the day shift (n=17), followed by the evening shift (n=16), and night shift (n=10). ECT did not appear to be a factor in the falls. During the six-month period following imbedding a FRLN and multidisciplinary care conferences, the unit's fall rate was reduced from 4.22/1000 patient days to 2.24/1000 patient days, and the fall-with-injury rate from 0.60/1000 patient days to zero. A total of 163 patients were discussed during

multidisciplinary care conferences. Most of the patients' medication specific dosages were adjusted. Moreover, an increased number of physical therapy consults for patients with fall risk were reported. Out of a total of 48 nursing staff, 60% responded to the survey distributed to obtain their feedback on the project. The majority (93%) of nursing staff agreed that the initiative met its goal of enhanced communication within the multidisciplinary team and increased nursing staff engagement. 62% percent agreed that the initiative played a key role in enhancing patient education and 48% felt that family education improved. Staff-identified opportunities for improvement included reducing the additional documentation required by incorporating the Falls Daily Report Sheet into the electronic medical record. The results demonstrated that young adults were a high fall-risk population in the inpatient psychiatric unit.

Limitations: This quality improvement project faced four key limitations. First, it is important to acknowledge that the project took place in only one psychiatric inpatient unit, therefore findings cannot be generalized. Second, it is quite likely that other inpatient psychiatric units might not have human resources such as a Clinical Care Coordinator who could work as an FRLN. Third, the baseline data was two years old by the time the fall quality improvement project was developed and implemented.

DISCUSSION

Lavsa, Fabian, Saul, Corman, and Coley (2010) identified a multidisciplinary team approach as the most important extrinsic factor in preventing falls. Both Abraham (2016) and Al-Khatib, Arnold, and Brautigam (2013) proposed that multidisciplinary discussions lead to effective strategies to prevent falls. Knight and Coakley (2010) reported findings from a quality improvement project conducted in a hospital unit primarily caring for patients with acute psychosis. They found when nurses kept track of medications/dosages administered in 24 hours and this information is included in daily multidisciplinary care conferences, the hospital realized a reduction in the fall rate from 6.0 to 0.46. Our findings substantiate this work. A large part of operationalizing the improvement components recommended here was the development of the role of the FRLN. Another key aspect of operationalization of these improvements was building an ongoing auditing system that included reviewing the safety reports and weekly fall project team meetings to discuss any gaps in the process that were identified in the previous week. These processes assisted in planning the following week, e.g., need for further staff education and addressing barriers in a timely manner to ensure smooth progress of the project. The control aspect of the quality process was conceptualized as the combination of having a consistent, dedicated FRLN, regular utilization of the Falls Daily Patient Report Form; and revisiting and addressing identified barriers to sustain gains. Etiology of falls in inpatient psychiatry is multifactorial (Krauss *et al.*, 2005), it requires a multifaceted approach (Blair and Szarek, 2008). A systematic approach within the framework of DMAIC was used in planning, implementing, and evaluating the project. For example, attention was focused on fall risk factors specific to the patient to be in alignment with the institution's fall reduction program, offering opportunity to reinforce standards with staff. Another factor was the appointment of and consistent engagement of the FRLN. The involvement of the multidisciplinary team was

important to the success of the project. Staff became aware that multifaceted nature of inpatient psychiatric patient falls and recognized the value of a multidisciplinary approach. Finally, staff felt that this quality improvement project not only enhanced communication within the multidisciplinary team, but increased nursing staff engagement and boosted their efforts in patient and family education. The falls team faced various challenges throughout this quality improvement project. Initially, it had to define the new role and responsibilities of FRLN and determine who would fill that role. Management supported expanding the role and the workload of the current clinical care coordinator. Moreover, this project increased the nursing staff workload associated with manual completion of the Falls Daily Report Form every shift, while other nursing documentation was done electronically.

Conclusion

This quality improvement project used a DMAIC model (Christopher *et al.*, 2014), 1) to decrease falls and fall-related injuries in a cost-effective manner, 2) to enhance communication within the team by embedding the FRLN within a multidisciplinary team, and 3) to increase nursing staff engagement and, promote critical thinking and critical behavior. An in-depth literature review guided the direction of this project, which was conducted to develop a better understanding of falls reported during the calendar year 2013 and devise an approach to reduce falls and falls with injury. The analysis of the nature and risk factors of patients who fell revealed that young adults fell most frequently and that most falls and medication changes occurred during week one of patients' hospital stays. This quality improvement project was heavily dependent on maximizing existing resources and processes that were created to decrease falls rate. The inpatient psychiatric unit's Clinical Care Coordinator, who performed the role/responsibilities of the FRLN, was key to improved patient outcomes and cost control. Utilizing existing standards and current personnel, this project decreased the unit-based fall rate from 4.22/1000 patient days to 2.24/1000 patient days, and the fall rate with injury from 0.60/1000 patient days to zero during the 6-month project period. The importance of the FRLN and daily multidisciplinary case conferences became apparent as the nurse, pharmacist, physician and others responsible for different aspects of the patients' care contributed to various factors in the project's positive results.

Implications: The multidisciplinary focus on fall prevention and, specifically, medications that contribute to falls, is a principle that can be applied in all inpatient populations. Many different strategies or methodologies can help to decrease falls, and this article demonstrates one valuable and successful approach. Clinicians and administrators may adapt the lessons of this project to suit their unique setting. This evidence-based project at one organization demonstrates a unique application of evidence into practice. This project may be of interest not just to nurses but also to all disciplines that are interested in reducing falls in the psychiatric inpatient population.

REFERENCES

- Abraham, S. 2016. Managing patient falls in psychiatric inpatient units: Part 2. *The Health Care Manager (Frederick)*, 35(2), 121-133.

- Al-Khatib, Y., Arnold, P., Brautigam, L., Chan-Domingo, L., Gennello, B., Jaminola, E., David Stockton, 2013. Prevention strategies to reduce falls in psychiatric settings. *Journal of Psychosocial Nursing and Mental Health Services*, 51(5), 28-34.
- Blair, E. W. and Szared, B. L. 2008. Exploring relationship of psychotropic medications to fall events in an inpatient geriatric psychiatric population. *International Journal of Psychiatric Nursing Research*, 14, 1698-1710.
- Blair, E. W. and Waszynski, C. M. 2013. Fall Prevention in Psychiatric Nursing. Available from: <http://nursing.advanceweb.com/Features/Articles/Fall-Prevention-in-Psychiatric-Nursing.aspx>. [Accessed: 26 March. 2017].
- Chan, C., Gau, S. S., Chan, H., Tsai, Y., Chiu, C., Wang, S. and Huang, M. 2013. Risk factors for falling in psychiatric inpatients: A prospective, matched case-control study. *Journal of Psychiatric Research*, 47, 1088-1094.
- Christopher, D., Trotta, R., Yoho, M., Strong, J. And Dubendorf, P. 2014. Using process improvement methodology to address the complex issue of falls in the inpatient setting. *Journal of Nursing Care Quality*, 29(3), 204-214.
- Edmonson, D., Robinson, S., and Hughes, L. 2011. Development of the Edmonson psychiatric fall risk assessment tool. *Journal of Psychosocial Nursing and Mental Health Services*, 49, 29-36.
- Graham, B. C. 2012. Examining evidence-based interventions to prevent inpatient falls. *Medsurg Nursing*, 21(5), 267-270.
- Irvin, D. J. 1999. Psychiatric unit. *Journal of Psychosocial Nursing and Mental Health Services*, 32(12), 8-16.
- Kay, S. R., Fiszbein, A. and Opfer, L. A. 1987. The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia. *Schizophrenia Bulletin*, 13(2), 261-276.
- Knight, M., and Coakley, C. 2010. Fall risk in patients with acute psychosis. *Journal of Nursing Care Quality*, 25(3), 208-215.
- Krauss, M. J., Evanoff, B., Hicho, E., Ngugi, K. E., Dunagon, W. C., Fischer, I., Birge, S., Johnson, S., Costantinou, E. and Fraser, V. J. 2005. A case-control study of patient, medication, and care-related risk factors for inpatient falls. *Journal of General Internal Medicine*, 20(2), 116-122.
- Lake, E. T., Shang, K., Klaus, S. and Dunton, N. E. 2010. Patient falls: Association with hospital Magnet status and nursing unit staffing. *Research in Nursing and Health*, 33(5), 413-425.
- Lavsa, S. M., Fabian, T. J., Saul, M. I., Corman, S. L. And Coley, K. C. 2010. Influence of medications and diagnoses on fall risk in psychiatric inpatients. *American Journal of Health-System Pharmacy*, 67(15)1274-1280.
- Poster, E. C., Pelletier, L. R., and Kay, K. 1991. A retrospective cohort study of falls in a psychiatric inpatient setting. *Hospital and Community Psychiatry*, 42(7), 714-720.
- Rausch, D. L. and Bjorklund, P. 2010. Decreasing the costs of constant observation. *The Journal of Nursing Administration*, 40(2), 75-81.
- Shmueli, T., Noy, R. H., Ben Natan M. and Ben-Israel, J. 2014. Reporting adverse events at geriatric facilities: Categorization by type of adverse event and function of reporting personnel. *International Journal of Health Care Quality Assurance*, 27(2), 91-98.
- Van Dyke, D., Singley, B., Speroni, K.G. and Daniel, M.G. 2014. Evaluation of fall risk assessment tools for psychiatric patient fall prevention: A comparative study. *Journal of Psychosocial Nursing*, 52(12), 30-35.
- Vaughn, K., Young, B. C., Rice, F. and Stoner, M. H. 1993. A retrospective study of patient falls in a psychiatric hospital. *Journal of Psychosocial Nursing Mental Health Services*, 31(9), 37-42.
