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Developing a Standardized Process for an Effective, Evidence-Based Fall Management Program to Reduce Falls in a Nursing Home Setting

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Developing a Standardized Process for an Effective, Evidence-Based Fall Management Program to Reduce Falls in a Nursing Home Setting

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By

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Abstract

Background: Falls among the elderly population, aged 65 years and older, are a significantly growing public health problem. For elderly people residing in residential care facilities and facility administrators, falls are of great concern due to the post-fall associated consequences. Preventing resident falls in long-term care is a priority to reduce injuries and associated costs.

Project Design: This evidence-based quality improvement (EBQI) pilot project focused on fall prevention and was conducted on 1 unit (3 long-term care hallways) at a facility that provides both long-term care (LTC) and short-term rehabilitation services in Utah County, Utah. Interventions chosen for the Falls Management Program Bundle (FMPB) included (a) providing staff educational and training sessions, (b) providing resident educational and training sessions, (c) instituting a Falling Star program, and (d) creating a Fall TIPS poster program.

Results: The post-test results following the education sessions on fall risk factors and fall prevention strategies showed an overall increase in knowledge in a minimum of 47% of resident and nurse participants. After the trainings, 94.4% (n = 17) of the nurses were able to determine the correct level of risk for a resident case-study scenario, and 55.5% (n = 10) were able to identify 3 out of 4 tailored interventions. Due to contextual factors, findings were inconclusive of whether the three-month evidence-based Falls Management Program Bundle resulted in a reduction of resident falls in the target hallways.

Recommendations: Implementation of a standardized, evidence-based Fall Management Program (FMP) that includes multiple fall-prevention strategies has the potential to prevent and/or reduce falls. Continuation of interventions included in the Falls Management Program Bundle would assist in keeping staff and residents educated on fall prevention measures, as well as communicating risk level and needed interventions in fall prevention. More accurate data

collection on the number of falls for the specific unit is needed to confirm effectiveness of the standardized fall prevention program. Continuation and monitoring of the Fall Management Program Bundle would be beneficial to assist the facility in its decision to add this project to other units.

Conclusion: The implementation of a standardized, evidence-based Fall Management Program to reduce falls at this facility increased nurses' and residents' knowledge regarding fall risk factors and fall prevention strategies. Training regarding risk assessment was beneficial in identifying risk levels and tailored interventions. Nursing staff was able to utilize the Fall TIPS poster program to communicate a fall intervention plan to residents and other staff members.

Keywords*:* falls, fall management programs, residents, nursing homes, fall prevention strategies

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Problem Description

Falls, and resulting complications among adults aged 65 years and older, are a growing public health concern (Botwinick et al., 2016; Houry et al., 2015). This public health challenge has been labeled as the "2030 problem" because of the rising trends that project by the year 2030: (a) the adult population aged 65 years and older in the United States will double, totaling 75 million elderly, (b) elderly fatal falls will reach 100,000 per year, and (c) associated medical costs of falls in the elderly is estimated to be $100 billion (Hasjim et al., 2019; Houry et al., 2015).

Nursing home residents are particularly at risk for falls due to frailty and increased age. Elderly people who reside in residential care facilities have an even greater health concern because the rate of falls is reportedly two to three times higher than among community-dwelling elderly (Botwinick et al., 2016; Cusimano et al., 2008; Tariq et al., 2013). Studies have shown that the average fall incidence in nursing homes is estimated to be 1.4 to 1.6 falls per bed per year with approximately half of the residents falling more than once a year (Rask et al., 2007; Vlaeyen et al., 2015; Haralambous et al., 2008).

Problem Background

Although increased age is a major risk factor for falling, other factors contribute as well. In fact, many falls are caused by a combination of risk factors. The greater number of risk factors an individual has, the greater their chances of falling (CDC, 2017). Certain personal factors (intrinsic) and environmental factors (extrinsic) contribute to increased risk of falling. According to Ambrose et al. (2013) and the CDC (2017), intrinsic factors include: age, functional abilities,

Vitamin D deficiencies, chronic diseases, sensory impairments, medications, and difficulties with walking and balance (gait disturbances). Extrinsic factors include home hazards (such as loose throw rugs or clutter), poor-fitting footwear, poor lighting, and unstable furniture. Tariq et al. (2013) also found that in addition to the extrinsic fall risk factors listed, the use of canes and walkers were also associated with falling. Fall risk increased when the canes and walkers were the incorrect size, were used improperly, or were in a poor state of repair.

Falls are common in nursing home facilities. It is estimated that of the 1.6 million nursing home residents in the United States, half of them will fall annually with about one in three of those falling more than once (Agency for Healthcare Research and Quality [AHRQ], 2017a). Falls often have serious consequences, especially for frail elderly residents. Falls can cause broken bones, serious head and brain injuries, as well as death. One in every 10 residents who falls has a serious related injury, and about 65,000 will suffer a hip fracture each year (AHRQ, 2017a).

Falls are a serious healthcare problem for elderly people in a residential setting because of the potential for serious post-fall associated consequences such as injury, functional impairment, disability, and death (Baixinho et al., 2019; Botwinick et al., 2016; Vlaeyen et al., 2015; Galik et al., 2018). Besides serious injuries and increased risk of death, falls have additional adverse consequences, such as increased fear of falling, reduced quality of life, and limiting the type of activities in which the resident might participate (AHRQ, 2017a).

The estimated costs of fatal and nonfatal falls combined totals approximately $50 billion a year (Florence et al., 2018). However, these costs don't include associated costs, such as lawsuit costs (in actions brought against facilities and staff), and some lingering long-term effects of the fall injuries (AHRQ, 2017).

Local Problem

Administrators at a facility that provides both LTC and short-term rehabilitation services in Utah County (a metropolitan region in north-central Utah), have reported fall rates 1.8 times higher than the fall rate of similar-sized facilities in the United States (Industrial Safety & Hygiene News, 2017). Additionally, administrators report having no standardized fall management program in place (Assistant Director of Nursing [ADON] and Director of Nursing [DON], personal communication, September 19, 2019). The lack of an effective fall management process at this facility puts residents at a greater risk for initial and recurrent falls, serious physical injuries, and death.

Available Knowledge

Literature Review

The literature review focused on determining the best evidence-based practices and/or fall management programs, to reduce fall rates among residents in nursing homes. The Population, Intervention, Comparison, and Outcome (PICO) format was used to develop the following question: For elderly residents (65 years of age and older) residing in long-term care facilities (P), can a fall management program (I) assist in reducing falls (O)? Databases searched included PubMed, The Cochrane Library, CINAHL, and Google Scholar. A combination of key terms was used for article retrieval: *falls, elderly, institutionalized, nursing home, long-term care, residential care facilities, prevention, and fall management*. Articles considered had to be written in English, be peer-reviewed, and focus on fall management programs and/or interventions for fall prevention/reduction in elderly who reside in nursing homes. All studies were considered, regardless of what type of study design was utilized. Studies were excluded if the population of interest was from the community, assisted-living facilities, or hospitals. The

author reviewed the studies and selected a total of 10 relevant articles published between 2003 and 2020 that answered the PICO question.

Synthesis of the Evidence

Using the Johns Hopkins Nursing Evidence-Based Practice Research Evidence Appraisal Tool and the Evidence Level and Quality Guide (Dang & Dearholt, 2018), each study was critically appraised for the evidence level, as well as the quality of the evidence (Appendix A). Six of the 10 studies were categorized into the Level I group. Three of the Level I studies were systematic reviews, and three of the studies were randomized control trial (RCT) studies. The remaining four research studies were categorized as Level II (Although these trials were diverse in their study design, they received a Level II designation because one study was a systematic review design using RCT and quasi-experimental studies, and the other three studies were single studies using a quasi-experimental study design).

Studies were grouped together based on similarities, differences, and connections (Reavy, 2016), such as whether the fall management program utilized only one intervention for prevention of falls, or if it was multifaceted. Once that division was established, the different components of the fall management programs were evaluated to see if they were beneficial in reducing falls.

Single Intervention Fall Management Program

Two of the 10 studies addressed whether a single fall management program would be beneficial in the reduction of falls (Gulka et al., 2019; Vlaeyen et al., 2015). Both studies were systematic review studies and included a meta-analysis. These meta-analysis studies synthesized findings from a total of 29 studies that used single-intervention programs to reduce falls. Vlaeyen et al. (2015) and Gulka et al. (2019) examined studies of single interventions (such as staff

training, medication evaluations, or just the use of Vitamin D supplements). The meta-analysis concluded that there was no effect on the number of falls with single interventions. In fact, it found that when only a single intervention was used for prevention of falls, falls actually increased in the intervention group. However, Gulka et al. (2019) did find that a combined approach of exercise interventions coupled with staff education did significantly reduce the number of recurrent fallers.

Multifaceted Fall Management Programs/Interventions

All 10 of the studies addressed multifaceted fall management programs/interventions (Appendix A) with four of the studies being systematic reviews (Cusimano et al., 2008; Francis-Coad et al., 2018; Gulka et al., 2020; Vlaeyen et al., 2015). Nine of the 10 studies exhibited positive impact on reducing the number of falls, fallers, or recurrent falls. The remaining study conducted by Kerse et al. (2004) found that fall-prevention strategies based on an individual's fall risk were not successful in reducing falls, and in fact, increased the incidence rate of falls in the intervention group. However, Kerse et al. (2004) suggest that this result may have been skewed due to source of bias; falls were underreported prior to the implementation of the fall-prevention strategies. Based on the review of multifaceted fall management programs/interventions, the following common categories were identified.

Staff Training. Eight studies emphasized the importance of training staff on the fall management program (Becker et al., 2003; Burland et al., 2013; Francis-Coad et al., 2018; Cusimano et al., 2008; Gulka et al., 2020; Kerse et al., 2004; Nitz et al., 2012; Rask et al., 2007; Taylor, 2002). Two studies gathered information through questionnaires or quizzes to determine the knowledge base of the staff and fall team (Rask et al., 2007; Burland et al., 2013). All seven studies provided teaching strategies for staff training, such as workshops, distribution of

manuals to team members, videos, self-paced learning packets, laminated brochures for units (that summarized the program outline and modules), and case examples of program application.

Staff education was most often conducted in more than one educational session prior to the beginning of the study. In four of the studies, the first training session ranged in length from as little as one hour up to a full day (Becker et al., 2003; Burland et al., 2013; Kerse et al., 2004; Rask et al., 2007). The introductory session covered basic information about falls, incidences and consequences of falls, and risk factors, along with preventative measures. If the study included a second training session, it focused on the core components of the new fall management program. If there wasn't a second training session, then the FMP information was included in the first session. In the studies where staff training was conducted along with other prevention interventions, the studies did have a positive result in reducing falls.

Resident Education. Another promising avenue for reducing falls appears to be educating residents, and (where possible) their families on prevention strategies (Becker et al., 2003; Burland et al., 2013; Cusimano et al., 2008: Nitz et al., 2012). Some studies did not specify the education modalities used; however, others were explicit in how the education was delivered: via pamphlets, discussions at the resident/family meetings, and posters displayed in the nursing home.

Resident education sessions focused on providing information on the new FMP, fall risks and/or falls prevention (Becker et al., 2003; Burland et al., 2013; Cusimano et al., 2008; Nitz et al., 2012), including instruction on safe transferring of residents from one location to another (Cusimano et al., 2008). Again, all these studies emphasized that resident education was a key component in a successful fall management program and has proved instrumental in reducing falls.

Multidisciplinary Teams. Three studies addressed the importance of having a multidisciplinary team involved in implementation of a fall management program. The studies suggested team members should include a nurse, nursing assistants, either an occupational or physical therapist, and a member from maintenance or engineering (Rask et al., 2007; Taylor, 2002; Vlaeyen et al., 2015). All these studies had fall rates that either remained stable in the intervention groups (Rask et al., 2007) or had a positive finding of reducing falls (Taylor, 2002; Vlaeyen et al., 2015).

A synthesis of the evidence showed good and consistent support for reducing falls in nursing homes by implementing a multifaceted fall management program. Moreover, findings suggest that an effective program should be overseen by a multidisciplinary fall prevention team and include both staff and resident education using a variety of teaching modalities.

Rationale

Theoretical Model/Conceptual Framework

The conceptual framework used in guiding the development of this quality improvement project is the Donabedian's Conceptual Model (Donabedian, 1988). According to this model, to determine if any quality improvement project has achieved a desired effect, then it must include both process and outcome measures to connect the theory of change to the expected outcome (Appendix B). Three components must be present when making changes to improve quality of care (Moran et al., 2020; Hickey et al., 2017):

- **Structure measures/input measures** include resources and the setting where the project will be implemented, as well as defining who will be involved in the project.
- **Process measures** address the way the systems and processes work to deliver the desired outcome (what will be done and how it will be delivered).

- **Outcomes measures** reflect the impact on the patient and ultimately determine if the aim of the project was met (what will be measured, reviewed, or assessed).

This model will assist in examining the concepts that will affect the structure attributes (standards and resources) and provide a systematic process for care (intervention-trainings/education) to help determine if the desired outcome (fall reduction) can be achieved.

Another critical component of the project is educating staff on the fall management program and interventions, and then evaluating what knowledge they attained and implemented. According to Bandura's Self-Efficacy Theory (Bandura, A., 1977; Novak & Valquez, 2013), when individuals believe their actions can influence the outcomes of a given situation, they not only feel better about themselves but also feel they have a sense of power and control over what happens. The four sources of efficacy beliefs are (Appendix C):

- **Performance Outcomes:** Previous personal mastery experiences (whether positive or negative) can influence the ability of an individual to perform a given task.
- **Vicarious Experiences:** Observing other people, especially role models who have succeeded by their sustained efforts, can increase learner confidence.
- **Verbal Persuasion:** Influential and successful people in our lives can strengthen beliefs that we have what it takes to succeed.
- **Physiological/Emotional States**: State of mind can influence performance for better or worse.

Project Framework – Role of the Logic Model in Project Development

In conjunction with both the Donabedian's Conceptual Model and Bandura's Self-Efficacy Theory, the Kellogg Logic Model (W. K. Kellogg Foundation, 2004) was used to guide the process of the project. This tool provided a visual representation of the framework for

identifying available resources (inputs), necessary activities, products (outputs), and a specific time frame to accomplish the desired outcomes. The model provided a way to communicate the steps of the project, to identify gaps in the process, to measure outcomes through data collection, and to evaluate the project.

Specific Aims

The aim of this evidence-based quality improvement project was two-fold: to implement a standardized, evidence-based fall management program at a long-term care and short-term rehabilitation facility, and to decrease the fall incident rate among its residents.

Context

Population

This facility mostly services Utahns 65 years of age and older who, prior to being admitted to this facility, had typically lived in Utah County or surrounding counties, such as Wasatch County and Salt Lake County. Of the estimated 606,503 Utahns living in Utah County, approximately 41,777 are aged 65 years and older with approximately 24,000 of those being female (World Population Review, 2019).

In Utah County, unintentional injuries are the third leading cause of death. According to the Utah Department of Health ([UDOH], 2019a), falls among Utah's older population are a significantly growing health concern and are the leading cause of injury-related death and hospitalization. It was also noted that for this Utah population, the combined cost of fall-related hospitalization and emergency room visits was roughly $123 million annually. Both national and Utah statistics over the past 20 years show a steady increase in death rates due to falls (Center for Disease Control and Prevention [CDC], 2019a; UDOH, 2019b). In 2016, approximately 30% of Utahns age 65 years and older had reported falling, and the age-adjusted rate of fall deaths was

approximately 58 deaths per 100,000 older adults (CDC, 2019a; CDC, 2019b). This population accounted for 77.8% of all fall-related deaths in the state.

According to the ADON (personal communication, September 19, 2019), approximately 65% of the residents are female, and the average age of residents is 80 years old. This population group is significant because the project focus is on individuals 65 years of age and older who reside in a specific long-term care facility.

Relevant Elements of Project Settings and Resources

Location and Size

The setting for this project is a facility in north-central Utah that provides both long-term care and short-term rehabilitation services. In July of 2017, this facility was established and opened its doors to its first five residents (ADON, personal communication, September 19, 2019). The facility was granted state licensure in September 2017, by the Utah Bureau of Health and Facility Licensing and Certification (Utah Department of Health, n.d.) and was granted certification to accept Medicare and Medicaid residents by the Centers for Medicare & Medicaid Services (CMS). The grand opening to the public was held on September 18, 2017 (Neeley, 2017).

The facility has a maximum total occupancy of 99 residents, with the average daily census of approximately 80 residents (ADON, personal communication, February 26, 2020). The building consists of six hallways; five are dedicated to long-term care residents and one is dedicated to short-term rehabilitation and/or skilled nursing residents.

Social Setting

Maintaining good communication and excellent customer service with residents, their families, and community partners is vital to the operation of this facility. This facility partners

with multiple health-care organizations, such as assisted-living facilities, hospice companies, surgeons, and hospitals. By sustaining these collaborations, the facility is able to make transitioning to long-term care and/or rehabilitation a seamless process for their customers and their customers' families.

Community reviews describe this place as a "beautiful facility" that is welcoming with "professionals that give attentive care" and have "incredible teamwork." Additional reviews indicate that this facility has upheld a rating score of 4.6 out of 5 stars over the past two years. Most reviews are positive regarding the staff's attentiveness and excellent care. However, there are a few negative comments indicating the staff did not answer call lights in a timely manner (Google, n.d.).

Political Setting

This facility is certified by the Centers for Medicare and Medicaid Services, and therefore is mandated to participate in a state inspection annually. State survey agencies conduct the health inspections on behalf of the government. The inspection team uses the federal government's standards to conduct the inspection and determine if the nursing home is meeting those standards in protecting residents.

The CMS has awarded this facility a "much above average rating" of 5 out of 5 stars for its overall treatment and care of its residents (U.S. Centers for Medicare & Medicaid Services, n.d.). These star ratings are based on a nursing home's performance on three separate measures: (a) health inspections, (b) staffing, and (c) quality measures. Each of these domains have their own star ratings, wherein more stars represent better quality of care.

Economic Resources

This specific facility is a for-profit company. Approximately two-thirds of total revenue comes from governmental health care programs: Medicaid and Medicare. The remaining income is generated from private health insurances, private long-term care insurances, and out-of-pocket monies.

Staffing Resources

This facility has approximately 180 total employees. The nursing staff is comprised of 106 of the total employees: 33 registered nurses, 10 licensed practical nurses, and 63 certified nursing assistants (ADON, personal communication, February 26, 2020). The remaining employees are non-nursing staff from different departments, including: (a) administration, (b) business office, (c) activities, (d) maintenance, (e) dietary services, (f) social services, and (g) therapy. The therapy team consists of physical therapists, restorative nurse assistants (RNAs), occupational therapists, certified occupational therapy assistants, speech therapists, language pathologists, and rehab aides/technicians.

Physical Resources

This facility primarily focuses on serving residents who require 24-hour, 7-day-a-week care for whatever long-term period the resident may need. The facility also provides skilled nursing services for residents needing a high level of medical care for short-term rehabilitation from illness or injury. These medical care services are provided in a gymnasium by the full-time, in-house therapy team who are all licensed health professionals. This facility also offers an integrated cognitive program for residents diagnosed with Alzheimer's disease. Additional services include hospice care (for terminally ill residents), and respite or temporary institutional care (for the sick or for disabled elderly persons), to provide relief to their usual caregiver (ADON, personal communication, February 26, 2020).

Another vital resource that this facility uses for recordkeeping is the PointClickCare (PCC) Electronic Health Record (EHR) System (ADON, personal communication, February 26, 2020). All resident history, assessment information, and electronic medication administration records are housed within the PCC EHR system. Staff support for the PCC EHR system comes from the company's Information Technology (IT) department at Ensign Group, Inc. This resource is vital in carrying out the quality improvement project and collecting fall data.

Leadership & Stakeholders

This facility is an independently operated, for-profit, subsidiary of a larger company, Ensign Group, Inc. The company is "flat structured," which allows local leaders and their teams to make decisions locally and provide solutions to the specific medical needs of the communities they serve (Ensign Group, Inc., 2020). This facility is also a part of the "Southern Utah cluster group" which consists of nine total independently operating nursing homes owned by Ensign Group, Inc. (ADON, personal communication, February 26, 2020). An Executive Director oversees the management of all nine nursing homes. However, each nursing home has an Administrator and a Director of Nursing. The Director of Nursing manages the day-to-day operations of their facility and reports to the Administrator, who in turn reports to the Executive Director.

This organization's primary stakeholders include: the Administrator, the Director of Nursing, two Assistant Directors of Nursing, Unit Managers, a Certified Nurse's Aide (CNA) Coordinator, Charge Nurses, Lead CNAs, and a Physical Therapy Director. This group of individuals is instrumental in forming a fall management team. They (a) approve which components of the FMP will be implemented, (b) carry out the tasks of the FMP and encourage

others to do so, (c) monitor progress, and (d) provide feedback on the FMP. The doctoral candidate served as the project leader for this project.

Congruence of Project with Organizational Mission, Values, and Needs Assessment

Organization Mission and Values

Two objectives of the organization's mission that correlate directly with the project's overall outcome of reducing falls are (a) "to lead the long-term care and assisted-living care industry by providing an unexpected level of excellence in care in the community we serve" and (b) "to serve the whole resident: body, mind, and spirit" (Ensign Group, Inc., n.d.).

The company has also defined seven core values for their employees on how to treat each resident, the resident's family, and each other. One core value, accountability, supports the goal of decreasing the fall risk among residents by holding the employees accountable for the "highest standard of care and professionalism" (Ensign Group, Inc., n.d.).

Needs Assessment

A baseline Strength, Weakness, Opportunity, and Threat (SWOT) analysis was completed (Appendix D). The findings of the assessment helped the project leader identify the organization's current internal and external attributes and threats (Moran et al., 2020). These findings also helped the project leader determine which program outcomes would be most appropriate for the project.

Organizational Culture and Readiness for Change

Administration voiced their support of the project leader undertaking an evidence-based quality improvement project to decrease the incidents of falls in their facility. Reducing falls at this facility would benefit nursing home residents and help enable the organization to adhere to their company's core value of "providing the highest standard of care" (Ensign Group, Inc., n.d.).

Fewer falls could also mean financial savings and higher satisfaction ratings from residents and their families.

In addition, administrators also committed IT resources to assist with setting up any additional tools for documentation that might be needed in the PCC EHR system. Allocation of funding for interventions was somewhat of a concern, although the ADON mentioned that they would be able to support the project by allowing for staff trainings and the creation of an interdisciplinary fall management team, plus other necessary interventions and changes within the PCC EHR system. Any allotted funding and resources would need approval first by the DON and then by the Business Office Manager. Any substantial funding would require final approval by the Ensign Group Executive Director who oversees the facility.

Strengths and Weaknesses

The SWOT analysis identified facility strengths, such as the high ranking for quality of resident care by the U.S. Centers for Medicare & Medicaid Services (n.d.). The rating system gives each facility a rating of between 1 and 5 stars on areas such as health inspections, staffing, and quality of resident care measures. This facility received a 5-star rating overall and a 5-star rating for quality of care for both long and short-term stays. Additional strengths included the facility's excellent customer service and strong community partnerships with other health care entities, such as assisted-living facilities, hospice companies, surgeons, and hospitals. These collaborations help the facility make transitioning to long-term care and/or rehabilitation a seamless process for their customers and their customers' families.

The primary area of concern identified through the assessment was staffing. According to the CMS (n.d.), the facility received only a 3-star rating (out of 5) for CNA staffing and a 4-star rating (out of 5) for the time registered nurses spent with the residents. Other staffing concerns

included the staffing ratio of just one CNA to every 16 residents and frequent turnover rates in the nursing staff. An additional concern was the high fall rate at the facility, which was significantly higher than the national average.

Memorandum of Understanding (MOU)

An MOU was obtained on February 11, 2021 (Appendix E). This document was signed by the DON of the facility and the project leader as an agreement that the facility was willing to allow the project leader to implement the quality improvement project. The MOU outlines the background of the project, the purpose of the project, and the intended outcomes of the project. The MOU also provided the facility with the proposed duration of the project, as well as information on reporting the findings of the project and potential publications.

Interventions

Logic Model

The Logic Model for this project (Appendix F) was used as a working flowchart to guide the quality improvement project and to communicate the process of the project to key stakeholders (Reavy, 2016). The Logic Model interventions included identifying: (a) expected resources (inputs), (b) essential processes intended to bring about change (activities), (c) individuals who will be reached, and (d) resulting products and services (outputs). The model helped build understanding of the project by linking the project interventions to projected outcomes.

Interventions in the evidence-based FMPB included the formation of a Falls Management Team who approved interventions such as: (a) educational sessions on fall risk and prevention for staff and residents, (b) focused training for nurses on the Morse Fall Scale, (c) tailored interventions for residents based on category of risk along with the requirement that nurses

include those tailored interventions on the report sheet so all nursing staff will know which interventions to follow for each resident, and (d) implementation of a Fall TIPS poster program. Interventions were flexible and could be altered based on the feedback from the FMT.

Outcomes: Short-term, Intermediate, and Long-term

This pilot project included a total of 10 outcomes: six short-term outcomes (STO), two intermediate outcomes (IO), and two long-term outcomes (LTO). The specific, measurable, achievable, relevant, and time-limited attributes (SMART) were used in developing clearly defined short-term and intermediate outcomes (CDC, n.d.). Each STO and IO was further identified as being either a process outcome (PO) or a change outcome (CO). A *process outcome* describes the activities and/or services delivered as part of the program implementation, while a *change outcome* focuses on what the target population would be able to know or do because of the program/activities (CDC, n.d.). IO and LTO are identified in the Logic Model (Appendix F). The short-term outcomes are outlined below:

1. By May 2021, 100% of the interdisciplinary Fall Management Team (FMT) approved a standardized, evidence-based FMPB for implementation. (CO)
2. By May 2021, 75% of the staff who participated in at least one educational session, reported a 10% improvement in knowledge of fall risks and/or prevention of falls. (PO)
3. By May 2021, 80% of the licensed nurses who attended a training session on the Morse Fall Scale (MFS) were able to correctly calculate the Fall Risk Status score and use the results to choose three interventions tailored to the area of risk. (CO)

4. By August 31, 2021, 75% of residents who attended an educational session on fall risks and fall prevention reported a 10% improvement in knowledge of prevention of falls post-educational session. (CO)
5. Residents who participated in the FMPB had an overall fall rate reduction of 3% (approximately one fall per month) from pre-intervention to post-intervention from June 2021 to August 31, 2021. (CO)
6. By August 31, 2021, 50% of the staff reported satisfaction with the FMPB. (PO)

Correlation of Interventions with the Theoretical Model Elements/Phases

All interventions were closely correlated with the three components of the Donabedian's model. Necessary resources included: administration personnel (who play a significant role in obtaining support for financial needs and for approval of a 4-to-6-member FMT); settings for educational sessions; key individuals (such as nursing staff, therapy team, and staff development coordinator); as well as supplies, materials, and technology needed for training sessions.

To satisfy the second component of Donabedian's model, the project leader utilized the Logic Model to determine how process measures would be delivered. The Logic Model served as a guide to help map out specific activities, as well as to determine how these activities would be performed, and who would perform them. Some process measures included: developing traditional and capital budgets for the FMPB, creating and delivering educational/training methods/sessions for staff and residents, developing and administering validated pre- and post-educational tools, along with gathering and summarizing the data from the results. All these process measures are directly correlated to supporting each outcome.

In the third component of Donabedian's model, the outcome measures include the end results of the activities that will ultimately determine if the project reached its goals. For this

project, some outcome measures were: (a) to gain approval of a FMP and implement it, (b) to improve knowledge of fall prevention interventions among staff, (c) to gain satisfaction with the FMPB among staff to help ensure that the program would be sustainable, and (d) to reduce fall rates among residents.

Bandura's Self-Efficacy Theory (Novak & Vasquez, 2013) was also incorporated as the staff began to perform the interventions included in the FMPB. The project leader involved staff with both formal and informal powers/leadership to help influence and strengthen other staff members. These influential individuals were expected to serve as role models to guide the implementation and ensure the sustainability of the project. These leaders would be tasked with strengthening other staff members and imbuing them with the confidence they need to succeed.

Timeline

A structured timeline for this project was followed using a table (Appendix G). The project began in September of 2019 (with the assessment of the facility and its proposed problem) and ended in April of 2022 (with the dissemination of project results to key stakeholders at the facility, as well as to faculty in the Doctor of Nursing Practice Program at Boise State University). Critical steps were outlined and tracked to ensure that the project was completed within the allotted time frame.

Measures

This quality improvement project had a total of six short-term outcomes that required data collection. Various instruments and questionnaires were utilized to collect specific data that measured each STO of the project (Appendix H).

The "Fall Management Team Minutes of Meeting Report" (Appendix I) was used for Outcome 1. This report captures the percentage of members of the FMT who approved the

FMPB and lists which fall management interventions/activities were approved to implement in the pilot program.

To measure Outcome 2, the project leader created a 12-question "Fall Prevention Knowledge Pre-Educational Evaluation Test" (Appendix J) and "Fall Prevention Knowledge Post-Educational Evaluation Test" (Appendix K) to determine the staff's knowledge before and after the educational session. The tests were created using the validated 13-question "Fall Prevention Knowledge Test" as a guide. This guide contained 11 true/false questions and two Likert Scale questions (Dykes et al., 2018). The project leader removed question #7 since it did not pertain to the facility. Zoe Barus (MPH and Project Leader at the Center for Patient Safety Research and Practices at Brigham and Women's Hospital) granted permission to modify and use the test in a long-term care setting (Appendix L).

To measure Outcome 3, the nurses completed a Morse Fall Scale Training Module and then completed "The Morse Fall Scale Training Questionnaire" (Appendix M). Answers were recorded using "The Morse Fall Scale Training Module Outcome Report Sheet" (Appendix N). The report sheet tracked whether the nurses could accurately calculate the MFS risk score for a hypothetical resident in a case study, put them in the correct fall-risk category, and correctly identify the three best interventions based on the resident's fall risks.

Outcome 4 was measured using the "Activities to Decrease Fall Risk Pre-Evaluation Questionnaire" (Appendix O) and "Activities to Decrease Fall Risk Post-Evaluation Questionnaire" (Appendix P) created by the project leader. The questionnaires contained a total of nine questions: seven true/false and two multiple-choice. This questionnaire was based off the pretest/posttest in Module One and Module Three from AHRQ Falls Management Program Chapter 5: Information and Training for Staff, Residents, and Their Families (AHRQ, 2017b).

This questionnaire did not require special permission to use. It was utilized to determine the resident's knowledge of reducing their fall risk (before and after the educational session) to verify whether an increase in knowledge occurred. For Outcome 5, the organization's electronic health record was accessed, as well as the "Fall Report Sheet" (Appendix Q), which was created by the ADON at the facility. The data gathered was used to quantify the number of falls that occurred three months prior to the implementation of the FMPB, as well as monthly during the implementation.

Lastly, the questionnaire for Outcome 6, "Satisfaction Survey of the Fall Management Program" (Appendix R) was based off the survey of Beliefs About Confidence to Prevent Patients From Falling (Dykes et al., 2011). Permission was granted to use the survey questions (Appendix S). The Satisfaction Survey of the Fall Management Program was used to quantify the staff's satisfaction with the FMPB and identify opportunities for improvement and revisions of the FMP. The survey consists of 12 Likert Scale questions and one open-ended question.

Analysis

Qualitative and quantitative analysis methods were used to determine if project outcomes were met (Appendix H). For Outcome 1, descriptive statistics were used to analyze data percentages of staff that approved the FMPB. The interventions/activities with the highest approval rate were chosen to be implemented at the facility. For Outcomes 2 and 4, the scores were analyzed to determine the difference in scores before and after education. For Outcome 3, descriptive statistics of percentage and frequency were used to determine the percentage of nursing staff that achieved the correct MFS score and identified the three target interventions best suited to addressing the case scenario. For Outcome 5, frequency was used to measure fall rates pre-intervention (March/April/May) and post-intervention (June/July/August). Outcome 6

used descriptive statistics (means, ranges, and standard deviation) for each quantitative question item. The qualitative data statistics were then analyzed by placing answers from the open-ended questions into categories.

Ethical Considerations

Ethical Considerations and Protection of Participants

Multiple steps were taken to protect the privacy of all project participants. All staff at the facility participated in training regarding the standards of patient privacy under the Health Insurance Portability and Accountability Act (HIPAA), which states that they must not disseminate any private health information (Hicks, 2018). The project leader completed HIPPA training and an online Collaborative Institutional Training Initiative Program for research and compliance to better understand how to treat human subjects involved in research.

Data for this project was collected voluntarily from staff and residents. To maintain confidentiality, the data collected had no direct identifiers and was given alternate identification numbers. Data collected electronically was encrypted and stored on a computer and/or server that required a secured password to obtain the information. Results of the data collected were reported in aggregate (Hicks, 2018). No information was shared with administration until data was de-identified.

Conflicts of Interest

The project leader is not employed or affiliated with the organization and/or facility where the project was implemented. The project leader was not aware of any institutional conflict of interest, and no other conflicts of interest were identified.

Biases

The project leader evaluated all collected data. To minimize *evaluator bias*, the project leader chose to collect all data for both the pre- and post-educational sessions and the staff satisfaction of the FMP Bundle through EB evaluation tools and survey instruments instead of by interviews. To minimize *participant selection bias*, all nursing staff (certified nurse's aides and licensed nurses), as well as all non-nursing staff (therapy team members), were offered the opportunity to receive training on the FMPB. All qualifying residents were also offered education on fall risks and fall prevention interventions. *Attrition bias* (for both staff and residents) was also a concern since high staff turnover rates and the possibility of resident illness or death could decrease the staff and resident sample size.

Threats to Quality

According to Donabedian (Hickey, 2017), numerous variables can influence the quality of the delivery of care and subsequently the outcomes of a given project. Some influences include adequacy of supplies and equipment, number and proficiency of healthcare workers, and the environment in which the care is provided. As such, some similar threats to quality were identified for this DNP project: cost for implementation of a multifaceted FMPB, potentially too many interventions included in the FMPB for staff to perform proficiently, and not enough staff trained or available to carry out intervention. In addition, since the project was launched in the middle of the COVID-19 pandemic, the project had to navigate within a tight set of regulations set by the state health officials and CMS (2020) regarding masks, social distancing, and daily symptom checks for illness in both staff and residents.

The project leader attempted to mitigate the threats to quality by trying to integrate simple interventions (such as documentation and environmental safety checks) into the daily work routine. Additionally, key players willing to participate in the process helped influence the

staff's attitude about the new program (as not being too time-consuming or work intensive) in hopes that the staff would become vested in the FMPB. It was recognized that more frequent smaller training sessions might needed due to the pandemic: since participants might fall ill suddenly or need to be socially distanced in the classroom. Another potential threat to project quality was the availability of funding for supplies, equipment, and staff training.

The project leader presented the proposed budget with all the necessary resources and activities needed to carry out the complete project. The proposed budget was accompanied by an alternative minimized budget with a reduced number of educational sessions and fewer materials. The project leader also provided a cost analysis and comparison of a single litigation case due to an injurious fall as opposed to the cost of implementing an FMP.

IRB Application and Project Determination

The quality improvement project was reviewed and granted approval on April 26, 2021 by the Boise State University Social & Behavioral Institutional Review Board (SB-IRB), approved under IRB protocol #186-SB21-076 (see Appendix T). No participants or project activities were engaged until approval had been granted.

Project Budget

The total cost of the quality improvement project for Year 1 was projected at $12,494. Year-end expenses for the project were grouped into nine main categories. Personnel was the largest expense category with a combined total of $10,791. For further breakdown of all project expenses and categories, refer to Appendix U.

Three-Year Budget Plan

The plan for this project was to implement the pilot project on three of six hallways in the facility and later implement the project facility-wide. Therefore, the project leader created a

budget plan for Years 2 and 3. (Appendix V). Operating expenses are respectively $15,831.87 for Year 2 and $11,627.20 for Year 3. For both forecasted budgets, most expenses fall in the Personnel category. Personnel expenses for Year 1 of the project include training and education for half of the licensed nurses and CNAs, as well as for the FMT, therapists, and staff development coordinator (SDC). Year 2 of the project presumes expanding the project to the three remaining hallways of the facility. This includes education and training for the remaining 15 RNs, 5 LPNs, and 31 CNAs. Most other expense categories for Year 2 would remain the same, assuming the same number of staff needing training and supplies. Year 3 would involve maintaining the FMPB, plus adding training sessions during the new-hire orientation and on an annual basis for established employees. The FMT would continue to meet monthly or on an as-needed basis (with fewer meetings held as fall incidents decreased).

Statement of Operations

The primary source of funding for the scholarly project was from in-kind donations totaling $12,494 (Appendix W). The in-kind donations were from personnel expenses of the DNP student ($6,958), other companies ($100 for incentives), as well as the organization ($5,436). The project did not generate any revenue.

Results

Steps of the Interventions

After receiving IRB approval, the project leader met with administration to determine the prospective members of the Fall Management Team. The staff members chosen to be a part of the FMT were involved in fall management in some capacity or had a stake in reducing falls among residents. The original FMT consisted of a Falls Nurse Coordinator (South Unit Manager), an Assistant Falls Nurse Coordinator (North Unit Manager), an ADON, a Lead CNA

(South Unit), and the Nursing Staff Educator. The following interventions were approved by the FMT to be implemented as part of the facility's Fall Management Program Bundle (FMPB): educational sessions for nursing staff and residents, implementation of a Falling Star program, utilization of the Fall TIPS (Tailoring Interventions for Patient Safety) program as a means to communicate the resident's tailored fall interventions to both staff and residents, and the addition of the tailored interventions to the report sheets (Brain) for CNAs and nurses.

Nursing Staff Education & Training Sessions

The initial interventions of the project's FMPB began on May 25, 2021, with a one-hour, educational session specific to nurses. These sessions took the place of the facility's monthly mandatory training. A total of seven in-person educational sessions were offered with one of the sessions offered either in person or virtually (via Zoom).

Participants signed in for each educational session held in the facility's boardroom. Each educational session consisted of (a) a pre- and post-educational test, (b) a PowerPoint presentation on information about falls and prevention strategies, (c) a training module on the facility's fall risk assessment tool, (d) tailored interventions used at the facility, and lastly, (e) an introduction and discussion of the approved FMPB. The training module and tests were administered electronically. Attendees used their phones to scan a QRS code to complete the module and tests. Those who attended virtually used the URL sent to them via the Crew app. After each educational session, participants who had remained for the entire 1-hour were entered into a drawing for a $5 gift card. One gift card was given away at each educational session. Seventeen nurses attended the educational sessions in person, while six nurses attended virtually.

To educate nursing staff who did not attend the sessions, the project leader recorded two educational videos: one specifically for nurses and the other for CNAs. Each 6-minute video

described the approved FMPB, the FMT members, and the staff's role in the implementation process. The videos were disseminated via the facility's messaging app, Crew. All nursing staff were instructed to watch the video and afterwards document in the communication book that they had viewed it.

Resident Educational Sessions

Resident educational sessions (offered as a one-hour, in-person group session) began on June 2, 2021. A total of two sessions were completed. Each session consisted of a pre- and post-educational test, a PowerPoint presentation on fall risks and fall prevention, a Bingo game on fall prevention strategies (Washington University School of Medicine in St. Louis, 2021), and an introduction and discussion of the FMPB. The educational sessions were done in collaboration with the Activity Director, the Speech Therapist, and a Speech Therapist Intern. Prizes were awarded to those residents who won at Bingo. A total of 21 residents participated in the educational sessions.

The educational session was offered to all residents on the South Unit, but many refused to attend or had physical therapy and/or occupational therapy appointments during that time period. Some others were quarantined due to COVID-19. Residents who did not receive the educational materials, did receive one-on-one training from the project leader on the Fall TIPS program and poster before it was hung in their room.

Fall TIPS Program

The Fall TIPS program was approved as an intervention for the FMPB by the FMT. The program is a three-step fall prevention process that consists of conducting a fall risk assessment, developing a tailored or personalized fall prevention plan, and consistently executing the plan (Dykes et al., 2020). This evidence-based fall-prevention intervention was initially set up for use

in acute care hospitals but has also been proven to be effective in nursing home settings (Tzeng, H.M. et al., 2020). The program is led by nurses, and a key component is the collaboration of the nurse with the resident. The Fall TIPS toolkit includes a laminated, reusable poster tailored specifically to each resident's fall risk factors and their prevention intervention plan. Caregivers use the poster as a communication tool regarding resident's fall prevention activities. Permission to use the poster and any other resources of the Fall TIPS toolkit was granted on the website (Fall T.I.P.S.; Tailoring Interventions for Patient Safety, n.d.).

The FMT agreed that long-term care residents on the South Unit would participate in the Fall TIPS program. Initially, the Fall TIPS poster for the medical/surgical settings was used. However, after permission was granted by Dr. Patricia Dykes (Appendix X) to use the Fall TIPS poster adapted for use in long-term-care settings (Appendix Y), those posters were then placed in the resident's rooms. The Unit Manager, staff nurses, and the project leader together reviewed each resident's Fall Risk Evaluation assessment and care plan in the PCC EHR. For each resident, the Fall Risks and Fall Interventions on the Fall TIPS poster were individualized. The project leader educated each of the 45 residents on the South Unit on their individualized fall risks and fall prevention plan. They reviewed the Fall TIPS poster and confirmed their fall risks and the interventions chosen by the nurses. The posters were hung on the resident's wardrobe door in full view of the resident and staff. As residents were admitted to the facility, the admitting nurse was supposed to complete the Fall TIPS poster for each resident and educate them on their fall interventions.

Audits/checks revealed that staff rarely completed the poster for new residents during the admissions process. To keep the project on track, the project leader would fill out the Fall TIPS poster, verify the information with another nurse, and educate the resident on the Fall TIPS

poster. This ensured that the Fall TIPS posters were consistently visible and in the resident's room to be used as a guide for fall prevention interventions

Falling Star Program and Report Sheet

An additional part of the approved FMPB is the Falling Star program (Linnane, 2018). A laminated picture of a yellow falling star (Appendix Z) was placed on the door frame of those residents considered at high risk for falls, according to the facility's Fall Risk Evaluation assessment. The falling star alerts the staff of the resident's high potential for falling. High-risk residents also have an asterisk placed on the CNA's and nurse's report sheet along with the wording "HR (high risk) for falls." Any individualized interventions will also be included on the report sheet. The CNAs and nurses were tasked with adding this information to the report sheet.

Details of the Process Measures and Outcomes

The pilot project consisted of six short-term outcomes (Appendix F). To achieve Outcome 1, the first meeting of the Fall Management Team was held on May 13, 2021. All members of the original FMT were in attendance (excluding the CNA Lead, who was no longer employed at the facility and whose role had been dissolved). Each member voted in support of the five interventions they felt the facility would be most able to implement. The Nursing Staff Educator presented the five interventions to the DON for final approval.

Outcome 2 was developed to determine if nursing staff would show an increase in knowledge regarding fall risks and prevention of falls following an education session. The "Fall Prevention Knowledge Educational Evaluation Test" (Appendix J and Appendix K) was used before and after the educational session. All 23 (100%) nurses who participated in the education session completed the pre- and post-test. The majority of participants (n = 21, 91%) were registered nurses: two participants (9%) had been employed at the facility less than 2 months;

eight participants (35%) had been there 2 to 11 months; five participants (21%) had been there 1 to 2 years; while eight participants (35%) had been there 3 years or more; 10 participants (44%) worked 16 to 24 hours per week; seven participants (30%) worked 25 to 39 hours per week; and six participants (26%) worked 40 plus hours per week.

Outcome 3 was planned to measure if nurses who had attended a training session would be able to correctly calculate a fall risk status score and then choose tailored interventions geared towards the greatest areas of risk. To measure this outcome, the project leader developed a "Fall Risk Evaluation Training Module" (Appendix AA). During the training session, the attendees were provided a fall-risk case study (American Society of Consultant Pharmacists & National Council on Aging, 2017). Referring to the case study, participants evaluated and scored the different areas that put the resident in the scenario at risk for falls. By tallying the scores for each fall risk area, the participants were able to determine the overall level of fall risk (low, medium, or high). Once the level of risk was determined, the participants chose tailored interventions for four of the fall risk areas (History of Falling, Vision Status, Gait/Balance/Ambulatory Aid, and Systolic Blood Pressure).

Outcome 4 involved measuring if residents showed an increase in knowledge regarding fall risks and fall prevention methods following an educational session. Realizing that there is greater risk for injury for individuals aged 85 and older, the project leader submitted an IRB Modification Form on May 18, 2021, to include a question regarding age on the demographic portion of the pre-test. On June 2, 2021, approval was received for IRB Modification #1 to the IRB protocol #186-SB21-076 (Appendix BB). This outcome was measured using the "Activities to Decrease Fall Risk Pre-Educational Evaluation Test" (Appendix O) and "Activities to Decrease Fall Risk Post-Evaluation Test" (Appendix P). These questionnaires were given using

the paper and pencil method. The project leader read each question aloud, one-by-one, while the residents marked their answers. Many residents needed assistance completing the questionnaire. The facility's activities director, speech therapist, the speech therapist intern, and the project leader assisted the residents who needed help by marking their preferred answers to each question. Demographic characteristics of participants revealed the age groups were evenly spread between the age groups of 45-54, 55-64, 65-74, 75-84, and 85 and older (with the ages of two participants remaining unknown). Eleven participants (52%) had a history of falling in the last year and 17 (81%) used assistive devices for ambulation.

Outcome 5 identified if residents who participated in the FMPB pilot project had an overall reduced fall rate of 3% from pre-intervention to post-intervention. Tracking of falls was supposed to be completed by the South Unit Manager, who oversaw the residents on the three hallways where the pilot project was conducted. However, the new manager did not realize it was her responsibility to track falls, so fall data was not collected specifically on the South Unit for one of the months during the project. Fall data of the entire facility was gathered from the three months prior to implementing the FMPB and the last month of the pilot project. Unfortunately, this fall data information was not able to be broken down to show only residents on the South Unit.

Outcome 6 was intended to determine if at least 50% of the staff who participated in the FMPB reported satisfaction with the FMPB. Feedback was elicited from the nursing staff on the South Unit (where the pilot program was conducted) through administering the "Satisfaction Survey of the Fall Management Program" questionnaire. Modifications to the initial survey were made to include questions specific to the interventions chosen by the FMT to be implemented in the facility. The project leader submitted an IRB Modification Form on August 30, 2021, to

reflect the changes to the survey questions. On September 13, 2021, approval was received for IRB Modification #2 to the IRB protocol #186-SB21-076 (Appendix CC). The approved survey (which consisted of 15 Likert 5-point scale questions and one open-ended question), was administered to the staff on the South Unit (Appendix DD).

Outcomes Analysis

Outcome 1 was met: By May 2021, 100% of the interdisciplinary Fall Management Team (FMT) approved a standardized, evidence-based Fall Management Program Bundle (FMPB) for implementation. All members in attendance at the first meeting voted in support of five evidenced-based interventions. See the "Fall Management Team Minutes of Meeting Report" (Appendix I).

Outcome 2 was partially met: By May 2021, 75% of the staff who participated in at least one educational session, reported a 10% improvement in knowledge of fall risks and/or prevention of falls. Results showed 11 of the 23 participants (47.8%) had a 10% increase of knowledge from pre- to post-educational session (Appendix EE). Two participants showed a decrease in knowledge in the post-educational session.

Outcome 3 was met: By May 2021, 80% of the licensed nurses who attended a training session on the Morse Fall Scale were able to correctly calculate the Fall Risk Status score and use the results to choose three interventions tailored to the area of risk. (This outcome required some modification since the facility was not using the MFS to predict resident's fall risks.) By May 2021, 80% of the licensed nurses who attended a training session on the "Fall Risk Evaluation" Assessment were able to correctly calculate the Fall Risk Status score to choose 3 interventions tailored to the areas of risk. Seventeen of the eighteen participants (94%) answered correctly (Appendix FF).

Outcome 4 was partially met: By August 31, 2021, 75% of residents who attended an educational session on fall risks and fall prevention reported a 10% improvement in knowledge of prevention of falls post-educational session. Twenty-two residents completed the pre-test but only 18 completed the post-test. Of those that completed both tests, ten participants (55%) had a 10% improvement in knowledge (Appendix GG). However, 13 participants (72%) had an overall improvement in knowledge from the pre- to post-educational session.

Due to lack of data, it was unclear whether Outcome 5 was met. Residents who participated in the FMPB had an overall fall rate reduction of 3% (approximately one fall per month) from pre-intervention to post-intervention from June 2021 to August 31, 2021. However, the facility was unable to run data solely for the South Unit for the three months prior to the implementation of the EBQI pilot project. Therefore, an accurate comparison of falls pre-pilot project and during pilot project was not able to be determined.

Outcome 6 was met with an extension: By August 31, 2021, 50% of the staff reported satisfaction with the FMPB. Nursing staff on the South Unit used a Likert five-point scale with one being "strongly disagree," three being neutral, and five being "strongly agree." Any response over a three was considered favorable. Four out of eleven participants (36.4%) responded as either "strongly agree" or "agree" while seven participants (63.6%) chose "neither agree or disagree" to continue both the Falling Star program and the Fall TIPS posters. To continue the High Risk (HR) for Falls Alert on the Report Sheet (Brain), seven out of 11 participants (63.6%) responded as either "strongly agree" or "agree," while three participants (27.3%) chose "neither agree or disagree," and one participant (9.1%) chose "strongly disagree" (Appendix HH). One participant included comments on the open-ended question regarding what else they would do to prevent residents from falling.

Associations and Interactions Between Outcomes, Interventions, and Contextual Elements

A few contextual elements interacted with the interventions in a negative way, which influenced the outcomes. High staff turnover (especially in leadership) likely impacted the interventions and outcomes. One week prior to project implementation, the DON resigned, and the facility eliminated the two ADONs positions and the CNA position on the South Unit. The ADON assigned as the Falls Nurse Coordinator delegated her responsibilities for tracking falls to the Unit Managers of the North Unit and South Unit. This huge responsibility was placed on Unit Managers with already heavy loads, making for a difficult transition. With all the reorganization and change in job titles, the Nurse Manager of the North Unit also became the interim DON until the first part of July 2021 when another DON was hired. One month after project implementation, the Nursing Staff Educator (who was also a member of the FMT) left the facility for other employment. Two months after project implementation (in early August), the Manager of the South Unit stepped down and a new Unit Manager was hired. The new Unit Manager was not aware of her responsibility to track falls on her unit until the project leader requested fall numbers for the month of August. Two weeks before the conclusion of the project, the North Unit Manager resigned. At that point, the South Unit Manger was assigned the position of North Unit Manager, and a new South Unit Manager was hired. Staff turnover and change of positions had a significant effect on the ongoing assessments through the implementation phase. The loss of critical team members meant that fewer posters were placed when residents were admitted or transferred to different rooms.

Due to budget constraints and the many changes in staffing, the CNAs were not allowed to attend the hour-long, in-person training session with the nurses. In addition, only seven educational sessions for nurses were allowed to be presented, which made it challenging for

many nurses to attend the training. Since fewer staff members were able to attend the offered educational sessions, the project leader prepared two videos (one for CNAs and one for nurses) to explain the pilot project and the FMPB, the implementation process, and the responsibilities that nurses or CNAs would have in the project. These videos were distributed via the Crew communication app. However, this made it difficult for the project leader to track how many members of the nursing staff actually viewed the videos. Even though the staff was advised to mark in the communication book that they had viewed the video, only two individuals documented that they had completed the training. Since the CNAs may not have been familiar with how to utilize the Fall TIPS poster, this could have a negative effect on Outcome 6 and the reduction of falls.

Another contextual element affecting project outcomes (particularly Outcome 3) concerned the choice of the fall assessment tool. After gaining access to PointClickCare, the project leader discovered that the facility was NOT using the Morse Fall Scale to predict falls as previously agreed. This meant that the "Morse Fall Scale Training Module" and validated data collection instrument had to be jettisoned. The project leader then had to quickly develop a new "Fall Risk Evaluation Training Module" to corresponded to the tool being used by the facility. (Appendix CC). One drawback was that the new training module had not been validated. However, it was tailored specifically to the facility's fall risk assessment tool and allowed the project leader to evaluate whether the staff was able to use the tool to correctly categorize the resident's risk for falls.

The project leader requested permission from Dr. Patricia C. Dykes to enhance the Fall TIPS poster by adding additional icons specific to the facility's Falls Risk Evaluation (wheelchair and eyeglasses). Dr. Dykes denied the additions because adding the intervention of

wearing eyeglasses had not been validated. However, she did provide the project leader a research article and a Fall TIPS poster that had been modified and validated for use in LTC facilities. Dr. Dykes did approve the use of the LTC Fall TIPS poster for the quality improvement project (Appendix X). Once permission was granted, the project leader hung the new LTC Fall TIPS posters in each resident's room in the South Unit. The LTC Fall TIPS poster contained two new icons: a wheelchair and a Hoyer lift. Both icons made for a quicker and easier visualization of what assistance the resident needed for ambulating or transferring. Since these icons were not on the original medical/surgical Fall TIPS posters, the project leader had to handwrite them on the posters. The Unit Manager, nurses, CNAs, and residents all expressed their excitement on receiving the updated posters.

Unintended Consequences

One unanticipated event was having the nurses and their manager balk at filling out the Fall TIPS poster and the report sheet for the newly admitted residents. The nurses and manager explained that they already had too much to do and lacked the time needed to complete the poster and update the report sheet. During the project, eight residents were admitted to the South Unit, and none had the Fall TIPS poster filled out on admission. The project leader and Unit Manager ended up working together to complete the poster for each new resident. Another unanticipated event was the turnover of the administration, including the South Unit Manager. When the first turnover occurred, the new South Unit Manager decided to limit the Falling Star program to just those residents she considered high risk: those who had experienced a recent fall (excluding other residents who would be considered high-risk based on their Fall Risk Evaluation assessment score).

Missing Data

While 23 nurses participated in the Fall Risk Evaluation Training session, only 18 chose to complete the Fall Risk Evaluation Training Module questionnaire. Two participants opened the training module but did not answer any of the questions. There were 22 residents who participated in the educational session, but only 18 who completed both the pre- and post-evaluation tests. Since the questionnaires and tests were given anonymously, there was no way to know who had participated and who had not.

Actual Project Revenues/Expenses

The actual expenses for the project were below budget. Overall projected expenses for personnel were significantly reduced. Fewer hours were required to educate the CNAs and licensed nursing staff due to part of the education being delivered electronically, and the fact that the FMT decided not to include a new FMP tool created in the electronic health record, PCC. CNAs received 10 minutes of a video training vs. the expected 90 minutes, reducing expenses from $624 to $69.47. Nurses received one hour of training versus the expected 90 minutes, partially reducing expenses from $894 to $596. Subsequently, no IT specialist was needed to design the FMP tool in the PCC, subtracting an expected $300. Also, the therapy department staff did not require training, subtracting another $630. A slight increase in costs of $677 was incurred for materials, supplies, and project leader's time since (a) the Fall TIPS posters were not part of the initial project plan, and (b) because the project leader taught all the nursing education sessions instead of the Nursing Staff Educator. Initially, some prizes for the training sessions were slated to be provided through donations. Since no donations were made, the project leader covered the cost of incentives and prizes. The actual accrued expenses of the pilot project were $9,653.47 (Appendix II) with all in-kind donations covered by the project leader and the facility. The net-operating income for this project was $0.

Summary

In summary, the aims of this EBQI project were to implement a standardized, evidence-based fall management program at a long-term care facility and decrease the fall incident rate among its residents. A Fall Management Team was created to assist in deciding which fall prevention interventions would be practical for the facility to implement. Once the five interventions; (educational sessions for nursing staff and residents, implementation of a Falling Star program, utilization of the Fall TIPS poster program, and the addition of the tailored interventions to the report sheets for CNAs and nurses) were approved, they were implemented in three of the six hallways housed on the South Unit.

Challenges such as staff turnover, time constraints, work demands, and COVID-19 protocols made it difficult to secure full participant involvement, educate new residents and staff on the FMPB, and gather needed data. Multiple changes to staff resulted in a failure to track specific fall data for the South Unit during the three-month project. As a result, findings were inconclusive as to whether the multifaceted Fall Management Program actually reduced fall rates in this LTC facility. However, results did show evidence of improvement in knowledge of fall risk factors and fall prevention strategies among both nurses (47.8%) and residents (72%). Findings also showed nurses were able to correctly identify the fall risk category (94%), and tailor three of four fall interventions to the risk factors (56%). At the close of the project, five of the six project outcomes were met (or partially met), and the aim of implementing a standardized, evidence-based Fall Management Program at a long-term care and rehabilitation facility was reached.

Interpretation

Association Between Interventions and Outcomes

Despite the many challenges of the project, the implemented interventions did result in three of the six project outcomes being partially met and two being fully met. To recap, Outcome 1 was met by having the FMT approve the interventions for the FMPB. Regrettably, staff turnover and dissolved positions reduced the effectiveness of the FMT (since by the end of the project, none of the original five Fall Management members were still on the team). By the end of the project, the FMT consisted of just the project leader and the new South Unit Manager meeting together to discuss falls and the FMPB. Outcome 3 (determining fall risk level) was met, yet the findings from the Fall Risk Evaluation Training Module confirmed that even though many nurses came up with the correct overall level of fall risk category (high risk), they scored each fall risk area slightly differently, which may have reduced the effectiveness of the interventions.

Overall, the consensus was that the facility would like to continue the Fall TIPS poster program, the Falling Star program, the procedure of having nurses and CNAs note HR warnings on their report sheets for residents with a high risk of falls, and having new employees complete the Fall Risk Evaluation Training Module.

This project did succeed in offering value to this long-term care facility by increasing staff and resident awareness of falls and creating a process for how to prevent them by implementing fall-prevention practices. Hopefully more of these practices can be implemented in the future after COVID-19 and staffing concerns stabilize.

Comparison of Results with Previous Findings

Comparison of fall rates of the project with research findings is difficult to do since accurate fall rate data was not collected. However, it appears likely that this project has a strong potential to reduce fall rates, since studies on the implementation of similar multifaceted fall

management programs have shown a reduction in falls (Becker et al., 2003; Kerse et al., 2004; Taylor, 2002; Tzeng, 2021).

Impact of Project on People and Systems

The interventions for this project did benefit many individuals and the facility overall. Even though a few of the educational goals were not completely met, results did show collective improvements in knowledge regarding fall prevention and fall risk factors by both nursing staff and residents. This is an important finding because research has shown that education is a key factor in reducing falls and improving resident outcomes. The Fall TIPS poster visually reminds the nursing staff of resident needs so the staff can better tailor fall prevention interventions for residents: another evidence-based fall reduction practice. With some adjustments, this project could be implemented across the entire facility and to other facilities within the corporation.

Reasons for Differences Between Observed and Anticipated Outcomes

Many factors impacted the desired outcomes for this project. Launching this intervention during the height of the COVID-19 pandemic was less than ideal in terms of timing. Care centers could fight only one battle at a time, and COVID-19 eclipsed all other concerns. Additionally, time, staffing, and budget constraints ended up limiting or abbreviating the planned interventions. For instance, nurses and CNAs had to remain on the floor rather than attend requisite trainings. This severely hampered their ability to achieve Outcome 2 (a 10% increase in knowledge of fall risks and prevention). For example, a couple days before staff training was set to occur, the project leader was informed that the nurses would only be allowed to attend one of two planned training sessions and that CNAs could no longer be spared to attend live training classes. The project leader then had to scramble to quickly condense the planned training materials into an abbreviated one-hour session. Not all pertinent information could be shared in

the shorter amount of time. Also, the commercially prepared PowerPoint presentation from the Fall TIPS toolkit was difficult to adapt since it was geared toward the pre- and post-evaluation test. Faced with information overload during a single one-hour session, the staff had difficulty absorbing and remembering all the material.

For Outcome 4 (resident training), the Speech Therapist and the Activities Director assisted the project leader in planning that event. However, there was some miscommunication regarding who was going to alert the floor to the fact that the education sessions were taking place on a certain day and time. Due to the COVID-19 pandemic restrictions, residents had to social distance. This meant conducting the training in a large, echoey dining area instead of the smaller meeting room. Although this larger space could accommodate more residents, the socially distanced participants (many of whom had vision or hearing impairments) had difficulty hearing the project leader and seeing the PowerPoint. While the project leader wore a microphone, the sound was projected in just one direction toward the residents. This caused an echo which made the presentation even more difficult to understand. Lastly, many residents needed help completing their questionnaires due to poor eyesight and writing challenges. All these factors reduced the effectiveness of the training and may have skewed the results and hampered the desired outcome of a 10% increase in resident knowledge of falls and prevention strategies .

It remains unclear if Outcome 5 (fall reduction) was achieved, since new facility leaders (following several turnovers) did not collect the specific falls data (by hall) as initially planned.

The implementation of the Fall TIPS poster for Outcome 6 also suffered somewhat from the fact that the training had to be provided solely by video.

Costs and Strategic Trade-Offs

Replicating the pilot project on the North Unit could be a challenge at a time when the facility does not have adequate staff to fill critical positions in the FMT. Currently, limited finances and staffing challenges make it difficult to provide the necessary training to all nursing staff. In this project, some planned interventions, such as the educational sessions, had to be abbreviated (presented in half the time) or provided in a different delivery format (video as opposed to in-person training). This did reduce costs, but meant the training was likely less effective than originally planned. Due to the COVID-19 pandemic and the resultant requirements for masking and social distancing, training methods for residents had to be altered as well. Continued pandemic concerns could impact the replication of this project in the immediate future. A fall-reduction initiative may not become a high priority until facility leaders are done grappling with the COVID-19 crisis and staffing shortages. Hopefully, this will change as the pandemic wanes and care centers have a chance to get back on a firmer foundation in terms of budgets and staffing.

Policy Implications

As a result of this pilot project, and in keeping with the standards required for certification as a Medicare & Medicaid Services nursing home provider, in particular the Center for Code of Federal Regulations (CFR) 483.25 Quality of Care and CFR 483.20 Resident Assessment (CMS, n.d.), it is recommended that the facility institute a new policy regarding staff education and the implementation of the Falling Star and Fall TIPS poster programs. Ideally, all newly hired nurses would be required to complete an education session using the "Fall Risk Evaluation Training Module" to learn how to properly assess a resident's fall risks using the facility's own assessment tool, the Fall Risk Evaluation Assessment. All staff should also be required to attend a training session on the Fall TIPS and Falling Star programs. In addition, the

facility should add the Fall TIPS poster to their "Admission Bundle" in the PCC EHR. This would ensure that admitting nurses would complete a poster to place every new resident on the Fall TIPS program. If the resident is assessed as "high risk" or has a history of falls, the nurse would also place a falling star outside the resident's room.

Resident and family member education should also be included as part of the Fall Prevention Policy. After assessing the fall risk of incoming residents, admitting nurses could educate residents and their families on the resident's fall risk and fall prevention plan. The nurse could utilize the Fall TIPS poster to assist with this education. The poster could be placed in a resident's room to serve as a visual reminder to residents of their care plan and what they must do to minimize their risk for falling, as well as remind staff of the needed interventions to reduce fall risk. Implementation of these suggested requirements would help the staff accurately assess fall risk for residents and provide for continuity of individualized fall prevention procedures, subsequently reduce resident falls and injuries in their facility.

Limitations

It was crucial to have a solid Falls Management Team in place for the duration of the project. By the conclusion of the project, every original team member had either resigned from the facility or had been reassigned to a different position. Only one departing team member was replaced: the South Unit Manager. The South Unit Manager and the project leader met regularly, but with only one team member, it made it difficult to plan, track, and get input on how to make the project better. Additionally, the overworked staff did not complete the Fall TIPS poster for newly admitted residents or ensure that the poster went with them when they moved to a different room. Eight new residents were admitted to the unit during the project, and not one had a Fall TIPS poster completed by the admitting nurse. Six residents changed rooms, but only one

had the poster transferred to the new room by staff, so new posters had to be recreated for those residents.

Conclusions

Usefulness of the Work

This EBQI project outlines the steps and processes that need to be considered prior to beginning a pilot project for an evidence-based fall reduction program. It explains the challenges that one might encounter and suggests ways the process could be improved if the project is piloted in another LTC facility. It emphasizes the importance of forming and retaining a strong Fall Management Team where the members remain active participants throughout the entire process. Regardless of size, facilities are wise to start change initiatives as small pilot programs so they can work out challenges before implementing the project more broadly across the entire facility.

Sustainability

This pilot project was intended to be the first phase of a two-part fall prevention project. Findings from questionnaires determined that education is a key factor in helping staff understand their responsibilities in fall prevention. Positive staff feedback regarding the FMP and administrative support for the project will help influence the decision to continue the project. The new DON expressed continued support of three interventions from the Fall Management Program Bundle implemented during the pilot project: the Falls Risk Training Evaluation Module, the Fall TIPS poster program, and the Falling Star program. No external financial support was necessary to fund the pilot project. When laminated, posters and falling stars can be cleaned and reused multiple times as new residents are admitted to the South Unit. Sustainability

of the program might also be bolstered by appointing a "Falls Champion" to continue the work started by the project leader.

Potential for Spread to Other Contexts

Administrators at the facility are discussing Phase 2, which would include implementing the evidence-based interventions on all remaining hallways housed on the North Unit. Two of the three remaining hallways are specific for individuals needing subacute care/rehabilitation services. The Fall TIPS program has been shown to reduce patient falls in *acute* care hospital and LTC settings but has not been studied as extensively in *subacute* care centers. However, work done by Tzeng et al. (2021) recently showed that fall rates and rates of injurious falls per 1000 resident-days was lowered after implementing the Fall TIPS intervention. These findings support that this would be applicable for the rehabilitation halls at this facility.

Implications for Practice and Further Study

Ongoing work in prevention of falls in LTC residents is imperative to help reduce avoidable injuries and death that occur too often among LTC residents. These project findings may prove helpful to leaders who are strategizing and developing interventions for future LTC fall prevention programs. It is recommended that the facility continue to educate newly hired nurses on their Falls Risk Evaluation assessment tool and utilize the teaching module and questionnaire created by the project leader. Accurately identifying a resident's fall risk areas is a critical component in tailoring the appropriate interventions for each resident.

During this project, the project leader discovered that (for many of the residents) the fall risk areas were scored incorrectly on the Falls Risk Evaluation assessment or no longer pertained and needed to be updated. This made choosing tailored interventions on the Fall TIPS poster a challenge since updated information could not be gathered directly from the PCC electronic

health record but instead had to be gathered by interviewing staff members who had previously cared for the resident. Improved documentation of fall risks is imperative to avoid preventable falls and implement individualized care, especially for those residents at elevated risk for falls.

Another recommendation would be to add the task of completing the Fall TIPS poster to the "Admission Bundle" for nurses charged with orienting new residents. One last recommendation would be to assign and train at least one individual as a "Falls Champion" and assign them to oversee the FMPB to ensure that all interventions are completed by nursing staff.

Next Steps and Dissemination

Next steps include presenting findings from the literature review, project interventions, and project outcomes to the administrative team at the facility. So far, the project leader has shared findings exclusively with the South Unit Manager. This information, as well as recommendations for improvements and continuation of the project, will need to be presented to the facility's stakeholders and decision makers. In addition, project results will also be disseminated to other students, colleagues, and nursing program faculty at Boise State University.

References

ACT Academy for Their Quality, Service Improvement and Redesign Suite of Programmes. (n.d.). *Online library of quality service improvement and redesign tools: A model for measuring quality care*. NHS Improvement. https://improvement.nhs.uk/documents/2135/measuring-quality-care-model.pdf

Agency for Healthcare Research and Quality. (2017a, December). *The falls management program: A quality improvement initiative for nursing facilities.* https://www.ahrq.gov/patient-safety/settings/long-term-care/resource/injuries/fallspx/man1.html

Agency for Healthcare Research and Quality. (2017b, December). *The falls management program: A quality improvement initiative for nursing facilities.* https://www.ahrq.gov/patient-safety/settings/long-term-care/resource/injuries/fallspx/man5.html

Agency for Healthcare Research and Quality. (n. d.). *Fall T.I.P.S.: A patient-center fall prevention toolkit*. https://www.falltips.org/resources/

Ambrose, A. F., Paul, G., & Hausdorff, J. M. (2013). Risk factors for falls among older adults: A review of literature. *Maturitas, 75*(1), 51-61. https://doi.org/10.1016/j.maturitas.2013.02.009

American Society of Consultant Pharmacists & National Council on Aging (2017). *ASCP-NCOA fall risk reduction toolkit. Case studies.* https://www.ascp.com/page/fallstoolkit?&hhsearchterms=%22fall+and+risk+and+case+and+studies%22

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychology*

Review, 84(2), 191-215. https://doi.org/10.1037/0033-295X.84.2.191

Baixinho, C. L., Dixe, M. A., Madeira, C., Alves, S., & Henriques, M. A. (2019). Falls in institutionalized elderly with and without cognitive decline: A study of some factors. *Dementia Neuropsychologia 13*(1), 116-121. https://doi.org/10.1590/1980-57642018dn13-010014

Becker, C., Sturm, E., Eichner, B., Walter-Jung, B., & Nikolaus, T. (2003). Effectiveness of multifaceted interventions on falls in nursing home residents. *Journal of American Geriatrics Society, 51*(3), 306-313. https://doi:10.1046/j.1532-5415.2003.5110

Botwinick, I., Johnson, J. H., Safadjouc, S., Cohen-Levyb, W., Reddy, S. H., McNelis, J., Teperman, S. H., & Stone, M.E. (2016). Geriatric nursing home falls: A single institution cross-sectional study. *Archives of Gerontology and Geriatrics, 63,* 43-48. https://dx.doi.org/10.1016/j.archger.2015.12.002

Burland, E., Martens, P., Brownell, M., Doupe, M., & Fuchs, D. (2013). The evaluation of a fall management program in a nursing home population. *The Gerontologist, 53*(5), 828-838. https://doi:10.1093/geront/gns197

Center for Disease Control and Prevention. (n.d.). Developing program goals and measurable outcomes. https://www.cdc.gov/std/Program/pupestd/Developing%20Program%20Goals%20and%20Objectives.pdf

Center for Disease Control and Prevention. (2017). Home and recreational safety. https://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html

Center for Disease Control and Prevention. (2019a). Deaths from falls. https://www.cdc.gov/homeandrecreationalsafety/falls/fallcost/deaths-from-falls.html

Center for Disease Control and Prevention. (2019b). Falls reported by state. https://www.cdc.gov/homeandrecreationalsafety/falls/fallcost/falls-by-state.html

Centers for Medicare & Medicaid Services. (n.d.). Regulations & Guidance. https://www.cms.gov/Regulations-and-Guidance/Regulations-and-Guidance

Cusimano, M. D., Kwok, J., & Spadafora, K. (2008). Effectiveness of multifaceted fall-prevention programs for the elderly in residential care. *Injury Prevention, 14*(2), 113–122. https://doi:10.1136/ip.2007.017533

Dang, D., Dearholt, S. L. (2018). *Johns Hopkins nursing evidence-based practice: Model and guidelines.* (3rd ed.). Sigma Theta Tau International

Donabedian, A. (1988). The quality of care: How can it be assessed? *Journal of the American Medical Association, 260*(12), 1743-1748.

https//doi:10.1001/jama.1988.03410120089033

Dykes, P. D., Bogaisky, M., Carter, E., Duckworth, M., Hurley, A. C., Jackson, E. M., Khasnabish, S., Lindros, M. E., Lipsitz, S. R., Scanlan, M., Yu, S. P., Bates, D. W., Adelman, J. S. (2019). Development and validation of a fall prevention knowledge test. *Journal of American Geriatrics Society 67*(1), 133-138. https://doi.org/10.1111/jgs.15563

Dykes, P. D., Burns, Z., Adelman, J., Benneyan, J., Bogaisky, M., Carter, E., Ergai, A., Lindros, M. E., Lipsitz, S. R., Scanlan, M., Shaykevich, S., & Bates, D. W. (2020). Evaluation of patient-centered fall-prevention tool kit to reduce falls and injuries: A nonrandomized controlled trial. *JAMA Network Open 3*(11), 1-10. https://doi:10.1001/jamanetworkopen.2020.25889

Dykes, P. D., Carroll, D., McColgan, K., Hurley, A. C., Lipsitz, S. R., Colombo, L., Zuyev, L.,

Middleton, B. (2011). Scales for assessing self-efficacy of nurses and assistants for preventing falls. *Journal of Advanced Nursing 67*(2), 438-449.

M. E., Lipsitz, S. R., Scanlan, M., Shaykevich, S., & Bates, D. W. Ensign Group, Inc. (n.d.). *Employee Handbook.* Author.

Ensign Group, Inc. (2020). Who is the Ensign Group? https://ensigngroup.net/

Facility. (2020b). In-house therapy. https://pointemeadows.com/in-house-therapy/

Falls T.I.P.S. Tailoring Interventions for Patient Safety. (n.d.). *A patient-centered fall prevention toolkit: Frequently asked questions.* https://www.falltips.org/faqs/

Francis-Coad, J., Etherton-Beer, C., Burton, E., Naseri, C., & Hill, A. M. (2018). Effectiveness of complex fall prevention interventions in residential aged care settings: A systematic review. *Joanna Briggs Institute Database of Systematic Reviews and Implementation Reports 16*(4), 973-1002. https://doi:10.11124/JBISRIR-2017-003485

Galik, E., Holmes, S., & Resnick. B. (2018). Differences between moderate to severely cognitively impaired fallers versus non-fallers in nursing homes. *American Journal of Alzheimer's Disease & Other Dementias, 33*(4), 247-252. https://doi:10.1177/1533317518761856

Google. (n.d.). Pointe Meadows Health and Rehabilitation: Google reviews. https://www.google.com/search?rlz=1C1CHBD_enUS888US888&q=How%20many%20nursing%20homes%20are%20in%20utah%20county%2C%20utah&sa=X&ved=2ahUKEwiGmfL48r3oAhWSJTQIHVoMCUUQvS4wAnoECAsQLg&biw=1366&bih=657&dpr=1&npsic=0&rflfq=1&rlha=0&rllag=40342272,-111784113,12533&tbm=lcl&rldimm=13528237830756495809&lqi=Ci9Ib3cgbWFueSBudXJzaW5nIGhvbWVzIGFyZSBpbiB1dGFoIGNvdW50eSwgdXRhaEiEn6iYnKuAgAh

aWAoWaG93IG1hbnkgbnVyc2luZyBob21lcxAAEAEQAhADGAIYAxgGGAgiLmhvd
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1cnNpbmcgaG9tZXMgYXJlIGluIHV0YWggY291bnR5IHV0YWg;mv:[[40.580022799
981336,-111.55154408378905],[40.04387124188181,-
112.8506773845703],null,[40.31247910371455,-112.20111073417968],10]

Gulka, H. J., Patel, V., Arora, T., McArthur, C., & Iaboni, A. (in press). Efficacy and generalizability of fall prevention interventions in nursing homes: A systematic review and meta-analysis. *Journal of the American Medical Directors Association*. https://doi.org/10.1016/j.jamda.2019.11.012

Haralambous, B., Haines, T. P., Hill, K., Moore, K., Nitz, J., Robinson, A. (2010) A protocol for an individualized, facilitated, and sustainable approach to implementing current evidence in preventing falls in residential aged care facilities. *BMC Geriatrics (10)*8, 2-7. https://www.biomedcentral.com/1471-2318/10/8

Hasjim, B. J., Grigorian, A., Kuza, C. M., Schubl, S., Barrios, C., Chin, T. L., & Nahmias, J. (2019). Ground-level falls at skilled nursing facilities are associated with more serious lower extremity injuries compared with home. *International Journal of Lower Extremity Wounds*, 1-7. https://doi.org/10.1177/1534734619870393

Hickey, J. V., & Brosnan, C. A. (2017). *Evaluation of health care quality for DNPs.* (2nd ed.). New York, NY: Springer Publishing Company.

Hicks, L. (2018). CITI program: Privacy and confidentiality -SBE. https://www.citiprogram.org/members/index.cfm?pageID=125#view

Houry, D., Florence, C., Baldwin, G., Stevens, J., & McClure, R. (2015). The CDC injury center's response to the growing public health problem of falls among older adults. *American Journal of Lifestyle Journal, 10*(1), 74–77. https://doi:10.1177/1559827615600137

Industrial Safety & Hygiene News (2017, July). Typical nursing home reports 100-200 patient falls per year. https://www.ishn.com/articles/106828-typical-nursing-home-reports-100-200-patient-falls-per-year

Kerse, N., Butler, M., Robinson, E., & Todd, M. (2004). Fall prevention in residential care: A cluster, randomized, controlled trial. *Journal of American Geriatrics Society, 52*(4), 524-531. https://doi:10.1111/j.1532-5415.2004.52157

Linnane, D. (2018). How do you significantly reduce falls in long-term care? Spotlight on Friendly Manor nursing home. https://quorum.hqontario.ca/en/Home/Posts/How-do-you-significantly-reduce-falls-in-Long-Term-Care-Spotlight-on-Friendly-Manor-Nursing-Home-5

Moran, K., Burson, R., & Conrad, D. (2020). *The doctor of nursing practice project: A framework for success.* (3rd ed.). Jones & Bartlett Learning.

Neely, K. (2018). Daily Herald: Pointe Meadows nursing facility in Lehi hosts grand opening. https://www.heraldextra.com/business/local/pointe-meadows-nursing-facility-in-lehi-hosts-grand-opening/article_72a30efb-aec5-53f3-b0eb-f56bdb3a5d19.html

Nitz, J., Cyarto, E., Andrews, S., Fearn, M., Fu, S., Haines, T., Haralambous, B., Hill, K., Hunt,

S., Lea, E., Morore, K., Renehan, E., & Robison, A. (2012). Outcomes from the implementation of a facility-specific, evidence-based falls prevention intervention program in residential aged care. *Geriatric Nursing (33)*, 41-50. https://doi:10.1016/j.gerinurse.2011.11.002

Novak, D., L. & Vasquez, J. (2013). *Fall 2013 Self-Efficacy Case Study.* PSHYCH 484: Work attitudes and job motivation. https://wikispaces.psu.edu/display/PSYCH484/Fall+2013+Self-Efficacy+Case+Study

PositivePhycology.org (2017). What is efficacy? Bandura's 4 sources of efficacy beliefs. http://positivepsychology.org.uk/self-efficacy-definition-bandura-meaning/

Rask, K., Parmelee, P., Taylor, J. A., Green, D., Brown, H., Hawley, J., Schild, L., Strothers, H., & Ouslander, J. (2007). Implementation and evaluation of a nursing home fall management program. *Journal of American Geriatrics Society, 55*(3), 342-349. https://doi.10.1111/j.1532-5415.2007.01083.x

Reavy, K. (2016). *Inquiry and leadership: A resource for the DNP project.* F. A. Davis Company.

Taylor, J. A. (2002). The Vanderbilt fall prevention program for long-term care: Eight years of field experience with nursing home staff. *Journal of the American Medical Directors Association, 3*(3) 180-184. https://doi.org/10.1016/S1525-8610(04)70462-4

Tariq, H., Kloseck, M., Crilly, R. G., Gutmanis, I., & Gibson, M. (2013). An exploration of risk for recurrent falls in two geriatric care settings. *BMC Geriatrics, 13*(106), 1-7.

Tzeng, H. M., Jansen, L. S., Okpalauwaekwe, U., Khasnabish, S., Andreas, B., Dykes, P. C.

(2020). Adopting the fall tailoring interventions for patient safety (TIPS) program to engage older adults in fall prevention in a nursing home. *Journal of Nursing Care Quality,* 1-6. https://doi: 10.1097/NCQ.0000000000000547

U.S. Centers for Medicare & Medicaid Services. (n.d.). Medicare.gov: Nursing Home Compare. https://www.medicare.gov/nursinghomecompare/profile.html#profTab=0&ID=465188&loc=LEHI%2C%20UT&lat=40.3916172&lng=-111.8507662&name=POINTE%20MEADOWS%20HEALTH%20AND%20REHABILITATION&Distn=0.0

Utah Department of Health (2019a). Falls are leading cause of injury-related death for older Utahns. https://www.health.utah.gov/featured-new/falls-are-leading-cause-of-injury-related-death-for-older-utahns

Utah Department of Health (2019b). Public health indicator based information system (IBS). https://ibis.health.utah.gov/ibisph-view/indicator/view/UniInjDth.Cause.html

Vlaeyen, E., Coussement, J., Leysens, G., Van der Elst, E., Delbaere, K., Cambier, D., Dehaerynck, K., Goemaere, S., Wertelaers, A., Dobbels, F., Dejaeger, E., & Milisen, K. (2015). Characteristics and effectiveness of fall prevention programs in nursing homes: A systematic review and meta-analysis of randomized controlled trials. *Journal of the American Geriatric Society*, *63*(2), 211-221. https://doi:10.1111/jgs.13254

Washington University School of Medicine in St. Louis. (2021). *Program in Occupational Therapy: Fall Prevention Bingo.* https://starklab.wustl.edu/fall-prevention-bingo/

W.K. Kellogg Foundation. (2004). Logic model development guide. Battle Creek, MI: W.K. Kellogg Foundation.

World Population Review (2019). Utah county, Utah population 2019. Retrieved October 20, 2019, from https://worldpopulationreview.com/us-counties/ut/utah-county-population

Appendix A

Literature Review Summary Table

TITLE OF ARTICLE	AUTHORS	RESEARCH QUESTION OR AIM OF THE ARTICLE	TYPE OF STUDY (DESIGN)	LEVEL/ QUALTIY OF EVIDENCE	DESCRIPTION OF SAMPLE (IF APPLICABLE)	OUTCOME MEASURES	RESULTS/KEY FINDINGS
Background/significance: Injuries and Cost Associated with Falls							
Geriatric nursing home falls: A single institution cross-sectional study	Botwinick et al. (2015).	Directly compare the outcomes between elderly patients who fall in the nursing home (NH) and their community counterparts after presentation to a Level 1 trauma center.	Quantitative Cross-Sectional Descriptive Correlation Study	Level III B	All ground-level fall patients aged 65 years and older (total of 1,296), who presented to a Level 1 trauma facility, from 2008 to 2012 Subdivided into 2 groups: NH patients and community dwelling patients	1.Clinical data collected: a. Injury Severity Score (ISS) b. Admission Glasgow coma score (GCS) c. Admission systolic BP (SBP) 2.Outcome data included: a. in-hospital complications b. Length of Stay (LOS) c. operative intervention d. in-hospital mortality	-Patients from NH had significantly higher rates of pneumonia, sepsis, unplanned intubation, and urinary tract infections, when compared to patients admitted from home -LOS in ICU was similar between groups -In-hospital mortality was not significantly different between the two groups, but NH patients had an increased rate of in-hospital complications -NH patients are significantly more debilitated on presentation after a fall

						e. traumatic brain injuries (TBIs)	than their community counterparts -Falls in NH have worse outcomes
Ground-level falls at skilled nursing facilities are associated with more serious lower extremity injuries compared with home	Hasjim et al. (2019).	Do injuries, specifically TBIs and lower extremity (LE) injuries, differ between patients suffering GLFs in SNFs compared with residential homes?	Cohort Study-Retrospective Analysis	Level III B	All patients (15,873) age 65 years or older who presented after a ground level fall (GLF) to more than 550 level I or II trauma center across all 50 states Subdivided into 2 groups: nursing home patients and community dwelling patients	Comparison of patients sustaining GLFs at home and SNFs a. Trauma Quality Improvement Program b. Injury Severity Score (ISS) 2.Descriptive statistics: a. *t* test b. Mann-Whitney *U* test	-GLFs at SNFs are associated with a 64% higher risk of a serious LE injury, femur fractures being the most common -In SNF residents 77.8% of serious fall-related injuries result in a fracture, with LE fractures being the most common. -Residents falling at SNFs had a lower rate of serious TBI than those at home
The CDC Injury Center's response to the growing public health problem of falls among older adults	Houry et al. (2015).	What will be the number of older adult falls by 2030 and the associated lifetime medical cost?	Cohort Study-Parallel Analysis	Level III B	Adults aged 65 and older	1. Number of older adult falls by the year 2030 along with lifetime medical cost a. Parallel analysis of fatal falls data from 1999-2012	-The number of older adult fatal falls is projected to reach 100,000 per year by 2030 with an associated cost of $100 billion -Falls in older adults will continue to rise substantially and become a significant

						b. CDC WISQARS fatal injury database c. US Census Bureau's population projection	cost to our health care system if focus is not given to prevention of falls in the clinical setting
Background/significance: Risk Factors Associated with Falls							
Falls in institutionalized elderly with and without cognitive decline: A study of some factors	Baixinho et al. (2019).	Determine the prevalence of falls among institutionalized elderly with and without cognitive decline.	Quasi-experimental-Correlational Study	Level III C	204 Individuals aged 65 years or older and institutionalized in two long-stay institutions 50% had cognitive decline, of which 26.5% were men and 73.5% women In the group without cognitive decline, 31.4% were men and 68.6% women	1.Evaluated gait capacity, mobility, and balance a. Timed Up and Go Test (TUGT) 2. Number of falls among participants with and without cognitive decline	81.4% of the elderly without cognitive decline and 43.9% with cognitive decline who fell took >12 sec. to perform the TUGT, this difference was statistically significant -40.2% of the elderly with cognitive decline experienced at least one fall -Safety practices and behaviors were better in the elderly with cognitive decline -42.2% fall prevalence among the elderly without cognitive decline, not statistically significant

							-Most of the elderly with cognitive decline who fell took benzodiazepines (65.9%)
Predictors of serious consequences of falls in residential aged care: Analysis of more than 70,000 falls from residents of Bavarian nursing homes	Büchele et al. (2018).	Object of the study was to analyze factors associated with serious consequences of falls in nursing home residents (NHR).	Cohort Study- Prospective, Observational Quasi - Experimental Study	Level II A	Sample of 70,196 falls from 528 nursing homes in Bavaria, Germany	Standardized form included information about date, time, sex, age, functional status, location of fall, activity leading to fall, footwear Potential consequences such as transfer to hospital or a suspected fracture	-Serious falls were associated with increasing age, being female, and less restricted functional status -Walking compared with transferring and particularly the morning hours (between 6 AM and 8 AM) were associated with a serious fall -Inappropriate footwear and weekends were associated with serious falls only in women
Falls and long-term care: A report from the care by design observational cohort study	Cameron et al.(2018).	What are risks for falls in elderly residents of Long-Term Care Facilities (LTCF)?	Cross-Sectional Study	Level III C	Sample of 395 LTCF residents ≥65 years of age	1.Data collected before, during and after the implementation of CBD (new model of coordinating primary care in LTCF) over a six-	-224/395 LTC residents in IG experienced at least one fall -Cognitive impairment (dementia), male gender, visual impairment, Potentially Inappropriate

						month timeframe	Medication (PIM) use and use of SSRI/SNRI medications were associated with increased risk of falls, while benzodiazepine use appeared to be associated with a decreased risk of having fallen. -Falls remain an important problem among LTC residents
Risk factors associated with accidental falls among Italian nursing home residents: A longitudinal study (FRAILS)	Castaldo et al. (2019).	The aim of this study is to assess characteristics of fallers and investigate risk factors associated with falls among older NHs residents.	Cohort Study-Observational Longitudinal study	Level III C	409 residents (82% women; 83 ± 9.4 years) in geriatric units (331, 81%) and in specialized dementia units (SDUs, 78%)	1.Demographic and clinical data from charts: a. Drugs, and fall events b. Risk factors of falling 2. Clinical data from routine assessment tools used in the NHs a. Activities of daily living (ADL) assessed with the Modified Barthel Index	-Higher autonomy in activities of daily living, living in SDUs, and previous falls were significantly associated with falls -111 residents fell (27%), and 54 (48.6%) of them had an injury related to a fall

						b. Mini Mental State Examination (MMSE) c. Comorbidity, evaluated by the Cumulative Illness Rating Scale (CIRS) 3. Falls 4. injurious falls	
Risk factors for falls in older people in nursing homes and hospitals. A systematic review and meta-analysis	Deandrea et al. (2012).	The aim of the study was to provide a comprehensive and quantitative review of risk factors for falls in older people in nursing homes.	Systematic Review Study	Level I A	The criteria for 24-article selection was at least 200 NH residents who were ≥65 years of age ≥75% were women	1.Depression was diagnosed by two scale a. Center for Epidemiologic Studies Depression Scale (CES-D) b. Geriatric Depression Scale (GDS). 2.Cognitive impairment was defined by a Mini Mental State Examination (MMSE) score 3.The pooled odds ratio (OR) was computed	-For NHR, the strongest associations were with history of falls, walking aid use, and moderate disability -Use of sedatives, antipsychotics and antidepressants was directly associated with risk of falling, as well as number of medications used (for one drug increase: Odd ratio [OR] = 1.0, OR = 1.17 multivariate) -For depression, stroke and incontinence no significant association was detected

						using random effect models	-Female gender was not associated with an increased risk of falling
Prevalence of risk factors for falls among elderly people living in long-term care homes	Dhargave et al. (2016)	To evaluate the prevalence of various risk factors for falls among older people living in long-term care homes.	Cross-Sectional Study	Level III C	163 elderly men and women aged 60-95 years in four nursing homes, who are able to move indoors with or without walking aids, and not receiving any physiotherapy or any other training for physical fitness	Assessment Tools: 1. Long Term Care Fall Risk Assessment Form 2. MMSE 3.Berg Balance Scale 4. Fall Factors Assessment 5. Dynamic Gait Index	-History of falls, poor vision, use of multiple medications, chronic diseases, use of walking aids, vertigo, and balance problems were associated with falls among the elderly population living in LTC. -Women had a higher risk of falls than men
Differences between moderate to severely cognitively impaired fallers versus non-fallers in nursing homes	Galik et al. (2018).	The aim is to determine if there is a difference in psychotropic medication, function, physical activity, agitation, resistiveness to care, comorbidities, and depression among moderate to severely cognitively impaired nursing home residents who were fallers versus non-fallers.	Randomized Controlled Trial (RCT)	Level I A	A total of 336 participants ≥55 years of age currently living in one of 12 nursing home, and scored less than 15 on the Mini-Mental State Examination (MMSE) Residents were mostly female (242, 72%) and white (199, 59%), with a smaller percent Black (133, 40%) or Asian (4, 1%)	Descriptive information was obtained: age, marital status, gender, race, education, and number of comorbidities based on chart abstracting. Falls at baseline were obtained from the designated facility staff along with whether the	- 211 reported falls occurred during the study -There was a significant difference in total number of comorbidities, agitation, total number of psychotropic medications, depressive symptoms, and time spent in physical activity between those who fell and those who did not fall

						individual was sent to the emergency department or admitted to the hospital associated with the fall and/or whether there was a fracture or other type of serious injury such as head trauma.	-Those who did not fall had less agitation, more comorbidities, fewer psychotropic medications, fewer depressive symptoms, and spent less time in physical activity -No difference among fallers vs non-fallers as to whether they received an antiseizure medication, antidepressant, anxiolytic medication, and antipsychotic medication
Potential Solutions: Effectiveness of Fall Prevention/Management Programs							
Effectiveness of multifaceted interventions on falls in nursing home residents	Becker et al. (2003)	Evaluate the effectiveness of multifaceted, non-pharmaceutical interventions and not individual components on incidence of falls and fallers	Prospective, Cluster-RCTs	Level I B	981 residents ≥60 years of age in 6 nursing homes (NHs) in Germany. Intervention group (IG)= 509 residents Control group (CG)=472 residents	1. Falls: *P*=<.001 and density rate of falls/1,000 resident years 2. Fallers: *P*=.038 3. Injurious falls: Hip fractures *P*= .801 and non-hip fractures *P*=.128	-Significant difference in fall rates: IG=1,399 CG=2,558 -Fewer fallers in IG: IG=36.9% fallers CG=52.3% fallers -No significant differences in hip fractures and/or other fractures in either group -Multifaceted interventions (staff & resident education,

							environmental adaptations, balance & resistance training, and hip protectors) are likely to prevent falls in this high-risk group
The evaluation of a fall management program in a nursing home population	Burland et al. (2013)	Evaluate if instigating a NH Fall Management Program (FMP) will help increase resident's mobility and decrease injurious falls.	Quasi-experimental, pre-post, comparison group	Level II B	1,046 residents from 12 NHs in Canada (5 NHs where FMP was implemented and 7 NHs where no FMP was present)	Preprogram vs postprogram over 14 months: 1. Falls: *P*=.058 also measured in per person per year (PPY) 2. Injurious falls: *P*=.02 3. Falls causing hospitalization: *P*=.023	-Postprogram fall rates equal for both groups 2.24 PPY -Significantly lower Injurious falls rates in IG=0.596 PPY than CG=0.746 PPY -Significantly fewer hospitalized falls in IG =0.020 PPY vs CG=0.041 PPY -Implementation of a multifaceted FMP (education for staff, residents, & families, risk reduction strategies, regular fall risk assessment and environmental audits and post fall protocols) improves outcomes compared with nonprogram NH

Effectiveness of multifaceted fall-prevention programs for the elderly in residential care	Cusimano et al. (2008)	Evaluate the effectiveness of multifaceted intervention programs in reducing the number of falls, fallers, and injurious falls among older people living in residential care facilities (RCF).	Systematic Review of RCTs	Level I B	1,685 participants ≥60 years of age currently living in a residential care setting (5 studies)	1. Falls: density rate of falls per 1,000 resident years 2. Fallers 3. Injurious falls 4. Recurrent Fallers	-2/5 studies reported significant reduction in # of falls & fallers -1/5 studies reported reduction in number of injurious falls -3/5 studies reported a significant reduction in # of recurrent falls (7-11%) -Multifaceted fall-intervention programs, with more than one intervention strategy (staff/resident education, environmental modifications, resident-specific, group-specific, and general interventions) have the potential to reduce the number of falls and recurrent fallers
Effectiveness of complex fall prevention interventions in residential aged care settings: A	Francis-Coad et al. (2018)	Synthesize best available evidence for the effectiveness of complex fall prevention delivered at least 2 levels (resident, facility,	Systematic Review, Random-effect model	Level II B	Residents in NHs ≥65 years of age (12 studies)	1. Falls: (a) falls per 1,000 occupied bed days (b) Confidence interval (CI)= −3.01, 0.43	-No significant reduction in fall rates or proportion of residents who fell with the complex fall prevention interventions delivered at multiple levels

systematic review		organization) on fall rates in the residential aged care population.				2. Fallers: (a) CI= 0.42, 1.38 (b) with additional resources CI= −3.72, −0.80 3. Injurious falls: injury/1,000 occupied bed days (a) serious injuries CI = −0.24, 0.13 (b) fractures CI= 0.67, 0.97	(exercise programs, education for staff, modification to environment) -Significant reduction in fall rates was noted with interventions delivered at 2 or 3 of the levels (residents, facility, or organization) & were supported with *additional resources*
Efficacy and generalizability of falls prevention interventions in nursing homes: A systematic review and meta-analysis	Gulka et al. (2020)	To determine efficacy of fall intervention programs in NHs and the generalizability of these interventions to people living with cognitive impairment and dementia	Systematic Review	Level I B	30,057 residents in NHs ≥65 years of age (36 studies)	Fall prevention interventions (25 single, 3 multiple, or 8 multifaceted) on 1. Falls: CI= 0.60-0.81 2. Fallers: CI= 0.72-0.89 4. Recurrent Fallers: CI= 0.69-0.89	-Single interventions had no significant combined effect on reducing # of falls -Multifaceted interventions reduced the number of falls -20/22 studies (both single and multiple fall prevention programs) showed a significant effect on reducing number of fallers

							-11/12 studies showed significant reduction in recurrent fallers -Fall prevention interventions in NH overall reduced falls by 27%, fallers by 20%, and recurrent fallers by 30%
Fall prevention in residential care: A cluster, randomized, controlled trial	Kerse et al. (2004)	To establish the effectiveness of fall-prevention program in reducing falls and injurious falls in older residential care residents.	Cluster, RCT	Level I B	628 older residents in 8 low-level dependency homes (rest-homes) and 4 high-level dependency homes (private hospitals or NHs) and 2 homes that are both low and/or high-level dependency	1. Falls: *P*=<.018 2. Fallers: *P*=<.078 3. Injurious falls: CI=0.61-2.13	-Fall prevention program based on the individual's fall risk was NOT successful in reducing falls and did not provide any benefit -Significantly more residents fell in the IG (56%) than CG (43%) -More multiple fallers in the IG than CG -No difference between IG and CG in injurious fall incidence rate or incidence of serious injuries
Outcomes from the implementation of a facility-specific evidence-based	Nitz et al. (2012)	To decrease falls among residents in residential aged care facilities (RACFs) through the implementation of an	Prospective, Quasi-experimental Cohort Study	Level II B	670 residents in 9 NH in Australia across 3 states	1. Falls: falls/1000 bed days *P*=.044 2. Fallers: single *P*=<.05 & multiple	-6/9 NH had total # of falls reduced -6/9 NH had a reduction in the proportion of single fallers

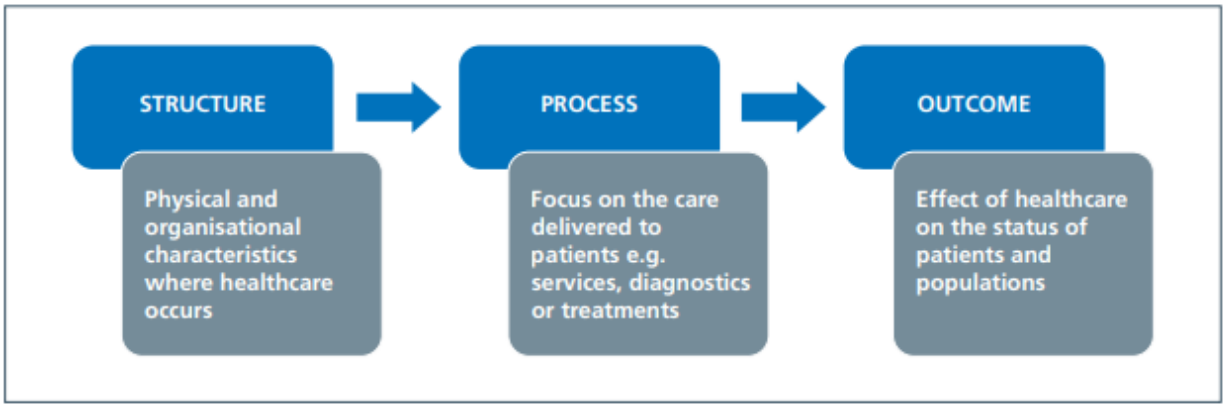
falls prevention intervention program in residential aged care		evidence-based fall prevention intervention					-9/9 NH multiple fallers decrease but not significantly -Due to a multifaceted, evidence-based fall prevention interventions that are individualized to facility and patient specific, 8/9 NH had sustained reduction in proportion of residents who fell in the 6-month follow-up phase
Implementation and evaluation of a nursing home fall management program	Rask et al. (2007)	Evaluate the feasibility of a fall management program (FMP) for NHs.	Quasi-experimental, Convenient sample	Level II B	All residents in 19 NH operated and owned by a single organization compared to the 23 NH not in the test group.	1. Falls: falls/100 resident/month 2. Restraint use 3. Process of care documentation	-Fall rates remained stable (17.3 at start and 16.4 at end) in IG -Falls rates increased 26% in CG (15 at start to 18.9 at end) -Restrain use decrease in IG from 7.9% to 4.4% -Documentation improved for the recommended care processes r/t fall prevention especially for residents that are high risk for falls

The Vanderbilt fall prevention program for long-term care: Eight years of field experience with nursing home staff	Taylor (2002)	Determine effectiveness of the Vanderbilt Fall Prevention Program in long-term care.	RCT	Level I B	213 residents in the IG in 7 NHs and residents in 7 NHs for CG. All NHs were in Tennessee.	1. Falls 2. Injurious falls 3. Restraint use	-19.1% lower proportion of recurrent fallers in IG -45% reduction in the rate of recurrent fallers in the IG -31.2% lower rate of injurious falls in the IG -No significant increase in restraint use in IG
Characteristics and effectiveness of fall prevention programs in nursing homes: A systematic review and meta-analysis of randomized controlled trials	Vlaeyen et al. (2015)	Determine characteristics & effectiveness of fall prevention programs (single or multiple interventions and/or customized) on fall-related outcomes for residents in NHs.	Systematic Review, individual-level RCTs or cluster RCTs	Level I C	A total of 22,915 elderly residents from nursing homes (13 studies)	1. Falls: CI=0.76−1.13 2. Fallers: CI=0.84−1.11 3. Recurrent Fallers CI=0.65−0.97	-Single intervention: IG had increase of falls -Multiple intervention: no significant decrease in falls or fallers -Multifaceted (customized) interventions: significantly reduced falls by 33% & number of recurrent fallers by 21% -Meta-analysis found significantly fewer recurrent fallers in the IG -NHs should implement multidisciplinary,

							customized, multifaceted fall prevention programs to reduce falls and recurrent falls in residents.

Appendix B

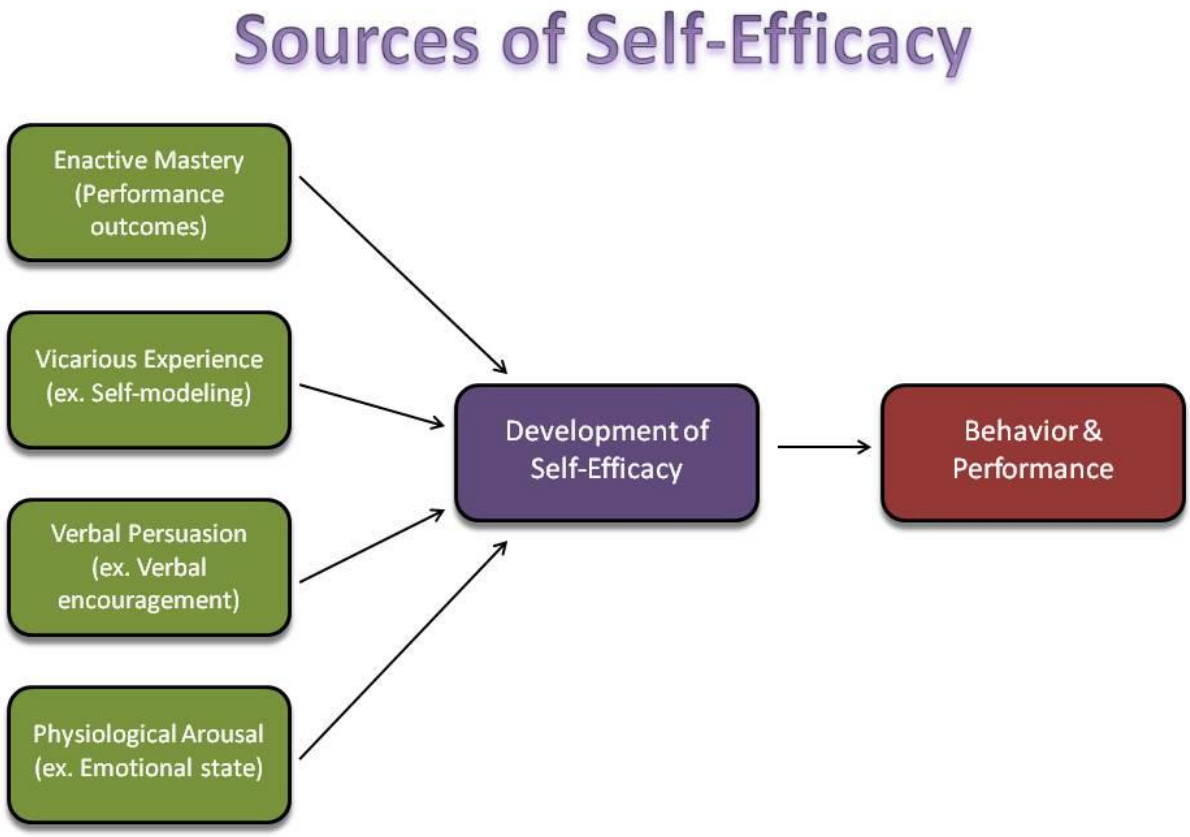
Donabedian's Conceptual Model



ACT Academy for their Quality, Service Improvement and Redesign suite of programmes. (n.d.).

Appendix C

Bandura's Self-Efficacy Theory



Novack & Vasquez (2013).

Appendix D

SWOT Analysis Table

Strengths	**Weaknesses**
1. High ranking of reputable quality care from U.S. Center for Medicare & Medicaid Services (n.d.): a. Only 3 health deficiencies. Average for Utah is 9.9. Average for US is 8.1 b. 5/5 stars on overall rating c. 5/5 stars on long and short-stay quality of resident care 2. Reputable reviews on Google (n.d.) from the community: a. Overall rating of 4.6/5 stars from a combined 127 reviews 3. Current partnerships with other health care entities: assisted living facilities, hospice companies, surgeons, and local hospitals 4. The ability and resources to track falls and what the situation was surrounding the fall. Findings just needs to be utilized better.	1. Limited resources-money & staff 2. Staffing concerns. According to U.S. Center for Medicare & Medicaid Services (n.d.): a. CNA i. Rating of 3/5 stars a. Nurses i. Below average for resident hours: 1 hour 2 minutes vs Utah average of 2 hour 9 minutes ii. Rating of 4/5 stars 3. Staffing ratios: a. CNA 1 to 16 residents (preferably would like 1:13) 4. Staff turnover. Increased in NH 65.6% in one year's time. 5. Increased fall rates vs national rates a. Approximately 365 fall/year with a national average of 100-200 falls/year (Industrial Safety & Hygiene News, 2017) 6. Lack of policy and procedure for fall prevention and management.
Opportunities	**Threats**
1. Possibly collaboration with the Utah County Health Department. They have a well-researched "Stepping On" program for Fall Prevention for community-based seniors who are 75 years old (women) and 80 years old (males) who dwell in the community. However, their lectures consist of topics that could be pertinent for residents at PMHR. 2. Partnership with Utah Falls Prevention Alliance. They have some great information on balance and exercise for community-based seniors, but the information could be geared towards residents at this facility. 3. National Council on Aging (NCOA): National Falls Prevention Awareness Day	1. Limitations and restrictions of CMS on what fall prevention modalities can be used in nursing homes (no restraint use, fall risk identifiers, etc.) 2. There are 55 other nursing homes in Utah County, Utah. Those who have scored higher in the staffing area for CMS and/or who have fewer falls/year. 3. Individuals suing the facility for injuries sustained from falls.

Appendix E

Memorandum of Understanding

Memorandum of Understanding

Memorandum of Understanding

Between

Katrina Little, Doctor of Nursing Practice (DNP) student

Boise State University

and

[redacted]

This Memorandum of Understanding (MOU) outlines the terms and understanding between Katrina Little, a DNP student at Boise State University, and [redacted] to pilot an evidence-based fall management program to reduce falls.

Background

Nursing home residents are particularly at risk for falls due to frailty and increased age. Elderly who reside in residential aged care facilities have an even greater health concern because the rate of falls occurs at a reported two to three times higher than among community-dwelling elderly (Botwinick et al., 2016; Cusimano et al., 2008; Tariq et al., 2013). It is estimated that of the 1.6 million nursing home residents in the United States, half of them will fall annually with about one in three of those falling more than once (Agency for Healthcare Research and Quality [AHRQ], 2017). Falls often have serious consequences, especially on frail old residents. Falls can cause broken bones, serious head and brain injuries, as well as death. One in every 10 residents who fall has a serious related injury and about 65,000 will suffer a hip fracture each year (AHRQ, 2017). "Over 800,000 patients a year are hospitalized because of a fall injury, most often because of a head injury or hip fracture" (CDC, 2017).

Purpose

The purpose of the quality improvement pilot project is two-fold: to implement an evidence-based fall management program as well as to reduce the fall incident rate among the residents. The student will create and assist in implementing a standardized fall management program, including organization of a Falls Management Team, educational sessions for both staff and residents, evaluation of participant's knowledge regarding fall risks and prevention, an intervention tool tailored to the resident's risk for falls, and assessment of resident's fall rate post-intervention.

Intended Project Outcomes

- The Fall Management Team (FMT) will approve the Fall Management Program and activities that will be implemented.
- Improved staff knowledge about prevention of falls.
- Accurate documentation of falls intervention in PointClickCare by users of the tailored falls intervention tool.

- Improved resident's knowledge and awareness of fall risks, fall prevention and activities they can do to reduce risk of falls.
- 50% or greater of staff that participated in the FMP feel the program is not only effective in fall reduction but is sustainable.
- Reduce the fall rate by 3% (approx. 1 fall per month).

Duration

The Scholarly Project will begin March, 2021 with the DNP student planning and coordinating the inception of a Fall Management Team (FMT). Educating the FMT on responsibilities and determining frequency of meetings as well as approval by the team of which activities to implement in the Fall Management Program will be completed prior to the project implementation phase. The implementation phase will begin in May 2021. Coordination with IT and the Falls Nurse Coordinator to create a tailored intervention based off of the Morse fall risk scale will occur prior to the implementation phase as well. Conclusion of the implementation phase will be August, 2021. The conclusion of the Scholarly Project and involvement with the DNP student will end in May, 2022 after the Final Project Report is given to the organization.

Reporting

The DNP student will present a Final Project Report to the organizational stakeholders in April, 2022. The DNP Scholarly Project will include a final report, an abstract, an oral presentation of the report and potential publication. The DNP student will submit a Final Project Report for publication in ScholarWorks. ScholarWorks is a collection of services designed to capture and showcase all scholarly output by the Boise State University community, including doctoral dissertations and doctoral project reports.

No personal identifiers will be included and all data will be reported in aggregate form. The author welcomes any comments or suggestions from [redacted], but reserves the right to publish findings and analysis according to professional standards and principles of academic freedom. For any work of a scholarly nature, the author agrees to follow the organization(s) preferences in how it is to be named (or not) in the work.

Agency preferences for how they are named/referred to within the student's work: by organizational name or solely by general type of agency within a region?

In presentation and publications, it was agreed upon that the facility will be referred to as: a short-term rehabilitation and long-term care facility in the North-Central region of Utah.

Student Contact Information

Katrina Little Date: 2/11/21
(*DNP Student signature*)
(*Student Name*), Boise State University DNP student
[redacted] Date: 2/11/21
(*Organizational Contact signature*)
(*Contact Name, Organizational Position, Organization name*)

Appendix F

Logic Model

Resources/Inputs	Activities	Outputs: What we accomplish or produce	Outputs: Who we reach	Outcomes: Short-term	Outcomes: Intermediate	Outcomes: Long-term
Personnel *Administration's support of project and financial needs, along with approval of a Falls Management Team (FMT) *FMT member's time *Project Leader's time **Materials/Supplies** *Supplies for creating educational/training materials (printer, paper, binder) **Space** *Facilities for FMT meetings **Equipment** *Computer technology and internet for production of training materials and communication purposes *TV and DVD Player	*Memorandum of understanding signed by organization administration *Approval of, identification of, and training of an Interdisciplinary FMT consisting of: * 1 Falls Nurse Coordinator and/or 1 Assistant Falls Nurse Coordinator * 2-4 Falls Nursing Assistants * 1 Falls Therapist (member of therapy team-RNA) * 1 DON or ADON *Develop Traditional budget for staff hours and	*Budget for FMT *Formation of FMT *FMT Bi-monthly meetings *FMT identify potential barriers and facilitators of a facility standardized process for an effective, EB FMP * Standardized, evidence-based "Falls Management Program Bundle" (FMPB)	*Interdisciplinary FMT members	1. By May 2021, 100% of the interdisciplinary Fall Management Team (FMT) approved a standardized, evidence-based FMPB for implementation. (CO)	7. By August 31, 2022 FMP Bundle continued to be followed by staff. (CO)	9. The standardized, evidence-based FMP Bundle piloted in one nursing home facility of the Ensign Group, Inc. has been implemented at all 8 other nursing home facilities included in the southern Utah group.

	Capital budget for materials, supplies, etc. *Project Leader meets with FMT to educate team on literature synthesis of evidence-based fall prevention interventions to reduce falls and to discuss barriers and facilitators of a Falls Management Program (FMP)					
Personnel *Administration's time and financial support *Time allotted for staff to prepare, teach, and/or attend training: * Staff development coordinator * Administration staff * Nursing staff (CNAs and licensed nurses) * Non-Nursing staff (therapy team) **Materials & Supplies** *Supplies for creating educational/training materials and pre-educational and post-educational evaluation tools	*Develop Traditional budget for staff hours and Capital budget for materials, supplies, prizes, etc. *Create 4-5 educational/training methods on the new standardized, evidence-based FMP Bundle *Publish/advertise dates of training *Determine incentives/prizes for staff who attend and/or participate in educational methods	*Training budget *Weekly educational/training methods planned (inservices, posters, word search, video, game, PPT presentation, email, web-based programs, etc.) *Incentives/prizes obtained *Pre-educational and post-educational evaluation tools *Data regarding the staff knowledge of prevention of falls	*Administration staff *Nursing staff (CNAs and licensed nurses) *Non-nursing staff (therapy team)	2. By May 2021, 75% of the staff who participated in at least one educational session, reported a 10% improvement in knowledge of fall risks and/or prevention of falls. (PO)	7. By August 31, 2022, FMP Bundle continued to be followed by staff. (CO)	9. The standardized, evidence-based FMP Bundle piloted in one nursing home facility of the Ensign Group, Inc. has been implemented at all 8 other nursing home facilities included in the southern Utah group.

Space *Facilities for training *Open space for booth *Walls for posters and flyers **Equipment** *Computer technology and internet for production of training materials and communication purposes **Marketing/Advertising** *Posters and flyers for advertising dates & times of training sessions and when project goes live **Incentives** *Food or other incentives/prizes for attendance and/or participation in educational sessions and for completing evaluation tools	*Educate/train staff on the new FMP *Develop/select EB pre-educational and post-educational evaluation tools *Administer pre-educational and post-educational evaluation tools to all staff members who participate in educational/training methods					
Personnel * Administration's time and support of financial needs	*Develop Traditional budget for staff hours and Capital budget for	*Training budget *Training session conducted 3 days/week over 1-2 weeks	*Nursing staff (licensed nurse) *Non-nursing staff (therapy team)	3. By May 2021, 80% of the licensed nurses who attended a training session on the Morse Fall Scale (MFS) were	7. By August 31, 2022, FMP Bundle continued to be followed by staff. (CO)	9. The standardized, evidence-based FMPB piloted in one nursing home facility of the Ensign Group, Inc. has

*Time allotted for staff to prepare, teach, and/or attend training: * Staff development coordinator * Nursing staff (CNAs and licensed nurses) * Non-Nursing staff (therapy team) * IT specialists *Project leader's time to assist in developing the tailored intervention tool in the PCC **Materials & Supplies** *Supplies for creating educational/training materials and pre-educational and post-educational evaluation tools **Space** *Facilities for training **Equipment** *Computer technology and internet for production of training materials, communication purposes, and access to PCC during training sessions	materials, supplies, prizes, etc. *Schedule, publish, and assign participating staff dates, times, and location of training session *Develop training curriculum/module using a scenario *Training regarding accurate Morse Fall Scale (MFS) risk and documentation of tailored interventions by licensed nurses and/or intervention follow through by nursing staff and non-nursing staff *Work with MDS coordinator for tailored interventions *Creation of a post-training questionnaire	* Training materials provided to all attendees *With remediation and/or retraining, nursing staff and non-nursing staff can correctly document the MFS risk and resident tailored interventions		able to correctly calculate the Fall Risk Status score and use the results to choose three interventions tailored to the area of risk. (CO)		been implemented at all 8 other nursing home facilities included in the southern Utah group.

Incentives *Food or other incentives/prizes for attendance and/or participation in educational sessions and for completing evaluation tools						
Personnel *Time allotted to prepare and teach the educational session: * Non-nursing staff (therapy team) *Time allotted to attend educational session: * Residents * Resident's families *Project leader's time to collect data **Materials & Supplies** *Supplies for creating educational materials and pre-educational and post-educational evaluation tools (printer, paper) ***Space** *Facilities for training **Equipment** *Computer technology and internet for production of training materials	*Arrange for a member of the therapy team to present on falls risk and fall prevention *Schedule date & time for meeting *Develop/select educational program materials *Obtain list of residents in the facility *Develop EB pre-educational and post-educational evaluation tools	*Educational session conducted 1-2 times/week at different times for 2 months *Data results of pre-educational and post-educational program learning	*Residents *Resident's family members (as available)	4. By August 31, 2021, 75% of residents who attended an educational session on fall risks and fall prevention reported a 10% improvement in knowledge of prevention of falls post-educational session. (CO)	8. By August 2022, fall rates at this facility are comparable to the national statistics for a facility of similar size. (CO)	10. Residents who participated in the FMP pilot project experienced a decrease in risk for physical and serious injuries, recurrent falls, and death due to reduction in fall rates.

Incentives *Food or other incentives/prizes for attendance and/or participation in educational sessions and for completing evaluation tools						
Personnel *Time allotted for staff to follow FMP Bundle: * Nursing staff (CNAs and licensed nurses) * Non-Nursing staff (therapy team) *Interdisciplinary FMT to review fall incidence *Project leader's time to collect data **Equipment** *Computer technology to gather data from PCC charting system	*Implementation of the approved FMP *Outcome measures for the FMP approved by the FMT (falls, residents who fall, residents with two or more falls, and fall related serious injuries) *Develop process of obtaining fall outcome measures *All nursing staff and non-nursing staff informed of process for obtaining fall outcome measures	*Outcome measures determined *Policy and procedure developed for measuring fall outcomes *Staff adherence to: * Measuring fall outcomes * Following the FMPB	*Residents *Resident's family members (as available)	5. Residents who participated in the FMPB pilot project had an overall fall rate reduction of 3% (approximately 1 one fall/month) from pre-intervention to post-intervention from June 2021 to August 31, 2021. (CO)	8. By August 2022, fall rates at this facility are comparable to the national statistics for a facility of similar size. (CO)	10. Residents who participated in the FMPB pilot project experienced a decrease in risk for physical and serious injuries, recurrent falls, and death due to reduction in fall rates.
Personnel *Project Leader's time to prepare and administer satisfaction survey *Administration staff, nursing staff, and non-nursing staff's (therapy team) time to complete satisfaction survey	*Develop a satisfaction survey *Create email with survey link *Display for all staff to view, a graphic poster summarizing number of	*Data regarding administration, nursing staff, and non-nursing staff satisfaction with FMP activities	*Administration Staff *Nursing staff (CNAs and licensed nurses) *Non-nursing staff (therapy team)	6. By August 31, 2021, 50% of the staff reported satisfaction with the FMPB. (PO)	7. By August 31, 2022, the FMPB continued to be followed by staff. (CO)	9. The standardized, evidence-based FMPB piloted in one nursing home facility of the Ensign Group, Inc. has been implemented at all other eight nursing home facilities included in the southern Utah group.

Materials & Supplies *Supplies for creating a summary of findings **Equipment** *Computer technology and internet for production and delivery of satisfaction survey	falls/month and/or days since last fall	*Guidance for future direction for sustainability of FMP activities				

Adapted from: Logic Model Foundation Development Guide, pg 4.
http://www.wkkf.org/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide

Appendix G

Project Timeline

	Project: Developing a Standardized Process for an Effective, Evidence-based Fall Management Program to Reduce Falls in a Nursing Home Setting																				
Semester/Year	**Fall 2019**	**Spring 2020**	**Summer 2020**	**Fall 2020**	**Spring 2021**					**Summer 2021**			**Fall 2021**				**Spring 2022**				
Month/Year	9-12/19	1-5/20	6-8/20	9-12/20	1/21	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22	2/22	3/22	4/22	5/22
ACTIVITY: PLANNING																					
Mission, Vision, & Problem Statement	X	X																			
Literature Review	X	X	X	X	X	X															
Meet with Facility Administration	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Organizational SWOT Analysis		X																			
Project Logic Model		X	X																		
Theoretical Model/Framework		X	X																		
Project Proposal Presentation & Approval		X						X													
Collaborative Institutional Training In itiative			X																		
Scholarly Project Timeline			X	X																	

Semester/Year	**Fall 2019**	**Spring 2020**	**Summer 2020**	**Fall 2020**	**Spring 2021**					**Summer 2021**			**Fall 2021**				**Spring 2022**				
Month/Year	9-12/19	1-5/20	6-8/20	9-12/20	1/21	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22	2/22	3/22	4/22	5/22
Create Financial Plan				X																	
MOU signed by Organization					X																
IRB Application, Submission & Approval					X	X	X	X													
Develop/Adapt Education Training Materials					X	X	X	X													
Project Outcome Measure Tools: Select/Adapt Pre/Post-education Evaluation Tools					X	X	X	X													
Form Advisory Committee				X	X	X	X	X													
ACTIVITY: IMPLEMENTATION																					
Collaborate with IT to Develop Individualized Fall Management Program (FMP) Tool in PointClickCare (PCC) the Electronic Health Record (EHR)							X	X													
Identify & Train Interdisciplinary Fall Management Team Members							X	X													

Semester/Year	**Fall 2019**	**Spring 2020**	**Summer 2020**	**Fall 2020**	**Spring 2021**					**Summer 2021**			**Fall 2021**				**Spring 2022**				
Month/Year	9-12/19	1-5/20	6-8/20	9-12/20	1/21	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22	2/22	3/22	4/22	5/22
Promote/Market Project to Staff								X	X												
Train Licensed Nurses on Individualized FMP Tool in PCC									X												
Conduct Educational Sessions for Staff & Residents									X	X											
Administer Pre/Post Survey at all Educational/Training Sessions									X	X	X	X									
Implement Individualized FMP Tool in PCC										X											
ACTIVITY: DATA COLLECTION																					
Collect Pre-educational and Post-educational Evaluation Tool Responses									X	X	X	X	X								
Collect Number of Falls and/or Recurrent Falls from PCC on those residents who participated in the Individualized FMP										X	X	X	X								

ACTIVITY: DATA ANALYSIS																				
Comparison of Pre-educational and Post-educational Evaluation Tool Results													X							
Data Analysis of Number of Falls and/or Recurrent Falls													X							
ACTIVITY: DISSEMINATION																				
Share initial findings with stakeholders informally (verbal)													X	X						
Present Final Project Report/Findings at Executive Session																		X		
Share Final Project Report/Findings with stakeholders																			X	

Appendix H

Outcomes Evaluation Table

Outcome	Data Collection Instrument / Data	Analysis Goal	Analytic Technique
1. By May 2021, 100% of the interdisciplinary Fall Management Team (FMT) approved a standardized, evidence-based Fall Management Program Bundle (FMPB) for implementation. (CO)	**Instrument:** **"**Fall Management Team Minutes of Meeting Report" created by the project leader **Data:** The report sheet will include a list of members, the percentage of FMT members who approved the FMP Bundle, and a statement of approvals for which fall management interventions/activities will be implemented for piloting.	1. To determine 100% of members of the FMT approved and support the FMP as well as which interventions/activities will be implemented in the FMPB.	Descriptive statistics will be used. Percentage will be used by calculating the number of FMT members who approve the FMPB. Frequency will be used to determine which interventions/activities had the highest approval rate and will be implemented at the facility.
2. By May 2021, 75% of the staff who participated in at least one educational session, reported a 10% improvement in knowledge of fall risks and/or prevention of falls. (PO)	**Instrument:** "Fall Prevention Knowledge Pre-and Post-Educational Evaluation Test". The same standardized questionnaire will be given both prior to and following the educational intervention. It will be anonymous. However, the survey will ask participants to identify which job title they have, educational levels, shifts they work, and on which area of the facility they work. The questionnaire is an 11-item true/false test based off the validated 11-item "Fall Prevention Knowledge Test" from the Fall T.I.P.S. Prevention Toolkit (modified and used with permission). The questionnaire contains statements specific to resident's fall risks and/or on prevention of falls. The questionnaire was modified to fit the long-term care setting instead of the hospital setting.	1. To quantify staff members' knowledge and awareness of fall prevention measures prior to and following the educational interventions. 2. To determine if knowledge was attained post intervention of the educational methods. An increase in at least one additional question correct after the educational method would be sufficient to	Descriptive statistics: compare aggregate mean scores using a pre- and post-design following educational interventions. Placed in an Excel spreadsheet to compare correctly answered questions from pre- to post-education evaluation.

	Data: The data sheets will assist in determining the staff's knowledge of resident's fall risk factors and/or methods of preventing falls pre- and post- educational intervention. The pre- and post-evaluation questionnaires will be compared to identify if additional knowledge was attained post-educational sessions.	meet the desired outcome.	
3. By May 2021, 80% of the licensed nurses who attended a training session on the Morse Fall Scale (MFS) were able to correctly calculate the Fall Risk Status score and use the results to choose three interventions tailored to the area of risk. (CO)	**Instrument:** "The Morse Fall Scale Training Module Outcome Report" which was created by the project leader. The project leader created an MFS training module based off "The Morse Fall Scale Training Module" by Partners HealthCare System Fall Prevention Task Force (modified and used with permission). The training module contains a review of the MFS and how the calculated data can be used to plan tailored interventions to prevent patient falls. The competency portion will have staff read a case study, complete the MFS based off the case study and then identify 3 interventions to prevent falls based on the patient-specific areas of risk. **Data:** The data collected will be used to determine the percentage of staff members who understood the training provided by correctly calculating the Fall Risk Score using the MFS, categorizing the fall risk, as well as whether they were able to identify intervention tailored to the area or risk for the resident in the case study.	1. To determine if staff know how to correctly calculate the Fall Risk Score and then categorize the resident's Fall Risk Status as Low, Medium, or High Risk for falls. 2. To determine if staff can identify 3 interventions that are specific to the case study of the resident-specific area of risk which was identified on the MFS.	Descriptive statistics of percentage and frequency was used to determine the percentage of staff that achieved the correct MFS score and identified 3 interventions specific to the case scenario.
4. By August 31, 2021, 75% of residents who attended an educational session on fall risks and fall prevention reported a 10% improvement in	**Instrument:** "Activities to Decrease Fall Risk Pre- and Post-Evaluation Test" created by the project leader. The questionnaire is based off the Pre and Posttest from Inservice #2 from AHRQ Falls Management Program Chapter 5: Information and Training for Staff, Residents, and their Families (AHRQ, 2017b).	1. To gather data on resident's knowledge and awareness of their fall risks, fall prevention and activities they can	Descriptive statistics: compare aggregate mean scores for each test by using a pre- and post- design

knowledge of prevention of falls post-educational session. (CO)	• The questionnaire was modified to support the resident's learning. It includes 3 multiple-choice questions and 7 True/False questions specific to content objectives of the education module for the SP. **Data:** Data will be collected on how many questions were correct prior to the educational intervention and then again after the educational intervention. Looking for increased recognition after the educational intervention by the resident of activities they can do specifically to reduce their risk for falls.	do to reduce risk of falls. To compare resident's knowledge prior to the educational intervention and after educational intervention and determine if learning occurred with the educational intervention.	following educational interventions. Placed in an Excel spreadsheet to determine if additional questions were answered on questionnaire from pre- to post-education evaluation
5. Residents who participated in the FMPB had an overall fall rate reduction of 3% (approximately one fall/month) from pre-intervention to post-intervention from June 2021 to August 31, 2021. (CO)	**Instrument:** The organization's electronic health record (EHR) system and the organization's "Fall Report Sheet" which was created by the ADON at the facility. **Data:** Information will be gathered on the total number of falls of the resident on the participating halls (South Unit). This data will be extracted from the EHR and put on the "Fall Report Sheet" of all residents participating in the pilot SP. The data will be compared with the previous 3 month's total of falls recorded on the organization's "Falls Report Sheet".	To quantify the fall rates prior to and following the implementation of the FMP Bundle to help determine if there may have been an impact in fall prevention/fall reduction of residents in the FMP Pilot Project.	Descriptive statistics: Frequency. The number of falls among the residents who participated in the FMP will be calculated 3 months prior to and during the implementation of the FMPB. This information will help determine the impact of the FMP had on the fall rates of residents who are participating in Pilot Project. Aggregate data will be collected on what the fall rate was prior to the implementation of the FMP and then monthly during the project implementation.

			Data will be displayed in a matrix format for describing and displaying quantitative data in the form of a table and/or line graph to display trends.
6. 50% of the staff reported satisfaction with the FMPB by August 31, 2021. (PO)	**Instrument:** "Satisfaction Survey of the Fall Management Program" questionnaire. A 10-item questionnaire, using a 5-point scaled Likert Scale will be used to determine staff's satisfaction with the Falls Management Program (FMP). There are open-ended questions based on the facility's stakeholders' need-to-know information regarding changes or revisions to the FMP. **Data:** The survey completed by the facility's staff will be anonymous to increase the honest feedback response. The questions will be geared towards key points of the FMP; education received, the new tailored intervention tool, falls management team, falls policy/procedure (if instigated), etc. The Project Leader will maintain the data and report findings to administrators at the facility.	1. To quantify the staff's awareness and satisfaction with the FMP. 2. To identify opportunities for improvements and revisions of the FMP or its process.	Data will be described using descriptive statistics (means, ranges, and standard deviation) for each quantitative question item. Qualitative data on the open-ended question regarding improvements, etc. The answer will be placed into categories.

Appendix I

Fall Management Team Minutes of Meeting Report

Falls Management Team Members												

Topic	Discussion	Action Plan / Follow-up Plan	Responsible Team Member(s)
Administrative Information • **Revised policies, processes, benefits, staffing changes, or other organizational information**			
Falls Management Program Bundle (FMPB) • **Proposed Evidence-based Interventions**			
Barriers and/or Facilitators of the FMPB			
Outcome of Vote on which interventions will be implemented as part of the FMPB & FMT who approved			
Number of falls since last meeting **Identified reason for fall** **Injury with fall**			
FMT Administrative Items/Preparation for future meeting(s)			
Question & Answer			
Next Meeting			

Appendix J

Fall Prevention Knowledge Pre-Educational Evaluation Test

You will be asked to take this test twice, once before and once after learning about falls. While preserving your anonymity I would like to link your Pre-Test and Post-Test forms with each other. In the space below, please write your "linking" number.

Linking number: _____. Please pick a 4-digit number you will remember and write it on the line. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 2021) so you can also write it on the next form.

Please mark whether you believe the statements below to be true (T) or false (F). To mark your answer, put an X or a √ in the box: [x] or [√].

Statement	T	F
1. Bedside nurses know their patients and are better than a standardized screening scale at identifying patients likely to fall.		
2. The 3-step fall prevention process is comprised of 1) screening for fall risks, 2) developing a tailored fall prevention plan, 3) completing fall prevention documentation.		
3. A 75-year-old male with history of recent falls and osteoporosis is admitted to this facility. He is at increased risk for injury if he falls due to his age.		
4. A common reason why patients fall is that their fall prevention plan is not followed.		
5. Falls can be prevented in patients who are susceptible to falling because of physiological problems by providing a safe environment; e.g., clear path to bathroom, room free of clutter, good footwear.		
6. Patient engagement in fall prevention means that the nurse completes the fall risk assessment and prevention plan, and then teaches the patient about their personal fall risk factors and prevention plan.		
7. A fall risk screening scale identifies those patients who are likely to fall because they have one or more physiological problems.		
8. When nurses communicate with residents/patients about their increased risk for injury if they fall, this improves the likelihood that residents/patients will follow their personalized fall prevention plan.		
9. Residents/patients at low risk for falls do not require a fall prevention plan.		
10. Bed and chair alarms should be activated for all patients who screen positive for being at a high risk of falling.		

11. Overall, how confident are you with your current ability, either in a direct care capacity or teaching others or in a leadership/management position, to prevent patients from falling? Please use a 10-point scale (0=not at all <--> 10=very much so) _____.

12. Compared to your peers in positions similar to yours, how do you rate your ability to prevent patients from falling? Above Average Average Below Average

Background Information: If you do not wish to answer a question, you may leave your answer blank.

1. What is your job in this nursing home? Check **ONE** box that best applies to your job. If more than one category applies, check the highest-level job.

☐ 1 **Administrator/Manager**

Executive Director/Administrator
Director of Nursing
Assistant Director of Nursing
Nursing Supervisor
Unit Manager/Charge Nurse
Minimum Data Set (MDS) Coordinator

☐ 2 **Licensed Nurse**

Registered Nurse (RN)

Licensed Practical Nurse (LPN)

☐ 3 **Nursing Assistant/Aide**

Certified Nursing Assistant (CNA)

☐ 4 **Direct Care Staff**

Activities Staff Member
Dietitian/Nutritionist
Physical/Occupational/Speech/

☐ 5 **Administrative Support Staff**

Administrative Assistant

Admissions

Billing/Insurance

Secretary

Human Resources

Medical Records

☐ 6 **Other** (Please write the title of your job):

_____

2. How long have you worked in this nursing home?

☐ 1 Less than 2 months
☐ 2 2 to 11 months
☐ 3 1 to 2 years
☐ 4 3 to 5 years
☐ 5 6 to 10 years
☐ 6 11 years or more

3. How many hours per week do you usually work <u>in this nursing home</u>?

☐ 1 15 or fewer hours per week
☐ 2 16 to 24 hours per week
☐ 3 25 to 40 hours per week
☐ 4 More than 40 hours per week

4. When do you work most often? Check ONE answer.

   ☐ 1 Days
   ☐ 2 Evenings
   ☐ 3 Nights
   ☐ 4 All shifts

5. In this nursing home, where do you spend most of your time working? Check **ONE** answer.

   ☐ 1 Many different areas or units in this nursing home / No specific area or unit
   ☐ 2 North halls
   ☐ 3 South halls
   ☐ 4 Rehab unit only
   ☐ 5 Other area or unit (Please specify): _____

6. What is the highest grade or level of education that you have completed?

   ☐ 1 Some high school, but did not graduate
   ☐ 2 High school graduate or GED
   ☐ 3 Some college or 2-year degree (AS/ASN)
   ☐ 4 4-year college graduate (BS/BSN), or
   ☐ 5 More than 4-year college degree (MS/MSN, PhD/DNP, etc.)

THANK YOU FOR COMPLETING THIS SURVEY.

Appendix K

Fall Prevention Knowledge Post-Educational Evaluation Test

This test is the second of two tests and should be taken after the educational presentation on learning about falls. While preserving your anonymity I would like to link your Pre-Test and Post-Test forms with each other. In the space below, please write your "linking" number.

Linking number: _____. Please pick a 4-digit number you will remember and write it on the line. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 2021) so you can also write it on the next form.

Please mark whether you believe the statements below to be true (T) or false (F). To mark your answer, put an X or a √ in the box: [x] or [√].

Statement	T	F
1. Bedside nurses know their patients and are better than a standardized screening scale at identifying patients likely to fall.		
2. The 3-step fall prevention process is comprised of 1) screening for fall risks, 2) developing a tailored fall prevention plan, 3) completing fall prevention documentation.		
3. A 75-year-old male with history of recent falls and osteoporosis is admitted to this facility. He is at increased risk for injury if he falls due to his age.		
4. A common reason why patients fall is that their fall prevention plan is not followed.		
5. Falls can be prevented in patients who are susceptible to falling because of physiological problems by providing a safe environment, e.g., clear path to bathroom, room free of clutter, good footwear.		
6. Patient engagement in fall prevention means that the nurse completes the fall risk assessment and prevention plan, and then teaches the patient about their personal fall risk factors and prevention plan.		
7. A fall risk screening scale identifies those patients who are likely to fall because they have one or more physiological problems.		
8. When nurses communicate with residents/patients about their increased risk for injury if they fall, this improves the likelihood that residents/patients will follow their personalized fall prevention plan.		
9. Residents/patients at low risk for falls do not require a fall prevention plan.		
10. Bed and chair alarms should be activated for all patients who screen positive for being at a high risk of falling.		

11. Overall, how confident are you with your current ability, either in a direct care capacity or teaching others or in a leadership/management position, to prevent patients from falling? Please use a 10-point scale (0=not at all <--> 10=very much so) _____.

12. Compared to your peers in positions similar to yours, how do you rate your ability to prevent patients from falling? Above Average Average Below Average

THANK YOU FOR COMPLETING THIS SURVEY

Appendix L

Consent for Use of Fall Prevention Knowledge Test

Katrina Little <katrinalittle@u.boisestate.edu> Mon, Feb 15, 2021 at 8:54 PM
To: PHSFallTIPS@partners.org

To whom it may concern:

I am a nursing student in a DNP program at Boise State University working on my Scholarly Project of implementing a Fall Management Program into a LTC and skilled nursing facility. I am interested in using the PHS MFS Competency Manual for training newly hired nurses and annual training at this LTC and skilled nursing facility. I am interested in using the Fall Prevention Knowledge Test for a pre- and post-evaluation of teaching.
I would need to alter the test wherever the word hospital or hospitalized is used (see attached document). Also, I would not be collecting Demographic information.
I am wondering if you would still allow me to use these 11 questions as a pre- and post-evaluation survey.
Thank you for your time and consideration.

Katrina Little, MSN, RN

1.-Fall-Prev-Knowledge-Test_Pre_11-item.docx
23K

Burns, Zoe <zburns@bwh.harvard.edu> Wed, Feb 17, 2021 at 12:14 PM
To: "katrinalittle@u.boisestate.edu" <katrinalittle@u.boisestate.edu>

Hi Katrina,

So sorry for the delay in getting back to you! Yes, you may make these changes and use the questions.
Best of luck!

Zoe

Zoe Burns, MPH
Project Manager
Center for Patient Safety Research, and Practice
Division of General Internal Medicine and Primary Care

zburns@bwh.harvard.edu
brighamandwomens.org

Katrina Little <katrinalittle@u.boisestate.edu> Wed, Feb 17, 2021 at 6:18 PM
To: "Burns, Zoe" <zburns@bwh.harvard.edu>

Thank you!
[Quoted text hidden]

Appendix M

The Morse Fall Scale Training Questionnaire

Linking number: _____. Please pick a 4-digit number you will remember and write it on the line. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 2021).

Please complete the following Morse Fall Scale on the Scenario to determine the level of risk for this resident.

Morse Fall Scale		
Item	Select Areas of Risk	**Score**
1. **History of Falling**	□ No □ Yes	**0** **25**
2. **Secondary Diagnosis**	□ No □ Yes	**0** **15**
3. **Ambulatory Aid** • None/bed rest/nurse assist • Crutches/cane/walker • furniture	 □ □ □	 **0** **15** **30**
4. **IV Therapy/HepLock**	□ No □ Yes	**0** **20**
5. **Gait** • Normal/bed rest/wheelchair • Weak • Impaired	 □ □ □	 **0** **10** **20**
6. **Mental Status** • Oriented to own ability • Overestimates/forgets limitations	 □ □	 **0** **15**

Total Morse Fall Scale risk score = _____.

Patient is (select 1)" ☐Low ☐Medium ☐High Risk for falls

Based on the areas of risk identified on the Morse Fall Scale, list 3 interventions that would prevent falls for this patient:

1. _____
2. _____
3. _____

Appendix N

The Morse Fall Scale Training Module Outcome Report Sheet

The purpose of this form is to determine the percentage of nursing staff who attained knowledge from the training provided by correctly calculating the Fall Risk Score using the Morse Fall Scale (MFS), then categorizing the Fall Risk Status by using the Fall Risk Score. Lastly, it will determine if the nurse was able to identify 3 interventions specific to the area of risk from the MFS based on the resident's case study used in the Training Module.

Morse Fall Scale	**Fall Risk Score 0**	**Fall Risk Score <25**	**Fall Risk Score 25-45**	**Fall Risk Score >45**	**No Risk**	**Low Risk**	**Moderate Risk**	**High Risk**
Number of nurses who choose this answer								
Total number of nurses who completed the training module								
Number of nurses that choose the correct answer				MFS Total Score= 115				X

Area of Risk from the Morse Fall Scale	**History of Falling**	**Secondary Diagnosis**	**Ambulatory Aid**	**IV Therapy/ HepLock (saline lock)**	**Gait**	**Mental Status**
	Yes. Fell within the past 3 months	Yes. Type 2 diabetes	Furniture (although he does have a cane as well)	Yes. Saline lock	Weak (uses furniture, short steady steps)	Overestimates abilities/forgets limitations
	25	15	30	20	10	15

Interventions specific to the Case Study that could be implemented for each Area of Risk. List the number of nurses that choose this intervention beside the intervention.						
	Safety Precautions					
	Communicate risk status via plan of care, change of shift report					
	Document circumstances of previous fall					
	Consider factors which may increase risk for falls					
	Request order for PT consult					
	Provide ambulatory aid					
	Implement toileting/ rounding schedule					
	Instruct resident to call for help with toileting					
	Review side effect of IV medications					
	Assist with out of bed					

	Consider PT consult					
	Bed alarm/ chair alarm					
	Place resident in visible location					
	Frequent rounding					
	Other Specific Answers					

Appendix O

Activities to Decrease Fall Risk Pre-Educational Evaluation Test

You will be asked to take this test twice, once before and once after learning about falls. While preserving your anonymity I would like to link your Pre-Test and Post-Test forms with each other. In the space below, please write your "linking" number.

Linking number: _____. Please pick a 4-digit number you will remember and write it on the line. You will need to remember the number so you can write it on the next form.

Please mark whether you believe the statements below to be true (T) or false (F). To mark your answer, put an X or a √ in the box: [x] or [√].

Statement	T	F
1. Older adults (65 years and older) can change their activities to prevent falls.		
2. It is okay for residents to share wheelchairs.		
3. Keeping a pathway clear of clutter 1-2 feet around the bed and to the bathroom can help reduce the risk of falling.		
4. Older adults who take several medications are at a greater risk for falls then those who only take one medication.		
5. Staying physically active can help reduce chances of falls.		
6. Getting up during the night to go to the bathroom leads to falls.		
7. Older adult men are at greater risk for falling than older adult women.		

8. Footwear is an important factor in falls. Which type of footwear is the best to wear to help reduce falling? (Please check all that apply)
   - ☐ 1 Knitted slippers
   - ☐ 2 High heels
   - ☐ 3 Tennis shoes with a Velcro fastener
   - ☐ 4 Sandals

9. Which of the following strategies will help reduce falls risk? (Please check all that apply)
   - ☐ 1 Stay sitting down as much as possible
   - ☐ 2 Muscle strengthening and balance training
   - ☐ 3 Proper fitting of wheelchairs
   - ☐ 4 Sitting at the edge of the bed and dangle feet before rising

Background Information: If you do not wish to answer a question, you may leave your answer blank.

1. What is your sex?
   ☐ 1 Female ☐ 2 Male

2. What is the highest grade or level of education that you have completed?
   ☐ 1 Elementary
   ☐ 2 Junior high
   ☐ 3 Some high school, but did not graduate
   ☐ 4 High school graduate or GED
   ☐ 5 Some college or 2-year degree
   ☐ 6 4-year college graduate, or
   ☐ 7 More than 4-year college degree?

3. What support do you use to walk?
   ☐ 1 None
   ☐ 2 Cane
   ☐ 3 Crutches
   ☐ 4 Walker
   ☐ 5 Wheelchair

4. Have you fallen in the past year?
   ☐ 1 Yes ☐ 2 No

5. If you have fallen in the past year, how many times have you fallen? _____

THANK YOU FOR COMPLETING THIS SURVEY.

Appendix P

Activities to Decrease Fall Risk Post-Educational Evaluation Test

You will be asked to take this test twice, once before and once after learning about falls. While preserving your anonymity I would like to link your Pre-Test and Post-Test forms with each other. In the space below, please write your "linking" number.

Linking number: _____. Please pick a 4-digit number you will remember and write it on the line. You will need to remember the number so you can write it on the next form.

Please mark whether you believe the statements below to be true (T) or false (F). To mark your answer, put an X or a √ in the box: [x] or [√].

Statement	T	F
1. Older adults (65 years and older) can change their activities to prevent falls.		
2. It is okay for residents to share wheelchairs.		
3. Keeping a pathway clear of clutter 1-2 feet around the bed and to the bathroom can help reduce the risk of falling.		
4. Older adults who take several medications are at a greater risk for falls then those who only take one medication.		
5. Staying physically active can help reduce chances of falls.		
6. Getting up during the night to go to the bathroom leads to falls.		
7. Older adult men are at greater risk for falling than older adult women.		

8. Footwear is an important factor in falls. Which type of footwear is the best to wear to help reduce falling? (Please check all that apply)
   - ☐ 1 Knitted slippers
   - ☐ 2 High heels
   - ☐ 3 Tennis shoes with a Velcro fastener
   - ☐ 4 Sandals

9. Which of the following strategies will help reduce falls risk? (Please check all that apply)
   - ☐ 1 Stay sitting down as much as possible
   - ☐ 2 Muscle strengthening and balance training
   - ☐ 3 Proper fitting of wheelchairs
   - ☐ 4 Sitting at the edge of the bed and dangle feet before rising

THANK YOU FOR COMPLETING THIS SURVEY

Appendix Q

Fall Report Sheet

Resident	Date	Injury	Notified	UDAs	Neuros	Alert Order	Alert Charted	Care Plan	802	IDT

Appendix R

Satisfaction Survey of the Fall Management Program

Thank you for responding to this survey. This survey is confidential. However, I would like to match this form with any other forms you may have completed or will complete. In the space below, please write your "linking" number.

Linking number: _____. Please write the 4-digit number you used on previous forms. If you have not filled out any other forms, please use a 4-digit number you will remember and write it on the line. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 2021).

The purpose of this survey is to rate your satisfaction and/or confidence in fall prevention and with the Fall Management Program implementation process. It will also help to identify processes that are working well or need adjustments.

Please read each item, then circle the number that best represents how much you agree or disagree with the statement. Please be open and honest with your responses.

Statement	**Strongly Agree**	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**	**Does Not apply or Don't Know**
Staff Related Process						
1. I receive a report about my residents' fall risk.	5	4	3	2	1	NA
2. I give a verbal report to the next shift about my residents' fall risk.	5	4	3	2	1	NA
3. I receive a report on at least one intervention from the care plan that I should do to help reduce my resident's risk for falls.	5	4	3	2	1	NA
4. I give a verbal report to the next shift on at least one intervention from the care plan that I should do to help reduce my resident's risk for falls.	5	4	3	2	1	NA

5. I ask about or look in the EHR and/or on the "brain" to see what I should do to prevent a resident from falling.	5	4	3	2	1	NA
6. I answer any call lights rapidly.	5	4	3	2	1	NA
7. We all work together as a team to help prevent residents from falling.	5	4	3	2	1	NA
8. I know who the members of the Fall Management Team are.	5	4	3	2	1	NA
9. I am satisfied with the monthly training session on Fall Prevention and felt it helped me become more aware of the importance of reducing resident falls in this facility.	5	4	3	2	1	NA
10. I am aware of my responsibilities in helping to reduce falls in this facility.	5	4	3	2	1	NA
11. Do you have anything else you would like to add about what you do to prevent residents from falling? (free text)						

Overall, how confident are you with your current ability, either in a direct care capacity or teaching others or in a leadership/management position, to prevent patients from falling? Please use a 10-point scale (0=not at all <--> 10=very much so) _____.

Compared to your peers in positions similar to yours, how do you rate your ability to prevent patients from falling? Above Average Average Below Average

Background Information: If you do not wish to answer a question, you may leave your answer blank.

1. What is your job in this nursing home? Check **ONE** box that best applies to your job. If more than one category applies, check the highest-level job.

☐ 1 **Administrator/Manager**

Director/Administrator
Director of Nursing
Assistant Director of Nursing
Nursing Supervisor
Unit Manager/Charge Nurse
Minimum Data Set (MDS) Coordinator

☐ 2 **Licensed Nurse**

Registered Nurse (RN)
Licensed Practical Nurse (LPN)

☐ 3 **Nursing Assistant/Aide**

Certified Nursing Assistant (CNA)

☐ 4 **Direct Care Staff**

Activities Staff Member
Dietitian/Nutritionist
Physical/Occupational/Speech/

☐ 5 **Administrative Support Staff**

Administrative Assistant
Admissions
Billing/Insurance
Secretary
Human Resources
Medical Records

☐ 6 **Other** (Please write the title of your job):

_____

2. How long have you worked in this nursing home?

☐ 1 Less than 2 months
☐ 2 2 to 11 months
☐ 3 1 to 2 years
☐ 4 3 to 5 years
☐ 5 6 to 10 years
☐ 6 11 years or more

3. How many hours per week do you usually work <u>in this nursing home</u>?

☐ 1 15 or fewer hours per week
☐ 2 16 to 24 hours per week
☐ 3 25 to 40 hours per week
☐ 4 More than 40 hours per week

4. When do you work most often? Check ONE answer.

☐ 1 Days
☐ 2 Evenings
☐ 3 Nights
☐ 4 All shifts

5. In this nursing home, where do you spend most of your time working? Check **ONE** answer.
   - ☐ 1 Many different areas or units in this nursing home / No specific area or unit
   - ☐ 2 North halls
   - ☐ 3 South halls
   - ☐ 4 Rehab unit only
   - ☐ 5 Other area or unit (Please specify): _____

6. What is the highest grade or level of education that you have completed?
   - ☐ 1 Some high school, but did not graduate
   - ☐ 2 High school graduate or GED
   - ☐ 3 Some college or 2-year degree (AS/ASN)
   - ☐ 4 4-year college graduate (BS/BSN), or
   - ☐ 5 More than 4-year college degree (MS/MSN, PhD/DNP, etc.)

THANK YOU FOR COMPLETING THIS SURVEY.

Appendix S

Katrina Little <katrinalittle@u.boisestate.edu> Apr 20, 2021, 7:18 AM (5 days ago)

Hello Dr. Dykes,
I wrote to you earlier about being able to use your Fall Prevention Self-Efficacy survey/questions for Assistants and Registered Nurses. I am still very interested in using these surveys/questions as part of my Doctorate Scholarly Project and was wondering if you would be willing to grant me permission to use them. I know that they would greatly enhance my project outcomes and support Bandura's Theory as well.

Thank you for your time and consideration.

Katrina Little
DNP Candidate - College of Health Sciences BSU
Advisor: Cara Gallegos, PhD
katrinalittle@u.boisestate.edu

Dykes, Patricia C. <PDYKES@bwh.harvard.edu> Apr 20, 2021, 7:43 AM

Hi Katrina,
Fine to use the self-efficacy scales and you don't need to use the demographic portion. I would recommend however that you explore our Fall Prevention Knowledge Test as we have found the self-efficacy scales have a ceiling effect making it difficult to measure change (most nurses believe they can prevent falls even when their fall prevention knowledge is low). The knowledge test was published in JAGS and is available on our website: www.FallTIPS.org/resources.
Best

Patricia C. Dykes, PhD, RN, FAAN, FACMI
Program Director Research
Center for Patient Safety, Research, and Practice
Brigham and Women's Hospital
Associate Professor of Medicine
Harvard Medical School

Office: 617-525-6654 | Mobile: 617-850-5748
pdykes@bwh.harvard.edu
brighamandwomens.org

Chair/President, American Medical Informatics Association Board of Directors

Appendix T

Institutional Review Board Approval

BOISE STATE UNIVERSITY
RESEARCH AND ECONOMIC DEVELOPMENT
Research Compliance

Date: April 26, 2021

To: Cara Gallegos cc: Katrina Little

From: Social & Behavioral Insitutional Review Board (SB-IRB)
c/o Office of Research Compliance (ORC)

Subject: SB-IRB Notification of Approval - Original - 186-SB21-076
Developing a Standardized Process for an Effective, Evidence-based Fall Management Program to Reduce Falls in a Nursing Home Setting

The Boise State University IRB has approved your protocol submission. Your protocol is in compliance with this institution's Federal Wide Assurance (#0000097) and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Protocol Number:	**186-SB21-076**	Received:	4/21/2021	Review:	Expedited
Expires:	**4/25/2022**	Approved:	4/26/2021	Category:	6, 7

Your approved protocol is effective until 4/25/2022. To remain open, your protocol must be renewed on an annual basis and cannot be renewed beyond 4/25/2024. For the activities to continue beyond 4/25/2024, a new protocol application must be submitted.

ORC will notify you of the protocol's upcoming expiration roughly 30 days prior to 4/25/2022. You, as the PI, have the primary responsibility to ensure any forms are submitted in a timely manner for the approved activities to continue. If the protocol is not renewed before 4/25/2022, the protocol will be closed. If you wish to continue the activities after the protocol is closed, you must submit a new protocol application for SB-IRB review and approval.

You must notify the SB-IRB of any changes to your approved protocol and the committee must review and approve these changes prior to their commencement. You should also notify the committee if your activities are complete or discontinued.

Current forms are available on the ORC website at http://goo.gl/D2FYTV

Please direct any questions or concerns to ORC at 426-5401 or humansubjects@boisestate.edu.

Thank you and good luck with your research.

Appendix U

Scholarly Project Expense Report

					Grand Total	$ 12,494.00
Expense Category	**Expense Description**	**Explanation of Expense**	**Type of Cost (variable/fixed)**	**Volume**	**Cost per Unit**	**Total**
Education and Training for Fall Management Team (FMT) & meetings during implementing of FMP						
Personnel	Falls Therapist wages	1 Therapist (from therapy team) for 3 hrs of training on Fall Management Program (FMP) and 1 hr bi-monthly meeting during project for review of falls	variable	9 hrs X 1 Therapist= 12 hrs	$45/hr	$ 405.00
Personnel	CNA wages	2 CNAs for 3 hrs of training on Fall Management Program (FMP) and 1 hr bi-monthly meeting during project for review of falls	variable	9 hrs X 2 CNAs=18 hrs	$13/hr	$ 234.00

Personnel	Licensed Nursing Staff wages	1 Falls Nurse Coordinator and 1 Assistant Fall Nurse Coordinator for 3 hrs of training on Fall Management Program (FMP) and 1 hr bi-monthly meeting during project for review of falls.	variable	9 hrs X 2 RNs=18 hrs	$27/hr	$ 486.00
Personnel	ADON wages	1 ADON for 3 hrs of training on Fall Management Program (FMP) and 1 hr bi-monthly meeting during project for review of falls.	variable	9 hrs X 1 RN=9 hrs	$29/hr	$ 261.00
Personnel	Project Leader wages (in kind)	Creating training materials, planning & preparation of training session and presenting Fall Management Program Bundle to the FMT	variable	50 hrs	$40/hr	$2,000.00
Material & Supplies	Paper, ink, binders, staples	6 educational packets in binder for FMT (25 pages/packet)	fixed	6 packets X 30 pages =180 pages, 6 binders	180 pages @ $0.20 6 binders @ $2.50	$ 51.00

Space	Facility for meeting (in kind)	Room for trainings/meetings	fixed	10 times (12 hours)	$25/hr	$ 300.00
Equipment	Printer/Ink (in kind)	To produce training materials	varied		$100	$ 100.00
Equipment	TV and DVD player for training (in kind)	For training videos	fixed	1 meeting day	$20/day	$ 20.00
Training of Administration Staff, Nursing Staff (CNAs and licensed nurses), and Non-Nursing Staff (therapy team) on fall prevention, FMP & documentation in PCC on FMP tool						
Personnel	Administration	Description of project and proposed FMP Bundle	variable	2 hr X 2 (ADON) 2 hr X 1 (DON)	$29/hr $40/hr	$ 196.00
Personnel	CNA wages	1 hr of training on PCC and FMP & 0.5 hr of fall prevention education/activities	variable	1.5 hr X 32 CNAs	$13/hr	$ 624.00
Personnel	Licensed Nursing Staff wages	1 hr of training on PCC and FMP & 0.5 hr of fall prevention education/activities	variable	1.5 hr X 18 RNs 1.5 hr X 5 LPNs	$27/hr $22/hr	$ 894.00
Personnel	Non-nursing team wages	1 hr of training on PCC and FMP & 0.5 hr of fall prevention education/activities	variable	1.5 hr X 6 Therapists 1.5 hr X 6 Therapy assistants	$45/hr $25/hr	$ 630.00

Personnel	Staff Development Coordinator	Preparing for training and completing training sessions	variable	5 sessions X 1 hr and preparing 3 hr =8 hr	$27/hr	$ 216.00
Personnel	Project Leader wages (in kind)	Creating FMP tool, pre- & post-evaluations, gathering data and compile results of evaluations	variable	40 hrs	$40/hr	$1,600.00
Material & Supplies	Paper (in kind)	125 Handouts for PCC, 12 flyers for units, 4 posters, 250 Evaluations	fixed	4 posters 1 ream of paper	$1.00 each $15/ream	$ 19.00
Space	Facility room for PCC Training (in kind)	Room for trainings/meetings 6 held on day and 6 on night shift	fixed	5 meetings X 1 hr = 5 hr	$20/hr	$ 100.00
Equipment	Copier machine/Ink (in kind)	For creating and producing training materials, communication needs, and training of FMP tool in PCC	fixed	Computers for PCC training		$ 100.00
IT	IT Specialist wages	Set up new FMP tool in PCC	variable	6 hrs	$50/hr	$ 300.00
Incentives	Candy, prizes (some in kind)	Incentives for finishing training sessions	fixed	10 ($5) Swig cards 10 bags of candy	$5 Swig cards $10 candy	$ 150.00

Training of Residents						
Personnel	Falls Therapist wages	1 Therapist (from therapy team) record 20 min video to be shown to residents- educational on falls risks and fall prevention, and safe and/or unsafe activities residents should or should not do to decrease risk for falls	variable	1 hrs X 1 Therapist	$45/hr	$ 45.00
Personnel	Project Leader wages (in kind)	Creating pre- & post-evaluations, gathering data and compile results of evaluations	variable	40 hr	$40/hr	$1,600.00
Space	Facility room for PCC Training (in kind)	Room for education session conducted 1-2 times/week at different times for 2 months	fixed	12 hr	$20/hr	$ 240.00
Equipment	Copier machine/Ink (in kind)	For creating training materials	fixed	4 hrs		$ 100.00
Equipment	TV and DVD player for	For training videos	fixed	8 days	$25/day	$ 100.00

	training (in kind)					
Material & Supplies	Paper (in kind)	Handouts & Evaluations for 40 residents	fixed	1/2 ream of paper	$15/ream	$ 7.50
Incentives	Candy, cookies (some in kind)	Incentives for finishing training sessions and completing educational form	fixed	10 ($5) Walmart card 4 bags of candy	$5/card $10/bag	$ 90.00
Implementation of Program						
Personnel	Project Leader wages (in kind)	Creating flyers, posters, post-evaluations, attending staff meetings to inform administrators and staff of SP plan, etc.	variable	40 hrs	$40/hr	$1,600.00
Marketing/Advertising	Posters, banner, flyers	Introduction of FMP, start day of the FMP & tracking of falls	fixed	8 (2 each unit & entrance) 1 paper banner	$1.00/poster $10/banner	$ 18.00
Material & Supplies	Paper (in kind)	Flyers	fixed	1/2 ream of paper	$15/ream	$ 7.50

Appendix V

Scholarly Project Three-Year Budget Plan

Yearly Totals:	**$ 12,494.00**	**$ 15,831.87**	**$ 12,566.40**	
Expense Category	**Year 1**	**Year 2**	**Year 3**	**Rationale**
Personnel	$ 10,791.00	$ 14,085.76	$ 11,627.20	**Year 1:** Pilot on 3/6 hallways (North). 18 RNs, 5 LPNs & 32 CNAs. Also included: wages of the FMT, therapists & assistants, and staff development coordinator (SDC). **Year 2:** Expand to entire facility 6/6 hallways. 33 RNs, 10 LPNs & 63 CNAs. Continue with FMT meetings 2/month & additional trainings. SDC now doing the training with 5% increase. No additional therapist training nor project manager wages. **Year 3:** Maintain project. Decrease training sessions; done with new hire orientation and/or staff meetings. FMT will continue to meet 1 hr bi-monthly.

Material & Supplies	$ 85.00	$ 94.08	$ -	**Year 2:** Training supplies for the additional 3 hallways should be equal to first year. Reuse any supplies if possible. Copy paper, posterboards, binders, etc. with the inflation of 2.24% per year. **3 Year**: training will be done at new hire orientation so cost will be absorbed there.
Equipment	$ 420.00	$ 428.40	$ 200.00	Internet services, use of copier and printer for creation of handouts, flyers, communication, and training of the FMP Tool in PCC (in kind)
Space	$ 640.00	$ 672.00	$ 739.20	Computers for use of production of handouts, flyers, etc. and for training of the FMP Tool on the PCC (in kind)

IT	$ 300.00	$ 215.00	$ -	After initial build of tool into the PCC system, may require updating as needed. 5% wage increase/year
Travel	$ -	$ -	$ -	
Marketing/Advertising	$ 18.00	$ 39.67	$ -	**Year 1 to 2** there would be the initial advertising and marketing for implementation into each of the 3 hallways. None would be in the 3rd year
Fees	$ -	$ -	$ -	
Incentives	$ 240.00	$ 296.96	$ -	**Year 1 and 2** would be the same incentives d/t the same amount of individuals doing the training. With a 2.24% increase

The national inflation rates were taken from Statista (2020), Projected Annual Inflation Rate in the United States 2010-2021, Statista web site: https://www.statista.com/statistics/244983/projected-inflation-rate-in-the-united-states/
Considering the annual inflation rate in the United States in recent years, a 2.24 percent inflation rate is a very moderate projection. Due to the global uncertainty caused by the coronavirus pandemic in early 2020, the source only made projections until 2021.

Appendix W

Scholarly Project Statement of Operations

Operating Income		**$ -**
	Revenue Total	**$ 12,494.00**
Source	**Description**	**Amount**
Project Leader	Hourly wages estimated @ 170 hrs x $40	$ 6,800.00
Project Leader	Incentives: Walmart gift cards, candy, cookies, etc.	$ 140.00
Project Leader	For Marketing & Advertising supplies-banner, posters	$ 18.00
Swig and/or other company	Incentives: 10 ($5) gift cards	$ 50.00
Donation from Young Living	Incentives: Lip balm, lotions	$ 50.00
Organization	Space, equipment, materials & supplies, personnel	$ 5,436.00
	Expenses Total	**$ 12,494.00**
Expenses	**Description**	**Amount**
Personnel	Pilot on 3/6 hallways (North) 18 RNs, 5 LPNs & 32 CNAs. Also included wages of the 6 FMT, therapists and assistants, and Staff Development Coordinator and Project Leader	$ 10,791.00
Material & Supplies	This also included percentage of wages of the 6 FMT, therapists and assistants, and Staff Development Coordinator and Project Leader	$ 85.00

Equipment	Computer and printer for creating and producing training materials, communication needs, and use in training of FMP tool in PCC	$ 420.00
Space	Room for training/meetings for residents, staff, and FMT	$ 640.00
IT	Set up new FMP tool in PCC (6 hrs X $50/hr)	$ 300.00
Travel	None	$ -
Marketing/Advertising	Introduction of FMP, start day of the FMP & tracking of falls	$ 18.00
Fees	None	$ -
Incentives	10 ($5) Walmart gift cards, 10 ($5) Swig gift cards, candy, cookies, lip balm, lotion, etc.	$ 240.00

Appendix X

Consent for Use of Fall T.I.P.S. Poster for Long Term Care Facilities

Katrina Little <katrinalittle@u.boisestate.edu> Wed, Jun 16, 1:59 PM)
to Patricia

Dr. Dykes,
Thank you so much! This is wonderful for this facility.

On Wed, Jun 16, 2021 at 8:09 AM Dykes, Patricia C. <PDYKES@bwh.harvard.edu> wrote:
Here you go—ok to add your institution's logo but no other changes.
Best

Patricia C. Dykes, PhD, RN, FAAN, FACMI
Program Director Research
Center for Patient Safety, Research, and Practice
Brigham and Women's Hospital
Associate Professor of Medicine
Harvard Medical School

Chair/President, American Medical Informatics Association Board of Directors

Office: 617-525-6654 | Mobile: 617-850-5748
pdykes@bwh.harvard.edu
brighamandwomens.org

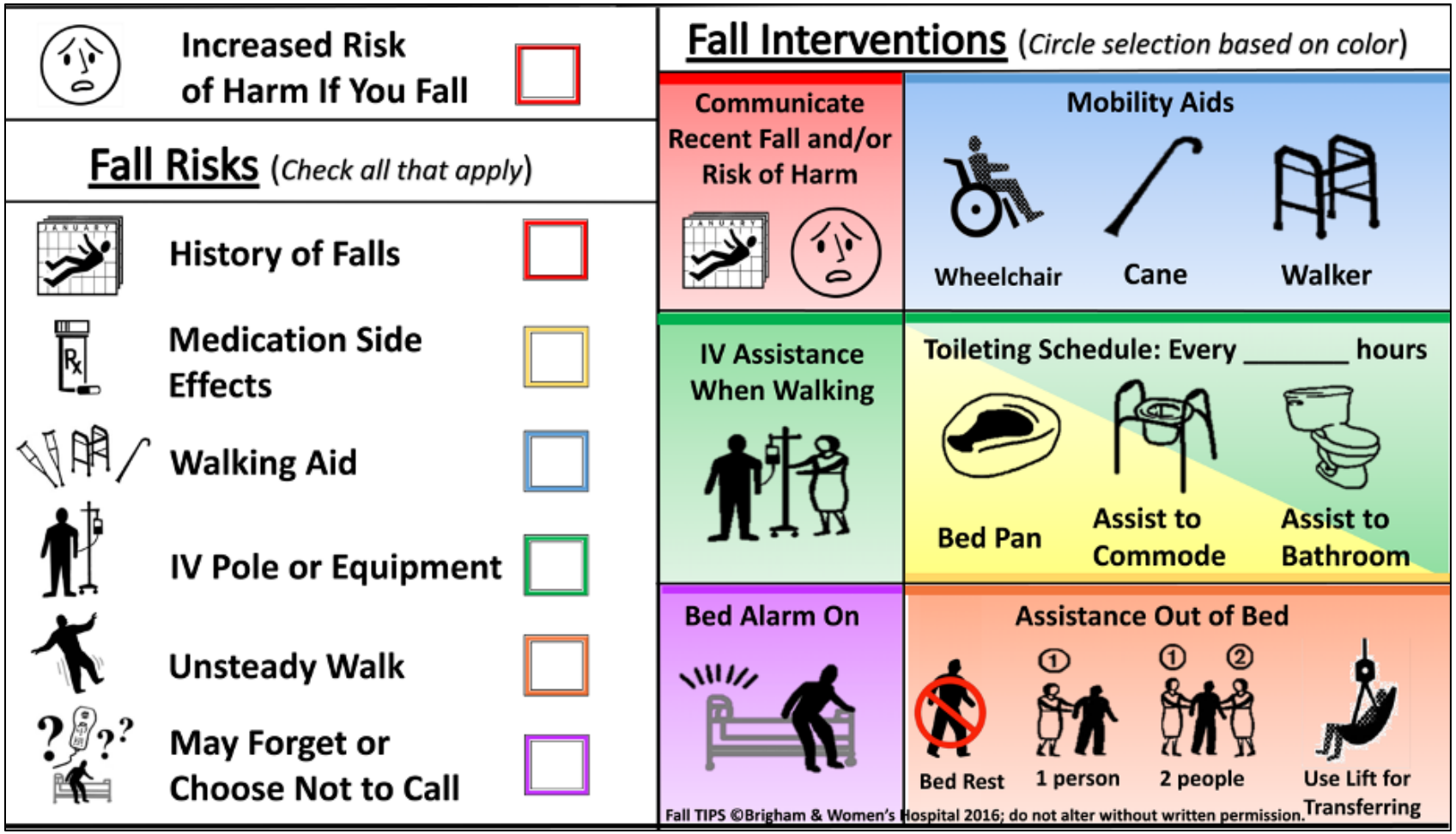
From: Katrina Little <katrinalittle@u.boisestate.edu>
Sent: Sunday, June 13, 2021 12:36 AM
To: Dykes, Patricia C. <PDYKES@BWH.HARVARD.EDU>
Subject: Re: Fall TIPS Poster

Hello Dr. Dykes,
In reading through the article that you sent me, I was able to find the Fall TIPS poster that was adjusted for LTC facilities (see below).
I am wondering if I am able to use this poster. However, I was not able to find it on any website. Is it available on a website? This would be perfect for what I am needing for the facility in which I am planning on implementing the fall prevention project at.
Once again,
Thank you for your time and consideration.

Katrina Little, MSN, RN
DNP Candidate - College of Health Sciences BSU
Advisor: Cara Gallegos, PhD, RN
katrinalittle@u.boisestate.edu

Appendix Y

Fall T.I.P.S. Poster for Long-Term Care



Appendix Z

Star Used for the Falling Star Program

Appendix AA

Fall Risk Evaluation Training Module

Instructions Fall Risk Evaluation Training Module

Please complete the following Fall Risk Evaluation on the Scenario to determine the level of risk for this resident.
While preserving your anonymity I would like to link your other test responses with these answers. In the space below, please write your “linking” number. For your "linking" number, please pick a 4-digit number you will remember and type it in the line below. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 1234 or 2021). You will also use this same number on other surveys that you complete.

_____

MENTAL STATUS According to the scenario, what would you document?

- ○ 0 ALERT / ORIENTED X 3 (time, place, person) or COMATOSE
- ○ 1 DISORIENTED X 1
- ○ 2 DISORIENTED X 2
- ○ 4 DISORIENTED X3

HISTORY OF FALLING According to the scenario, what would you document?

- ○ 0 NO FALLS in the past 3 months
- ○ 2 1-2 FALLS in past 3 months
- ○ 4 3 or MORE FALLS in the past 3 months

ELIMINATION STATUS According to the scenario, what would you document?

- ○ 0 REGULARLY CONTINENT
- ○ 2 REQUIRES REGULAR ASSIST WITH ELIMINATION
- ○ 4 REGULARLY INCONTINENT

VISION STATUS According to the scenario, what would you document?

- ○ 0 ADEQUATE (with or without glasses)
- ○ 2 POOR (with or without glasses)
- ○ 4 LEGALLY BLIND

GAIT/BALANCE/AMBULATION According to the scenario, what would you document?

- ☐ 0 GAIT / BALANCE NORMAL
- ☐ (1 point will be added for each box checked)
- ☐ 1 BALANCE PROBLEM WHILE STANDING
- ☐ 1 DECREASED MUSCULAR COORDINATION /JERKING MOVEMENTS
- ☐ 1 CHANGE IN GAIT PATTERN WHEN WALKING (i.e., shuffling)
- ☐ 1 REQUIRES USE OF ASSISTIVE DEVICES (i.e., cane, walker, wheelchair)

SYSTOLIC BP According to the scenario, what would you document?

- ○ 0 NO NOTED DROP between lying and standing
- ○ 2 Drop LESS THAN 20 mm Hg between lying and standing
- ○ 4 Drop MORE THAN 20 mm Hg between lying and standing

MEDICATIONS Respond below based on the following types of medications: Anesthetics, Antihistamines, Antihypertensive, Antiseizure, Benzodiazepines, Cathartics, Diuretics, Hypoglycemic, Narcotic, Psychoactive Meds, Sedatives / Hypnotics

- ○ 0 NONE of these medications taken currently and/or within last 7 days
- ○ 2 TAKES 1-2 of these medications currently and/or within last 7 days
- ○ 4 TAKES 3-4 of these medications currently and/or within last 7 days

---

PREDISPOSING DISEASE Respond below based on the following predisposing conditions: Hypotension, Vertigo, CVA, Parkinson's Disease, Loss of Limbs), Seizures, Arthritis, Osteoporosis, Fractures, Multiple Sclerosis, Wandering

- ○ 0 NONE present
- ○ 2 1-2 PRESENT
- ○ 4 3 or more PRESENT

TOTAL SCORE Tally the resident's score and record.

- ○ 0-5 Low Risk
- ○ 6-10 Medium Risk
- ○ 11 or greater High Risk

HISTORY OF FALLING According to the scenario, what would you choose for a tailored intervention?

- ○ Bed in lowest position
- ○ Provide activities that promote exercise and strength building where possible
- ○ Review information on past falls and attempt to determine cause of falls. Record possible root causes. Alter remove any potential causes if possible. Educate resident/family/caregivers/IDT as to causes.
- ○ Other

VISION STATUS According to the scenario, what would you choose for a tailored intervention?

- ○ Remind resident to wear glasses when up
- ○ Arrange items in room in order to promote independence
- ○ Maintain a clear pathway, free of obstacles
- ○ Keep needed items, water, etc. in reach
- ○ Other

GAIT/BALANCE/AMBULATION According to the scenario, what would you choose for a tailored intervention?

- ○ PT/OT as ordered for strengthening, gait and balance deficits
- ○ Provide nonskid footwear
- ○ Needs to be evaluated for, and supplied with appropriate adaptive equipment or devices
- ○ Wipe up spills immediately
- ○ Other

SYSTOLIC BP According to the scenario, what would you choose for a tailored intervention?

- ○ Instruct resident to change positions slowly especially from lying to sitting position
- ○ Have resident dangle at the edge of bed
- ○ Other

Appendix BB

IRB Modification Approval #1

BOISE STATE UNIVERSITY
RESEARCH AND ECONOMIC DEVELOPMENT
Research Compliance

Date: June 02, 2021

To: Cara Gallegos cc: Katrina Little

From: Social & Behavioral Insitutional Review Board (SB-IRB)
c/o Office of Research Compliance (ORC)

Subject: SB-IRB Notification of Approval - Modification - 186-SB21-076
Developing a Standardized Process for an Effective, Evidence-based Fall Management Program to Reduce Falls in a Nursing Home Setting

The Boise State University IRB has approved your proposed modifications to your protocol application. Your protocol is still in compliance with this institution's Federal Wide Assurance (#0000097) and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Protocol Number: 186-SB21-076 Received: 5/18/2021 Review: Expedited
Expires: 4/25/2022 Approved: 6/2/2021

This approval does not extend or change your protocol's current expiration date noted above.

You must notify the SB-IRB of any additional changes to your approved protocol using the Biosafety Protocol Update form. The SB-IRB must review and approve the modifications before they can begin.

All forms are available on the ORC website at http://goo.gl/D2FYTV

Please direct any questions or concerns to ORC at 426-5401 or humansubjects@boisestate.edu.

Thank you and good luck with your research.

Appendix CC

IRB Modification Approval #2

BOISE STATE UNIVERSITY
RESEARCH AND ECONOMIC DEVELOPMENT
Research Compliance

Date: September 13, 2021

To: Cara Gallegos cc: Katrina Little

From: Social & Behavioral Insitutional Review Board (SB-IRB)
c/o Office of Research Compliance (ORC)

Subject: SB-IRB Notification of Approval - Modification - 186-SB21-076
Developing a Standardized Process for an Effective, Evidence-based Fall Management Program to Reduce Falls in a Nursing Home Setting

The Boise State University IRB has approved your proposed modifications to your protocol application. Your protocol is still in compliance with this institution's Federal Wide Assurance (#0000097) and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Protocol Number: 186-SB21-076 Received: 8/30/2021 Review: Expedited
Expires: 4/25/2022 Approved: 9/13/2021

This approval does not extend or change your protocol's current expiration date noted above.

You must notify the SB-IRB of any additional changes to your approved protocol using the Biosafety Protocol Update form. The SB-IRB must review and approve the modifications before they can begin.

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Please direct any questions or concerns to ORC at 426-5401 or humansubjects@boisestate.edu.

Thank you and good luck with your research.

Appendix DD

Modified Satisfaction Survey of the Fall Management Program

The purpose of this survey is to:
1. Collect feedback on your satisfaction with the Fall Management Program that was implemented in June 2021 (Falling Star Program, High Risk for Falls alerts added to the "Brain" sheet, and the Fall T.I.P.S. posters added to each resident's closet door)
2. Collect feedback on your confidence in fall prevention

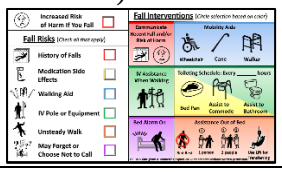
It should only take 3 to 4 minutes. Your feedback will be used to help identify fall prevention processes that are working well or that may need improvements.

This survey is confidential. However, I would like to link this survey with any other surveys you may have completed. For your "linking" number, please use your previous 4-digit "linking" number or if you haven't taken a survey before or if you have forgotten your "linking" number, please pick any 4-digit number and type it in the line below. The numbers can be the last 4 of your cell phone or any numbers you will remember (not 1234 or 2021).

Linking number: _____.

Please read each item, then circle the number that best represents how much you agree or disagree with the statement. Please be open and honest with your responses.

Statement	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	Does Not Apply or Don't Know
Staff Related Process						
12. I receive a report about my residents' fall risk.	5	4	3	2	1	NA
13. I give a verbal report to the next shift about my residents' fall risk.	5	4	3	2	1	NA
14. I receive a verbal report on at least one intervention from the care plan that I should do to help reduce my residents' risk for falls.	5	4	3	2	1	NA
15. I give a verbal report to the next shift on at least one intervention from the	5	4	3	2	1	NA

care plan that should be done to help reduce residents' risk for falls.						
16. I look in the electronic health record (EHR) and/or on the "Brain: sheet to see what I should do to prevent a resident from falling.	5	4	3	2	1	NA
17. I use the "Falling Star" on the outside of the doorframe to know if the resident is at risk for falls. 	5	4	3	2	1	NA
18. I have used the Falls T.I.P.S. (Tailoring Interventions for Patient Safety) poster on the resident's closet door to help me know what interventions I should do for the resident to help prevent falls (i.e., transfer assistance, ambulation devices needed, assist to bathroom) 	5	4	3	2	1	NA
19. We all work together as a team to help prevent residents from falling.	5	4	3	2	1	NA
20. I feel the monthly training session on Fall Prevention that was presented in June helped me become more aware of the importance of reducing resident falls in this facility.	5	4	3	2	1	NA
21. I am aware of my responsibilities in helping to reduce falls in this facility.	5	4	3	2	1	NA
22. I would like this facility to continue using the "Falling Star Program".						

23. I would like this facility to continue using the "Falls T.I.P.S. poster" in the resident's room.						
24. I would like this facility to continue using the "High Risk (HR) for falls" alert on the "Brain" sheet.						
25. Is there anything else you would like to share about what you do to prevent residents from falling? (free text)						

Overall, how confident are you with your current ability, either in a direct care capacity or teaching others or in a leadership/management position, to prevent patients from falling? Please use a 10-point scale (0=not at all <--> 10=very much so) _____.

Compared to your peers in positions similar to yours, how do you rate your ability to prevent patients from falling? Above Average Average Below Average

Background Information: If you do not wish to answer a question, you may leave your answer blank.

1. What is your job in this nursing home? Check **ONE** box that best applies to your job. If more than one category applies, check the highest-level job.

☐ 1 **Administrator/Manager**
Director/Administrator
Director of Nursing
Assistant Director of Nursing
Nursing Supervisor
Unit Manager/Charge Nurse
Minimum Data Set (MDS) Coordinator

☐ 2 **Licensed Nurse**
Registered Nurse (RN)
Licensed Practical Nurse (LPN)

☐ 3 **Nursing Assistant/Aide**
Certified Nursing Assistant (CNA)

☐ 4 **Direct Care Staff**
Activities Staff Member
Dietitian/Nutritionist
Physical/Occupational/Speech/

☐ 5 **Administrative Support Staff**
Administrative Assistant
Admissions
Billing/Insurance
Secretary
Human Resources
Medical Records

☐ 6 **Other** (Please write the title of your job):
_____

2. How long have you worked in this nursing home?

☐ 1 Less than 2 months	☐ 4 3 to 5 years
☐ 2 2 to 11 months	☐ 5 6 to 10 years
☐ 3 1 to 2 years	☐ 6 11 years or more

3. How many hours per week do you usually work <u>in this nursing home</u>?
   - ☐ 1 15 or fewer hours per week
   - ☐ 2 16 to 24 hours per week
   - ☐ 3 25 to 40 hours per week
   - ☐ 4 More than 40 hours per week

4. When do you work most often? Check ONE answer.
   - ☐ 1 Days
   - ☐ 2 Evenings
   - ☐ 3 Nights
   - ☐ 4 All shifts

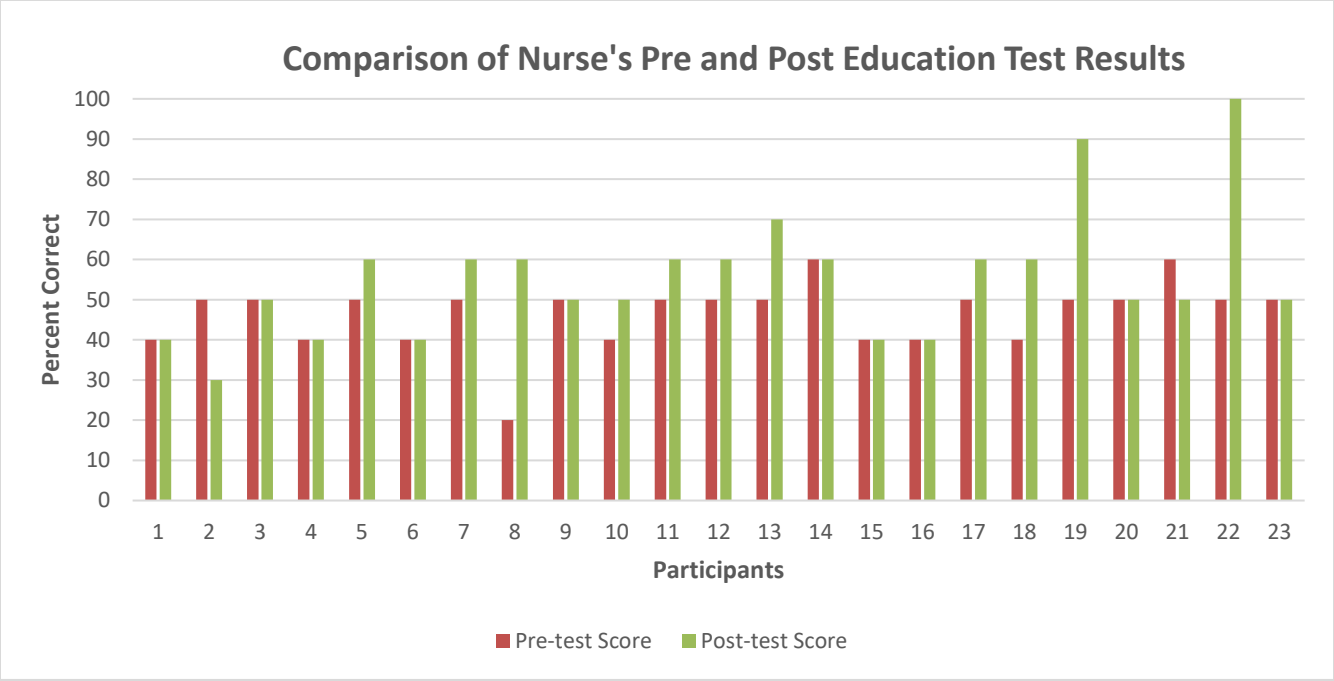
5. In this nursing home, where do you spend most of your time working? Check **ONE** answer.
   - ☐ 1 Many different areas or units in this nursing home / No specific area or unit
   - ☐ 2 North halls
   - ☐ 3 South halls
   - ☐ 4 Rehab unit only
   - ☐ 5 Other area or unit (Please specify): _____

6. What is the highest grade or level of education that you have completed?
   - ☐ 1 Some high school, but did not graduate
   - ☐ 2 High school graduate or GED
   - ☐ 3 Some college or 2-year degree (AS/ASN)
   - ☐ 4 4-year college graduate (BS/BSN), or
   - ☐ 5 More than 4-year college degree (MS/MSN, PhD/DNP, etc.)

THANK YOU FOR COMPLETING THIS SURVEY.

Appendix EE

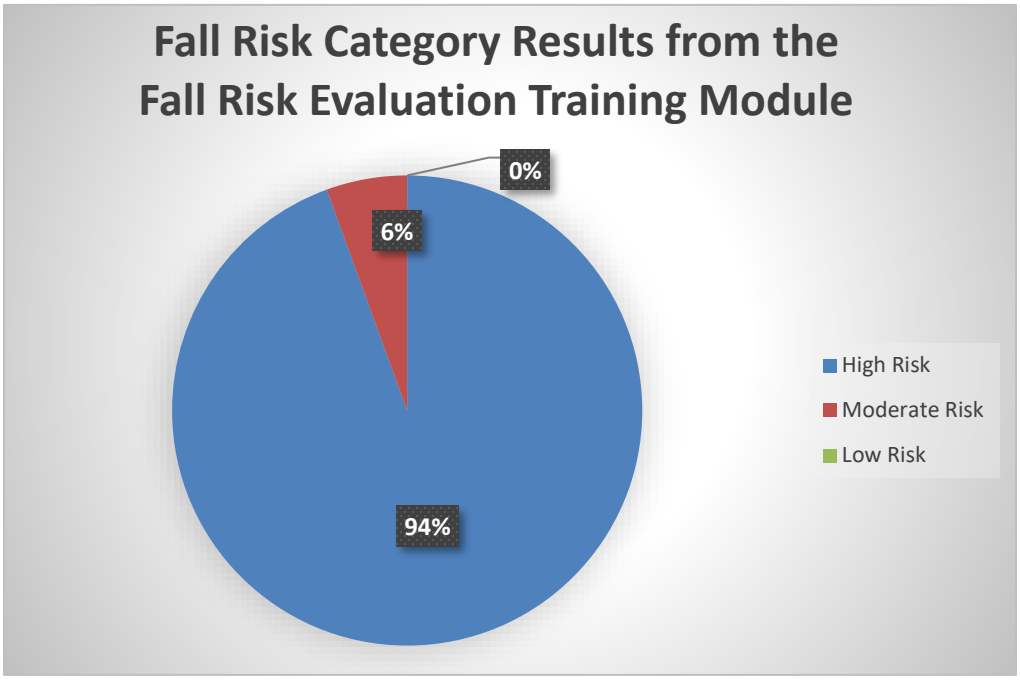
Pre- and Post-Fall Prevention Educational Evaluation Test Results



Appendix FF

The Fall Risk Evaluation Training Module Outcome Report

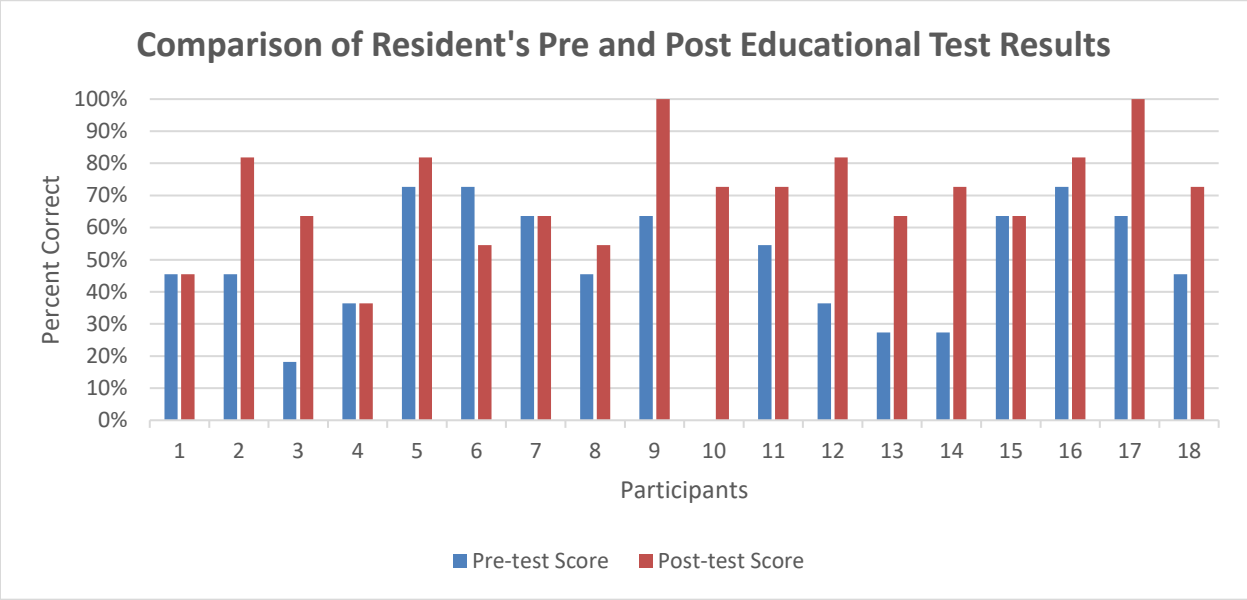
Fall Risk Evaluation	Low Fall Risk Status	Medium Fall Risk Status	High Fall Risk Status
	Score 0-5	Score 6-10	Score 11 or greater
Number of nurses who choose this answer	*N*=0	*N*=1	*N*=17



Area of Risk from "Fall Risk Evaluation"	Intervention	Intervention	Intervention	Intervention	Intervention
History of Falling	Bed in lowest position ***N***=2	Provide activities that promote exercise and strength building where possible ***N***=6	Review information on past falls and attempt to determine cause of falls. Record possible root causes. Alter remove any potential causes if possible. Educate resident/family/caregivers/IDT as to causes. ***N***=10 (56%)	Other: Specify ***N***=0	
Vision Status	Remind resident to wear glasses when up ***N***=0 (0%)	Arrange items in room in order to promote independence ***N***=0	Maintain a clear pathway, free of obstacles ***N***=10	Keep needed items, water, etc. in reach ***N***=4	Other: Specify ***N***=1
Gait/Balance/ Ambulation	PT/OT as ordered for strengthening, gait and balance deficits ***N***=13 (72%)	Provide nonskid footwear ***N***=2	Needs to be evaluated for, and supplied with appropriate adaptive equipment or devices ***N***=2	Wipe up spills immediately ***N***=0	
Systolic BP	Instruct resident to change positions slowly especially from lying to sitting position ***N***=15 (83%)	Have resident dangle at the edge of bed ***N***=3	Other: Specify		

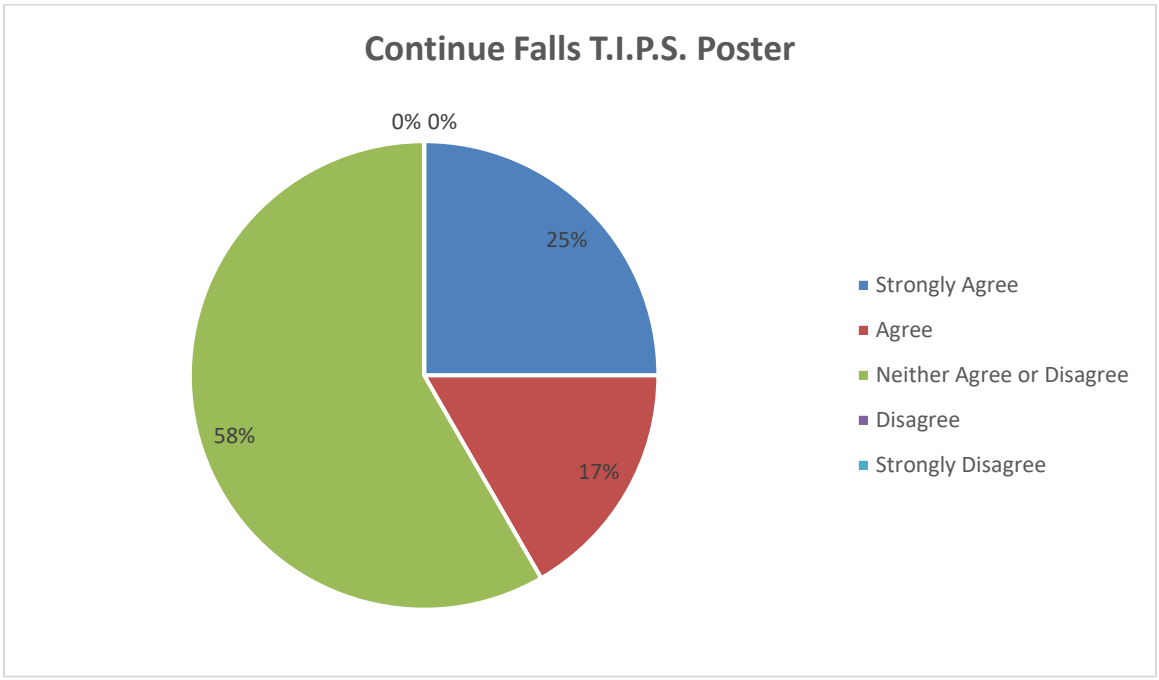
Appendix GG

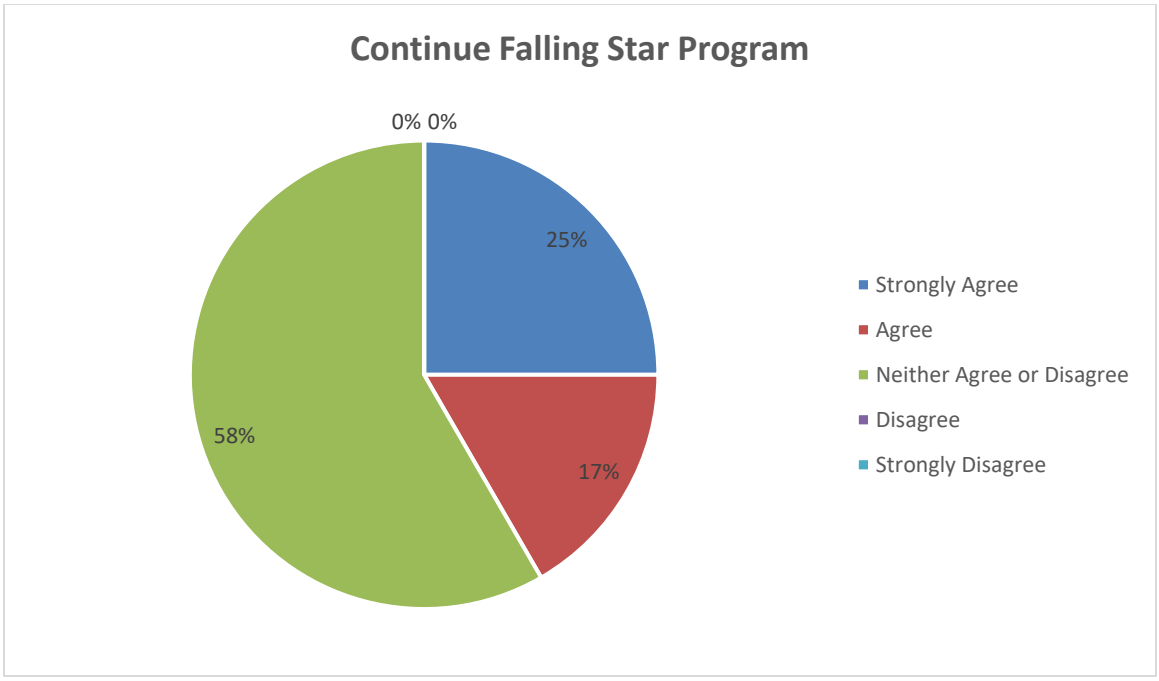
Pre- and Post-Activities to Decrease Fall Risk Education Evaluation Test Results

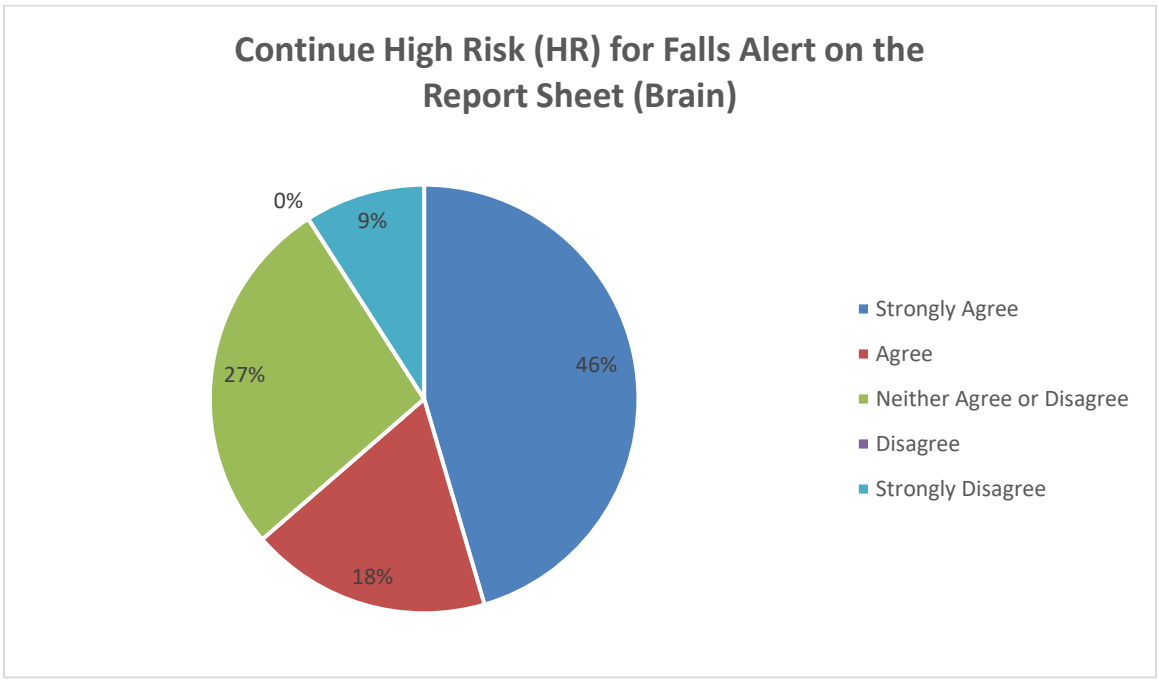


Appendix HH

Satisfaction Survey Results






Continue High Risk (HR) for Falls Alert on the Report Sheet (Brain)
0%
9%
46%
27%
18%
Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

Appendix II

Actual Expense Report

					Grand Total	$9,653.47
Expense Category	**Expense Description**	**Explanation of Expense**	**Type of Cost (variable/fixed)**	**Volume**	**Cost per Unit**	**Total**
Education and Training for Fall Management Team (FMT) & meetings during implementing of FMP						
Personnel	CNA wages	1 CNA for1 hr of training on Fall Management Program (FMP) and 1 hr first FMT Meeting	variable	2 hr X 1 CNA	$13/hr	$ 26.00
Personnel	Licensed Nursing Staff wages	1 Falls Nurse Coordinator (South Unit Manager) and 1 Assistant Fall Nurse Coordinator (North Unit Manger) for 2 hrs of training on Fall Management Program (FMP) and 1 hr monthly meeting during project for review of falls.	variable	5 hrs X 2 RNs=10 hrs	$27/hr	$ 270.00

Personnel	ADON wages	1 ADON for 3 hrs of training on Fall Management Program (FMP) and 1 hr (1 meeting) FMT original meeting	variable	4 hrs X 1 RN	$29/hr	$ 116.00
Personnel	Project Leader wages (in kind)	Creating training materials, planning & preparation of training session and presenting Fall Management Program Bundle to the FMT	variable	50 hrs	$40/hr	$ 2,000.00
Space	Facility for meeting (in kind)	Room for trainings/meetings	fixed	4 times (3.5 hours)	$25/hr	$ 87.50
Equipment	Printer/Ink (in kind)	To produce training materials	varied		$100	$ 100.00
Equipment	TV for training (in kind)	For training videos	fixed	1 meeting day	$20/day	$ 20.00
Training of Administration Staff, and Nursing Staff (CNAs and licensed nurses), on fall prevention, FMPB and review the Fall Risk Evaluation tool.						
Personnel	Administration	Description of project and proposed FMP Bundle	variable	2 hr X 2 (ADON) 2 hr X 1 (DON)	$29/hr $40/hr	$ 196.00

Personnel	CNA wages	10 min of training video on Crew App on FMP (Fall TIPS, brain sheet, & Falling Star Program)	variable	0.167 hr X 32 CNAs	$13/hr	$ 69.47
Personnel	Licensed Nursing Staff wages	1 hr of training on FMP, Fall Risk Evaluation Training Module & Fall Prevention education/activities	variable	1.0 hr X 18 RNs 1.0 hr X 5 LPNs	$27/hr $22/hr	$ 596.00
Personnel	Non-nursing team wages (speech therapist & Activity Director)	0.5 hr of training & discussion on FMP & 1 hr of assisting with fall prevention education/activities for residents	variable	1.5 hr Speech Therapists 1.5 hr X Activities Director	$45/hr $25/hr	$ 105.00
Personnel	Project Leader wages (in kind)	Creating FMP Fall TIPS posters, Falling Stars, pre- & post-evaluations, gathering data and compile results of evaluations	Variable	50 hrs	$40/hr	$2,000.00
Space	Facility for meeting (in kind)	Room for trainings	fixed	7 training sessions	$25/hr	$ 175.00

Incentives	Candy, prizes (some in kind)	Incentives for finishing training sessions	fixed	7 ($5) Swig cards 8 bags of candy	$5 Swig cards $10 candy	$ 115.00
Training of Residents						
Personnel	Project Leader wages (in kind)	Creating PPT of activities to decrease falls, pre- & post-evaluations, gathering data and compile results of evaluations	variable	40 hr	$40/hr	$1,600.00
Equipment	Copier machine/Ink (in kind)	For creating training materials	fixed	4 hrs		$ 100.00
Equipment	TV, projector, and screen for training (in kind)	For training videos	fixed	8 days	$25/day	$ 100.00
Space	Facility for meeting (in kind)	Room for trainings	fixed	2 sessions	$25/hr	$ 50.00
Material & Supplies	Paper (in kind)	Handouts & Evaluations for 20 residents, markers, bingo cards, game etc.	fixed	1/2 ream of paper	$15/ream	$ 7.50
Incentives	Chips, arts & crafts, decorations	Incentives for finishing training sessions and	fixed	Miscellaneous items 2 bags of candy	$20 $10/bag	$ 40.00

	other food items (in kind from project leader)	completing educational form				
Implementation of Program						
Personnel	Project Leader wages (in kind)	Creating flyers, post-evaluations, attending staff meetings to inform administrators and staff of SP plan, making videos, Fall TIPS posters, Falling Stars, etc.	variable	45hrs	$40/hr	$ 1,800.00
Marketing/Advertising	Posters, banner, flyers	Introduction of FMP, start day of the FMP & tracking of falls	fixed	3 (1 each unit & entrance)	$1.00/poster	$ 3.00
Material & Supplies	Paper (in kind) Laminating supplies, tape, tacky	Colored Fall TIPS posters,	fixed	100 color copies (2 different Falls T.I.P.S. posters), 100 Laminating pouches	$22.00 Laminating sheets, colored copies $0.55 per copy	$ 77.00