

A DNP PROJECT

**IMPLEMENTATION OF FALL TIPS
INTERVENTION TO REDUCE RATE OF FALLS IN
A PSYCHIATRY INPATIENT UNIT**

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Implementation of Fall TIPS Intervention to
Reduce Rate of Falls in a Psychiatry Inpatient Unit

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Abstract

Project Question

Does educating nurses on the implementation of the Fall TIPS Program decrease the rate of falls in an inpatient psychiatric hospital six months post implementation?

Background

The National Database of Nursing Quality Indicators states that psychiatric units experience 13 to 25 total number of falls per 1,000 patient days compared to four falls in a medical-surgical area per 1,000 days (Abraham, 2016). There are few research studies that focus on the prevention of falls in psychiatric areas despite the higher number of falls rate compared to other inpatient areas.

Methods

A total of 103 Nursing staff were educated on the Fall TIPS program which includes the Morse Fall Assessment, tailored interventions, and hands-on training of the electronic medical record (EMR) TIPS documentation. Comparison of pre- and post- implementation falls rate were compared using the Mann-Whitney U test.

Results

Although there is no statistical significance of falls and falls rate in using Fall TIPS, the data is trending towards significance. The findings showed a decrease in the falls rate using the Fall TIPS program compared to pre-implementation in September 2019 from 4.73 to post-implementation in February 2020 1.46; falls with injury fell in September 2019 from 1.18 to 0.58 in February 2020. The overall falls incidents decreased by 14% from 149 in 2018 to 128 in 2019.

Conclusion

The problem of inpatient falls in a psychiatric unit was addressed and reduced by implementing the Fall TIPS program.

Keywords: psychiatry, falls, tailoring interventions, fall TIPS

Implementation of Fall TIPS Intervention to Reduce Rate of Falls in a Psychiatric
Inpatient Unit

Introduction

The Centers for Disease and Control Prevention (CDC) defines a patient fall as either a witnessed or unwitnessed, unplanned, descent to the floor (Centers for Disease Control Prevention [CDC], 2014). There are between 700,000 and 1,000,000 reported inpatient falls each year per the Agency for Healthcare Research and Quality's Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care (2013). It is also reported that more than one-third of falls lead to fracture and head trauma (Agency for Healthcare Research and Quality [AHRQ], 2019). Per the CDC (2014), by 2020, the cost of fall injuries will reach \$67.7 billion. Fall injury leads to increased length of stay, liability, and additional healthcare costs (Bouldin et al., 2013). The Centers of Medicare and Medicaid Services do not reimburse hospitals for fall related additional expense effective October 2008 (Bouldin et al., 2013).

Per Quigley, Barnett, Bulat, and Friedman (2014), falls occurring in psychiatry units have a higher rate of injury compared to other units such as medical-surgical or nursing homes. Falls with injury are debilitating to patients as the fall may result to loss of function, death, and financial problems. The length of stay in hospitals for psychiatric patients with recurring falls is longer compared to other inpatient populations (Quigley et al., 2014). Having a diagnosis of Alzheimer's or dementia increased the incident of falls compared to geriatric patients' conditions (Quigley et al., 2014).

Despite a growing body of evidence to prevent falls in acute care settings, there is a limited number of evidence-based practices geared to psychiatry. Per Quigley et al.

(2014), addressing multiple components of a patients' risk level and medical conditions are effective ways to prevent falls. In 2009, the Fall Tailored Interventions for Patient Safety or TIPS evidence-based research was launched to prevent falls by using a fall risk screening tool and a tailored fall prevention program which address the patient's risk factors (Dykes et al., 2018).

Background

Per the Centers for Disease and Control Prevention's Falls Among Older Adults: An Overview (2014), falls are considered one of the major problems for older adults aged 65 years and older. Per the CDC (2014), one of three adults fall each year and only half inform their doctors about falls; falls are the leading cause of both fatal and non-fatal injuries. In 2013, there were 2.5 million nonfatal injuries treated in the ED and more than 734,000 older adults were admitted in the hospitals due to falls. Additionally, in 2012, there were 30 billion dollars associated with the direct medical costs of falls.

The Joint Commission states that anyone can be at risk for falls despite age or physical disability if they experience any physiological changes related to medications, procedures, or diagnoses due to confusion and weakness (The Joint Commission, 2015). Per The Joint Commission (2015), hundreds to thousands of patients fall in hospitals every year and 30 – 50% are falls with injury. This also leads to increased length of stay and costs about \$14,000 per incident. There are several factors that may affect the falls rate. Fixsen, Scott, Blase, Naom, and Wagar (2011) report challenges have been identified in the implementation and competency development of fall prevention practices. Recommendations by Bechdel, Bowman, and Haley (2014) to prevent falls include skilled

communication, true collaboration, effective decision-making, appropriate staffing, meaningful recognition, and authentic leadership.

Additional challenges identified by Abraham (2016) specific to psychiatry are patients' behaviors and adherence to plan of care. Psychiatric patients may be voluntary or involuntary admitted to the units. It may be challenging for staff to effectively educate, promote awareness, and engage involuntary patients to address fall prevention strategies due to lack of engagement from the patient. Other risk factors that contribute to falls include impaired judgement, psychosis, confusion, history of falls, polypharmacy, staffing ratio, and anti-psychotic medications (Abraham, 2016; Quigley et al, 2014).

Though extensive research and fall intervention programs currently exist, there are few studies that focus on falls and fall prevention strategies in psychiatric areas. This is very alarming since the National Database of Nursing Quality Indicators states that psychiatric units experience 13 to 25 total number of falls per 1,000 patient days compared to four falls in a medical-surgical area per 1,000 days (Abraham, 2016). The falls rate has not gone down despite intervention programs. This puts psychiatric units at a disadvantage due to their higher number of falls compared to other units.

Significance

The Centers for Medicare and Medicaid Services and insurance companies do not reimburse hospitals for traumatic injuries occurring in hospitals, most of which are injuries related to falls (Abraham, 2016; Centers for Medicare and Medicaid Services [CMS], 2014). This alone is a major concern for hospital organizations. Fall related injuries can be very costly due to treatment and possible litigation. Per Abraham (2016), by 2020, treating fall related injury may cost up to \$43 billion. Post-discharge quality of life of

patients who had an accidental fall is affected. Stenhagen, Ekström, Nordell, and Elmståhl (2014) found that among the elderly population, there was a reduction in quality of life related to physical ailments such as fractures, as well as long term depression.

Needs Assessment

According to the World Health Organization (World Health Organization [WHO], 2019), falls are the second leading cause of injury related death, with an estimated 646,000 fatal falls each year globally. The morbidity rate is highest among those aged 65 years and older, 15 - 29 years old, and children less than 15 years of age. Similarly, deaths related to falls is highest among 60 years old and older.

In the United States, falls are the leading cause of injury related death for those aged 65 years and older according to the Centers for Disease Control and Prevention (Burns & Kakara, 2018). Furthermore, the rate of deaths from falls increased by an average of 3% every year from 2007 to 2016. In New York State, the number of deaths related to falls increased to 15% and fall-related to hospitalizations increased to 19% from 1999 to 2008 (New York State, 2013).

The setting of the project is a 133-bed psychiatric inpatient hospital situated in New York City. The hospital has four units which provide specialized services such as a dual focus program, a mood disorders program, an Asian program which caters to Chinese, Korean, Japanese, and other Asian communities, as well as an older adult program. The Patient Care Team is multidisciplinary, which includes registered nurses, nurse practitioners, nurse aides, phlebotomists, psychologists, psychiatrists, internists, social workers, therapeutic activity staff, and physical therapists.

The mission and vision of the hospital is to provide the highest quality, state-of-the-art mental health treatment and healing environment to the patients. This organization values respect, compassion, quality and excellence, integrity, and teamwork. In order to stay true to the mission and vision, the organization continues to strive to provide the best patient care available by employing evidence-based practices.

A SWOT analysis was conducted to analyze the DNP project's strengths, weaknesses, opportunities, and threats. The organization's strengths included having a solid mission and vision and a Quality Department which guides the organization with the goals it has to achieve for the year. In 2018, the organization had 149 total falls and 21 falls with injury. And so, one of the Quality and Safety goals of this organization was to decrease the number of falls by 8% to 137 in 2019. Despite having these strengths, the organization had some weaknesses. Even with the low number of falls with injury, the organization was seeing a high number of patient falls despite the current falls intervention. Prior to the Fall TIPS implementation, the organization was practicing just the Universal Fall Precautions. The Morse Fall Risk Assessment tool was used to identify a patient's fall risk as either low or high. The fall risk status was documented in the chart; however, currently, there was no tailored or patient-specific intervention being offered related to the patient's fall risk score. If a patient was identified as a low fall risk, the patient was only provided with a standardized patient education handout on reducing risk for falls. However, if a patient was identified as a high fall risk, a standardized intervention was followed which are:

- Use of yellow wrist band
- Use of yellow, double sided non-skid slipper socks

- Use of falling stars placard outside room/Get Up Slowly placard over bed
- Use of call bell instruction
- Identification of high fall risk patients on the Observation/Check board and Comfort Round Sheets
- Orthostatic blood pressure and pulse
- Toileting as needed and prior to sleep
- Standardized patient education handout

In October 2019, the organization implemented the Fall TIPS Program, an evidence-based tool to prevent falls which used a modified Morse Fall Risk Assessment tool and targeted the identified risk factors using evidence-based interventions. The Fall TIPS implementation was above and beyond the previous standard care; it involved staff education, workflow changes in the fall assessment, teaching, tailored interventions, as well as changes to the electronic medical record documentation. However, with every change, there were looming threats that the organization had to accept and mitigate. There was resistance to change. Menlyk, Irwin, and Disch (2012) identified several barriers to implementing evidence-based practices in an organization. These were resistance to change, lack of education on evidence-based practices, no access to information, managerial resistance, inadequate staffing, nursing resistance, physician resistance, budgetary issues, and lack of resources.

Problem Statement

Psychiatric units experience higher rate of falls compared to other units. There is also an increase in the cost of fall related injuries being shouldered by the healthcare

organization. If this trend continues, there would be a negative impact on the patient and the organization.

The clinical question was, does educating nurses on the implementation of the Fall TIPS Program compared to the current standardized fall interventions decrease the rate of falls in an inpatient psychiatric hospital six months post implementation?

This project implemented the evidence-based Falls TIPS tool in all four units of the organization. This project also provided tailored fall interventions to psychiatric patients based on their risk factors from a modified fall risk assessment tool. The TIPS documentation of risk factors, intervention, and education and communicate fall risk status and evidence-based interventions to prevent patient falls in hospitals (Zuyev, Benoit, Chang, & Dykes, 2011).

Aim

The principal aim of this DNP project was to reduce the rate of falls in an inpatient psychiatric hospital through the implementation of the Fall TIPS program.

Objectives

To achieve the aim of the project, several stakeholders were involved.

- The Quality Department provided the specifications required for the Fall TIPS workflow and electronic documentation which was submitted to the Nursing Informatics Committee.
- Once the build was done, this was tested by the Co-Investigator and the Quality Department in the test environment for sign-off before moving to the Production environment.

- While Fall TIPS documentation was being built, the Co-Investigator started developing training materials for the nursing and support staff. In-service was provided along with access to the test environment for the 103 nursing staff to get trained with the new documentation and workflow. Classroom training started in October for two-weeks.
- Once in-service was done, the training materials were posted online to the organization's learning center module for easy access.
- While all this was happening, there was an on-going communication between the Co-Investigator and hospital leadership to update of the status of the project and allow for adjustments as needed.
- Post go-live data collection and analysis were done. The Co-Investigator looked for rate of falls, and the type of falls (with or without injury) for comparison pre- and post-implementation.
- Fall TIPS program became a part of the hospital's standard of care in nursing practice to prevent falls by incorporating the new program in the Fall's policy and incorporated in their daily workflow.

Literature Review

Search Strategy

A literature search was conducted to identify research studies of tailored intervention programs for falls prevention. CINAHL, Medline, and PubMed databases were used to search for studies between 2009 to 2019. Since the original Fall TIPS study was conducted in 2009, the Co-Investigator included research articles starting in 2009. The search terms used were "fall prevention" and "tailored intervention program" or "fall tips". Additional search criteria used were articles published in English and academic

journals. A manual search for reference lists was also done to identify relevant research studies which yielded two additional research studies. Articles were screened using the title, abstract, and full article. Research studies which have discussion on the Fall TIPS program were included. There was a total of 356 search results; however, only ten studies were relevant for use in this review. Refer to Appendix A for graphical representation of the search.

Literature Review Summary

The literature review showed minimal research studies regarding the Fall TIPS program. This was attributed to the fact that the Fall TIPS intervention was started in 2009 and has been tested primarily by its developers. Although literature was scant, the Co-Investigator found foundational research studies in the creation of the intervention, as well as experimental studies in conducting the effectiveness of the tool to decrease inpatient falls. There was also non-experimental research which focused on individual modalities such as usability testing of the toolkit, content validity index testing of the icons, patient engagement, and the Fall Prevention Knowledge Test scale.

The quality of the studies was critiqued using the John Hopkins Nursing Evidence-Based Practice Model's Summary Tool. Based on the methodology used, there were three Level Is, one Level II, five Level IIIs, and one Level V. For a list of all research studies included in the Literature Review, refer to Appendix B.

Although there was strong evidence available on the effectiveness of the intervention in hospital units such as neurology and medical-surgical, further research was needed to assess the effectiveness of the Fall TIPS intervention in Psychiatry.

Description of the studies

Ten studies were found to have reviewed the effects of the Fall TIPS program and the factors associated with it. All the studies took place in acute care hospitals such as medical-surgical units in the United States (Carroll, Dykes, & Hurley, 2012; Duckworth et al., 2019; Dykes et al., 2019; Dykes et al., 2009; Dykes et al., 2010; Dykes et al., 2017; Dykes, I-Ching, Soukup, Chang, & Lipsitz, 2012; Katsulis et al., 2016; Leung et al., 2017; Zuyev, Benoit, Chang, & Dykes, 2011). Although the data collection period was less than six months in each of the individual studies included in this review, the studies showed positive effects for the Fall TIPS program in the falls reduction rate (Dykes et al., 2010; Dykes et al., 2017).

Effect of Fall TIPS program in Falls Reduction

Of the ten studies in this review, two studies focused on the effect of the Fall TIPS program in reducing the falls rate (Dykes et al., 2010; Dykes et al., 2017).

The first experimental Fall TIPS research study was conducted by Dykes et al. (2010). A six-month randomized control study of the Fall TIPS program was implemented in four urban US hospitals. Four units with 5,140 patients were used for the control, while four units with 5,160 patients were used for the intervention. The program reduced the number of falls in control units (4.18 per 1000 patient days) compared to the intervention units (3.15 per 1000 patient days) by 25%.

In another experimental study conducted by Dykes et al. (2017), it was found that the fall rate decreased by 30% from 3.28 per 1000 patient days to 2.8 per 1000 patient days in Site A with a mean adherence to Fall TIPS program at 82%, while in Site B there was a slight fall rate increase from 3.04 to 3.1 per 1000 patient days with adherence rate at 90.5%.

Both of these studies showed a reduction of the falls rate by implementing the Fall TIPS program. One particular study showed a significant reduction in falls rate for patients aged 65 years or older compared to the younger age group (Dykes et al., 2010).

Factors Associated with Falls Reduction

Eight studies examined the different factors associated with falls reduction in acute care hospitals. The factors were rate of fall risk documentation, patient and staff engagement, as well as program adherence.

In 2009, Dykes et al. identified a strategy for implementing the Fall TIPS program using the Institute of Healthcare Improvement's Framework of Spread in four US hospitals. A cluster randomized controlled study was used with a sample of 685 patients. The framework is based on Roger's Diffusion of Innovations theory wherein communication is key to spreading the innovation. The three phases of the framework included planning and set-up, spread within the target population, and continuous monitoring and feedback. The result of the use of the Framework of Spread was a 25% increase in the mean number of fall risk assessments completed by the nurses.

Another randomized controlled study looked at the effect of Fall TIPS program in the effectiveness of the electronic documentation in the quality of fall risk status and interventions. Carroll et al. (2012) found that the intervention groups yielded 89% fall risk documentation compared to the 64% compliance rate for the control group.

There were two usability tests of the Fall TIPS program available in the literature. Studies by Zuyev et al. (2011) and Katsulis et al. (2016), were conducted during the preliminary design of the Fall TIPS program. Usability testing with end users in Zuyev et al. (2011) included providers who will be using the program, individuals who will not be

using the program, and an informatics committee. The observational usability studies found issues and suggestions. The five categories of issues are the toolkit, sign printout, plan of care, patient education printout, and workflow issues. Users recommended not automatically closing the fall risk assessment after completion allowing users to review the assessment, increasing the size of the printout icons, and adding Spanish patient education materials.

In 2016, Katsulis et al. developed a paper version of the Fall TIPS for those hospitals where electronic documentation was not available. Requirements such as icons were gathered from patients and nursing interviews, as well as nursing practice committee. Prototype comparison interviews were conducted to gather feedback and then an evaluation of the final version was conducted. The final design included two separate sections for the fall risk and interventions. Each risk had a specific icon describing the risk factor. The color code system corresponded to the interventions based on the risk factors.

Another design study conducted by Leung et al. (2017) validated the fall prevention icons. The icons communicated intervention plan for staff, patients, and family to improve adherence to the fall intervention. Patients and nurses from two academic hospitals participated in the testing to refine the six fall risk and ten fall prevention icons. Participants rated the icons on a 4-point Likert scale during individual interviews. Content Validity Index scores and feedback were used to improve the icons in the Fall TIPS program.

Duckworth et al. (2019) examined the impact of Fall TIPS program in patient engagement in the 3 Fall TIPS modalities. This included electronic documentation, bedside displays, and poster lamination. Random audits were conducted asking if patient

or family member knew their fall prevention plan and if bedside poster was present during the audit. There were 1,209 audits for patient engagement measure and 1,401 Fall TIPS poster at bedside included in the study. The study found that greater than 80% showed patient engagement and staff adherence to the fall prevention process.

Dykes et al. (2019) developed and evaluated an 11-item Fall Prevention Knowledge Test scale and found it to have a tetrachoric coefficient of 0.73 reliability and validity. The Fall Prevention Knowledge Test scale was used to assess nursing staff knowledge of fall prevention. After assessing staff knowledge, an effective educational program was created to address gaps in nursing knowledge.

The first pilot study of the Fall TIPS program by Dykes et al. (2009) was used to identify factors associated with falls. A later case control study by Dykes et al. (2012) used data mining to find out why patients fell and to apply these findings to improve the Fall TIPS program. Although the Fall TIPS program was accurate; fidelity and adherence to the interventions was found to be lacking for both patients and providers. Practice recommendations from the 2012 study included educating patients about the risk factors and the specific interventions that apply to the patients.

Fall TIPS program

Based on the literature review, several studies acknowledged the importance of the Fall TIPS program. The program's key elements in reducing the falls in inpatient units included timely risk assessments of patients' specific risk factors using the Morse Fall Risk, automatically generated and customized interventions based on the risk factors, and communication tools such as care plans, patient/family education, and bedside alert posters. The Fall TIPS program used a clinical decision support wherein interventions

tailored to patient specific risk factors were selected (Dykes et al., 2010). The interventions used in the program were from evidence-based fall interventions for patient specific risk factors (Dykes et al, 2009). For example, if a patient had a history of falling, the intervention specific to this risk factor was automatically selected by the electronic medical record (EMR). Based on the patient's risk factors, the education material and the poster reflected identified risk factors using the Fall TIPS icon which was developed specifically for this program (Leung et al., 2017).

The Co-Investigator found studies showing consistently decreased fall rates through the use of the Fall TIPS program. The research settings were limited to medical-surgical units; no research was conducted in a psychiatry setting. Therefore, future research was needed to measure whether the Fall TIPS program was effective in other healthcare settings.

The results of this review indicated that the Fall TIPS program was an effective intervention in reducing falls in acute care settings. Factors identified in this program that may lead to improved patient safety outcomes included timely assessment of fall risk factors, tailored fall interventions, and patient and staff engagement using the Fall TIPS program. With this knowledge, this intervention was expected to be successful in reducing the fall rates in inpatient Psychiatry as it had similar environmental settings for which the above factors can be implemented, and outcomes can be measured.

Theoretical Framework

This DNP project utilized Lewin's Force Field Analysis as the theoretical framework. In 1951, Kurt Lewin developed the force field analysis theory that consisted of a three-phase change model (White and Dudley-Brown, 2012). The first phase was

unfreezing the current situation either by increasing the forces of change or decreasing the opposing factors for change. The second phase was moving or changing, which was implementation of change. The third and final phase was refreezing, where changes were sustained.

The first phase, unfreezing, required a determination of need. The organization was looking to decrease the rate of falls. The second phase was changing, which meant implementation of the project will take place. To do this, the Fall TIPS program was implemented which involved changes in EMR documentation and nursing education. The final phase was refreezing wherein the changes remained in place, policy modification took place, monitoring of the falls rate were ongoing, as well as staff feedback to discuss issues and possible workflow improvement. Refer to Appendix C for a graphical representation of the theoretical framework.

Quality Improvement Project

The Quality Improvement project was established; its goal was to improve the falls rate by monitoring the performance and improving outcomes. The Plan-Do-Study-Act or PDSA cycle was one of the most commonly used Quality Improvement approaches. White and Dudley-Brown (2012) stated that PDSA improves outcome and performance. For this DNP project, the plan phase was to implement the Fall TIPS program in the four inpatient psychiatric units in the project setting. Plans included build, training, testing, and go-live. The do phase was the project proposal approval by the hospital and then by the IRB. The study phase was the implementation rollout in October 2019 to all the units. Lastly, the act phase was the continuous monitoring of the fall rates in all the units via outcomes

monitoring. The fall rates data determined the success of the project. Refer to Appendix D for a graphical representation of the PDSA model for the project proposal.

Methodology

Design and Methods

This project was a quantitative evaluation of a quality improvement project. The nursing staff were educated on the Fall TIPS program in a classroom setting and then through additional online learning. Practice changes and electronic documentation with no clinical decision support were implemented. The pre- and post-implementation falls and falls with injury rates were compared.

Procedures

The Quality Improvement project was established to educate the nursing staff on the Fall TIPS program. The educational session was an in-person classroom training followed by an online training as a refresher for all the nursing staff. The training and refresher education were on the Morse Fall Risk Assessment tool, a tool to identify patients who are at risk for fall (Dykes et al. (2009). The nurses were educated on specific interventions related to a patient's risk factors identified with the Morse Fall Risk tool. Materials, including a bedside poster and patient education, were printed and provided to the patients by the nurses. The Fall TIPS documentation pre-completed note was inserted into the electronic health record by the Co-Investigator. The updated fall risk assessment was completed by the nurses during admission and part of the daily assessment, re-assessment, and post-fall as per the hospital's policy. The updated fall risk assessment documentation replaced the current admission fall risk assessment in the BH Intake Assessment and in the BH Ongoing Assessment for the daily assessment. The Fall TIPS

program used a pre-completed note with no clinical decision support where the intervention specific to the risk factors were selected, as well as identifying risk of injury using the ABCS in the EMR. In addition, the standardized fall tips intervention remained. Refer to Appendix E for the sample Fall TIPS program using the electronic Morse Fall Risk tool and interventions. Based on the patient's identified risk factors, the nursing staff documented an individualized patient education material using the Fall TIPS icon to reflect the risk factors. Likewise, the nurses printed the patient education materials to reflect updated fall risk assessment factors. Refer to Appendix F for a sample bedside poster, and Appendix G for a sample Patient Education handout.

The classroom training included a demonstration of the updated EMR documentation, followed by hands-on training wherein nurses were given the opportunity to practice documenting on the EMR. After the classroom training, nurses were asked to complete the online training refresher.

Per hospital quality improvement protocol, all 103 staff nurses were mandated to attend one classroom training and an online training prior to the project implementation. Classroom training were made available for two weeks in October 2019. It was available from Monday to Friday from 0800H – 0900H, 1200H – 1300H, 1500H – 1600H, and 1600H – 1700H at the hospital. Refer to Appendix H for the teaching plan and content. E-mail communication was sent to the nurses to inform them of the classroom training schedule. Refer to Appendix J for e-mail communication.

Duration for Study and Each Subject

The duration of the project was from October 2019 to March 2020. Education started in October 2019 for two weeks and then data were collected for six months.

Preliminary Data

Preliminary data included the pre-intervention falls rate which were provided by the Quality Department.

Study Variables

The monthly inpatient falls and falls with injury rates were the outcome variables for the project.

Data Collection

- Data Source: The data source was the hospital's incident reporting application, KeepSafe. The Co- Investigator did not have access to this application; the Quality Department provided monthly de-identified falls rates in Excel. The fall incidents are reported by the nursing staff every time there is a fall incident.
- Inclusion/Exclusion: All reported patient falls from January 1 to September 2019 and January to December 2018 (pre-intervention) and from October 2019 to February 29, 2020 (post-intervention) were collected, summarized as monthly rates, and provided to the Co-Investigator.

Project Management***Co-Investigator Qualifications***

The Co-Investigator is a Master's prepared Nursing Informaticist who works as the Nurse Informaticist in the hospital. The Principal Investigator (PI) is familiar with the culture and policy of the site. The PI has experience providing in-service training to registered nurses, especially with changes to the EMR documentation. Also, the PI is a member of the Falls, Research, and Nursing Informatics Committees which are beneficial to the project and to the hospital.

Resources Available

The Quality Department collected and provided the data at no charge to the co-PI. The Department of Nursing was available to answer any questions or concerns the nurses have with the Fall TIPS program.

Setting

The setting was a 133-bed psychiatric inpatient hospital situated in the Upper East Side of New York City. This facility was affiliated with one of the biggest hospitals in New York and had four units which provide specialized mental health services. Its aim was to provide high-quality, patient-centered mental health and chemical dependency treatment services to those living in New York City. The patient population admitted in the hospital included Caucasian, Hispanic, African American, and Asian. This facility only admitted adult ages 18 years old and older with behavioral health needs.

Project Timeline

Project implementation began in October 2019 and concluded in February 2020. The timeline was contingent on IRB approval. A detailed timeline is found in Appendix I.

Waiver of Consent Process

This Quality Improvement project requested to waive consent of the nurses as this was an expected component of their work. Likewise, the consent of the patients was not required beyond their routine consent for treatment.

Risks and Benefits to Staff

Privacy protections were followed as the Excel data provided to the PI Principal Investigator not include Protected Health Information or PHI of either the patients or the

nurses. The Registered Nurses received the benefit of education on the Fall TIPS program. The patients received the benefit of heightened attention to the prevention of falls.

Data Management

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences or SPSS version 26. Pre-analysis phase were done to edit raw data and to enter data in SPSS. Preliminary analysis was conducted to identify missing values. The incidence rates of falls were analyzed using bivariate statistics. Pre- and post-implementation fall rate data were analyzed using the Mann-Whitney U test.

Data Security

The data were kept confidential and safe in a locked file during and after the project. All data were encrypted and de-identified of names and medical record number. Only the Principal Investigator and Co-Investigator have access to the data for security.

Approvals/Authorizations

A Site Letter Agreement was obtained from the project setting as part of the requirement for the DNP project proposal. Refer to Appendix K for the letter. Another requirement for the DNP project was the DNP Team Signature sheet. Refer to Appendix L.

Results

This Quality Improvement project involved education of 103 Registered Nurses on the Fall TIPS program. The intervention began October 7, 2019 to October 18, 2019 with a go-live date of October 21, 2019. Preliminary and post-intervention falls data including rate of falls per 1,000 patient days was provided by the Quality Department.

Upon completion of data gathering, a Mann-Whitney U test was used to test unrelated samples of data from independent sources. This test was also used to identify if there is a significance decrease in the falls rate by comparing pre-and post-implementation fall rates. The results indicated that the falls rate and falls rate with injury in the Fall TIPS program was lower than the Fall Standard program. Falls rate and Falls with Injury rate of the Falls Standard program were higher than those of the Fall TIPS program. A Mann-Whitney U test for falls rate and falls with injury rate indicated that this difference was not statistically significant from pre-intervention rates in January 2018 to September 2019 versus post-intervention rates beginning in October 2019 to February 2020:

Falls rate: $U(N_{\text{Fall standard}} = 21, N_{\text{Fall TIPS}} = 5,) = 33, z = -1.27, p = 0.21$

Falls with injury rate: $U(N_{\text{Fall standard}} = 21, N_{\text{Fall TIPS}} = 5,) = 30, z = -1.47, p = 0.14$

Refer to Table 1 for the statistical table.

Although there is no statistical significance of falls and falls rate in using Fall TIPS, the data is trending towards significance. Falls data per 1,000 patient days are summarized in Figure 1. Based on this data, there is a downward trend of falls. The fall raw and rate pre-intervention on September 2019 were higher than the fall raw and rate post-intervention on February 2020 (16 to 5 and 4.73 to 1.46, respectively). Figure 2 which summarized Falls with Injury per 1,000 patient days showed a decrease three months post-implementation to an increase in February 2020 (4 to 0 to 2) and falls with injury rate post-implementation from 1.18 on September 2019 to 0.58 on February 2020 post-implementation. The falls and falls with injury raw and rates from January 2018 to February 2020 are summarized in Figures 3 and 4, respectively. Though the Fall TIPS program only went live on October 2019, the overall falls incidents decreased by 14% from

149 in 2018 to 128 in 2019 achieving the Quality and Patient Safety goal to decrease by 8% in 2019.

Discussion

Inpatient psychiatric units have the highest rate of falls compared to other non-psychiatric units (Abraham, 2016). There are many challenges in preventing falls in this type of unit such as patient behaviors and adherence to plan of care, lack of patient engagement in their treatment plan, and limited research studies that focus on falls and fall prevention strategies in psychiatry (Abraham, 2016). The TIPS program, an evidence-based practice showed a downward trend in the rate of falls and falls with injury after education of nurses of the TIPS program, although not statistically significant.

The problem of inpatient falls in a psychiatric unit can be addressed and reduced using the Fall TIPS program. This program identifies the patients' fall risk factors and tailors' interventions to address the risk/s to prevent falls in the hospital. In this hospital setting, nurses identify fall risk factors by completing the Morse Fall Assessment every shift. Based on the risk factors identified, interventions will be identified to address specific risk factors. Universal fall precautions and fall risk injury assessment are also included in the assessment and interventions. Patient and family involvement in the fall prevention plan of care is part of the program.

The objectives of the Quality Improvement project have been met.

- Objective #1: Educated and trained all nurses in the Fall TIPS program
- Objective #2: Trending down of rate of falls incidents
- Objective #3: Post go-live data collection and analysis

- Objective #4: TIPS program as the Nursing Standard of Care in fall prevention

There were barriers that affected the implementation of the TIPS program in this hospital. The major barrier was the inability of the EMR vendor to build the TIPS documentation with clinical decision support this year due to lack of resources on their end. This barrier was mitigated by revising the TIPS workflow. Instead of utilizing clinical decision support to automate the documentation of interventions, the nurses would have to manually document and select the interventions, document patient education, and document on the TIPS poster posted in all the patient rooms. Due to this change, buy-in was re-obtained from leadership and staff. IRB modification was submitted and obtained from Rutgers University to allow changes identified to the project.

Another barrier that was encountered were the nurses' resistance to change. Using Lewin's Force Field Analysis theory, phase one was achieved by increasing the forces of change. Buy-in was obtained from leadership and nurses, Registered Nurse Fall Champions identified per shift per unit, Fall TIPS in-service provided, education, and in-person training provided. Phase two is the moving or changing phase where intervention and implementation were completed; however, not all staff welcomed the change. When chart audits were done by the nurse managers, they were finding missing documentation in the first two weeks after go-live. To resolve this issue, constant rounding on the unit was done for the month of October to provide support to the nurses. Phase three was achieved by sustaining the change and making it part of the Nursing Standard of Care in the hospital and hospital policy.

The PDSA cycle is currently being utilized to identify improvement in outcomes and practice. To achieve this, the Quality Department is monitoring the fall rates data every month and is being communicated to the units and various hospital committees. Staff feedback is very important to identify issues and areas for improvement in the current workflow. At this time, the current fall policy needs revision to reflect current workflow.

Implications

Clinical Practice

The Fall TIPS program effectively reduced fall incidents in a psychiatric unit as evidenced by the results from this project. The foundation of this program as identified by Dykes et al (2017) addresses problems with communication which is found to be the main reason for the fall incidents. To prevent falls, the program follows a three-step process which are conducting fall risk assessment, using tailored fall prevention plan, and implement the plan of care consistently using universal precautions and fall risk injury assessment. In the study by Dykes et al (2017), although the nurses are conducting the assessment, communicating the risk factors and plan of care is not being done consistently.

The Fall TIPS program implemented at the project site follows the three-step process. Although the nurses are already conducting fall risk assessment by using the Morse Fall Assessment tool, this project provided re-education of the Morse Fall Assessment. Properly identifying the risk factors is important as it drives the intervention and plan of care during the patient stay. Fall assessment is done every shift to capture changes to the patients' risk factors. The second step is using tailored fall prevention plan using the TIPS poster and EMR documentation to address the patients' risk factors identified in the assessment. Education documentation is also being documented in the

EMR and a printout of the patients' plan of care by addressing the risk factors and tailored interventions is conducted every shift. The final step process is consistently implementing the plan of care, assessment, and education. Universal fall precautions and the fall risk injury assessment is assessed and documented every shift as well. Following the above steps significantly reduced the rate of falls in the project site.

Healthcare Policy

Since the institution of the Fall TIPS program at the project site, the Falls Policy was revised to incorporate this new program. The Nursing and Fall Prevention committees were the ones who revised the current policy and presented to the Policy and Procedure committee for approval.

The following consideration have been incorporated in the newly revised policy. It is required that fall risk factors will be assessed every shift, followed by the documentation of the tailored interventions, universal fall precautions, fall risk injury assessment, and patient education. In addition to the assessments and documentation, involving the patients and family members is required. In doing so, adherence to the plan of care can be seen through the support of family.

Quality and Safety

It is an organization's duty to prevent falls according to Murphy (2013). An example is a Quality Improvement committee leads the falls prevention project. At the project site, the Quality Department performs quality and data reporting. One of the project site's quality and patient safety initiatives is to decrease the incident of falls.

This initiative was achieved by implementing the Fall TIPS program which showed a significant reduction of falls. As part of the quality audits, Fall TIPS tracers have been

developed to ensure that the program is being consistently implemented at the hospital. Nurse managers have been tasked to perform audits and submit this audit to the Quality Department to monitor compliance and identify issues, if any.

Education

Education is vital to the success of the Fall TIPS program. Properly training the nurses in the Morse Fall Assessment, Falls Risk Injury Assessment, Universal Precautions, and available interventions gave nurses the skills and knowledge they need to implement the program. Face-to-face education with hands-on exercise provided nurses the ability to review the updated EMR documentation, practice documenting on the EMR, and ask questions they may have regarding the new workflow. In addition to the in-service they received, the nurses were also provided with supplementary e-learning module of the Fall TIPS program.

Patient and family education is another key component of the program. Educating patients and family of the three-steps ensured that they are included in the patients' plan of care. Involving patients and family is one of the challenges encountered in a psychiatric patient population; however, consistently including them in the fall prevention program led to them understanding the risk factors and identify ways to address those risk factors to keep them safe while in the hospital.

Economic Implications

Falls prevention has a big impact in cost-savings for any hospital organizations. Preventing falls not only will benefit the hospital organizations, but patients themselves. Just like any other sentinel events, the patients will not experience increase their length of

stay and will not receive physical and emotional harm if falls are prevented at the hospitals.

Plans for Future Scholarship

Dissemination. The completed report will be shared in different avenues. There will be a poster presentation in the RSN poster day in Rutgers University, as well as at the hospital's Annual Evidence-based Practice and Research Symposium and during Grand Rounds. The Co-Investigator will submit the report for publication as well. The result of this project will be discussed in the final public presentation of the project in Rutgers University, as well as in the hospital's Falls, Nursing Informatics, Research and Evidence-based Practice, and Professional Governance Committees. The results will also be published locally in the hospital's quarterly newsletter as well as in the unit's electronic visibility boards used for communication. Future Information Technology changes will include building the Fall TIPS documentation with built-in clinical decision support.

Sustainability. This intervention became a part of the hospital's standard of care in nursing practice to prevent falls. Haas & Mortensen (2016) identified four enabling conditions that are present in high-performing teams. These are direction, strong structure, supportive context, and shared mind\set. After the conclusion of the project, the Quality Department will continue to monitor the falls rate and identify changes that might be needed to make the program more effective in this setting. Using the Plan-Do-Study-Act framework, it will identify opportunities for improvement in the intervention. The Institute of Healthcare Improvement (2008) identified several key components of sustainability including staff engagement and culture of improvement. The hospital encourages staff engagement especially when it comes to nursing practice through the Professional Governance Committee. This committee is comprised of multiple disciplines which

balance each other's skills and knowledge and share their expertise in problem solving. Management plays an important role in this committee offering support to the group's suggestions and solutions. As such, every member feels supported and empowered to voice their concerns, opinions, and potential solutions to issues. Although not all staff can be included, members of the committee have the responsibility to share information with their own unit or discipline and discuss among themselves ways to resolve issues identified as well as to try out solutions identified in the committee. In doing so, the organization functions in a shared mindset where all work together towards the goal to create a culture of improvement and staff engagement.

Conclusion

The problem of inpatient falls in a psychiatric unit may be addressed and eliminated by implementing the Fall TIPS program (Dykes et al., 2009). The Fall TIPS program identifies the patients' risk factors and tailors' interventions to the specific risk factors in an aim to decrease the rate of falls. The following are the key elements to be observed for the success of this program:

- Communication of fall risk status with staff and patients via the Morse Fall Risk Assessment and the patient handout, as well as the bedside poster printout
- Education of staff
- Consistency in applying and documenting the falls risk score and intervention

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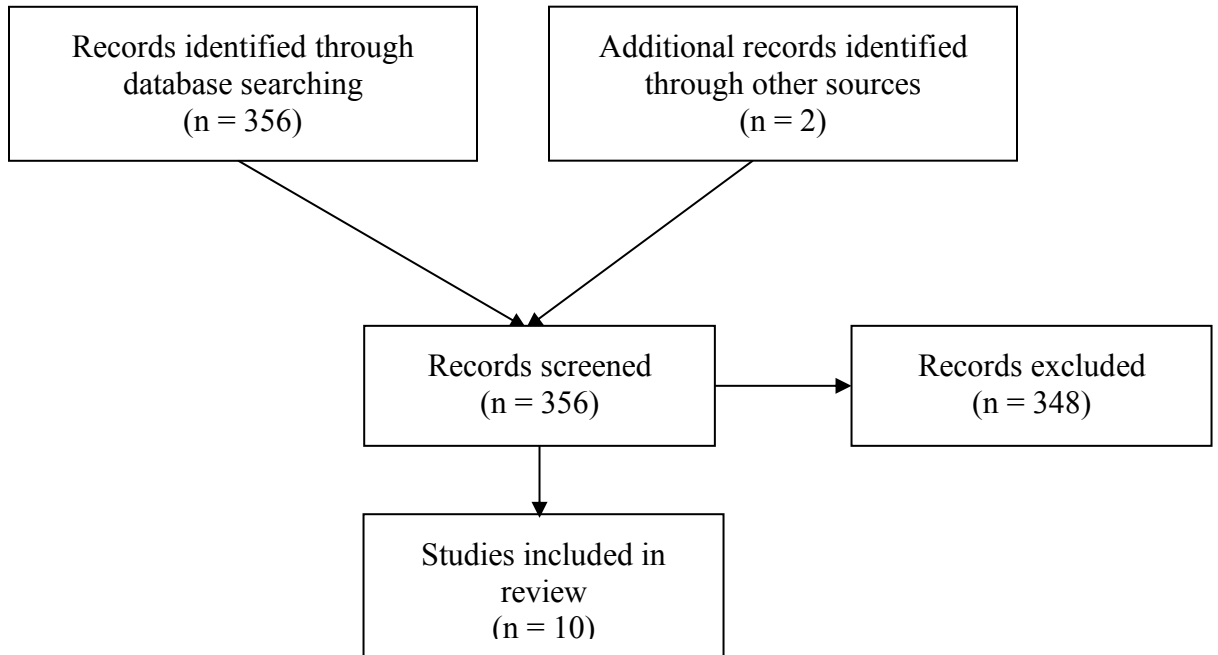
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Appendix A
Literature Review Search



Appendix B
Table of Evidence

Article #	Author & Date	Evidence Type	Sample, Sample Size, Setting	Study findings that help answer the EBP Question	Limitations	Evidence Level ¹ & Quality ²
1	Carroll et al. (2012)	Randomized controlled study	Four units and 5,267 patients (intervention); four units and 5,116 (control); 320 patients had fall risk documented (n=117 control and n=157 intervention); two academic and two	The intervention yielded a significantly higher number of fall risk documentation (84% compliance compared to 64%)	Small sample size; not blinded study	Level I - Low

¹ Evidence levels are as follows: Level I is experimental study, RCT; Level II is quasi-experimental study; Level III is non-experimental study; Level IV is opinion from expert committees; and Level V is experiential and non-research evidence (Dearholt & Dang, 2012)

² Quality levels are as follows: High is consistent, generalizable results; Good is reasonably consistent results; and Low is little evidence with inconsistent results (Dearholt & Dang, 2012)

			community hospitals			
2	Duckworth et al. (2019)	Nonexperimental study	Six neurology units; 7 medical-surgical units; 1209 patient audits; 1401 Fall TIPS poster at bedside; three acute care hospitals in the US	The study found that greater than 80% showed patient engagement and staff adherence to the 3 Fall TIPS modalities which are electronic, laminated, and bedside display	Differences in the implementation of the Fall TIPS at the three hospitals which include communication, systems, leadership and timing of the implementation; not randomized	Level III – Low
3	Dykes et al. (2019)	Nonexperimental study	209 subjects (n=104 – test; n=105 – validation)	The study developed and evaluated an 11-item Fall Prevention Knowledge Test. FPKT scale reliability = 0.73; validity was also adequate.	Not randomized subjects; all subjects were interested in the topic	Level III - Good
4	Dykes et al. (2009)	Cluster randomized controlled study	685 patients; Hospital A n=142; Hospital B n=208, Hospital C n=170; and Hospital D n=165); four	Using the Institute of Healthcare Improvement's Framework of Spread is an effective framework in implementing the Fall TIPS program (25% increase in the nurses' documentation of the fall risk assessment)	Short amount of time the study's been in implemented (6-months); only available in experimental units	Level I – High

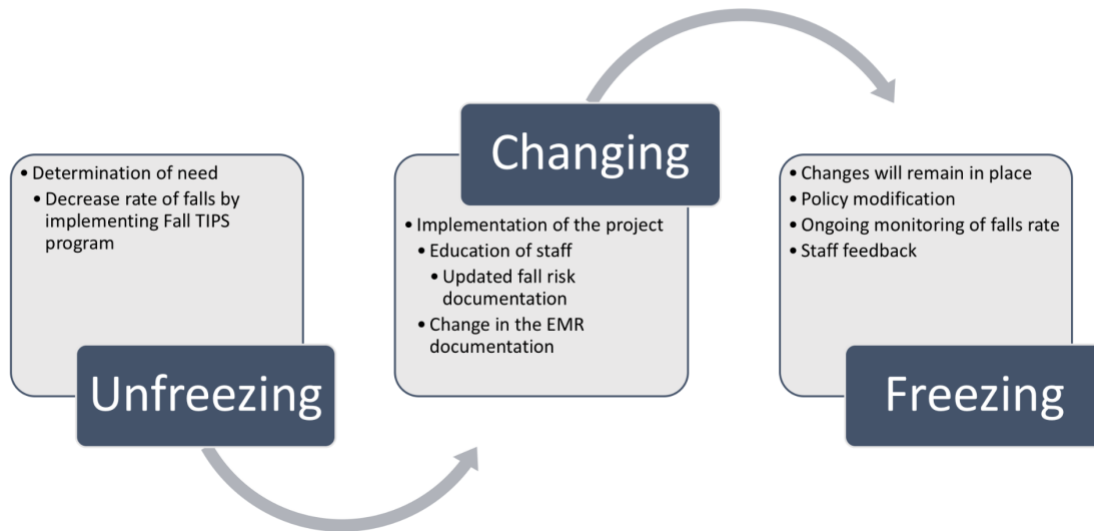
			urban hospitals in the US			
5	Dykes et al. (2010)	Cluster randomized controlled study	Four units and 5,140 patients (control); four units and 5,160 patients (intervention); urban hospitals in the US	During the six-month intervention, the Fall TIPS program reduced the number of falls in the intervention group (3.18 per 1000 patient days; n=67) compared to the control group (4.18 per 1000 patient days; n=87)	Study conducted in four hospitals within the same enterprise; not blinded study; not effective for younger patients; and small sample size	Level I - High
6	Dykes et al. (2017)	Experimental study	Eight units; 31 patients (answered pre-survey at Site A); 33 patients (answered post-survey at Site A); 32 patients (answered pre-survey at Site B); 30 patients (answered post-survey at Site B); Two acute care hospitals	The study found that Site A has a mean adherence to Fall TIPS at 82%; fall rate decreased from 3.28/1000 patient days to 2.8/1000 patient days. Site B's adherence to Fall TIPS at 90.5%; fall rate slightly increased from 3.04 to 3.1/1000 patient days	Insufficient duration of the study to determine effectiveness	Level II – Low

7	Dykes et al. (2012); (Katsulis et al., 2016)	Case controlled study	48 patients (interventions); 144 (control); sample size = 192; urban hospitals in the US	The study found that although the Fall TIPS intervention was effective, it was not used at the time of the fall	Small sample size; potential incomplete documentation of the Fall TIPS	Level V - High
8	Katsulis et al. (2016)	Qualitative study (usability study)	15 nurses	The study found that the paper Fall TIPS improved usability of existing toolkit.	Usability testing should be done in prototypes rather than the final version; no formal evaluation of the usability of the existing Fall TIPS documentation	Level III – Low
9	Leung et al. (2017)	Qualitative study (interview)	88 patients; 60 nurses; Two acute care hospitals	The study validated the fall prevention icons using CVI testing. Using the new icons, they found that this will further engage patients and nurses in their fall risk	Representation of the developed fall icons to identify specific risk factors	Level III – Low
10	Zuyev et al. (2011)	Qualitative study (Usability study)	25 samples; urban hospitals in the US	Usability testing of the Fall TIPS toolkit	Only completed one usability testing; suggestions from	Level III – Low

					participants were either applied or will be addressed during training	
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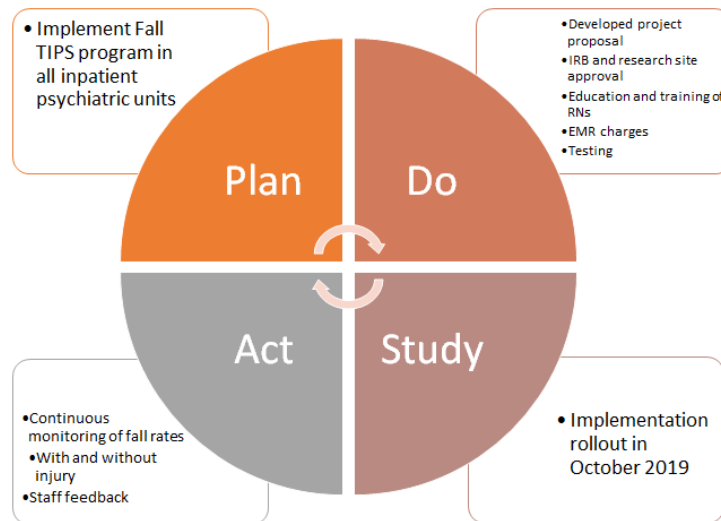
Appendix C
Lewin's Force Field Analysis Theoretical Framework

Lewin's Force Field Theory



Source: White and Dudley-Brown (2012)

Appendix D
Plan-Do-Study-Act



Source: White and Dudley-Brown (2012)

Appendix E

Fall TIPS Documentation using the Morse Fall Risk Assessment

This intervention is being done during:

	Initial assessment	Document interventions below
	Daily/Shift re-assessment – unchanged intervention	Refer to previously documented Fall TIPS Intervention
	Daily/Shift re-assessment – changed intervention	Document interventions below
	Post Fall assessment	Document interventions below

Standard Fall Interventions in Place:

	Intermittent Checks
	Reinforce use of assistive devices (e.g. glasses, hearing aids)
	Fall and Injury prevention education
	Reviewed with patient/family their shared responsibility on fall prevention
	Keep call bell, table/night stand and personal items within reach
	Have patient demonstrate call bell use
	Reinforce use of call bell and importance of calling for assistance
	Yellow non-skid socks
	Use of non-skid footwear
	Orient to immediate surroundings
	Keep floor dry and environment free of barriers/equipment
	Maintain safe room lighting; use nightlight
	For medical beds; keep 2 upper side rails raised
	For medical beds; keep bed in low position with wheels locked
	Use clothing of appropriate length

Potential Injury Risk Factors (ABCS)

	A – age: 85 years or older, fragility
	B – bones: Osteoporosis, risk/history of fractures, etc.
	C – Coagulopathy: Risk for bleeding, low platelet counts, or taking anticoagulants
	S – Surgery (recent): Lower limb amputation or major abdominal or thoracic surgery
	None identified

Fall Risk Factors Related to:

History of Falling in Past 3 Months (if yes)

	Communicate previous fall during hand offs
--	--

Presence of Secondary Diagnosis (if yes)

	Review medication list
	Consult with provider
	Toileting schedule
	Assess for orthostatic changes

Ambulatory Aid (for Crutch/Cane/Walker)

	Provide ambulatory aid
	Request for PT consult
	Apply yellow falls wristband

Ambulatory Aid (for Holds onto Furniture)

	Request for PT consult
	Out of bed with assistance

Ambulatory Aid (for Bed Rest)

	Bed rest
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Gait (if weak/impaired)






















	Out of bed with assistance
	Bed rest (<i>for bed rest</i>)
	Apply yellow falls wristband

Mental Status (if forgets limitation)

	Bed/chair alarm turned on
	Bed close to nursing station
	Frequent checks: re-orientation
	Provide diversion activities

Source: Cerner Electronic Medical Record Fall TIPS Documentation, 2019
Version #2/October 2019

Appendix F
Sample Bedside Poster

		Patient Name: _____		Date: _____	
 Increased Risk of Harm If You Fall <input type="checkbox"/>		Fall Interventions <i>(Circle selection based on color)</i>			
Fall Risks <i>(Check all that apply)</i>					
 History of Falls <input type="checkbox"/>	Communicate Recent Fall and/or Risk of Harm		Walking Aids		 Crutches
 Medication Side Effects <input type="checkbox"/>	 		 Cane		 Walker
 Walking Aid <input type="checkbox"/>	IV Assistance When Walking		Toileting Schedule: Every _____ hours		
 IV Pole or Equipment <input type="checkbox"/>			 Bed Pan		
 Unsteady Walk <input type="checkbox"/>	Bed Alarm On		 Assist to Commode		
 May Forget or Choose Not to Call <input type="checkbox"/>			 Assist to Bathroom		
		 Bed Rest		Assistance Out of Bed	
		 1 person		 2 people	

Fall TIPS ©Brigham & Women's Hospital 2016; do not alter without written permission.

Source: Fall TIPS Poster, 2019
Version #2/October 2019

Appendix G

Sample Patient Education Handout











Fall Prevention Information


Your nurse has evaluated you and identified that you have a high risk for falling while in the hospital.

Why are you at risk for falling?

1. You are in an unfamiliar environment.
2. You are not feeling well.

How can we work together to prevent you from falling while you are in the hospital?

	Tell your nurse about recent falls.
	You have a high chance of getting hurt if you fall.
	Call for help to get out of bed. You need someone to assist you. Make sure to use your walking aid while ambulating.
	Call for help to get out of bed. You need someone to assist you.
	The bed alarm/chair is on to remind you and your care team that you need help to get up.
	Your doctor has put you on bed rest. Please call when you need help.
	Call for help with toileting. Your care team will help you to the bathroom.
	Yellow Fall Risk wristband.

Source:  Fall Patient Education handout, 2019
Version #2/October 2019

Appendix H Teaching Plan and Content

1. Introduction to the Fall TIPS program
 - a. Components
 - i. Morse Fall Risk Assessment tool
 - ii. Tailored Interventions
 - iii. Consistent Implementation (Standard Precautions)
2. Component I – Morse Fall Risk Assessment refresher
 - a. History of Falls
 - b. Secondary Diagnosis
 - c. Ambulatory Aid
 - d. IV or Heplock Present
 - e. Gait
 - f. Mental Status
3. Component II – Tailored Interventions

Morse Fall Risk Assessment	Tailored Interventions
History of Falls <ul style="list-style-type: none"> If Yes, the intervention will automatically be selected 	<ul style="list-style-type: none"> Communicate previous fall during all handoffs
Secondary Diagnosis <ul style="list-style-type: none"> If Yes, the interventions will automatically be selected 	<ul style="list-style-type: none"> Recommend PT consult to the physician Assist with toileting Assess for orthostatic changes with ADLs Review medication list
Ambulatory Aid <ul style="list-style-type: none"> If other than None, the interventions will automatically be selected 	<ul style="list-style-type: none"> Evaluate use of ambulatory aid device & leave at bedside Recommend PT consult to the physician Instruct to call for assistance prior to ambulating Out of bed with assistance Review current activity order, discuss with MD if necessary
IV or Heplock Present <ul style="list-style-type: none"> If Yes, the interventions will automatically be selected 	<ul style="list-style-type: none"> Equipment safety precautions Monitor for side effects of medications Assist with toileting Equipment assistance when walking
Gait <ul style="list-style-type: none"> If other than Normal, the interventions will automatically be selected 	<ul style="list-style-type: none"> Out of bed with assistance Assess for orthostatic changes with ADLs Review current activity orders and discuss with MD if necessary

	<ul style="list-style-type: none"> • Instruct to call for assistance prior to ambulating
Mental Status <ul style="list-style-type: none"> • If Forgets Limitation, the interventions will automatically be selected 	<ul style="list-style-type: none"> • Bed/chair alarm turned on • Bed close to nursing station • Re-orientation • Diversion activities • Remain with patient while toileting
Potential Injury Risk Factors	Tailored Interventions
<ul style="list-style-type: none"> • Age 85 years or older, frailty • Bones – Osteoporosis, risk or history of fracture • Coagulopathy – risk for bleeding, on anticoagulants • Surgery – recent lower limb amputation, major abdominal, thoracic surgery 	<ul style="list-style-type: none"> • Communicate risk for injury to team and patient/family • Monitor side effects of meds that increase bleeding risk

4. Component III – Standard Precautions

- Intermittent Checks
- Reinforce use of assistive devices (e.g. glasses, hearing aids)
- Fall and Injury prevention education
- Reviewed with patient/family their shared responsibility on fall prevention
- Keep call bell, table/nightstand and personal items within reach
- Have patient demonstrate call bell use
- Reinforce use of call bell and importance of calling for assistance
- Yellow non-skid socks
- Use of non-skid footwear
- Orient to immediate surroundings
- Keep floor dry and environment free of barriers/equipment
- Maintain safe room lighting; use nightlight
- For medical beds; keep 2 upper side rails raised
- For medical beds; keep bed in low position with wheels locked
- Use clothing of appropriate length

5. Demo of Morse Fall Assessment in EMR

6. Hands-on training of Morse Fall Assessment in EMR

7. Question and Answer

Appendix I
DNP Research Project Proposal Timeline

Tasks	January 2019	February 2019	April 2019	May 2019	October 2019	February 2020
Meet with key stakeholders to obtain project proposal approval via Research and Evidence-based Project Committee	January 30, 2019					
Discuss Fall TIPS project requirements with Nursing Informatics Enterprise Committee	February 4, 2019					
Submit Letter of Cooperation for approval/signature by the Chief Nursing Officer	February 18, 2019					
Meet with the Research and Evidence-based Committee and Falls Prevention Committee to discuss Fall TIPS project	February 19, 2019					
Meet with the Quality Department to discuss Fall TIPS program implementation in psychiatry	February 21, 2019					
Submit proposal draft to project chair	April 18, 2019					
Schedule proposal presentation	April 22, 2019					
Receive proposal approval from chair/team	April 22, 2019					
Submit approval project proposal and documentation to IRB	April 29, 2019					
Respond to IRB queries	May 13, 2019					
IRB notification of project approval/exemption and start recruitment of subjects and consent form	May 27, 2019					
Begin project implementation	October 21, 2020					
Education of staff	October 7 – 18, 2020					
Begin tracking falls on unit	October 21, 2020					
Conclude data collection on unit	February 29, 2020					
Finish data collection	February 29, 2020					

Source: DNP Project Proposal Timeline, 2019
Version #2/October 2019

Appendix J
Sample E-mail Letter

Dear Registered Nurse,

The hospital will be participating in a Quality Improvement program from October 2019 to February 2020.

The purpose of this program is to reduce the rate of falls through the implementation of the Fall Tailored Intervention for Patients program in this hospital.

All Registered Nurses are participating in this program. Your involvement includes learning the Fall TIPS program. The training will include refresher course of the Morse Fall Risk Assessment tool, identifying tailored interventions and standard interventions, as well as review of the bedside poster and patient education.

All Registered Nurses are required to attend the mandatory classroom training. Schedule of classes will be offered starting October 7, 2019 to October 18, 2019 Monday to Friday from:

- 0800H – 0900H
- 1200H – 1300H
- 1500H – 1600H
- 1600H – 1700H

Classroom training will be held at the Learning Center. After attending the classroom training, nurses are required to complete the online learning module.

Sign-up sheets will be posted in the Nursing Office.

For more information about this program, please contact Karissa Padilla.

Thank you,

Karissa Padilla, MSN, RN-BC
Co- Investigator

Appendix K
Site Agreement Letter

Letter of Cooperation

Date: May 7, 2019

Re: Letter of Cooperation For [REDACTED]

Dear Karissa Padilla,

This letter confirms that that I, as an authorized representative of [REDACTED], allow the Principal Investigator access to conduct activities at the listed site(s), as discussed with the Principal Investigator and briefly outlined below, and which may commence when the Principal Investigator provides evidence of Rutgers IRB approval for the proposed project.

- **Site:** [REDACTED]
- **Purpose:** *The purpose of this project is to decrease the rate of falls by implementing the Fall TIPS program, an evidence-based practice tool. This project will provide tailored fall interventions to patients based on their fall risk factors from the Morse Fall Risk Assessment tool.*
- **Activities:** *Activities will include meetings with the [REDACTED] enterprise team for project details and on-going updates which includes [REDACTED] as well as [REDACTED] Research and EBP Committee and Falls Committee. There will also be communication with the [REDACTED] EMR vendor for electronic build request and testing. All nursing staff will be trained in the new workflow in a classroom setting. Online training materials will be made available to [REDACTED] SABA or Learning Center.*
- **Staff Enrollment:** *All registered nurses are required to attend the Fall TIPS program education prior to the start of the project.*
- **Site Support:** *The Principal Investigator may access required information including databases and may represent the organization in Fall related and Research project committees/meetings.*
- **Data Management:** *The fall rates data from January 1, 2019 to February 2020 will be provided by the Quality Department. All data will be de-identified by the Quality Department.*

- 
- **Anticipated End Date:** *February 2020*

I understand that this site's participation will only take place during the study's active IRB approval period. All study related activities must cease if IRB approval expires or is suspended. Though such activities are not anticipated, I understand that any activities involving Personal Private Information or Protected Health Information may require compliance with HIPAA Laws and Rutgers Policy.

Our organization agrees to the terms and conditions stated above. If we have any concerns related to this project, we will contact the Principal Investigator. For concerns regarding IRB policy or human subjects welfare, we may also contact the Rutgers IRB (see orra.rutgers.edu/hspp).

Regards,



Table 1
Mann-Whitney U Test Statistical Table

Test Statistics^a

	Fall Rate	Fall with Injury Rate
Mann-Whitney U	33.000	30.000
Wilcoxon W	48.000	45.000
Z	-1.269	-1.468
Asymp. Sig. (2-tailed)	.205	.142
Exact Sig. [2*(1-tailed Sig.)]	.224 ^b	.157 ^b

a. Grouping Variable: Fall Prevention Program

b. Grouping Variable: Fall Prevention Program

Figure 1
TIPS Program Falls Hospital Data

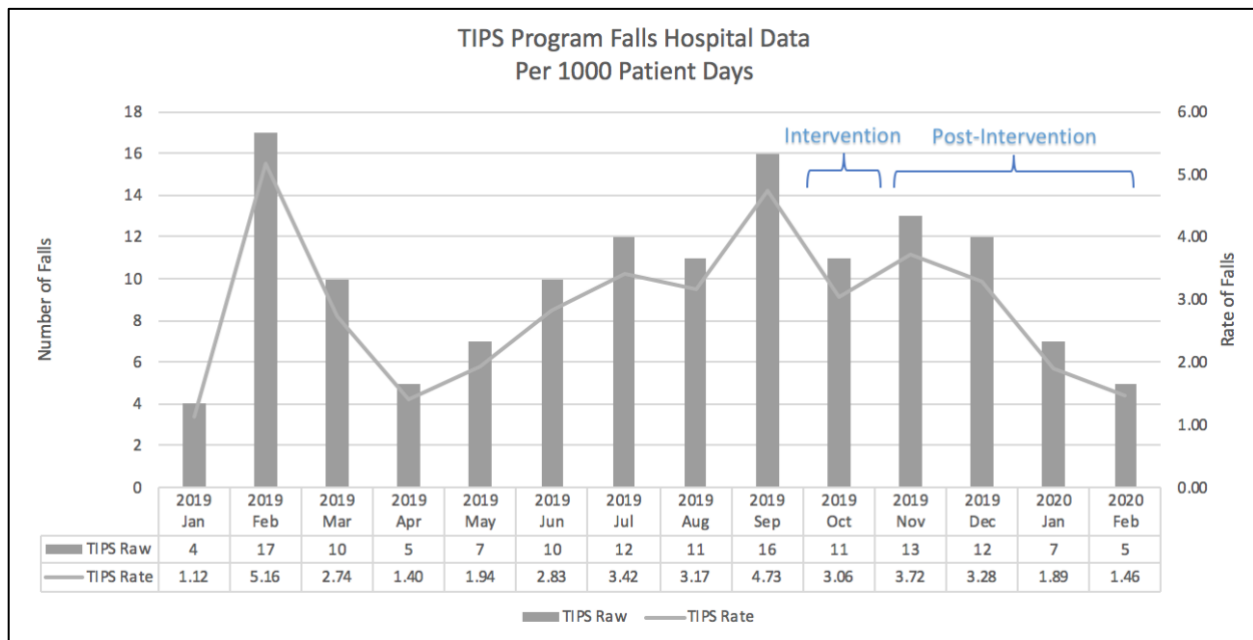


Figure 2
TIPS Program Falls with Injury Hospital Data

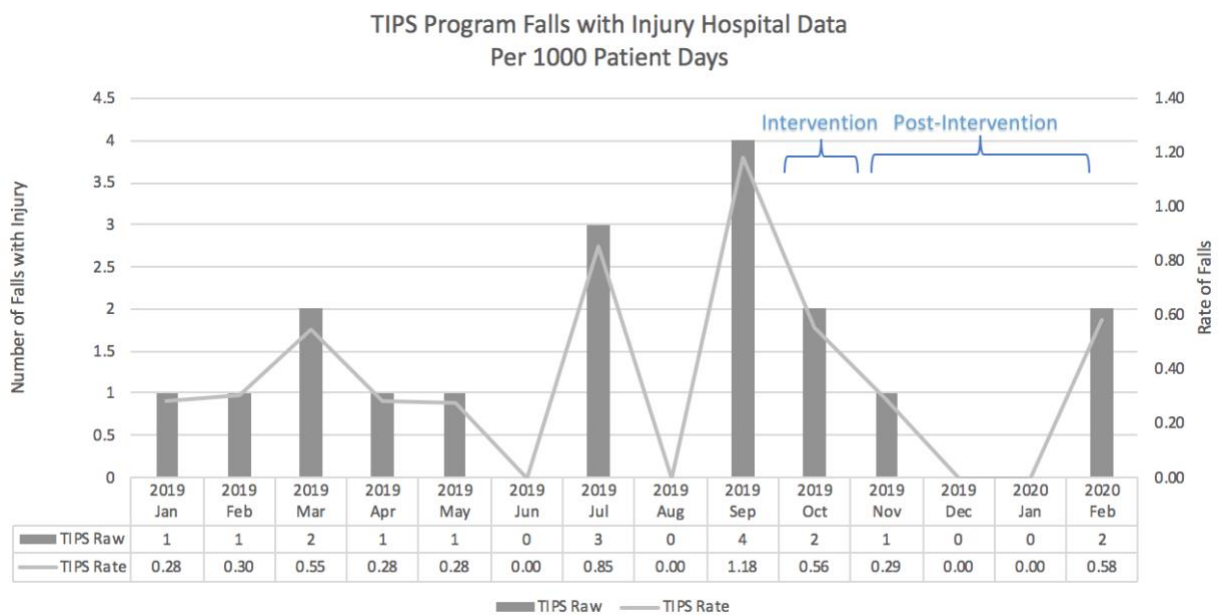


Figure 3
2018 – 2020 Falls Hospital Data

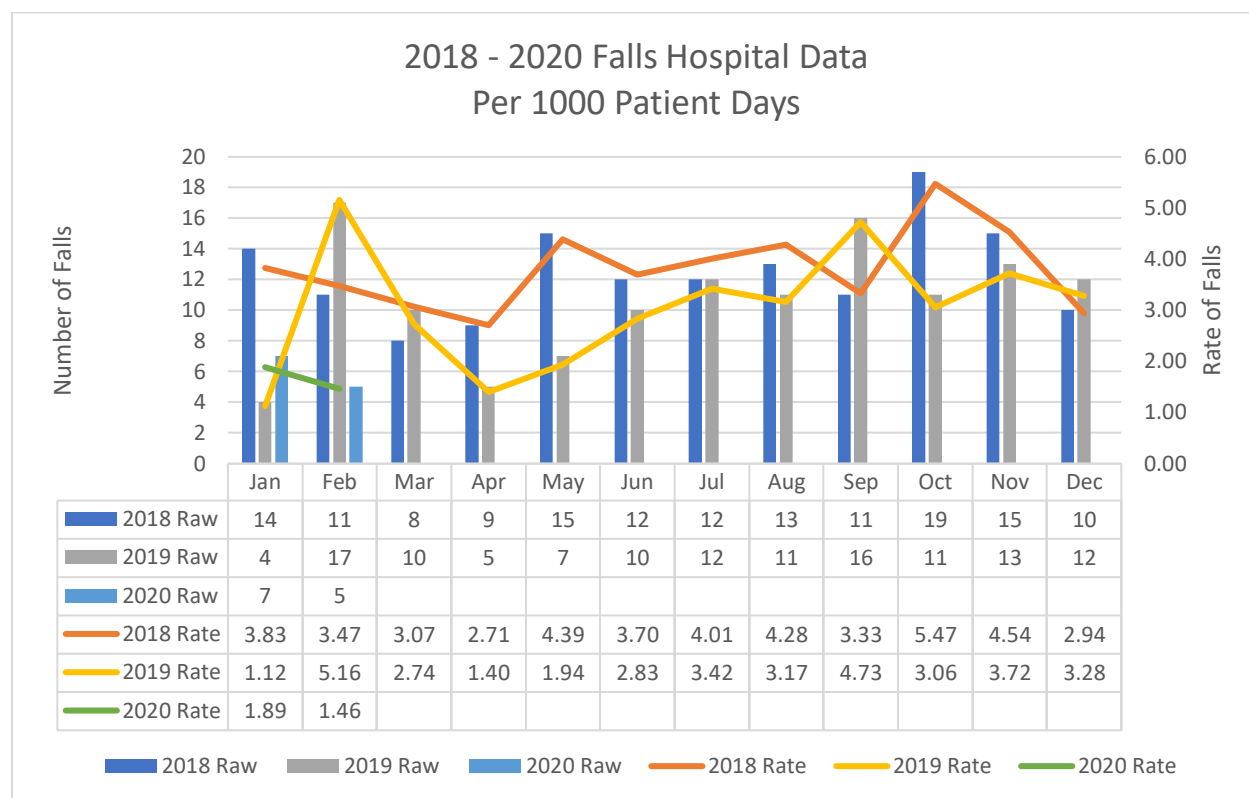
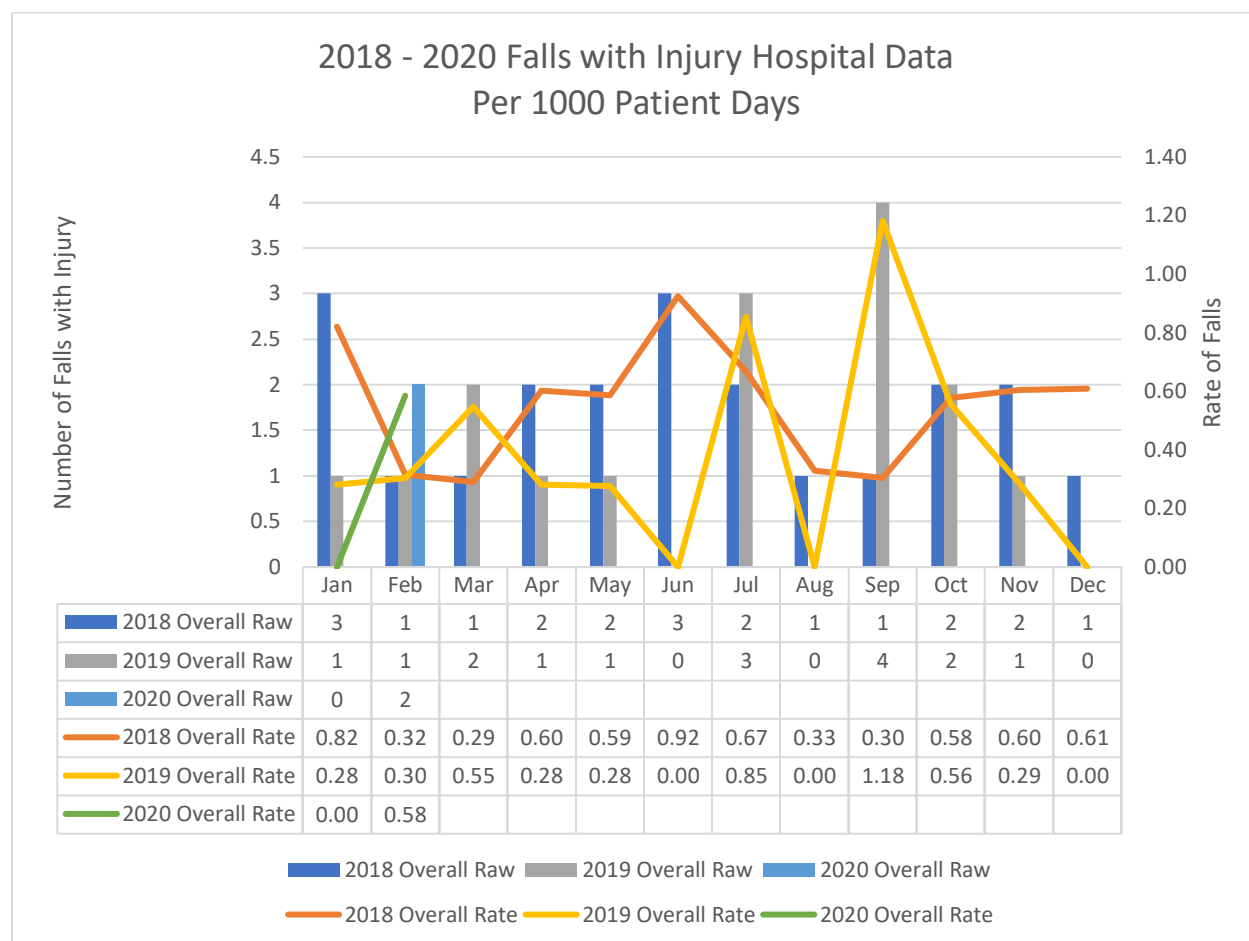


Figure 4
2018 – 2020 Falls with Injury Hospital Data



Tailoring Interventions in Reducing Rate of Falls in a Psychiatric Inpatient Unit

Karissa Padilla MSN, RN, RN-BC, Melinda Jenkins Ph.D., FNP, and Sallie Porter DNP, Ph.D., APN, RN-BC, CPNP

Background and Problem

National Database of Nursing Quality Indicators: psychiatric units experience 13 – 25 total number of falls per 1,000 patient days compared to four falls in a medical-surgical area per 1,000 days (Abraham, 2016)

- 700,000 – 1,000,000 reported inpatients falls each year (AHRQ, 2013)
- One-third of falls lead to fracture and head trauma (AHRQ, 2019)
- By 2020, cost of fall injuries will reach \$67.7 billion (CDC, 2014)
- Increased LOS, liability, and additional healthcare costs (Bouldin et al., 2013)

CMS do not reimburse hospitals for injuries related to falls since October 2008 (Abraham, 2016; Bouldin et. al., 2013; CMS, 2014)

Challenges in Psychiatry:

- adherence to plan of care,
- lack of patient engagement, and
- lack of research studies (Abraham, 2016)

Aim

Principal aim is to decrease the rate of falls in a psychiatric inpatient hospital using the evidence-based Tailoring Interventions for Patient Safety (TIPS) program

- Evidence-based practice to prevent falls by using a fall risk screening tool and a tailored fall prevention program which address patient's risk factors (Dykes et al., 2018)

Methodology

- QI project in a 133-bed psychiatric hospital
- Provided in-person education and hands-on training of the Fall TIPS program to the 103-nursing staff: electronic medical record (EMR) TIPS documentation of the Morse fall assessment, tailored-interventions, and patient education
- Project timeline: Oct. 2019 to Feb. 2020
- Data source was de-identified falls rate per 1,000 patient days from Jan. 2018 to Feb. 2020

Contact Information

Karissa Padilla, MSN, RN, RN-BC
Karissa.Padilla@rutgers.edu

Patient Name: _____		Date: _____	
<input type="checkbox"/> Increased Risk of Harm If You Fall		Fall Interventions (Circle selection based on color)	
Fall Risks (Check all that apply)		Communicate Recent Fall and/or Risk of Harm	
<input type="checkbox"/> History of Falls	<input type="checkbox"/> Medication Side Effects	<input type="checkbox"/> Walking Aids Crutches Cane Walker	
<input type="checkbox"/> Walking Aid	<input type="checkbox"/> IV Pole or Equipment	<input type="checkbox"/> Toileting Schedule: Every _____ hours Bed Pan Assist to Commode Assist to Bathroom	
<input type="checkbox"/> Unsteady Walk	<input type="checkbox"/> May Forget or Choose Not to Call	<input type="checkbox"/> Bed Alarm On	
		<input type="checkbox"/> Assistance Out of Bed Bed Rest 1 person 2 people	

Fall Prevention Information	
Your nurse has evaluated you and identified that you have a high risk for falling while in the hospital.	
Why are you at risk for falling? 1. You are in an unfamiliar environment. 2. You are not feeling well.	
How can we work together to prevent you from falling while you are in the hospital?	
<input type="checkbox"/>	Tell your nurse about recent falls.
<input type="checkbox"/>	You have a high chance of getting hurt if you fall.
<input type="checkbox"/>	Call for help to get out of bed. You need someone to assist you. Make sure to use your walking aid while ambulating.
<input type="checkbox"/>	Call for help to get out of bed. You need someone to assist you.
<input type="checkbox"/>	The bed alarm/chair is on to remind you and your care team that you need help to get up.
<input type="checkbox"/>	Your doctor has put you on bed rest. Please call when you need help.
<input type="checkbox"/>	Call for help with toileting. Your care team will help you to the bathroom.
FALL RISK Yellow Fall Risk wristband.	

Results

- Though post-intervention only started October 2019, the overall falls incidents **decreased by 14%** from 149 in 2018 to 128 in 2019
- The findings showed a **decrease in the falls rate** with the Fall TIPS program compared to pre-intervention from Sept. 2019 to post-intervention from Feb. 2020:
 - Falls rate per 1,000 pt. days: 4.73 to 1.46
 - Falls with injury per 1,000 pt. days: 1.18 to 0.58
- A Mann-Whitney U test of falls rate pre-intervention from Jan. 2018 to Sept. 2019 and post-intervention from Oct. 2019 to Feb. 2020
- Although there is **no statistical significance** of falls rates in using Fall TIPS, the data is trending towards significance.
 - Falls rate per 1,000 pt days: $U(N_{\text{Fall standard}} = 21, N_{\text{Fall TIPS}} = 5,) = 33, z = -1.27, p = 0.21$
 - Falls w/injury rate per 1,000 pt days: $U(N_{\text{Fall standard}} = 21, N_{\text{Fall TIPS}} = 5,) = 30, z = -1.47, p = 0.14$

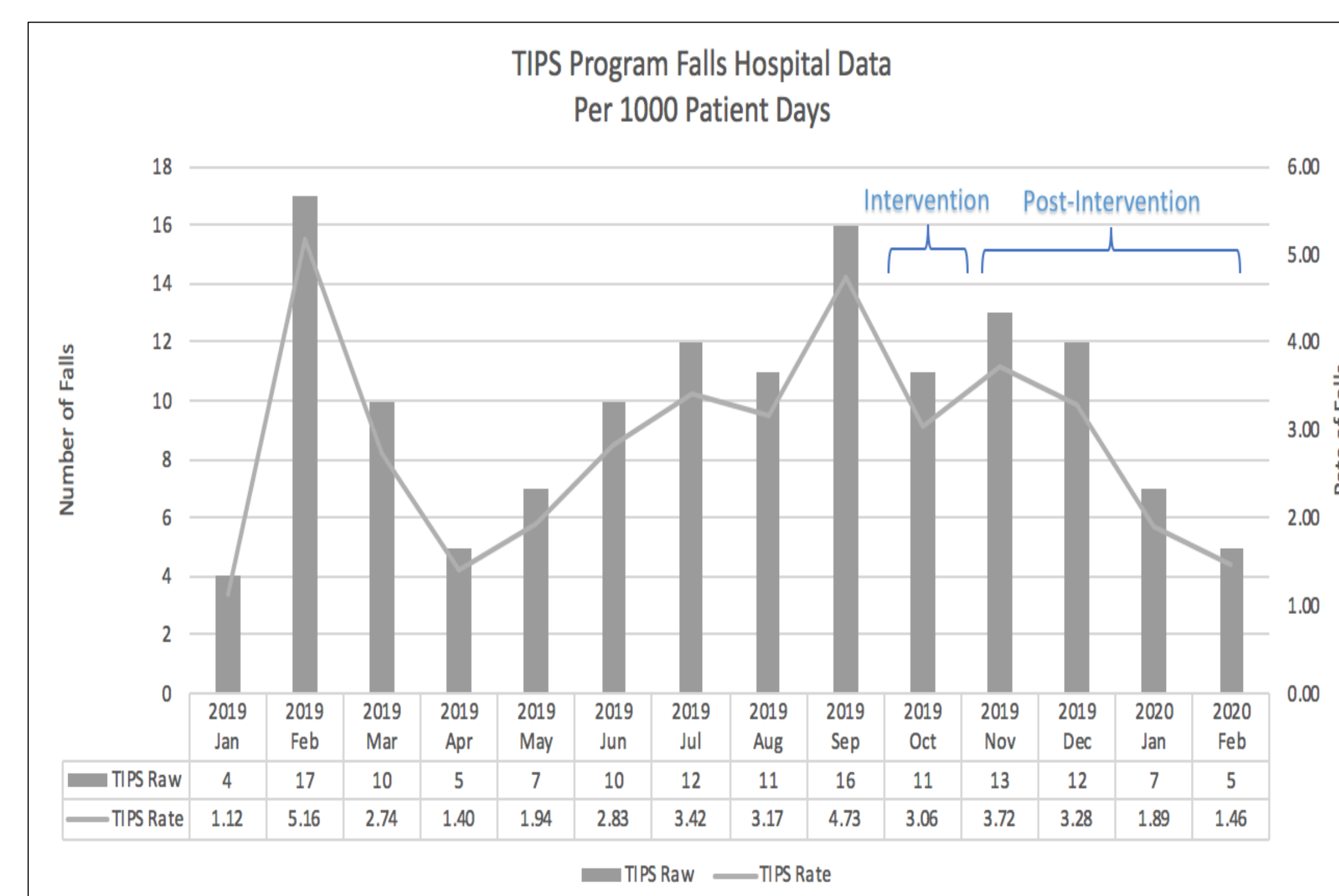


Figure 1
TIPS Program Falls Hospital Data (Jan. 2019 – Feb. 2020)

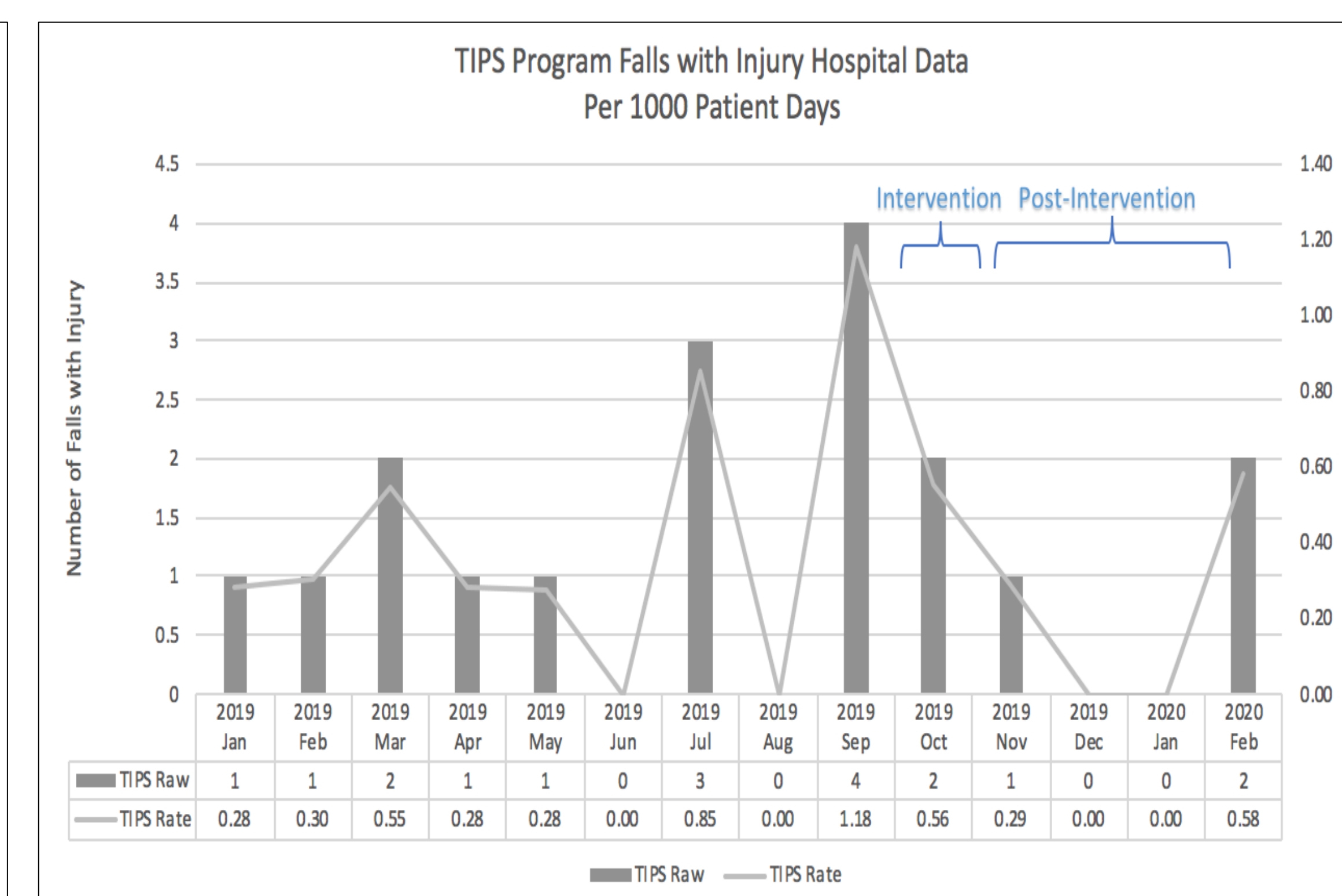


Figure 2
TIPS Program Falls w/ Injury Hospital Data (Jan. 2019 – Feb. 2020)

Discussion

- TIPS program showed a downward trend in the rate of falls and falls with injury
- Inpatient falls in psychiatric hospitals can be addressed and reduced using the Fall TIPS by continuously assessing the fall risk factors, tailoring interventions, and patient education

Discussion

- Universal fall precautions and fall risk injury assessment should be assessed
- Involving staff, patient, and family in fall prevention plan of care

Implications

- Clinical Practice: Communicating risk assessment, interventions, and education
- Healthcare Policy: Incorporated the TIPS program in the Fall Prevention Policy
- Quality and Safety: Continuous review of fall incidents, monthly tracking of data, and audits to ensure compliance
- Education: Educating the nursing staff and consistent patient and family education
- Economic Implications: Cost-savings
- Dissemination: Poster presentation within the hospital and university and publication submission
- Sustainability: Standard of care in Nursing practice and policy; monitoring of falls data; and continuous involvement of nursing staff and management

Conclusion

- Although not statistically significant, it assisted with the trending down of the falls rate by educating nurses in identifying risk factors, tailoring interventions using the EMR documentation/poster and educating patients


Reference List

Abraham, S. (2016). Factors Contributing to Psychiatric Patient Falls. *Journal of Community Medicine and Health Education*, 6(2), 1-10.

AHRQ. (2013). Preventing falls in hospitals toolkit to improve quality of care. Retrieved February 16, 2019, from <http://www.ahrq.gov/professionals/systems/hospital/fallpxtoolkit/fallpxtoolkit.pdf>

AHRQ. (2019). Falls. Retrieved February 16, 2019 from <https://psnet.ahrq.gov/primers/primer/40/Falls>

Dykes, P. C., Carroll, D. L., Hurley, A., Lipsitz, S., Benoit, A., Chang, F., . . . Middleton, B. (2010). Fall prevention in acute care hospitals: a randomized trial. *Journal of the American Medical Association*, 304(17), 1912-1918.



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Implementation of Fall TIPS Intervention to Reduce Rate of Falls in a Psychiatry Inpatient Unit

Karissa Padilla, MSN, RN, RN-BC

DNP Chair: Dr. Melinda Jenkins, PhD, FNP
DNP Team Member: Dr. Sallie Porter, DNP, PhD, APN, RN-BC, CPNP

1



Fall TIPS Intervention

Problem Statement


Psychiatric units are experiencing **higher rate of falls** compared to other units (Abraham, 2016).

This project aims to **decrease the rate of falls** in a psychiatric hospital using the **evidence-based Tailoring Interventions for Patient Safety (TIPS) Fall tool**.

- Provided in-person education of the Fall TIPS program to all Registered Nurses
- Provided tailored fall interventions based on the patients' risk factors from the Morse Fall Risk Assessment tool
- Electronic medical record (EMR) TIPS documentation of risk factors, intervention, and education and communication of fall risk status and evidence-based interventions to prevent patient falls (Zuyev, Benoit, Change, & Dykes, 2011)

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Fall TIPS Intervention




Introduction

Fall

- Witnessed or unwitnessed, unplanned descent to the floor (CDC, 2014).


Statistics:

- 700,000 – 1,000,000 reported inpatients falls each year (AHRQ, 2013)
- One-third of falls lead to fracture and head trauma (AHRQ, 2019)
- By 2020, cost of fall injuries will reach \$67.7 billion (CDC, 2014)
- Increased LOS, liability, and additional healthcare costs (Bouldin et al., 2013)

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Fall TIPS Intervention

Introduction

Falls in Psychiatry


- Falls in psychiatry have a higher rate of injury compared to other units (Quigley, Barnett, Bulat, & Friedman, 2014).
- Addressing multiple components of a patients' risk level and medical conditions are effective ways to prevent falls (Quigley et al., 2014).

Tailoring Interventions for Patient Safety (TIPS) Intervention

- Evidence-based practice to **prevent falls** by using a **fall risk screening tool** and a **tailored fall prevention program** which **address patient's risk factors** (Dykes et al., 2018)

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Fall TIPS Intervention

Fall TIPS Program

Use of the Morse Fall Risk Assessment tool


- Hx of Falls
- Secondary Diagnosis
- Use of ambulatory aid
- Presence of IV or Heparin
- Gait
- Mental Status

Patient Name: _____ Date: _____

Fall Risks (Check off that apply)		Fall Interventions (Circle selection based on color)	
<input type="checkbox"/> Increased Risk of Harm If You Fall	<input type="checkbox"/> Communicate Risk of Harm	<input type="checkbox"/> Walking Aids	<input type="checkbox"/> Bed Rest
<input type="checkbox"/> History of Falls	<input type="checkbox"/> IV Assistance When Walking	<input type="checkbox"/> Crutches	<input type="checkbox"/> Assist to Bathroom
<input type="checkbox"/> Medication Side Effects	<input type="checkbox"/> Bed Pan	<input type="checkbox"/> Cane	<input type="checkbox"/> Assist to Bathroom
<input type="checkbox"/> Walking Aid	<input type="checkbox"/> Bed Alarm On	<input type="checkbox"/> Walker	<input type="checkbox"/> Assist to Bathroom
<input type="checkbox"/> IV Pole or Equipment	<input type="checkbox"/> May Forget or Choose Not to Call	<input type="checkbox"/> Bed Rest	<input type="checkbox"/> Assist to Bathroom
<input type="checkbox"/> Unsteady Walk		<input type="checkbox"/> Bed Rest	<input type="checkbox"/> Assist to Bathroom
<input type="checkbox"/> May Forget or Choose Not to Call		<input type="checkbox"/> Bed Rest	<input type="checkbox"/> Assist to Bathroom

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Fall TIPS Intervention

Fall TIPS Program

Based on the risk factors, **tailored patient interventions and education** will be documented in the EMR and TIPS poster

History of Falling in Past 3 Months (If yes)

☐ Communicate previous fall during hand off

Presence of Secondary Diagnosis (If yes)

☐ Review medication list

☐ Consult with provider

☐ Tolerating schedule

☐ Assess for orthostatic changes

Ambulatory Aid (for Crutch/Cane/Walker)

☐ Provide ambulatory aid

☐ Request for PT consult

☐ Apply yellow falls wristband

Ambulatory Aid (for Holds onto Furniture)

☐ Request for PT consult

☐ Out of bed with assistance

Ambulatory Aid (for Bed Rest)

☐ Bed rest

Gait (If weak/Impaired)

☐ Out of bed with assistance

☐ Bed rest (for bed rest)

☐ Apply yellow falls wristband

Mental Status (If forgets limitation)

☐ Bed/chair alarm turned on

☐ Bed close to nursing station

☐ Frequent checks in orientation

☐ Provide diversion activities

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RUTGERS Fall TIPS Intervention

Background and Significance

National Database of Nursing Quality Indicators (NDNQI)

- Psychiatric units experience **13 – 25 total number of falls** per 1,000 patient days compared to four falls in a medical-surgical area per 1,000 days (Abraham, 2016)

CMS **do not reimburse hospitals** for injuries related to falls since October 2008 (Abraham, 2016; Bouldin et al., 2013; CMS, 2014)

Reduction in quality of life related to physical ailments such as fractures and long term depression (Stenhagen, Ekström, Nordell, & Elmståhl, 2014)

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Challenges in Psychiatry:

- Due to patient behaviors and patients' adherence to plan of care (Abraham, 2016)
- Lack of patient engagement (Abraham, 2016)
- Lack of research studies that focus on falls and fall prevention strategies

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RUTGERS Fall TIPS Intervention

Needs Assessment



Global


Falls are the **second leading** cause of injury with an estimate number of 646,000 fatal falls each year (WHO, 2019)



US


Falls are the **leading** cause of injury related deaths for those aged 65 years and older (Burns & Kakara, 2018)

Rate of deaths from fall **increased** by an average of 3% each year from 2007 - 2016 (Burns & Kakara, 2018)



New York State

Falls related to deaths **increased** to 15% and falls related to hospitalization increased to 19% from 1999 to 2008 (New York State, 2013)



Hospital

High number of patient falls – 149 total falls in 2018

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RUTGERS Fall TIPS Intervention

Needs Assessment

Strengths	<ul style="list-style-type: none"> Solid mission and vision Quality Department
Weaknesses	<ul style="list-style-type: none"> High number of patient falls Absence of tailored or patient-specific intervention
Opportunity	<ul style="list-style-type: none"> Investing on an evidence-based tool to prevent falls
Threats	<ul style="list-style-type: none"> Resistance to change Lack of education on evidence-based practices

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RUTGERS Fall TIPS Intervention

Clinical Question

Does educating **nurses (P)** on the **implementation of the Fall TIPS program (I)** compared to the **current standardized fall interventions (C)** decrease the rate of falls **(O)** in an inpatient psychiatric hospital **six months post implementation (T)?**


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RUTGERS Fall TIPS Intervention

Aim and Objectives


Principal aim is to **reduce the rate of falls** in a psychiatric hospital through the implementation of the Fall TIPS program in a psychiatric inpatient unit




Objective #1: Educate and train all Registered Nurses in the Fall TIPS program and in documenting in the EMR



Objective #2: Decrease the rate of falls in the hospital by 8%



Objective #3: Post go-live data collection and analysis



Objective #4: Fall TIPS program to become a standard of care

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RUTGERS Fall TIPS Intervention

Review of Literature

Search Strategy

- Databases: CINAHL, Medline, and PubMed
- Timeline: 2009 – 2019
 - Fall TIPS Intervention started in 2009
- Search terms: "fall prevention" and "tailored intervention program" or "fall tips"
- Additional search criteria: articles published in English and academic journals
- Manual search for reference lists was also done

```

graph TD
    A[Records identified through database searching (n=355)] --> C[Records excluded (n=348)]
    B[Additional records identified through other sources (n=72)] --> C
    A --> D[Records included in review (n=35)]
    B --> D
  
```

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RUTGERS Fall TIPS Intervention

Review of Literature

Description of the studies

- 10 studies
- All studies done in acute care hospitals in the US
- Data collection period for individual studies was less than six months
- They showed positive effects of the Fall TIPS program in the falls reduction (Dykes et al, 2010; Dykes et al., 2017)
- Settings were limited to medical-surgical units; no research was conducted in a psychiatry setting

Summary

- Program's key elements in reducing the falls in inpatient units include:
 - Timely assessments of patients' specific risk factors using the Morse Fall Risk,
 - Tailored fall interventions, and
 - Patient and staff engagement
- Studies showed consistently decreased falls rate through the use of the Fall TIPS program

(Garroli, Dykes, & Hurley, 2012; Duckworth et al., 2019; Dykes et al., 2019; Dykes et al., 2009; Dykes et al., 2010; Dykes et al., 2017; Dykes, I-Ching, Soukup, Chang, & Lipsitz, 2012; Katsulis et al., 2016; Leung et al., 2017; Zuyev, Benoit, Chang, & Dykes, 2011)

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RUTGERS Fall TIPS Intervention

Theoretical Framework

Lewin's Force Field Theory

```

graph LR
    Unfreezing[Unfreezing] --> Changing[Changing]
    Changing --> Freezing[Freezing]
    Freezing --> Unfreezing
  
```

Unfreezing

- Determination of need
- Decrease rate of falls by implementing Fall TIPS program

Changing

- Implementation of the project
- Education of staff
- Updated fall risk documentation
- Change in the EMR documentation

Freezing

- Changes will remain in place
- Policy modification
- Ongoing monitoring of falls rate
- Staff feedback

White and Dudley-Brown (2012)

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RUTGERS Fall TIPS Intervention

Quality Improvement Study

```

graph TD
    Plan[Plan] --> Do[Do]
    Do --> Study[Study]
    Study --> Act[Act]
    Act --> Plan
  
```

Plan

- Implement fall TIPS program in all inpatient psychiatric units

Do

- Developed project proposal
- IRB and research site approval
- Education and training of staff
- EMR changes
- Testing

Study

- Implementation rollout in October 2019

Act

- Continuous monitoring of fall rates with and without injury
- Staff feedback

White and Dudley-Brown (2012)

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RUTGERS Fall TIPS Intervention

Methodology

Design and Methods

- Quantitative evaluation
- Educated 103 nursing staff in a classroom setting
 - Emailed communication was sent to inform nurses of training schedule
 - New hires were educated as part of the onboarding process which is held once a month
- Comparison of pre- and post-implementation fall rates

Procedures

- Education of the nursing staff
 - Refresher of the Morse Fall Risk Assessment
 - Tailored interventions based on the risk factors
 - Review of bedside poster and patient education materials
- Classroom training
 - Demo of the updated EMR documentation
 - Hands-on training

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RUTGERS Fall TIPS Intervention

Methodology

Duration

October 2019 to February 2020

- Education started in October 2019 for two weeks (weeks of October 7th and 14th) and every month for new hire training
- Data collection for six months

Preliminary Data

Pre-intervention falls rate per 1,000 patient days

Study Variables

Monthly inpatient falls rate per 1,000 patient days

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RUTGERS Fall TIPS Intervention

Methodology

Data Collection

- Data Source: de-identified falls rate data
 - Reported falls rate from January 2018 to September 2019 (pre-intervention) and October 2019 to February 2020 (post-intervention)

Co-Investigator Qualifications

- Master's prepared Nursing Informaticist employed by the hospital
- Experience in providing in-service training to registered nurses especially with changes to the EMR
- Member of various hospital committees such as Falls, NIC, and Research

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RUTGERS Fall TIPS Intervention

Methodology

Setting

- 133-bed psychiatric inpatient hospital in the Upper East Side of New York City
- Four units

Project Timeline

- Project implemented on October 2019 and data collection until February 2020; Go Live Date: October 21, 2019

Waiver of Consent Process

- Requested to waive consent of the nurses as this is an expected component of their work
- Consent of patients was not required

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RUTGERS Fall TIPS Intervention

Methodology

Risks/Harms

- Privacy protections
 - Data mining will not include Protected Health Information or PHI, as well as staff information

Subject Costs/Compensation

- No attached cost and compensation for subjects

Approvals/Authorization

- Site Letter Agreement was obtained

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RUTGERS Fall TIPS Intervention

Evaluation Plan

- Preliminary Data: pre-intervention falls rate which will be provided by the QI Department (January 2018 to September 2019)
- Post-live Data: 6 months post go-live
- Monthly monitoring of the rate of falls per unit (with or without injury)
- Falls rate will be reported as the rate of falls per 1,000 occupied bed days which is the standard reportable data submitted to NDNQI
- Mann-Whitney U test – pre and post-implementation fall rate data

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RUTGERS Fall TIPS Intervention

Results

Though intervention only started in October 2019, the overall falls incidents **decreased by 14%** from 149 in 2018 to 128 in 2019.

The findings showed a **decrease in the falls rate** with the Fall TIPS program compared to pre-implementation from September 2019 to post-implementation February 2020:

Falls rate per 1,000 patient days
- 4.73 to 1.46

Falls with injury per 1,000 patient days
- 1.18 to 0.58

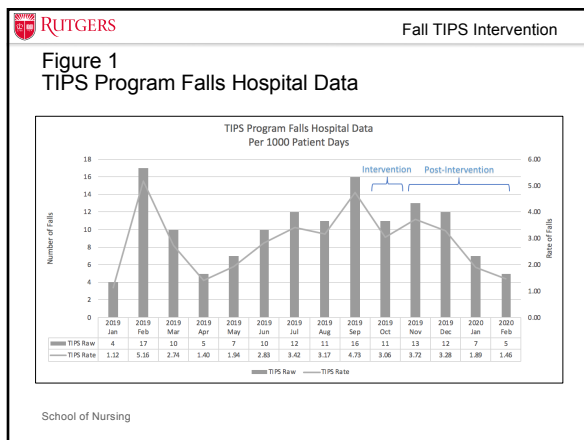
A **Mann-Whitney U test** of falls rate pre-intervention from January 2018 to September 2019 and post-intervention from October 2019 to February 2020 was performed

Although there is **no statistical significance** with the Fall TIPS program compared to pre-implementation, the data is trending towards significance.

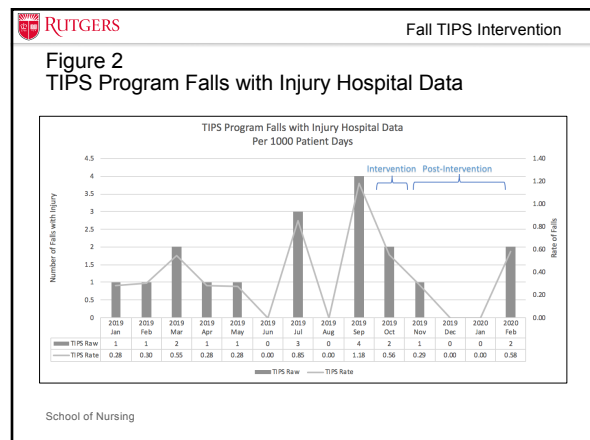
- Falls rate: $U(N_{\text{fall standard}} = 21, N_{\text{fall TIPS}} = 5) = 33, z = -1.27, p = 0.21$
- Falls w/injury rate: $U(N_{\text{fall standard}} = 21, N_{\text{fall TIPS}} = 5) = 30, z = -1.47, p = 0.14$

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RUTGERS Fall TIPS Intervention

Discussion

- The TIPS program, an evidence-based practice showed a downward trend in the rate of falls and falls with injury after education of nurses of the TIPS program, although not statistically significant.
- Universal fall precautions and fall risk injury assessment should be assessed
- The objectives of the Quality Improvement project have been met.
 - Objective #1: Educated and trained all nurses in the Fall TIPS program
 - Objective #2: Trending down of rate of falls
 - Objective #3: Post go-live data collection and analysis
 - Objective #4: TIPS program as the Nursing Standard of Care in fall prevention

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RUTGERS Fall TIPS Intervention

Discussion

- Barriers:
 - Inability of the EMR vendor to build the TIPS documentation with clinical decision support
 - Mitigated by:
 - Revising the TIPS workflow by manually documenting the interventions and patient education in the EMR and using the TIPS poster
 - IRB modification was submitted to reflect this change and buy-in was re-obtained from leadership and staff
 - Staff's resistance to change
 - Used Lewin's Force Field Analysis theory to resolve this issue

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RUTGERS Fall TIPS Intervention

Implications

Clinical Practice

- The foundation of this program as identified by Dykes et al (2017) addresses problems with communication which is found to be the main reason of the fall incidents.
 - Fall risk assessment – Morse Fall Assessment
 - Tailored fall prevention plan
 - Consistent implementation of the plan of care, including education
- TIPS program project addressed the above by providing re-education of the Morse Fall Assessment, EMR documentation of evidence-based tailored fall intervention, and patient and family education.

Healthcare Policy

- Incorporated the Fall TIPS program in the organization's Fall Prevention Policy.
 - Shift assessment of risk factors and TIPS documentation including patient and family education

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Implications

Quality and Safety

- Achieved organization's QPS goal – decrease incidents of falls
 - Review of fall incidents every month
 - Monthly tracking of fall data
 - Fall TIPS tracers to ensure compliance

Education

- Education is **vital** to the success of the TIPS program
 - In person education with hands-on EMR training
 - Consistent patient and family education

Economic Implications

- Cost-savings for any hospital organizations
 - Decrease LOS, no physical and emotional harm

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Plans for Future Scholarship

Dissemination

- Poster presentation in Rutgers University
- Organization's Annual EBP and Research Symposium, Grand Rounds, and quarterly newsletter
- Organization's committees: Falls, Nursing Informatics, Research and EBP, and Professional Governance
- Submitting the results for publication and poster presentation
 - Poster presentation: American Psychiatric Nurses Association (APNA) on Sept. 30 – Oct. 3, 2020 at Disney's Coronado Springs Resort
- Future IT changes to incorporate CDS in the TIPS documentation

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Sustainability

- Became a part of the standard of care in nursing practice and policy
- Monitoring of the falls rate by the Quality Department
- Identify changes that might be needed to make the program more effective through the PDSA cycle
- Continuous involvement of nursing staff and management
- Professional Governance committee Support from leadership

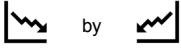
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Conclusion

Although there is no statistical significance, this QI project assisted with the **trending down of the rate of falls** in the inpatient psychiatric unit using the **Fall TIPS program**



- Providing **education** to the Registered Nurses
- **Identifying patient's risk factors** using the Morse Fall Risk Assessment
- Providing a **tailored fall interventions** based on the risk factors
- Use of **bedside TIPS poster and patient education**

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Tailoring Interventions in Reducing Rate of Falls in a Psychiatric Inpatient Unit
Karissa Padilla MSN, RN, RN-BC, Melinda Jenkins Ph.D., FNP, and Sallie Porter DNP, Ph.D., APN, RN-BC, CPNP

Background and Problem: National Database of Nursing Quality Indicators (Nurse-Sensitive Data) reported that falls are the most common patient safety concern. One-third of falls lead to fractures and head trauma (AHRQ, 2019). By 2020, cost of fall injuries will reach \$67.7 billion (CDC, 2014). Increased LOS, liability, and additional healthcare costs (Shibasaki et al., 2013).

Challenges in Psychiatry:

- adherence to plan of care,
- lack of patient engagement, and
- lack of research studies (Abraham, 2016)

Goal: Project aim is to decrease the rate of falls in a psychiatric inpatient hospital using the evidence-based Tailoring Interventions for Patient Safety (TIPS) program.

Methodology:

- QI project in a 133-bed psychiatric hospital provided in-person education and hands-on training of the Fall TIPS program to the 103 nursing staff. Electronic medical record (EMR) TIPS documentation of the Morse fall assessment, tailored interventions, and patient education.
- Project timeline: Oct. 2019 to Feb. 2020.
- Data source was de-identified falls rate per 1,000 patient days from Jan. 2019 to Feb. 2020.

Conclusion: TIPS program showed a downward trend in the rate of falls and falls with injury.

Discussion:

- Inpatient falls in psychiatric hospitals can be addressed and reduced using the Fall TIPS by continuously assessing the fall risk factors, tailoring interventions, and patient education.

Results:

- Through post-intervention only started October 2019, the overall falls incidence **decreased to 14%** from 14% in 2018 to 12% in 2019.
- The findings showed a **decrease in the falls rate** with the Fall TIPS program compared to pre-intervention from Sept. 2019 to post-intervention from Feb. 2020:
 - Falls rate per 1,000 pt. days: 6.73 to 1.60
 - Falls with injury per 1,000 pt. days: 1.18 to 0.58
- A Mann-Whitney U test of falls rate pre-intervention from Jan. 2019 to Sept. 2019 and post-intervention from Oct. 2019 to Feb. 2020:
 - Falls rate per 1,000 pt. days: $U_{stat} = 5.3$; $z = -1.27$; $p = 0.21$
 - Falls with injury rate per 1,000 pt. days: $U_{stat} = 21$; $z = -1.47$; $p = 0.14$
- Although there is **no statistical significance** of falls rates in using Fall TIPS, the data is trending towards significance.

Figure 1: TIPS Program Falls w/ Injury Hospital Data (Jan. 2019 - Feb. 2020)

Figure 2: TIPS Program Falls w/ Injury Hospital Data (Jan. 2019 - Feb. 2020)

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– DNP Team member

*For your patience,
unending support,
and forever
guidance
during this journey!*

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Study.PI Name:

Study.Co-Investigators:

Appendix 2

Doctor of Nursing Practice Project Final Evaluation Framework

Student's Name: Karissa Padilla

Title of DNP: Implementation of Fall TIPS Intervention to Reduce Rate of Falls in a Psychiatry Inpatient Unit

1 = Very poorly 2 = Poorly 3 = Good 4 = Very Good 5 = Excellent						
	1 (Fail)	2	3	4	5	Comments
I. DNP Components						
The candidate addresses each DNP component:					X	
Background and Significance						
Background information/literature demonstrates the focused need or problem.					X	
Literature review supports significance/relevance of problem/proposed project /intervention.					X	
Need, feasibility and significance are clearly presented.					X	
Problem Statement or Purpose						
Problem/purpose clearly described.					X	
Scope of project realistic and appropriate.					X	
Theoretical Framework						
Framework (theoretical/conceptual/practice) is described/evident and applicable.					X	
Project Description						
Literature, benchmarks and supporting data provided and organized into integrated synthesized summary					X	
Objectives stated in feasible and measurable terms.					X	
Congruence of organizations' strategic plan to project is described.					X	
Project Design						
Appropriate for objectives.					X	
Clear rationale for actions/method.					X	
Setting and group clearly described.					X	

Implementation methods/tools/measures clearly described.					X	
Resources/supports and risks/threats and benefits noted.					X	
Time frame outlined.					X	
Evaluation Plan						
Analysis/Evaluation plan coherent / consistent with project plan.					X	
Evaluation measures linked to objectives.					X	
Outcomes/evidence-based measures appropriate for objectives.					X	
Tools/instruments described and linked to measures and objectives.					X	
Method of analysis clearly described for each measurement.					X	
Findings						
Findings organized in appropriate format.					X	
Findings linked to problem statement, purpose objectives and evaluation plan.					X	
Described the extent to which the objectives were achieved.					X	
Addressed key facilitators and barriers that impacted the project's objectives.					X	
Described unintended consequences (both positive and negative).					X	
Recommendations/Implications						
Recommendations/Implications addressed for problem statement, supporting organization, key stakeholders, other settings, and student.					X	
Included recommendations related to identified facilitators / barriers and unintended consequences.					X	
Addressed any ongoing activities or evaluations outside the scope of the DNP Project.					X	
Writing and Organization						
APA format followed appropriately; writing is scholarly and clear; appropriate for doctoral level education.					X	
II. Project Synthesis						
Extent to which candidate met goals/aims of project. If not, appropriate rationale and					X	

explanation provided.						
Extent to which candidate integrated scientific curiosity and inquiry in project completion.					X	
Extent to which candidate analyzed issues and provided critique of advanced nursing practice within the project.					X	
Extend to which candidate demonstrated practice inquiry skills including appraising and translating evidence.					X	
Evidence of candidate's ability to engage in collaborative partnership(s) in designing and implementing DNP project.					X	
Ability of candidate to articulate state of current knowledge as it relates to advanced practice nursing in the health care system.					X	

a. Approve the DNP Project

Once the DNP Project Proposal is approved, the student becomes eligible for graduation at which time the DNP candidate will be granted the degree along with the rights and privileges awarded by the degree.

b. Conditionally approve the DNP Project with minor revisions

The student will file a final/revised Project Proposal to Doctoral Committee Chair within two weeks of the proposal defense meeting.

c. Reject the DNP Project

The student must develop a significantly revised or new proposal. The Doctoral Committee Chair will work with the candidate on the revision. The Doctoral Committee will review the new proposal and all prior steps will be repeated.

Doctoral Committee Chair's Signature: _____

Doctoral Committee Member's Signature: _____

Doctoral Student's Signature: _____

Date: April 14,
2020
