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# Implementation of an Interprofessional Fall Prevention Program to Reduce Falls on an Older Adult Inpatient Psychiatric Unit

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# IMPLEMENTATION OF AN INTERPROFESSIONAL FALL PREVENTION PROGRAM TO REDUCE FALL RATES ON AN OLDER ADULT INPATIENT PSYCHIATRIC UNIT

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Teresa Woodson

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**Abstract**

Falls are the most reported incidents in the hospital setting, especially among older adults. According to the National Database of Nursing Quality Indicators, the number of falls in inpatient psychiatric units is 13-25 per 1,000 patient days, compared to 4 per 1,000 days for medical-surgical units. This DNP project aims to implement an interprofessional fall risk team to reduce falls in an older adult inpatient psychiatric unit. The psychiatric inpatient units at a South Texas hospital had a total of 31 falls, with 13 (40%) occurring on the older adult unit. To reduce falls on the unit, education was done with nursing staff, providers, and physical therapy (PT) on fall prevention strategies. Providers were educated on high-risk fall scores and related medications. During the first three quarters of 2021, there were a total of 19 falls on the inpatient psychiatric units, with 3 (16%) occurring on the older adult psychiatric unit. The outcomes of this QI project help expand on the dearth of literature regarding falls on psychiatric inpatient units. This project also highlights The Joint Commissions' recommendation of establishing an interprofessional team, making fall prevention everyone's responsibility by increasing awareness of fall risk patients and developing strategies for fall prevention.

*Keywords:* psychiatric elderly patients, Wilson Sims Fall Risk Assessment Tool, psychiatric medications

# Implementation of an Interprofessional Fall Prevention Program to Reduce Falls on an Older Adult Inpatient Psychiatric Unit

Falls among adults 65 years and older are the leading cause of fatal and non-fatal injuries in the United States (Centers for Disease Control and Prevention [CDC], 2020a). Approximately one in four patients report falling each year, with 37% of falls resulting in injuries that require medical treatment or restrictive activity for at least 1 day (CDC, 2020b). In addition, deaths related to falls in older adults between 2009-2018 increased by 30% (CMS, 2020). By 2050, the population of Americans 65 and over is projected to be 83.7 million (Ortman et al., 2014). With this considerable growth, falls will be even more of a concern in the aging population.

Patient falls continue to be a challenge in healthcare. Falls are the most reported incident in the hospital setting. In the United States, between 670,000 and 1.3 million hospitalized patients fall, with 13,000 to 78,000 falls resulting in injury (Abraham, 2016). According to the National Database of Nursing Quality Indicators, the number of falls in inpatient psychiatric units is 13-25 per 1,000 patient days, compared to 4 per 1,000 patient days for medical-surgical units (Abraham, 2016). Financial costs associated with treatment and trauma from falls range from $1,139 to $30,931 per fall (Abraham, 2016). By 2040, the estimated cost for injuries related to falls is projected to be as high as $240 billion (CMS, n.d.). CMS has stated that falls are preventable in the hospital setting and will no longer pay for fall-related injuries (Chung & Coralic, 2015).

Despite numerous interventions to prevent patient falls, such as fall assessment monitoring tools, hourly rounding, and 15-min checks, falls continue to be a problem in inpatient psychiatric units. This quality improvement project aims to implement an interprofessional fall

prevention program to help reduce the number of falls on an older adult inpatient psychiatric unit.

## Statement of the Problem

### Background and Significance

Since 1973, numerous research studies have been done on falls involving older adults in the community, nursing homes, and hospital units. However, there is a limited number of research studies involving older adult falls in psychiatric inpatient units (Abraham, 2016). In addition, there is a lack of research on how nurses approach fall prevention and the multiple interventions used to reduce falls in older adult patients (King et al., 2018). There is also a lack of research on physicians' knowledge of patient falls—they have reported a lack of knowledge regarding fall risk and fall prevention (Abraham, 2016).

Because CMS is tracking and refusing to pay for injuries related to inpatient falls, health care organizations have policies and procedures in place for nursing staff to help prevent falls from occurring. Nurses have the most significant impact on reducing patient falls because they have the most contact with patients. The American Nurses Association and the National Quality Forum use patient falls as a nursing quality indicator, placing responsibility for falls directly on nurses (King et al., 2018). However, nursing alone cannot solve this problem. Nurses have become overwhelmed and feel like the "second victim," reporting increased stress, anxiety, guilt, and self-doubt about their quality of care when a fall occurs (King et al., 2018). In addition, blame and pressure from hospital administrators on nursing staff to reduce falls may alter how nurses care for fall-risk patients. For example, some nurses use the strategy of restricting ambulation as an intervention to avoid patients falling, even when they know this type of care results in poor outcomes for the patient (King et al., 2018).

Evidence has shown that an interprofessional team approach, rather than nursing alone, is the best approach in preventing falls (Healey, 2011). According to Dhillon et al. (2019), an interprofessional team consisting of physicians, nursing, pharmacists, occupational and physical therapists is the most important extrinsic factor for fall prevention. Abraham (2016) and Dhillon et al. (2019) agree that an interprofessional team leads to effective strategies for preventing patient falls. During a quality improvement (QI) project, Knight and Coakley (2010) also found that when nurses monitored medications and dosages given in the previous 24 hours and reported information during interprofessional team meetings, there was a reduction in fall rates from 6.0 to 0.46 (Dhillon et al., 2019).

**Assessment**

The setting for this project was an older adult inpatient psychiatric unit located in a hospital in a medical center in South Texas. The hospital has three additional psychiatric units, an observation unit, detox, and an acutely ill unit. All the psychiatric units are closed units and are accessible only by a badge system. There is a telephone located outside the units for visitors to call the nursing unit for access. The unit is a galley-style design with patients, activity, and dining rooms located on the right side of the hallway and the exam room and nursing station on the left side of the hallway. The nursing station is closed in with plexus glass. There is an opening that allows medications to be passed and conversations to take place with patients. There is a door that provides access to the nursing station that stays open most of the time. The unit has five semi-private rooms across from the nurses' station, accommodating up to ten patients.

There is an activity board on the right side of the wall with activities planned throughout the day. Activities with an occupational therapist include teaching skills to help patients develop,

improve, or maintain therapeutic techniques for daily living. The therapist also performs exercises with the patients for strength conditioning. A recreational therapist engages patients in therapeutic activities such as games and music to enhance communication and togetherness.

There are eight nurses and two patient care technicians (PCTs) assigned to the older adult unit. Day shifts are 7 a.m. to 7 p.m., and night shifts are 7 p.m. to 7 a.m. There are two registered nurses (RN) and a PCT on shift when the unit is full. The PCT is canceled or floated to another unit if the census falls below 8. There are three healthcare providers, one psychiatrist, the director of the unit, and two nurse practitioners (NPs).

**Needs Assessment**

During 2020, 31 falls occurred on all the inpatient psychiatric units, with 13 falls occurring on the older adult unit. This resulted in a fall percentage of 40% for the older adult unit. Per the organization, falls should occur at a rate of 30% or less. Despite interventions such as fall assessment tools, hourly rounding, and 15-min safety check, falls have increased on the older adult unit between January and December 2020. More than half of the nurses feel that patient falls are their responsibility. Nurses also stated there was no formal training on the current fall assessment tool, the Wilson Sims Fall Risk Assessment Tool, implemented the year before. During the initial assessment of the unit, inconsistencies were seen in high-risk fall scores, and the nursing judgment section of the tool, which allows nursing staff to determine fall risk, had no documentation. While staff on the unit used a dry erase board to document room numbers of patients at high risk for falls, the board was not updated consistently. It was also floor policy that patients wear red socks after a patient fall which was not happening consistently either.

During the weekdays, at 9 a.m., an interprofessional meeting consisting of a nurse, psychiatrist, case manager, social worker, PT, and pharmacist occurs on the unit. The team discusses possible discharges, patient problems that happened on the unit, and patient medications. Nurses do not communicate high-risk fall scores to the providers or pharmacist for possible review; furthermore, providers have indicated not knowing about the fall scores of patients on the unit. There is no communication between the nurses and providers about medications related to high-risk fall scores. Several falls have occurred after increases in medication or the addition of new medicines.

**Organization's Readiness for Change**

Being ready for a change in the health care setting can be challenging. Even with the best evidence-based information, staff members may not be ready for change. Implementation of a new clinical practice requires a thorough assessment of the organization's readiness and careful planning. Once readiness happens, it would be prudent to identify staff willing to take ownership of the improvement plan to maximize the possibility of its implementation and sustainability.

Kurt Lewin, known as the “father of social psychology,” developed The Change Theory of Nursing (Petiprin, 2020). Lewin theorized a model of three stages (unfreeze, change, and refreeze) necessary for prior learning to be rejected and replaced. “Unfreezing” involves finding ways to make it possible for people to accept a new way of doing things instead of doing things as it has always been done (Petiprin, 2020). The “change” stage, also known as the transition stage, involves implementing a change. While some people believe change is necessary, some may feel uneasy about accepting the change process (Juneja, 2021). Finally, “refreezing” is when the change becomes a standard operating procedure. During this stage, people are willing to accept the new change and believe it makes a difference to what they are trying to achieve.

During this time, it is essential to give positive reinforcements and recognize the hard work staff put in to accepting change and improve patient safety.

The organization's stakeholders (CNO, nursing manager, nurses, and physicians) are excited about the project and are ready for a change, especially the nursing staff. All stakeholders are committed to reducing falls on the older adult unit and possibly implementing the program in the other psychiatric units. The providers have agreed that reviewing medications and high-risk fall scores at morning rounds is a step in the right direction. The CNO and nursing manager are aware of CMS regulations concerning falls in the hospital and voice their dedication to reducing falls throughout the facility.

## Project Identification

### Purpose

The purpose of this project is to implement and evaluate the effectiveness of an interprofessional fall program designed to reduce the number of falls on a 10-bed older adult inpatient psychiatric unit.

### Objectives

This DNP project includes the following objectives:

1. Educate 100% of nursing staff, providers, and physical therapists on project initiatives for fall prevention in high-risk patients.
2. Educate 100% of nursing staff on the Wilson Sums Fall Risk Assessment Tool and the importance of the nursing judgment section.
3. Educate 100% of providers on the Wilson Sims Fall Risk Assessment Tool and high-risk fall scores.
4. Assessment and identification of patients at high risk for falls 100% of the time upon admission to the unit and status change.

5. Upon client admission to the unit and status changes, the nursing judgment section on Wilson Sims Fall Risk Assessment Tool will be documented 100% of the time.
6. Fall scores and subsequent patient status changes will be reported at least 50% of the time during interprofessional team meetings.
7. Medications will be reviewed 100% of the time by nurses and providers and charted under the fall/safety section of the EHR.
8. Providers will order a consult for PT in the EHR 100% of the time for all high-risk patients.

**Anticipated Outcome**

Research has shown that an interprofessional team approach is the most important extrinsic factor in preventing falls (Dhillon et al., 2019). Interprofessional teams communicate and develop effective strategies to help assess high-risk patients in helping with fall prevention. During this project, an interprofessional team of nurses, providers, and therapists will develop fall prevention strategies and reduce the fall percentage to 30% or less per hospital protocol. Moreover, this interprofessional team will sustain the principles of this project and continue once this project ends.

## Summary and Strength of the Evidence

Despite the lack of research, numerous quality improvement projects, descriptive, cohort, and case-control studies have been done concerning fall prevention on inpatient psychiatric units. According to the literature, there are several risk factors associated with patient falls. Intrinsic factors (barriers within a person) include a history of falls, acute and chronic diseases, muscle weakness, unsteady gait, and cognitive status (Abraham, 2016). Extrinsic factors (barriers outside of a person) include slippery floors, improper footwear, rooms away from nurses' station,

lack of walking devices, and lack of implementation of evidence-based policies on falls (Abraham, 2016).

Medications are another significant factor implicated in patient falls. Psychiatric drugs, such as selective serotonin reuptake inhibitors, tricyclic antidepressants, antipsychotic agents, benzodiazepines, and anticonvulsants, are most associated with falls on psychiatric units (Lavsa et al., 2010). The literature supports nurses reviewing medications that may increase fall risk and communicating to health providers possible revisions of medications that will reduce a chance for a fall (Lavsa et al., 2010). The Joint Commission, an organization that accredits more than 22,000 health care organizations, consistently tracks falls that cause severe injuries in the hospital. One of their national patient safety goals requires establishing an interprofessional fall prevention program, including evaluation and effectiveness at reducing falls (Lavsa et al., 2010). A fall prevention program should include an interprofessional approach and not be the nursing's responsibility alone. Lavsa et al. (2010) identified that an interprofessional team of nurses, physicians, pharmacists, and occupational and physical therapists was the most effective extrinsic way to prevent patient falls. Knight and Coakley's (2010) findings from a quality improvement study showed that when nurses kept track of medications, dosage, and time and relayed the results to an interprofessional care meeting, there was a reduction in falls (Dhillon et al., 2019).

The majority of nursing interventions already used to prevent patient falls have not reduced or prevented injuries from falls (Abraham, 2016). Many of the interventions reduce falls by only 30-40% (Abraham, 2016). Fall prevention should consist of predictive interventions to keep patients from falling. Nursing interventions such as identifying who is at high risk, monitoring for cognitively impaired patients routinely, and reviewing medications with the

physicians are effective predictive measures in fall prevention and patient safety (Abraham, 2016).

One way to assess fall risk on an inpatient psychiatric unit is by using a fall assessment tool. Many hospitals use the Morse Fall Scale as a fall-risk tool for medical-surgical units, but this tool is not validated for use in psychiatric units. Because psychiatric patients have unique risk factors for falls, an assessment tool for psychiatric patients is needed (Wong & Pang, 2019). The assessment tools most appropriate for inpatient psychiatric units are the Wilson Sims Fall Risk Assessment Tool and the Edmonson Psychiatric Fall Risk Assessment Tool. The Wilson Sims Fall Risk Assessment Tool, when compared to the Edmonson Psychiatric Fall Risk Assessment Tool, is preferred for psychiatric patients because of the inclusion of nursing judgment (Wong & Pang, 2019). The clinical assessment of an experienced professional is an excellent addition when assessing high-risk patients. In a pilot study consisting of 30 psychiatric inpatients, the Morse Fall Scale and the Wilson Sims Fall Risk Assessment Tool, using nursing clinical judgment, were used. Seventeen patients were classified as high risk by the Wilson Sims Fall Risk Assessment Tool, and eight were classified as high risk by the Morse Fall Scale. Two of the eight patients classified as high risk by both fall scales had a fall during the study. Compared to the Modified Functional Ambulation Classification, a tool used to assess psychogeriatric patients' walking capacity, the Wilson Sims Fall Risk Assessment Tool matched perfectly. However, 30% classified by the Modified Functional Ambulation Classification as high-risk were not considered high-risk by the Morse Fall Scale (Wong & Pang, 2019).

Physical therapy plays a vital role in fall prevention programs. In the hospital setting, PTs are knowledgeable at using strategies for patients at high risk for falls. While only about 5% of falls result in fractures, most fractures occur because of a fall (Karinkanta et al., 2010). The most

robust intervention for preventing falls and fractures is determining who is at high risk of falling and creating preventive interventions for these individuals (Karinkanta et al., 2010). An interprofessional team consists of staff members, including PT, who conduct fall risk assessments, direct care for fall prevention, and ensure the care is performed and documented in the patients' chart (Agency for Healthcare Research and Quality [AHRQ], 2013). Physical therapists can assess patients for strength and balance and make recommendations for assistive devices or adaptive equipment. A physical therapist can review the appropriateness of ordered activities and communicate with medical providers to check or adjust orders relating to activity as needed.

Psychiatric medications are a significant factor for inpatient falls in the psychiatric population (Lavsa et al., 2010). Prescribing several drugs to treat psychiatric illnesses are linked with an increased risk of falls among older adults. Psychiatric medications most responsible for falls are selective serotonin reuptake inhibitors, tricyclic antidepressants, antipsychotics, benzodiazepines, and anticonvulsants (Lavsa et al., 2010). The treatment versus non-treatment risk question (whether the risk of treatment outweighs the risk of non-treatment) is an ongoing controversy with psychotropics in older adults. For example, the known risk of untreated depression or anxiety disorders outweighs the unknown risk of falls with antidepressants (Lenze, 2018). Large randomized controlled trials can better determine whether antidepressants increase fall risk (Lenze, 2018). All benzodiazepines, including short-acting ones, increase fall risk. There is no therapeutic index for older adults—no dose of benzodiazepines that is effective for anxiety and safe from falls (Lenze, 2018).

Nursing interventions for intrinsic factors related to falls include reviewing medications with the providers (Abraham, 2016). Changing medications with multiple dosages to once a day

or reducing all medicines' dosages is a way to reduce adverse events such as falls (Lenze, 2018). According to the literature, medication recommendations include avoiding benzodiazepines or discontinue them when feasible. If a tricyclic antidepressant is needed, nortriptyline and desipramine are better choices because of fewer side effects (Lenze, 2018). Using second-generation antipsychotics instead of first-generation antipsychotics can lower fall risk because of low anticholinergic effects. Using the minimal effective dose of mood stabilizers and anti-epileptics may reduce a fall risk (Lenze, 2018). Nurses can offer these types of suggestions when reviewing medications with healthcare providers; however, the provider is ultimately responsible for all decisions related to medication treatment.

## Methods

### Project Interventions

The Plan-Do-Study-Act (PDSA) model was used to guide the project. PDSA is a quality assessment tool used to test a change that is being implemented (AHRQ, 2020). The four steps in the model help guide the thinking process, develop and evaluate interventions, and determine what modifications need to be made. The "Plan" stage is where a brief statement is written on what will be done during the project. The "Do" stage is where plans will be set in motion. The "Study" phase represents the interventions that were put in place and the data collected. This is also the time where problems can be addressed, and necessary modifications can take place. Finally, the "Act" phase is where the team reviews whether the project worked or did not work. If the project worked, it would be ready to implement on other psychiatric units.

#### *Step 1: Forming a Project Committee Consisting of the Project Mentor (CNO), Project Leader, Unit Manager, and Project Champion.*

The project mentor was available for unforeseen issues and approval of interventions on the project. The role of the project leader was to implement interventions related to the project; to be available for education, questions, and concerns related to the project; and to collect and measure all data obtained during the project. The project champion was the senior nurse of the unit. She monitored interprofessional meetings and discussed the fall status of patients on the unit. She also discussed the project initiatives with staff who are floated to the unit.

***Step 2: Educating the Nursing Staff on Using the Wilson Sims Fall Risk Assessment Tool and Documenting Nursing Judgment.***

An education booklet was created to help teach nurses how to use the tool. An education booklet was also placed at the front desk for float staff and new hires.

***Step 3: Educate Providers on the Wilson Sims Fall Risk Assessment Tool.***

The education addressed how nurses use the fall risk tool to score patients for high risk and the medications associated with increased falls.

***Step 4: Nurses Screen all Patients at Admission and Status Change to Identify Those Who Are at High Risk for Falls.***

A score of seven or higher on the Wilson Sims Fall Risk Assessment Tool classified a high risk for falls. The Wilson Sims Fall Risk Assessment Tool was placed in the patients' charts and documented in the EHR.

***Step 5: Nurses Inform Providers of Fall Risk Scores and Review Medications That May Contribute to a Fall.***

Communication was documented in the fall/safety section in the EHR.

***Step 6: All High-Risk Fall Patients on the Unit Wear Red Socks.***

High-risk patients wear red socks on their feet and a yellow fall risk band on their wrists to help identify them as fall-risk patients. Identifying high-risk patients facilitated monitoring when patients were ambulating in the hallway or attending group therapy.

***Step 7: Dry-Erase Board Updated Every Shift.***

Staff updated the dry-erase board every shift to help identify high-risk patients to staff members who are floated and other healthcare members visiting on the unit.

***Step 8: Communication of Fall Scores During Interprofessional Meetings by Project Champion.***

The project champion communicated the fall scores of all high-risk patients on the unit during the team meeting. The interprofessional team being aware of high-risk fall scores can result in more predictive measures to reduce falls and facilitate medication review by the pharmacy and the providers on medication management alternatives.

***Step 9: Creation of a Medication Review Sheet.***

A medication review sheet was created and stored on a clipboard at the nurses' station to help with reviewing medications by the nurses and providers.

***Step 10: PT Consults Ordered Upon Admission.***

Providers were encouraged to have consults placed in the EHR for high-risk fall patients upon admission and status change to get PT recommendations for ambulation and assist devices. Education was carried out with PT on how nurses score patients' fall risk using the WSFRAT to help with the best approach to prevent falls.

***Step 11: Creation of a Flowsheet.***

An algorithm was created showing the steps to take when a patient is identified as high risk. The flowsheet aided nursing staff and providers not assigned to the unit.

## Setting/Population

The project's setting was on an inpatient older adult psychiatric unit at a local hospital in a medical center. The unit is a mixture of patients aged 55 and up. There are five semi-private rooms and one private room for patients who need temporary isolation. All patients were admitted for psychiatric disorders ranging from schizophrenia to suicide attempts. Length of stay varied between 4 and 7 days but could be longer. Medications used most on the unit are antipsychotics, anticonvulsants, antidepressants, selective serotonin reuptake inhibitors (SSRIs), and benzodiazepines.

## Organizational Barriers and Facilitators

### *Organizational Barriers*

There were a few organizational barriers that impacted this DNP project. While nurses can review and communicate high-risk fall scores to the providers, the ultimate decision rests with the providers. Providers must weigh the risk of treatment versus the risk of reduced or non-treatment. While nurses can make recommendations, the providers are ultimately responsible for all decisions on medication management.

Another barrier is other high-risk medications associated with falls, including diuretics and cardiovascular drugs. The psychiatric department admits patients, so a hospitalist/primary care doctor is not assigned to a patient unless a medical issue arises. Then a consult is placed by the psychiatric provider. This created a problem addressing medical medications because the hospitalists were not readily available during this project.

This project addresses the reduction of falls while using an interprofessional team approach. However, there are other issues on the unit that can increase the risk of a fall. The layout of the unit is not ideal for an older adult patient psychiatric unit. The design is gally-style, with the nurses' station on one side of the unit and the patients' rooms on the other side. This

style does not allow patient rooms to be close to the nurses' station. There is no call light system for patients to call for help due to safety issues, and the bathroom design is not safe for an older adult population. All these conditions increase the chance of a fall. This DNP project will not address these issues, as this would require major structural renovation of the physical space.

### *Organizational Facilitators*

Facilitators for this project included nursing staff, healthcare providers, nurse managers, and hospital administration. The CNO was very receptive and engaged in the project and reducing fall rates in the older adult unit. The staff and nursing manager care for their patients and are open-minded about improving patient care and reducing patient falls. The nursing staff was excited about fall prevention being a team effort instead of just the responsibility of nursing alone. Administrators have communicated to the organization's fall surveyors visiting the hospital about the project and are excited about the outcome.

### Ethical Considerations

On December 10, 2020, the institutional review board (IRB) at the University of the Incarnate Word found that the proposed project does not require approval via the IRB process due to not meeting federal regulatory requirements for human subject research. The Hospital administration approved the project, and the unit manager and quality department are onboard. Employee consent was unnecessary due to hospital administration approval. Names of patients were not recorded on any data collected to ensure privacy and confidentiality.

## Project Evaluation

The EHR, chart audits, and quality improvement (QI) data were reviewed to evaluate project interventions. Education evaluation for nurses, providers, and PT on the Wilson Sims Fall Risk Assessment Tool was done using a sign-in sheet to verify that each participant received an

educational booklet. Assessment and identification of high-risk fall patients using the Wilson Sims Fall Risk Assessment Tool were made by reviewing the patients' charts at the nurses' station. The initial fall risk scores and subsequent patient status changes discussed during interprofessional meetings were performed by the project champion and shared with the project leader. Consults to physical therapy were reviewed in the patients' EHR. The number of and reasons for falls were examined in the post-fall book and QI reports when a fall occurs.

The Wilson Fall Risk Assessment Tool was used to establish high-risk fall scores for patients on the unit. Developed in a community hospital with Magnet recognition, a distinction given to healthcare organizations by the American Nurses Credentialing Center highlighting nursing excellence in Michigan, the Wilson Sims Fall Risk Assessment Tool is used for admission assessments in an adult inpatient psychiatric unit (Abraham, 2016). The Wilson Sims Fall Risk Assessment Tool has a sensitivity of 100% (the probability that the screening tool correctly identifies patients at risk for falls) and a specificity of 63.1%. Content validity (how well a test measures what it is supposed to measure) of the Wilson Sims Fall Risk Assessment Tool equals .90, making it a reliable tool to use for fall assessment (Abraham, 2016). Risk factors included in the tool are age, mental and physical status, elimination, impairments, gait, history of falls, specific medications, and detox protocol.

## Results

This project used descriptive statistics and reviewed trends of data from the previous year. Attention was paid to the number of falls per quarter and the reason for the fall. Medication groups such as antipsychotics, anti-anxiety, mood stabilizers, anxiolytics, and antidepressants were reviewed for dosage amount and indications for use. Data storage and statistical analysis was done using Excel (Microsoft version 14.69) and SPSS (version 26)

This project involved a multidiscipline approach to reduce the fall rate of 40% to 30% or lower on an older adult psychiatric inpatient unit. The project leader met with the project mentor and the VP of nursing to discuss unit assessment, background, objectives, interventions, and start date of the DNP project. Fliers with the initial project start date of February 23, 2021, were placed on the bulletin board of the unit and physical therapy department. Unfortunately, the implementation of the project was put on hold due to a severe winter storm and unforeseen circumstances with the city's power grid. A new date of March 1, 2021was agreed upon. The project leader announced the implementation of the project during interprofessional team rounds.

During the first 2 weeks of implementation, education booklets were passed out to nursing staff, providers, and PT explaining the new interventions implemented on the unit. The project leader was available on the unit to address questions and concerns about new interventions in place. The project leader was able to discuss project initiatives to float staff not assigned to the unit. Data collection began by reviewing patient charts and electronic health records (EHR) and participating in the interprofessional team meeting. The project champion began motivating other staff members on project initiatives and communicating high-risk fall scores to the interprofessional team members.

**Demographic Survey**

A total of 51 patients were screened on the unit. Forty-one of them, with a fall assessment score of 7 or higher, were included in this project (see Table 1). The top five diagnoses are listed (see Table 2).

**Table 1**

| Baseline characteristics | n | % | *M* | *SD* |
|---|---|---|---|---|
| Gender | | | | |
| Female | 24 | 56 | | |
| Male | 18 | 44 | | |
| Age | | | 63.5 | 8.87 |
| 50-59 | 6 | 15 | | |
| 60-69 | 20 | 49 | | |
| 70-79 | 11 | 27 | | |
| 80-89 | 3 | 7 | | |
| 90+ | 1 | 2 | | |
| Race | | | | |
| Asian | 1 | 2 | | |
| Black | 5 | 12 | | |
| Hispanic | 4 | 10 | | |
| White | 31 | | | |
| Marital Status | | | | |
| Single | 21 | 51 | | |
| Married | 8 | 20 | | |
| Divorced | 7 | 17 | | |
| Widow | 5 | 12 | | |

**Table 2**

*Top Five Psychiatric Diagnoses*

| Medical Diagnosis | |
|---|---|
| F33.1 | Major Depressive Disorder recurrent, severe with psychosis |
| F31.2 | Bipolar manic severe w/o psychosis |
| F20.0 | Paranoid Schizophrenia |
| F10.20 | Alcohol Use Disorder moderate/severe |
| R45.851 | Suicidal Ideation |

**Implementation Process**

Education was completed with the nurses and PT staff by providing an education booklet for project initiatives and new interventions. Instructions included the significance of using the Wilson Sims Fall Risk Assessment Tool in the psychiatric setting and the purpose of the nursing judgment section. Because the unit utilizes a number of float staff, an education booklet and flow sheet were placed at the nursing station showing the steps to follow for patients identified as high risk for falls. Assessment and identification of patients at high risk for falls on the Wilson Sims Fall Risk Assessment Tool was completed at the time of admission to the unit and status changes. Because the unit had been using a fall score of 8 or higher as a risk factor for falls from the previous tool, the nurses were concerned that the Wilson Fall Risk Assessment Tool considered 7 or higher to be a risk for falls. A meeting between the project leader, unit manager, and educator resulted in the new fall risk score being set at 7 or greater, per Wilson Sims Fall Risk Assessment Tool. The high-risk fall board was updated, and red socks were placed on all patients with a score of 7 or greater. The red socks became a safety issue due to improper fit (too small or too large); the project mentor and unit manager were notified, and new red socks were ordered for the unit. The project champion was tasked with communicating the fall scores during interprofessional team meetings. Fall scores and medications were also discussed between nurses and providers at admission and provider rounds and documented in the fall/safety section of the EHR.

Education of providers was completed using an education booklet on the use of the Wilson Sims Fall Risk Assessment Tool. Instructions included utilizing the tool in the psychiatric unit, how fall scores were determined, and the medication categories related to falls. Providers were made aware of fall score status during interprofessional team meetings. Both fall

scores and medications were discussed during provider rounds and documented in the fall/safety section of the EHR. A medication review sheet was created to help with reviewing medications by the nurses and providers and collecting data during the project. Unfortunately, the providers used the sheet only 33% of the time, saying that the sheet was too time-consuming. The review sheet also caused an unforeseen burden to nurses because they had to remind providers to fill it out. A meeting between the project leader, champion, and providers resulted in the medication sheet being discontinued. Instead, the medication reconciliation report printed at midnight would be used to review medication status during the project. Consults to physical therapy were ordered in the EHR for ambulation and assist devices.

**Project Outcome Data**

The quality improvement project ran from March 1 to July 31, 2021. During the planning stage of this project, an assessment of the unit was done to determine the appropriate interventions that should be included in this interprofessional team approach to fall prevention. It was determined that the nursing staff needed education on the current fall assessment tool, and additional safety measures were needed to help prevent falls on the unit. It was also determined that the providers were not educated on fall scores and high-risk medications. When addressing the objectives:

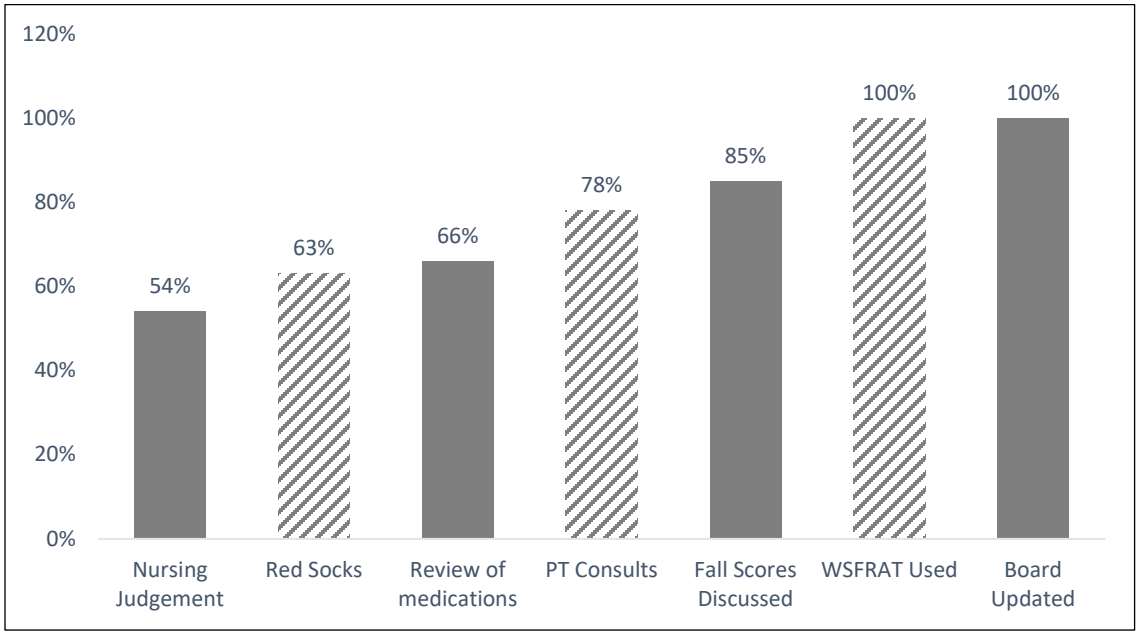
1. Education was completed for all nursing staff, providers and physical therapy 100% on project incentives, the Wilsons Sims Fall Risk Assessment Tool, nursing judgement, and high fall risk scores.
2. Assessment and identification of patients at high risk for falls using the Wilsons Sims Fall Risk Assessment Tool was carried out 100% by the nurses. The dry erase board was

updated 100%, and red socks were placed on patients whose fall score was 7 or greater 63% of the time.

3. The nursing judgment section of the Wilson Sims Fall Risk Assessment Tool was documented 46% of the time during the project's initial phase but increased to 54% after reeducation.
4. The project champion communicated fall scores during interprofessional team meetings 85% of the time, and fall scores and medications were discussed 60% upon admission and during provider rounds.
5. Consults to physical therapy were ordered in the EHR 78% of the time at admission or status change (see Figure 1).

**Figure 1**

*Fall Prevention Interventions*



**Medications**

Treatment with psychotropic medications is a crucial aspect of treating mental health disorders. However, these medications are responsible for a variety of adverse reactions, such as falls. Using four or more of these medications, especially in older adults, increases the fall risk even more (Lavsa et al., 2010). While it may be necessary to use more than four medications per patient during an acute psychiatric episode, it is essential to continuously review medications and lower the dose or discontinue when no longer needed.

Taking two types of drug combinations can cause interactions that can increase the risk for falls. The first drug interaction is pharmacodynamic: taking two sedative drugs at a time (Lenze, 2018). For example, an older adult who takes Ativan and Zyprexa is more at risk for a fall than an older adult who takes only one of these drugs. The second drug interaction is pharmacometric: a drug interferes with the metabolism of another drug (Lenze, 2018). For example, antidepressants such as Wellbutrin and SSRIs (Paxil, a strong CYP 2D6 and 2B6 inhibitor; Prozac and Cymbalta, a moderate CYP 2D6 and 2B6 inhibitor), when taken together, can cause a concentration increase of both medications resulting in adverse effects, including falls (Lenze, 2018).

Medications prescribed on the older adult unit included antidepressants, antipsychotics, mood stabilizers, benzodiazepines, anxiolytics, selective serotonin reuptake inhibitors, and hypnotics such as Ambien (see Table 3).

**Table 3**

*Medications Use, by Categories*

| Medications | Patients | | Medication Usage |
|---|---|---|---|
| | n | % | % |
| Antidepressants | | | |
| Cymbalta | 5 | 12 | 24 |
| Effexor XR | 2 | 4 | 9 |
| Pristiq | 1 | 2 | 5 |
| Remeron | 7 | 17 | 33 |
| Wellbutrin XL | 6 | 15 | 29 |
| Antipsychotics ($2^{nd}$gen) | | | |
| Invega | 1 | 2 | 3 |
| Risperdal | 13 | 32 | 42 |
| Seroquel | 9 | 22 | 29 |
| Zyprexa | 8 | 20 | 26 |
| Anxiolytic/Hypnotic | | | |
| Buspar | 4 | 10 | 36 |
| Trazodone | 6 | 15 | 55 |
| Vistaril | 1 | 2 | 9 |
| Benzodiazepines | | | |
| Ativan | 9 | 22 | 60 |
| Klonopin | 3 | 7 | 20 |
| Restoril | 3 | 7 | 20 |
| SSRIs | | | |
| Lexapro | 2 | 5 | 11 |
| Paxil | 1 | 2 | 6 |
| Prozac | 7 | 17 | 39 |
| Zoloft | 8 | 20 | 44 |

Scheduled medications were reviewed by categories used, the number of antipsychotics used per patient, drug combinations (e.g., antidepressants, selective serotonin reuptake inhibitors, and antipsychotics), and the use of benzodiazepines and hypnotics. Special attention was paid to the use of lower doses, decrease in dosage, and discontinuation. During the project, 2nd generation antipsychotics were prescribed 100% of the time, and patients were only prescribed

one during treatment. Risperdal and Seroquel were used the majority of the time. Risperdal is recommended at 0.5–2.0 mg a day and Seroquel 25-100 mg twice a day for older patients. At the lower dose, Risperdal was prescribed 100% and Seroquel 55 % of the time.

The antidepressant reviewed during this project was Wellbutrin because of its pharmacokinetics with other psychotropics in increasing falls. Wellbutrin, a strong CYP 2D6 inhibitor, was used 29% of the time and was combined with Cymbalta, a moderate CYP 2D6 and 2B6 inhibitor, 26% of the time.

The combination of antipsychotics (Zyprexa and Seroquel) with benzodiazepines, anxiolytics, or hypnotics (e.g., Ativan, Restoril, and trazodone), producing a psychodynamic interaction resulting in increased sedation and falls, were prescribed 41% of the time. The lower dose of these medication combinations was used 75% of the time.

Caution should be used when prescribing anxiolytics or hypnotics (e.g., Ambien) and benzodiazepines to older patients. Ambien, used for sleep, is especially concerning for use in the older population due to increased confusion. Unit data in 2020 revealed two falls occurred after patients took Ambien at bedtime. During this project, Ambien was not prescribed for sleep to patients at high risk for falls. Instead, Trazodone was the drug of choice for sleep. Usually prescribed as an antidepressant, trazodone is used as a sleep aid because of its mild sedating effects. Compared to Ambien, trazodone is safer in older adults, has fewer side effects, and is less likely to produce physical dependence (American Addiction Centers, 2021). Trazodone was used at the lower dose of 25-50 mg 33% of the time.

Benzodiazepines are also of great concern in the older population. All benzodiazepines, short, moderate, or long-acting, carry a risk for falls. There is no therapeutic index for older adults**,** meaning no effective yet safe dose for falls (Lenze, 2018). Recommendations for the use

of benzodiazepines are to stop when feasible or taper to lower dosages. In the psychiatric setting, benzodiazepines are used for extreme anxiety, catatonia (unresponsiveness to external stimuli with abnormal movements while the patient is awake)**,** and alcohol withdrawal (Brasic & Farhadi, 2018). At the recommended dose of 1-2 mg per day for older patients, Ativan was prescribed 44% of the time. Higher doses of Ativan were prescribed 56% of the time. Patients prescribed the higher dose were diagnosed with catatonia and severe anxiety. After treatment, Ativan was discontinued 40% of the time. On another positive note, the psychiatric department director stated he would decrease benzodiazepines on the unit. The decrease of benzodiazepines has happened and is only used depending on the severity of psychiatric conditions or when the Clinical Institute Withdrawal Association (CIWA protocol) is used to prevent alcohol withdrawal.

**Falls**

Assessment pre-project found that 13 falls occurred on the older adult unit from January 2020 to December 2020. Thirty-one percent of the falls were due to medications, with the three most responsible being Ambien, trazodone, and Ativan. Other reasons listed for falls were environmental (6%) (slipping on wet floors), history of previous falls (19%), and other (44%) (falling while ambulating to the restroom, falling out of bed while sleeping, and slipping off chairs). None of the patients who fell had red socks on, and the Wilson Sims Fall Risk Assessment Tool was done 66% of the time.

During the first two quarters (January-June) of the project, there was a total of 3 falls. None of the falls were medication-related. One fall during the first quarter was due to a patient falling out of the chair after the sitter was discontinued. The Wilson Sims Fall Risk Assessment Tool was completed with a fall score of 18, and red socks were noted on the patient. A

wheelchair was used as an assist device. During the second quarter, there were 2 falls. The first fall involved a confused patient (fall score 20) who jumped out of a Geri chair with a sitter present. The second fall happened when an impulsive patient (fall score 14) jumped out the bed with staff present. The Wilson Sims Fall Risk Assessment Tool was completed on both patients, and red socks were utilized (see Figures 2 and 3).

**Figure 2**

*Falls per Quarter*

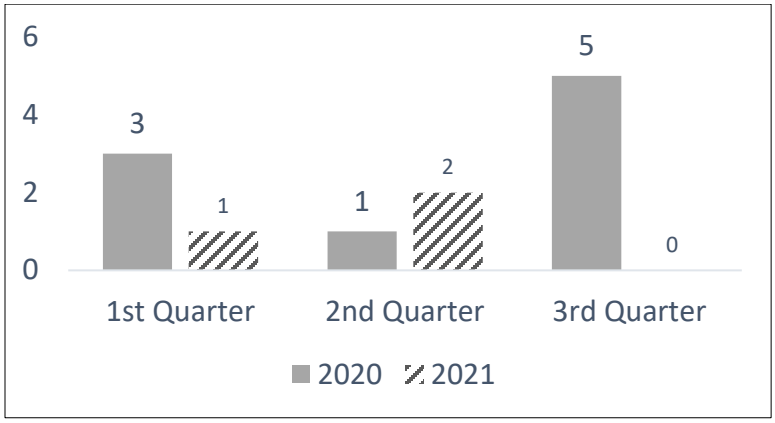
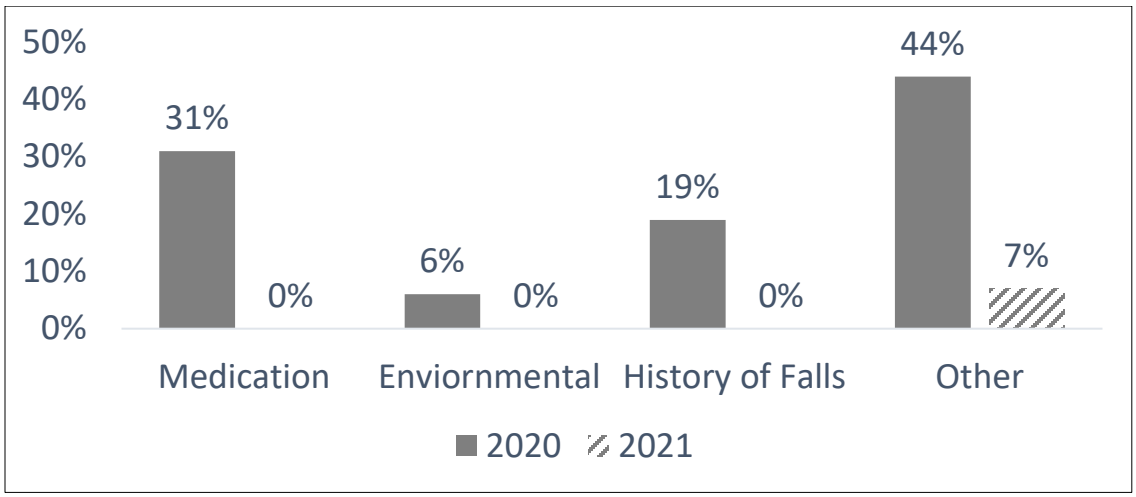



**Figure 3**

*Reasons for Fall*



## Discussion

This quality improvement project aimed to implement an interprofessional fall risk program on an older adult psychiatric unit. Utilizing evidence-based research, collaborating with other disciplines (nurses, health providers, and PT), and education on an approved fall assessment tool, interventions were put in place to help reduce falls on the unit. The project ran over a 5-month time frame. Fall rates and intervention compliance was monitored weekly. The success of this project was due to an increase in professional accountability of the nursing staff by continued use of interventions implemented during the project. The project champion took ownership of the project and continued to educate staff on the new interventions. The unit ran out of red socks because of the compliance of staff when high-risk patients were identified. In addition, there was a decrease/discontinuation in scheduled medications such as benzodiazepines and sleep aids such as Ambien.

The results of this QI project are consistent with the literature that the use of an interprofessional team is the most important extrinsic factor in preventing falls. In this project, team discussions lead to effective strategies in fall prevention and enhanced communication between the team members. The team members and project champion are the reasons for the success of this project. The team understood that a problem existed and were committed to the recommended changes. While there were some challenges, the staff realized that the project enhanced communication and allowed the nurses to feel that they were not the only ones responsible for fall prevention. The project changed the way the staff cared for the patients by placing high-risk patients in front of the nurses' station, calling providers with concerns that medication dosages were too high, and encouraging patients to participate in group therapy to learn ways to keep themselves safe and exercises that help with strength and motivation. There

was an overall sense of pride on the unit because of the reduction in falls. When the unit had a fall, the staff were visibly upset and reviewed what they could have done better to prevent the fall from happening.

**Limitations**

This project had several limitations. The project was carried out on an older adult unit using a small sample size and only represented patients aged 55 and up, so it did not represent all ages of psychiatric patients. Staff was another limitation during this project. There are not enough permanent nurses assigned to the unit, resulting in a large amount of float staff being utilized. In addition, there were limitations related to physical risk factors that could not be addressed in this project, including unit design, small rooms, and poorly arranged bathrooms. Another limitation was that providers felt it was time-consuming to fill out the medication review sheet and refused to fill them out. And hospitalists or PCPs were not available during the implementation of this project. Another limitation happened toward the end of the project when the unit ran out of red socks, resulting in significant wait times for new stock. The final limitation included some nursing staff not being compliant in documenting in the nursing Judgement section when there was a status change and change in fall score. This was addressed with further education being carried out, stressing the importance of this section, which resulted in some improvement.

**Recommendations**

Because there is a limited amount of research on falls in inpatient psychiatric units, the results of this project may be beneficial to future researchers within the healthcare setting. Since 1973, research has been carried out on falls on other hospital units; however, falls in psychiatric units have not been widely researched. Doctoral-prepared APRNs need to become involved with

interprofessional teams and address the fall status of patients by doing more QI improvement projects. As nurses, we are taught to treat patients holistically. This is extremely important for psychiatric patients because of the uniqueness of their care. So, it is essential to know the whole picture of the patient before prescribing psychotropic medications.

**Sustainability**

Even with a bit of pushback, the nursing staff took ownership of the program over time. The project champion was instrumental in keeping staff motivated, ensuring staff understood the importance of the project in preventing falls, and educating new staff hired on the unit. The nurses followed the latest interventions and were instrumental in communicating fall scores and medications with the providers on the unit. The psychiatric director was pleased and said the project made a difference on the floor, and the nurses are doing a great job communicating the fall scores during interprofessional meetings. Providers, in turn, are now educated on the current fall assessment tool and review medications that may increase the risk for a fall. The most significant change was the providers' decreased use of benzodiazepines. Since the project has shown positive results and includes multiple patient care disciplines and not just nurses, the staff are determined to continue the trend and help reduce falls on their unit.

**Implications for Practice**

The outcomes of this QI project help expand on the dearth of literature on fall prevention in inpatient psychiatric settings. This project also highlights the Joint Commissions' recommendation of establishing an interprofessional team, making fall prevention everyone's responsibility by increasing awareness of fall risk patients and developing strategies for fall prevention.

This project has shown that an interprofessional fall prevention team utilizing evidence-based practice interventions to promote patient safety is an effective way to prevent or reduce falls. Collaboration between nurses, providers, PT, social workers, and case managers aided in increasing awareness about patients' overall condition, fall risk, and ambulation status. This awareness aids in treatment while in the hospital and treatment after discharge. The role of the APRN is to manage and holistically treat psychiatric patients by understanding the whole picture of the patient. Treating patients' mental disorders and understanding the medications that can put them at risk for adverse reactions such as falls can help provide a safe environment and improve outcomes in this vulnerable population.

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# Appendix A

## Institutional Review Board (IRB)


12/10/2020

Project Lead: Teresa Woodson
Project title: Implementation of an Interprofessional Fall Prevention Program to Reduce Fall Rates on an older adult Inpatient Unit

Teresa:

Your project titled Implementation of an Interprofessional Fall Prevention Program to Reduce Fall Rates on an older adult Inpatient Unit was deemed to be **Not Regulated Research**.

Your proposed project was reviewed and found to not meet federal regulatory requirements for human subject research and does not require approval via the IRB process. Please use the IRB number **NRR [20-018]** when inquiring about or referencing this determination.

No further review of the project as proposed is required. Should you determine at any point you wish to add additional elements to the project, please contact us before initiating those components, as this may impact the determination.

For information regarding the IRB or the review process, please contact me at (210) 805-5885.

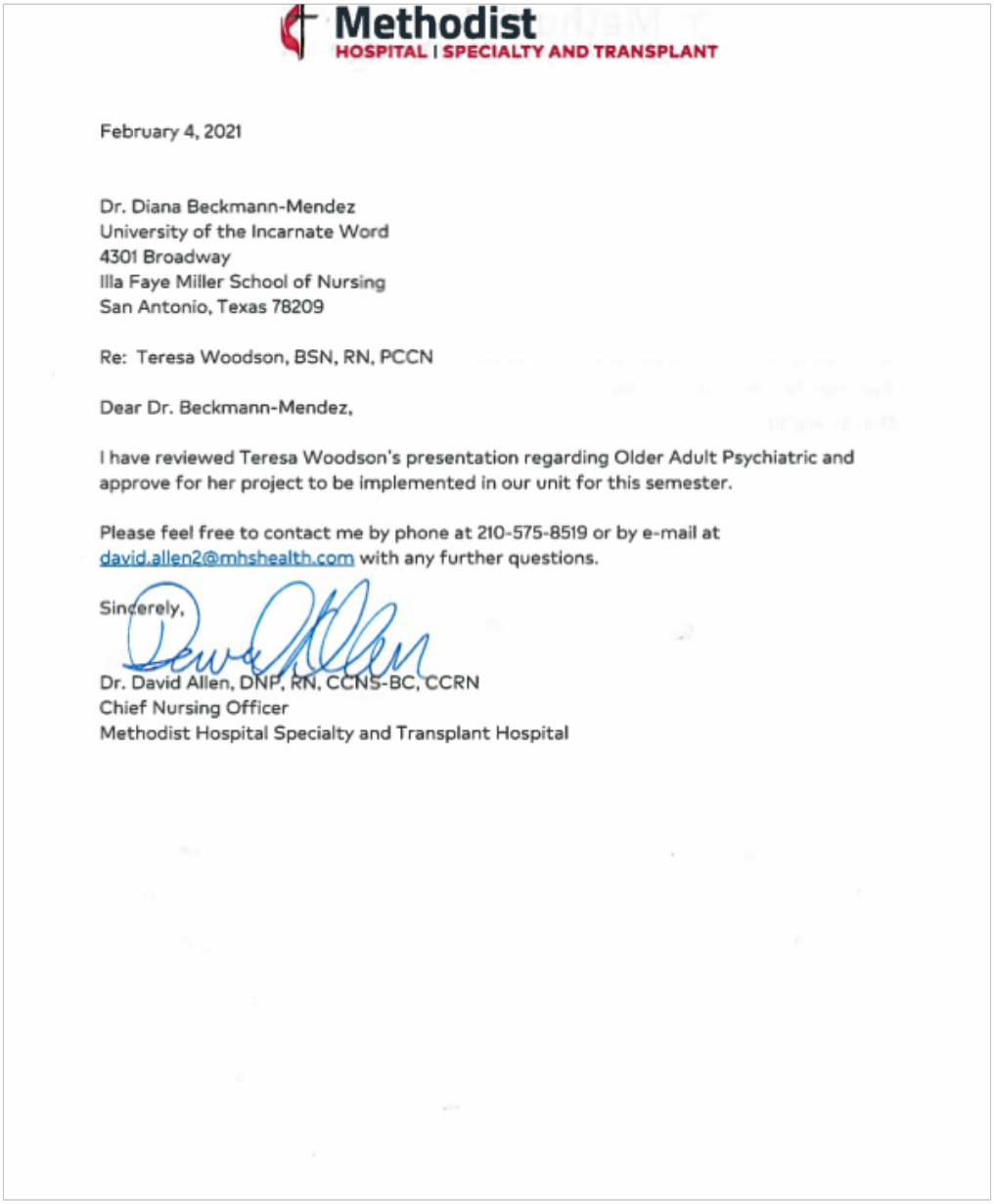
Sincerely,

Ana Hagendorf, PhD, CPRA

Ana Hagendorf, PhD, CPRA
Director, Office of Research and Sponsored Projects Operations
Office of Research and Graduate Studies
University of the Incarnate Word
4301 Broadway, CPO 1216
San Antonio, Texas 78209
(210) 805-3036
wandless@uiwtx.edu

## Appendix B

## Letter of Approval



Methodist
HOSPITAL | SPECIALTY AND TRANSPLANT

February 4, 2021

Dr. Diana Beckmann-Mendez
University of the Incarnate Word
4301 Broadway
Illa Faye Miller School of Nursing
San Antonio, Texas 78209

Re: Teresa Woodson, BSN, RN, PCCN

Dear Dr. Beckmann-Mendez,

I have reviewed Teresa Woodson's presentation regarding Older Adult Psychiatric and approve for her project to be implemented in our unit for this semester.

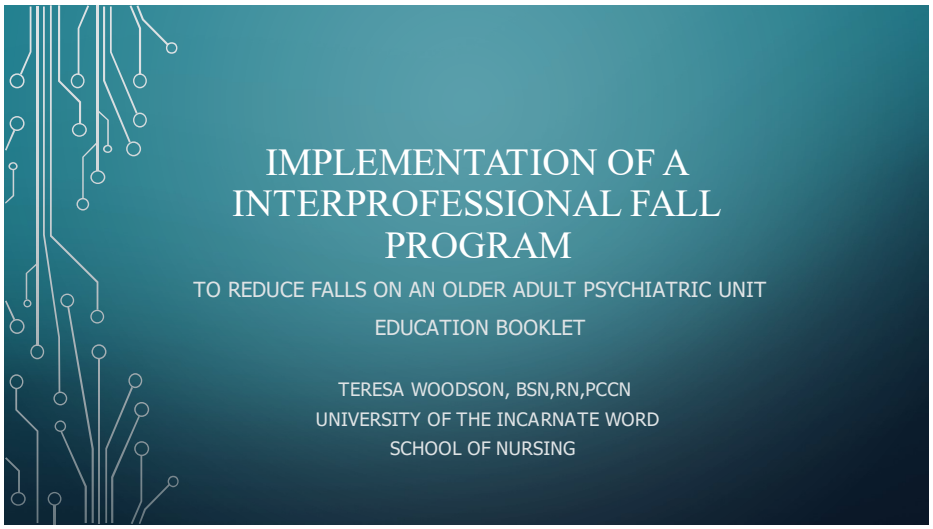
Please feel free to contact me by phone at 210-575-8519 or by e-mail at david.allen2@mhshealth.com with any further questions.

Sincerely,

Dr. David Allen, DNP, RN, CCNS-BC, CCRN
Chief Nursing Officer
Methodist Hospital Specialty and Transplant Hospital

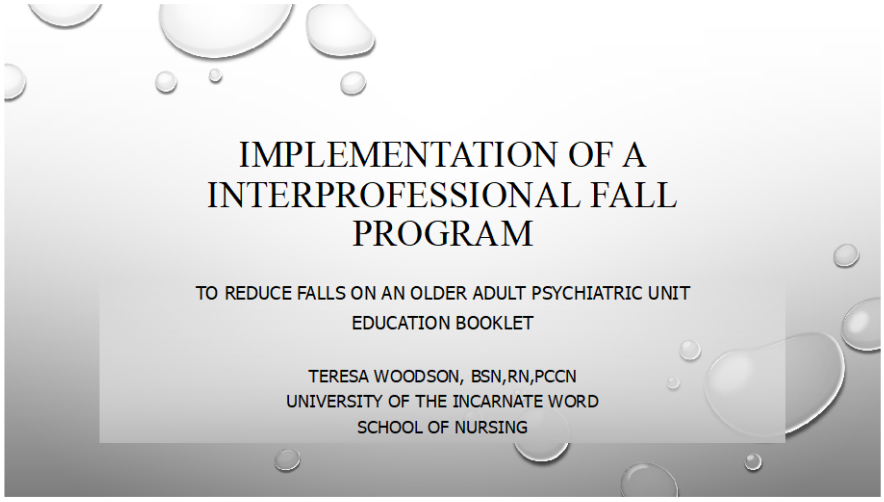
**Appendix C**

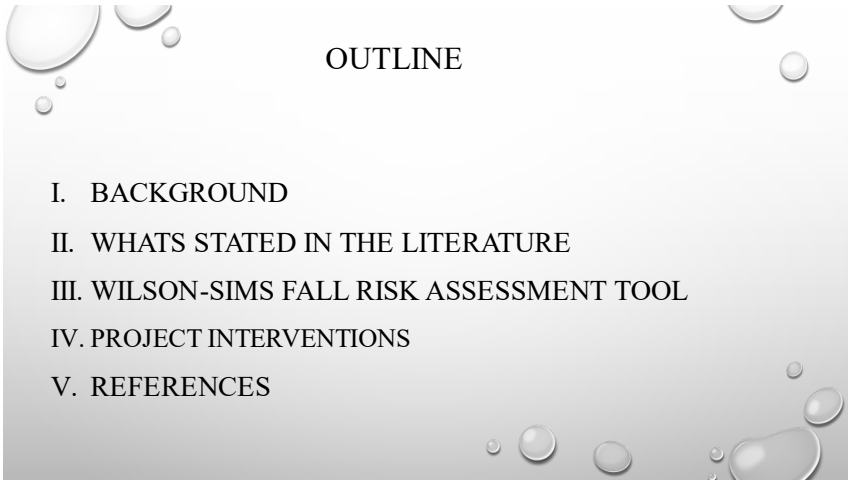
**Nursing Education**




**Appendix D**

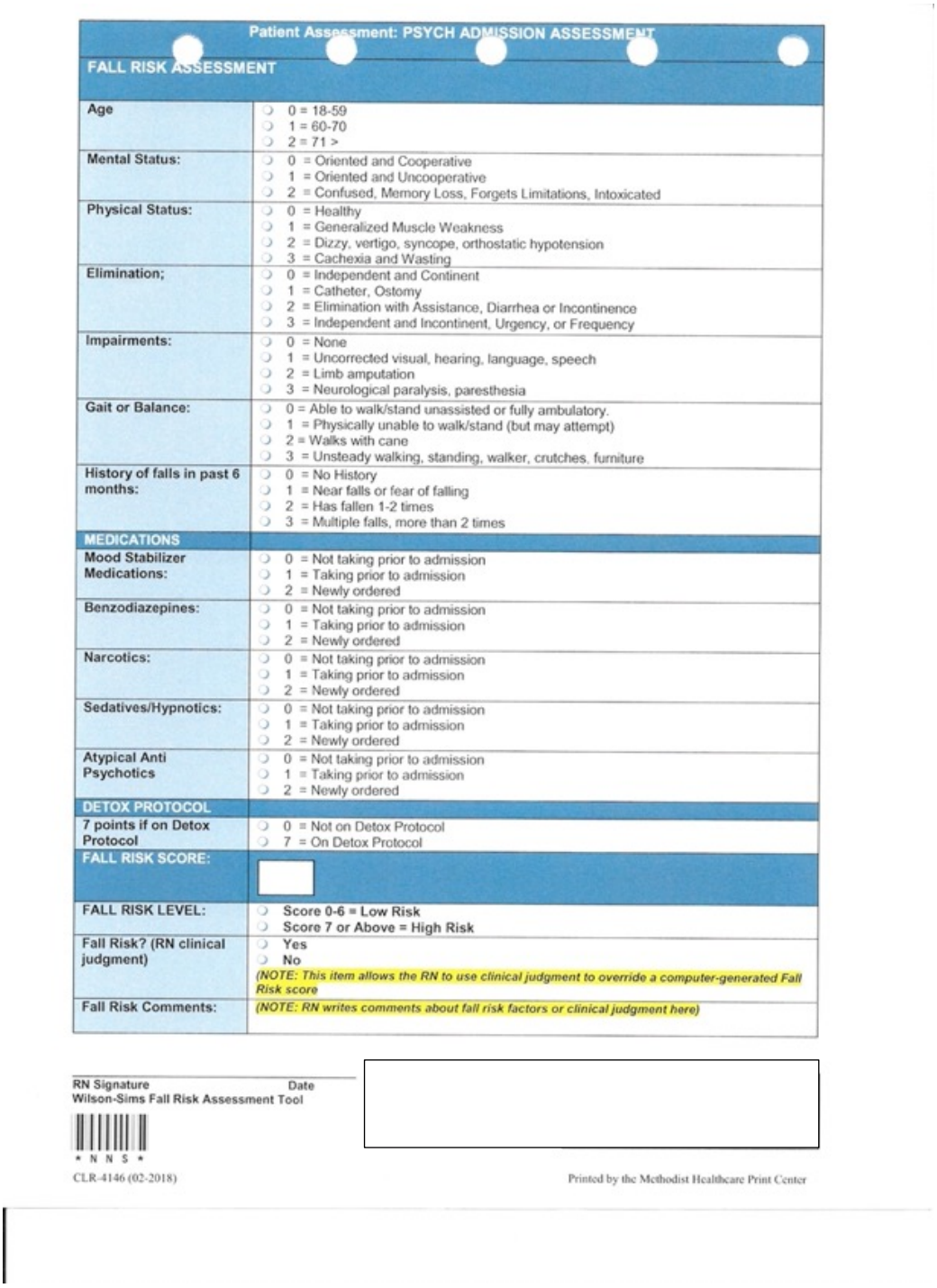
**Education for Healthcare Providers**



# Appendix E

## Wilson Sims Fall Risk Assessment Tool



| Patient Assessment: PSYCH ADMISSION ASSESSMENT | |
|---|---|
| **FALL RISK ASSESSMENT** | |
| Age | ❍ 0 = 18-59<br>❍ 1 = 60-70<br>❍ 2 = 71 > |
| Mental Status: | ❍ 0 = Oriented and Cooperative<br>❍ 1 = Oriented and Uncooperative<br>❍ 2 = Confused, Memory Loss, Forgets Limitations, Intoxicated |
| Physical Status: | ❍ 0 = Healthy<br>❍ 1 = Generalized Muscle Weakness<br>❍ 2 = Dizzy, vertigo, syncope, orthostatic hypotension<br>❍ 3 = Cachexia and Wasting |
| Elimination; | ❍ 0 = Independent and Continent<br>❍ 1 = Catheter, Ostomy<br>❍ 2 = Elimination with Assistance, Diarrhea or Incontinence<br>❍ 3 = Independent and Incontinent, Urgency, or Frequency |
| Impairments: | ❍ 0 = None<br>❍ 1 = Uncorrected visual, hearing, language, speech<br>❍ 2 = Limb amputation<br>❍ 3 = Neurological paralysis, paresthesia |
| Gait or Balance: | ❍ 0 = Able to walk/stand unassisted or fully ambulatory.<br>❍ 1 = Physically unable to walk/stand (but may attempt)<br>❍ 2 = Walks with cane<br>❍ 3 = Unsteady walking, standing, walker, crutches, furniture |
| History of falls in past 6 months: | ❍ 0 = No History<br>❍ 1 = Near falls or fear of falling<br>❍ 2 = Has fallen 1-2 times<br>❍ 3 = Multiple falls, more than 2 times |
| **MEDICATIONS** | |
| Mood Stabilizer Medications: | ❍ 0 = Not taking prior to admission<br>❍ 1 = Taking prior to admission<br>❍ 2 = Newly ordered |
| Benzodiazepines: | ❍ 0 = Not taking prior to admission<br>❍ 1 = Taking prior to admission<br>❍ 2 = Newly ordered |
| Narcotics: | ❍ 0 = Not taking prior to admission<br>❍ 1 = Taking prior to admission<br>❍ 2 = Newly ordered |
| Sedatives/Hypnotics: | ❍ 0 = Not taking prior to admission<br>❍ 1 = Taking prior to admission<br>❍ 2 = Newly ordered |
| Atypical Anti Psychotics | ❍ 0 = Not taking prior to admission<br>❍ 1 = Taking prior to admission<br>❍ 2 = Newly ordered |
| **DETOX PROTOCOL** | |
| 7 points if on Detox Protocol | ❍ 0 = Not on Detox Protocol<br>❍ 7 = On Detox Protocol |
| **FALL RISK SCORE:** | |
| FALL RISK LEVEL: | ❍ Score 0-6 = Low Risk<br>❍ Score 7 or Above = High Risk |
| Fall Risk? (RN clinical judgment) | ❍ Yes<br>❍ No<br>*(NOTE: This item allows the RN to use clinical judgment to override a computer-generated Fall Risk score* |
| Fall Risk Comments: | *(NOTE: RN writes comments about fall risk factors or clinical judgment here)* |

RN Signature Date

Wilson-Sims Fall Risk Assessment Tool

* N N S *

CLR-4146 (02-2018)

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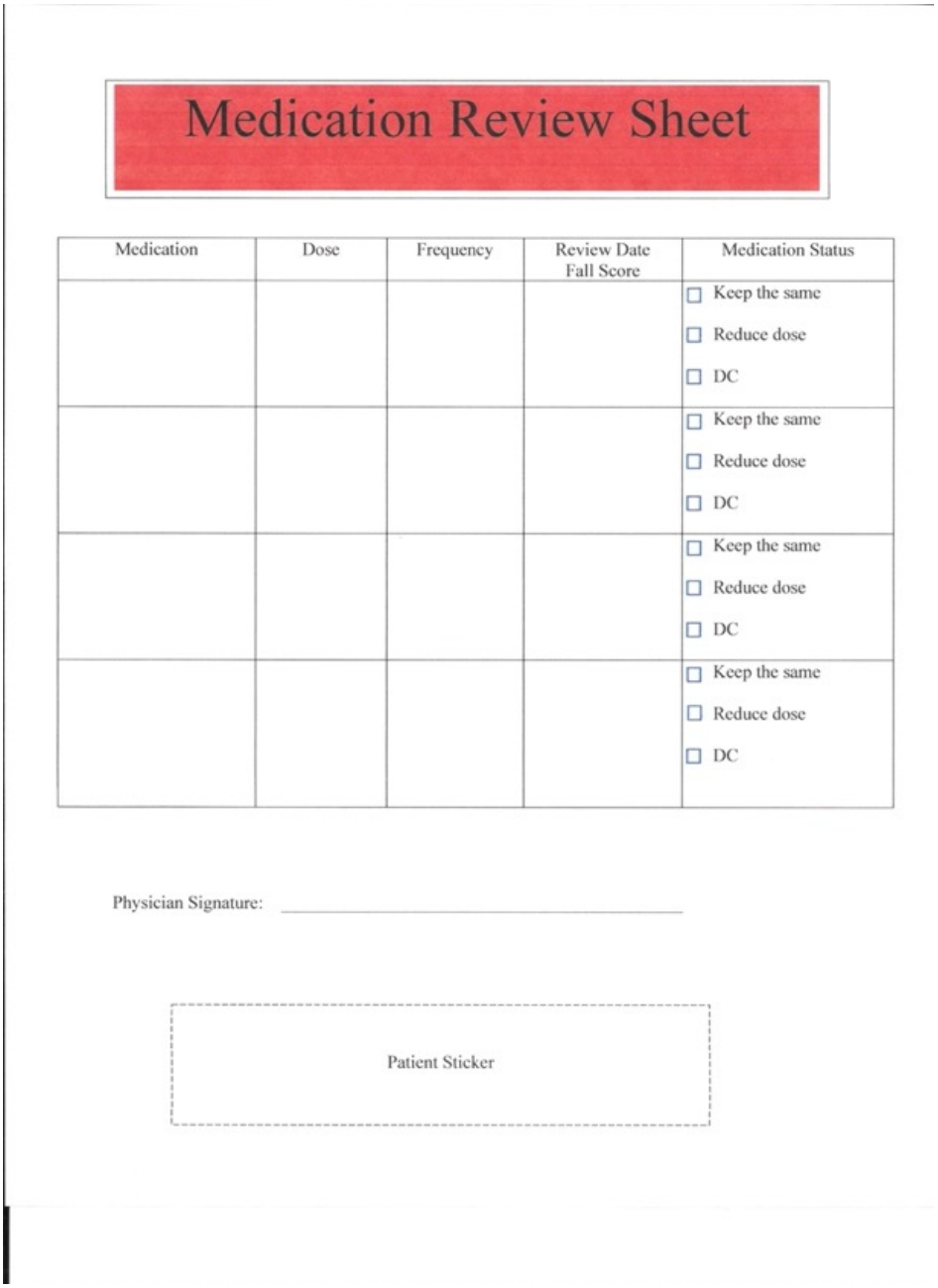
## Appendix F

## Medication Review Sheet



Medication Review Sheet

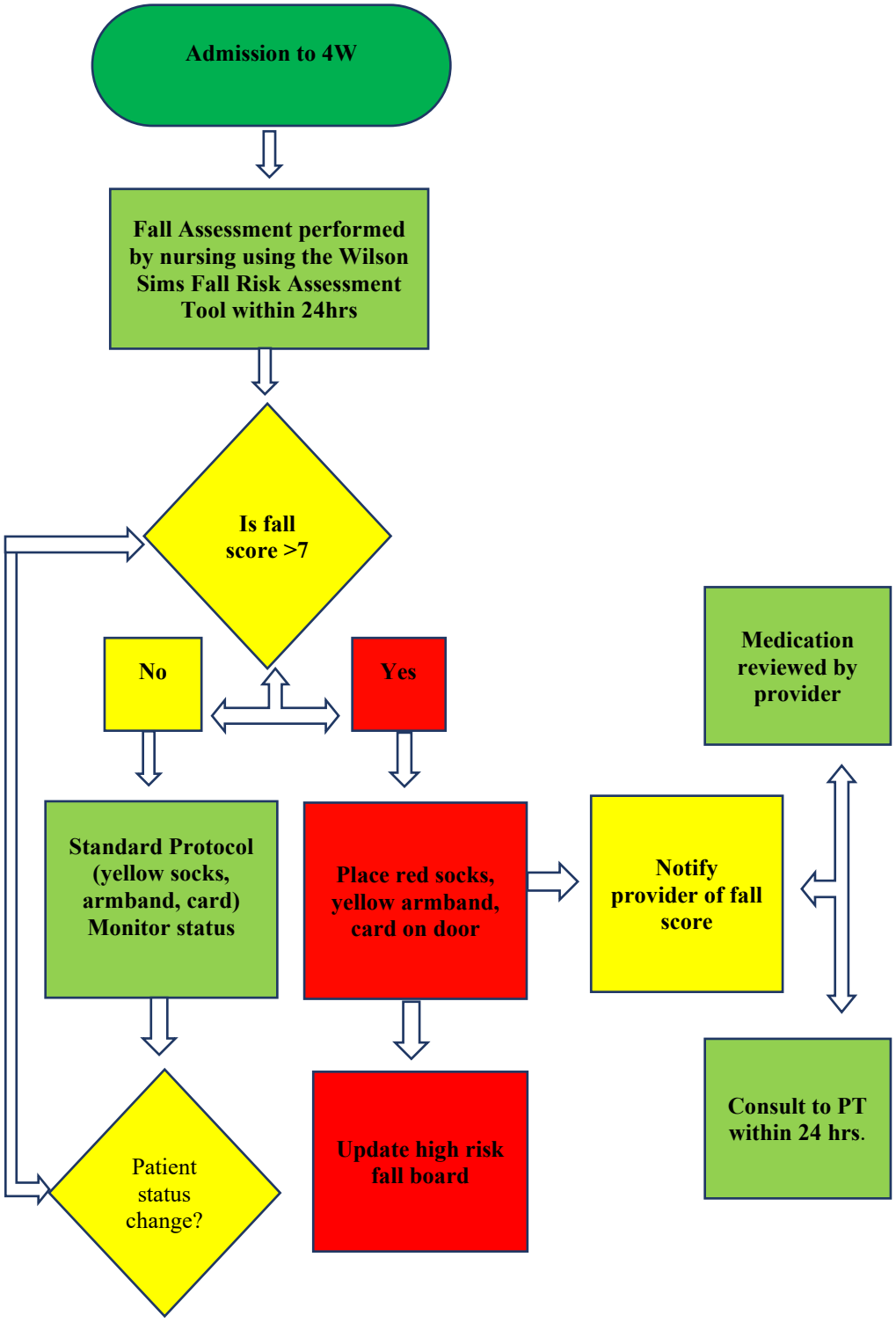
| Medication | Dose | Frequency | Review Date<br>Fall Score | Medication Status |
|---|---|---|---|---|
| | | | | ☐ Keep the same<br>☐ Reduce dose<br>☐ DC |
| | | | | ☐ Keep the same<br>☐ Reduce dose<br>☐ DC |
| | | | | ☐ Keep the same<br>☐ Reduce dose<br>☐ DC |
| | | | | ☐ Keep the same<br>☐ Reduce dose<br>☐ DC |

Physician Signature: _____

Patient Sticker

## Appendix G

## Project Flow Sheet



**Appendix H**

**Project Flier**