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Implementation of a Standardized Multifactorial Fall Prevention Program in a Rehabilitation Facility

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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MSN, FNP Walden University, 2015

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Project Submitted in Partial Fulfillment

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Abstract

One and a half million people are currently living in residential care facilities; as the baby boomer generation ages, this number will increase to 3 million. Approximately 3 out of 4 residents of these facilities fall each year, and 10% to 20% of those falls result in serious injuries such as fractures, disability, and a decreased quality of living. The *BOUNCE Back* fall initiative is a multifactorial program that uses a systematic approach starting on admission and to re-evaluate a resident following a fall. Nursing and therapy uses the Morse Fall Scale and the Elderly Mobility Scale to assess and categorize the resident's risk for falls. Guided by Lewin's theory of change, this project was designed to assess the effectiveness of the fall initiative as a quality improvement 60-day (August 2016-September 2016) pilot study in a skilled nursing and rehabilitation facility as a potential means to reduce the number of resident falls. Sixty residents (aged 64 to 98, mean age 81) were assessed at a minimum 2 time points to determine their level of fall risk and needed intervention, within 60 minutes of admission to the facility and 7 days postadmission. De-identified pre- and post-implementation data were provided from the corporate quality measure database, entered into a spreadsheet, and numbers were compared. As a result of the fall prevention pilot, for August 2016, 5 falls occurred with no repeat fallers; September 2016, 3 falls with 1 repeat faller which is a significant decrease from 14-22 falls occurring per month for 2 consecutive years. Following implementation, the facility scored 3%-5% for the number of falls, which is below the 7% threshold set forth by the pilot facility's corporate office. Prior to the implementation of the initiative, the facility had not met the 7% fall threshold in 2 years.

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Dedication

God has undoubtedly granted me an astounding level of faith, strength and perseverance to sustain through this DNP journey, and enabled me to create and implement a fall prevention program to improve the quality of life of elderly individuals in residential care facilities. When the load seemed unbearable, unachievable and the road seemed lonely, God I thank you for being an ever-present help and presence in my life. For I know without you this achievement would not have been possible! To my little rays of sunshine, my motivation, my daughters, Jonnae' and Janiyah, thank you for your continuous motivation to be an example for you and young aspiring children everywhere, in showing you that there are no boundaries in what you cannot achieve in life. In memory of my father, the late Mr. Michael Johnson, one of my biggest supporters whom I lost during the course of this program in November 2015. This is an achievement that you anticipated, prayed and sacrificed for. I can clearly see the smile on your face as you heavenly witness and celebrate this lifetime accomplishment; your presence will never be forgotten. Thank you for believing and investing in my future and pushing me to exceed all expectations, no matter the struggles that were set before me. I love you and miss you dearly! To my mother for always being a second caretaker for the girls and giving of yourself unselfishly through the years to our family and being an example and the true meaning of perseverance in every way.

Acknowledgments

Sincere thanks to my DNP Chair, Dr. Diane Whitehead for always being willing to devote your time, expertise and sharing an astounding amount of knowledge to steer me through this DNP journey. You never hesitated to make yourself available to assist with making this process as smooth as possible and always willing to give an undedicated amount of encouragement and devotion throughout this process timely. I would like to also thank Ms. Joan Trottier, Director of Corporate Quality Performance and Improvement for her dedication and devotion from the start. You were someone who shared my dedication from the very beginning to decreasing the falls and improving the quality of care for our residents through evidence-based practice and research. Thank you for allowing me to be autonomous in the efforts of creating the BOUNCE Back fall initiative that I could call my own, while ensuring that I remain within corporate, state and federal guidelines. You made me a part of the corporate team and encouraged me to take part in the awarding experience of serving on a corporate committee. To Dr. Barbara Gross, my committee member and University Research Reviewer, Dr. Edna Hull, thanks for your promptness, guidance and sharing your unparalleled knowledge through the completion of my DNP capstone. To the lasting support and friendships gained at the DNP intensive retreat, specifically the "3T-The Talented Twelve", thank you for your continuous support and encouragement. To my colleagues and close friends, thank you for your encouragement and willingness in making this a successful process.

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Section 1: Nature of the Project

Introduction

According to the World Health Organization (as cited in Brito, Coqueiro, Fernandes, & Jesus, 2014), falls are one of the most important and common problems reported among the elderly; incidence increases progressively with age in both female and males. Falls are dreaded by most elderly, family members and institutions, both because of the physical consequences (fractures, restricted activity, decline in health, and decreased physical activity), and their psychosocial consequences, such as, social isolation, depression, and risk of institutionalization (Brito et al., 2014). One out of five falls causes a serious injury such as a fracture or a significant head injury (Centers for Medicare & Medicaid Services [CMS], 2015). Over 700,000 patients are hospitalized due to a fall with injury and because of this the healthcare costs for fall related injuries has reached as high as 34 billion dollars in each year (CMS, 2015). Patients 65 years and older who have sustained a fall whether with or without injury, may experience increased levels of fear, anxiety, and weakness. Following a fall, patients may also experience a decrease in the ability to complete their activities of daily living, restrict their mobility, and decrease their participation in social activities. With a decrease in participation in these activities, the patient may experience deconditioning, social isolation, and reduced pleasure or enjoyment of life (Jung, Shin, & Kim, 2014).

Problem Statement

Falls are a major factor in the elderly population with detrimental factors affecting the patient's health and overall wellbeing. A sequel of falls has been noted to be the

second leading cause of death in the United States (Cangany, Back, Hamilton-Kelly, Altman, & Lacey,2015). Costs resulting from falls alone have been reported as between 0.85% and 1.5% of the total health care expenses within the United States, Australia, the European Union, and the United Kingdom (Booth, Logan, Harwood, & Hood, 2015). The direct medical cost related to falls is $30 billion and by the year 2020, the annual direct cost related to falls is expected to be near $54.9 billion (Bechdel, Bowman, & Haley, 2014). To improve the safety and quality of life for all patients, standardized fall prevention programs are very important in the skill and/rehab and residential care settings.

Nursing home residents have a higher risk of falling. The average fall incidence is estimated to be 1.6 falls per bed per year, with almost half of the residents falling more than once a year (Vlaeyen et al., 2015). Preventing falls will reduce the medical costs patients incur following serious injuries such as fractures or head injuries that are sustained following a fall. Falls in skilled or residential care facilities often lead to serious injuries. Within skilled and residential care facilities an estimated hip fracture incidence rate of 4% annually and within 1 year after a fall-related hip fracture, 12% of residents incur a new fracture, and 31% die as a result (Valaeyen et al., 2015). Falls not only increase the risk for injury and medical cost, but will increase physical burden, psychological consequences such as fear of falling and poor quality of life (Valaeyen et al., 2015). It is important for researchers to see that as the percentage of older adults in the population increases, issues regarding falls and related healthcare cost will become more prevalent and consistently rise (Booth et al., 2015).

Purpose Statement

The purpose of this DNP quality improvement project was to assess the effectiveness of implementing the BOUNCE Back fall initiative within a skilled nursing and rehabilitation facility by reducing the number of resident falls. The program was implemented for 60 days to assess the relationship between the use of a standardized, multifactorial fall prevention program on the reduction of resident falls within a skilled nursing and rehabilitation facility. The facility provided the DNP student access to de-identified fall data for a 1 year period prior to implementation and 60 days postimplementation of the quality improvement project. The project outcomes were to:

1. Decrease the number of falls within the skilled nursing and rehabilitation facility after implementation of the BOUNCE Back fall management initiative with multifactor interventions.
2. Enhance nursing staff knowledge and skills in managing falls, fall prevention and fall risk assessment.

Nature of the Doctoral Project

To effectively implement a quality improvement project within the facility to address the number of resident falls, I reviewed fall data from July 2014 until the date of implementation of the BOUNCE Back fall program from the corporate quality measure system. I then conducted education with nurses and staff members regarding fall management and fall risk assessments.

Staff education sessions were scheduled and conducted one week prior to implementation of the BOUNCE Back fall program, which was scheduled on August 1,

2016. To ensure that all staff members understand the role that they play in fall prevention and also the importance of team collaboration, it was mandatory for staff members to attend the BOUNCE Back training program. Attendance was mandatory for each department including maintenance, dietary, housekeeping, physical, occupational, and speech therapy, and nursing as all departments are responsible for fall prevention within the facility. All staff members that attended the educational training sessions were required to take a pre and posttest to assess their individual knowledge prior to the educational training and to assess the effectiveness of the educational program.

Following staff education, on August 1, 2016, the quality improvement pilot was initiated. All new patient admissions as of August 1, 2016 were assessed within 30 minutes of admission using the Morse Fall Scale (MFS) and Elderly Mobility Scale (EMS) to determine their individual level of fall risk potential. Once their level of fall risk had been determined, the staff initiated the fall protocol based on the BOUNCE Back fall management initiative protocol. All current residents who were admitted prior to August 1, 2016 were assessed and placed on the BOUNCE Back protocol within the first week of implementation.

The DNP student coordinated the patient safety team (PST) which consisted of individuals from each department within the facility. This team collaborated to ensure that the patient's fall care plan was individualized to meet their current needs. The PST met weekly to review new admissions, residents that sustained a fall during that week and residents that the team determined to be at risk for falls. This assessment included a

review of the MFS and the EMS scores, admitting diagnosis, current interventions and risk levels. Based on the patient's assessment, new interventions were recommended.

During the PST meetings, the team discussed the patients to determine if their fall risk care plan met their current needs based on what all departments observed. If not, the patient's care plan was their care plan was updated based the recommendations by the PST. Data were collected for 60 days following staff education and implementation of the fall management program.

When implementing the BOUNCE Back program or any new program, there are many challenges that may arise. Challenges anticipated and considered for this DNP project included:

- improper administration of the MFS and the EMS
- inaccurate assessment of the patient's risk for falls
- ensuring the immediate implementation of fall prevention interventions based on the patient's level of risk by the nurse within 30 minutes of admission

Evaluation of the fall outcomes and the quality improvement program were measured by comparison of the fall data prior to and post implementation of the quality improvement program. Throughout this process, Lewin's theory of change was used to guide the process of the piloted quality improvement program related to fall prevention.

Significance and Relevance to Practice

Many members of the elderly population 65 years and older will sustain a fall or multiple falls within a lifetime. Many of these patients are living in residential or skilled

nursing facilities due to their need for assistance. In residential or skilled nursing facilities, it is estimated to be 1.6 falls per bed per year, with approximately 50% of the residents falling more than once per year (Vlaeyen et al., 2015). When falls occur in a residential or skilled nursing setting, they often lead to serious injuries. The incident rate for a hip fracture for residents in skilled nursing facilities is approximately 4% annually (Vlaeyen et al., 2015). Within 1 year after a fall-related hip fracture, 12% of residents incur a new fracture, and 31% die as a result of the fall (Vlaeyen et al., 2015).

Falls are a significant problem today; however, as the baby boomers age, the number of elderly individuals in the U.S. will increase. It has been documented and shown that the number of individuals 65 and older is estimated to increase from 11 million in 2010 to 18 million in 2030, due to 10,000 Americans turning age 65 every day from 2011 to 2029 (Bragg & Hansen, 2015). In 2008, the Center for Medicare Services and state Medicaid (CMS) offices began ending payment for the treatment of preventable incidents such as fractures, dislocations and intracranial injuries resulting from falls during a patient's stay (CMS, 2015). The CMS also implemented a 1% deduction in Medicare payments for hospitals scoring in the top percentile for the number of harmful conditions occurring to inpatients during hospitalization such as falls.

To date, few studies have been developed to address the needs of individuals 65 years and older and those residing in residential or skill nursing facilities (Fielding, McKay & Hyrkas, 2013). Due to the increasing number of individuals who are 65 years of age and older and those residing in residential or skilled care facilities, it is important

that researchers work to increase the knowledge and research related to the best evidence-based practices to address fall prevention in the above settings.

Summary

Falls represent a substantial threat to the aging population and remains a leading cause of morbidity and mortality for elderly patients. Falls can cause significant injury but can also cause increase anxiety, fear, social isolation, and psychological trauma. At least 30% of persons aged over 65 years and older experience one or more falls each year, and this proportion increases to 40% after the age of 75 (Schwenk et al., 2012). Falls among older adults account for 60% of fall-related injuries and fractures are the most frequent injuries reported (Jung et al., 2014). When a resident sustains a fall, there are complications that could arise from fractures that may lead to death, immobility, weakness, constipation, reduced fitness, social isolation and reduced quality of life (Jung et al., 2014). The estimated cost for a fall was 30 billion dollars in 2010 (Stubbs, Brefka, & Denkinger, 2015).

The reported data in this report indicate the importance for creating fall prevention programs within residential/skilled care facilities in an attempt to reduce falls and increase resident safety. Through this quality improvement program each employee gained increased knowledge related to fall prevention in residential and skilled care facilities.

Section 2: Background and Context

Lewin's Theory of Change

When looking at organizational change, it is normally a planned change that is intended to improve the organizational structure or the level of service provided. It is important that a researcher or change agent identify an appropriate theory or model to provide a framework for implementing, managing and evaluating change (Mitchell, 2013). Conducting a fall prevention quality improvement pilot required a change in behavior and mindset of the floor staff along with all members of the interdisciplinary team. Lewin's theory of change was developed many years ago, and is still viewed as an exceptional framework that acknowledges that change occurs in stages. McGarry, Cashin, and Fowler (2012) credited Lewin with being the intellectual father of contemporary theories of applied behavioral science, action research and planned change, with the belief that learning was the key resolution to change.

Schriner et al. (2010) documented how Lewin's change theory assists with reconstructing change using three stages: (a) unfreezing, (b) change, and (c) refreezing. During the unfreezing stage the equilibrium of the environment needs to be unfrozen before old behaviors can be discarded (unlearnt) and new behavior can successfully be adopted (Schriner et al., 2010). It is important that the team perceives the proposed change as necessary, a collaborative effort and understanding that the key element for finding a resolution, is learning (Mcgarry et al., 2012). This enables individuals through fresh understanding to change their views and facilitate resolution.

During the second stage, entitled change, participants, managers and researchers identify the plan for change, implementation strategies, driving forces which push toward change, and restraining forces which pull away from change (Schriner et al., 2010). By identifying these forces prior to implementing change, the goal is to reduce resistance within the team and organization through education and a team effort. Resistance to change is common and can be the result of psychological, environmental, and societal factors. Lewin believed that change should be implemented gradually, with the goal of addressing all levels of resistance along the way (Schriner et al., 2010). Change is most likely to be achieved when the organization has specific goals, objectives and deadlines (Schriner et al., 2010).

Refreezing is the final stage of Lewin's theory. In this stage, implementation along with the integration of change continues. To make the refreezing stage successful, it is important that the entire team be committed and motivated about the change. To conquer the challenges of change the entire team must be motivated, committed and willing to collaborate to make all stages of the change successful. Figure 1 is an illustration and explanation of Lewin's change theory.

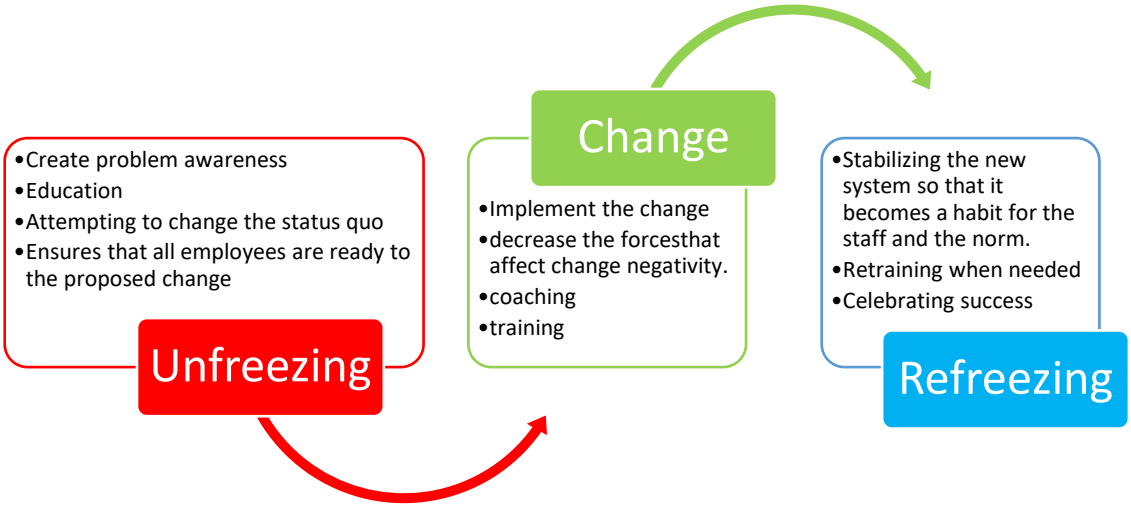

Figure 1. Lewin's theory of change illustration.

Application of Lewin's Theory to the Fall Prevention Program

Unfreezing is the initial stage of Lewin's theory of change. In this stage, the Corporate Director of Quality Improvement, Corporate Falls Committee, and the DNP student met to review the suggested quality improvement pilot, goals, possible barriers, and educational timeline of the quality improvement program. Highlights from the meeting served as the unfreezing stage. These highlights included communication to the staff members educating them on the current fall data, why reducing falls within the facility is important, and implementation of the quality improvement pilot. During this time, nursing and staff members were given an opportunity to discuss concerns regarding the falls prevention program. Facility leaders along with the doctorate student in-turn assessed barriers and resistance to the planned change.

During the change stage, education regarding falls and the fall management pilot was conducted with all members of the nursing staff and members of the interdisciplinary

team. Those individuals interested in becoming a part of the PST also received education to ensure that they were aware of their responsibilities and the functions of the team. The quality improvement fall pilot was implemented on August 1, 2016. To ensure that the pilot was implemented successfully, staff were monitored completing the forms and the forms were reviewed during the PST meetings for accuracy. To ensure implementation was successful managers, stakeholders, and corporate team supported the program and the staff as part of the refreezing stage to ensure a change in behavior occurred.

To ensure that refreezing occurred, the PST team, the DNP student, management team and stakeholders continued to support and educate the frontline staff, such as dietary, housekeeping, nurse's aides and maintenance. Periodic monitoring and re-education continued to occur as the staff grew more comfortable using the MFS and EMS. Once implementation of the quality improvement initiative was completed, the management team, stakeholders, frontline staff, and I came together to discussed the program, challenges and any proposed changes for the future. Table 1 explains details regarding the purpose and completed tasks of the quality improvement project as applied to Lewin's change theory.

Table 1

Application of Lewin's Change Theory to the Fall Prevention Project

Stages of Kurt Lewin's Change Theory	**Goals/Objectives**	**Activities Completed**
1. Unfreeze	To reduce forces and change existing attitudes which maintain behavior in present form/recognizing the need for change	• Initial Problem identification • Preparing the ground and communication • Obtaining data on falls
2. Change	Development of new attitudes or behaviors and implementing change	• Problem Diagnosis • Action Planning/ Implementation • Follow up and Stabilization • Assessment of Consequences
3. Re-freeze	Consolidating the change at a new level and reinforcement through supporting mechanisms/policies/structures/ organizational norms. Monitor the staff to ensure that a behavior change has occurred. If tasks are being completed incorrectly it is important that staff receives education and positive reinforcement.	• Assessment of consequences • Ongoing Monitoring

Relevance to Nursing Practice

Falls represent a substantial threat to the aging population globally along with ultimately affecting the resident's quality of life. Falls remain a leading cause of morbidity and mortality for elderly residents. Falls affect around 30% of individuals over 65 years of age living residential settings and the risk increases with age (Stubbs et al., 2015). Not only is a fall considered a burden to the patient, it can also become a burden to the facility. The direct cost of health care provisions following a fall in the United States

was estimated at $30 billion in 2010 (Stubbs et al., 2015). Due to the potential of Medicare and Medicaid services denying reimbursements for fall-related injuries, it is important that guidelines be developed and implemented to prevent falls.

Approximately 1.7 million beneficiaries of Medicare fee-for-service receive care in nearly 15,000 skilled nursing facilities (SNFs) annually (Hye-Young, Trivedi, Grabowski, & Mor, 2016). The prevention and management of falls in older adults in this type of setting has become a key public health priority. National guidance on the assessment and prevention of falls was published by the National Institute for Health and Clinical Excellence (NICE) in 2004. NICE (as cited in Dickinson et al., 2011) recommended routine screening for falls in people age over 75 followed by referral for multifactorial falls risk assessment if required. When looking at the 18 million elderly individuals in 2030, two out of three will live in a residential or long-term care facility (Hicks, 2015). When a resident experiences a fall there are many consequences, such as fear that leads to decrease mobility and lack participation in activities of daily living (Barker, 2014). The patient may also lose confidence, experience higher levels of anxiety, and have an increased risk for developing conditions such as pneumonia (Barker, 2014). Fall prevention is a high priority topic in healthcare. While there are numerous studies conducted in acute care settings, research conducted on falls in rehab and skilled nursing facilities or residential care facilities is not as prevalent.

Local Background and Context

Corporate Background

The corporate company is a well-known national healthcare and senior living organization based out of a state in the northeast portion of the United States. The organization has two major operating divisions, including Senior Living and Rehabilitation Services. The corporate company has more than 260 health care centers composed of Independent Living, Assisted Living, Alzheimer's/Memory Care, Healthcare Centers with Skilled Nursing and Rehabilitation and Continuing Care Retirement Communities. The company also offers outpatient rehabilitation, day programs, and respite/short stay options. Company values include:

- We put people first
- We act with integrity
- We mind the business
- We listen—then act decisively and we work to be our best

As evidenced by supporting this project, the company prides itself on striving to be the best every day, in every situation. The host company attempts to provide a continuum where they are constantly improving the knowledge, systems, and skills and hold each other to uncompromising standards of quality of care for all residents.

Local Facility

The fall prevention quality improvement pilot was conducted in the southeastern region of the United States. The skilled and rehabilitation facility is a 42-bed unit with the resident population consisting of individuals 56 and older with the oldest resident 98

years old during the time of this project. Residents are admitted to this facility for acute issues such as a stroke, congestive heart failure and chronic obstructive pulmonary disease (COPD) exacerbation, urinary tract infection, systematic infections, cardiac surgery, and status post orthopedic surgeries. These residents are admitted for rehabilitation and skilled nursing care. Each resident's stay is estimated between 30 to100 days depending on diagnosis and insurance. This organization also has 10 beds designated for long-term care residents and approximately six of the long-term care residents have lived within the facility for 3 or more years. Many of the residents residing within the facility were previously ambulatory and independent or required minimal assistance with their activities of daily living. The inability to perform previous tasks that could be performed independently contributes greatly to the number of falls that occur within the skilled nursing and rehab facility.

To date the setting had an estimated 14 to 22 falls per month in the last year without a significant decrease noted (Table 2, Figures 1-3). With the exception of the month of March 2015, the facility has not met the corporate threshold of 7% for the number of patient falls. The staff members involved in direct resident care are registered nurses, licensed practical nurses, certified nursing assistants, restorative aides, and the therapy team. The nursing management team is also involved in resident and family education, care plan meetings and direct patient care. The nursing management team consisted of the Director of Nursing (DON), Assistant Director of Nursing (ADON), and the unit manager.

Although all residents are considered high risk for falls, the corporate office has not designed or designated a fall prevention program or implemented a designated screening tool to assess a resident's risk for falls on admission, quarterly and when there is a change in status. The facility and corporate team have tried multiple interventions for the residents related to fall prevention. However, there has been no standardized method for fall reduction within this community or other communities within the company. While interventions such as safety alarms, floor mats, and low-level beds have been in place, the facility has not adopted an individual call care plan to meet resident safety needs.

Table 2

Rehab and Skilled Facility Fall Statistics 2014 - 2016

Month	Total Falls	Percentage of total falls	Falls w significant injury	% of Fall w/ significant injury	# of Residents with falls	% of Residents' w/falls	# of patient days for the month
Nov 2014	16	16%	2	1.98%	14	14%	1009
Dec 2014	19	19%	0	0%	12	12%	1015
Jan 2015	22	19%	0	0%	13	12%	1129
Feb 2015	13	14%	0	0%	5	5%	922
March 2015	5	5%	0	0%	4	4%	932
April 2015	12	13%	0	0%	10	11%	933
May 2015	17	18%	0	0%	7	8%	928
June 2015	14	15%	0	0%	8	9%	930
July 2015	8	9%	0	0%	5	6%	866
August 2015	15	16%	0	0%	8	8%	945
Sept 2015	12	12%	0	0%	8	8%	996
Oct 2015	15	17%	0	0%	10	11%	905
Nov. 2015	15	15%	0	0%	12	12%	974
Dec. 2015	18	18%	0	0%	8	8%	1020
Jan. 2016	19	21%	0	0%	7	8%	892
Feb. 2016	20	22%	0	0%	7	8%	921
March 2016	11	13%	0	0%	7	8%	860

Information includes historical data on number and percentage of falls for the faciality prior to implementation of the fall prevention program.

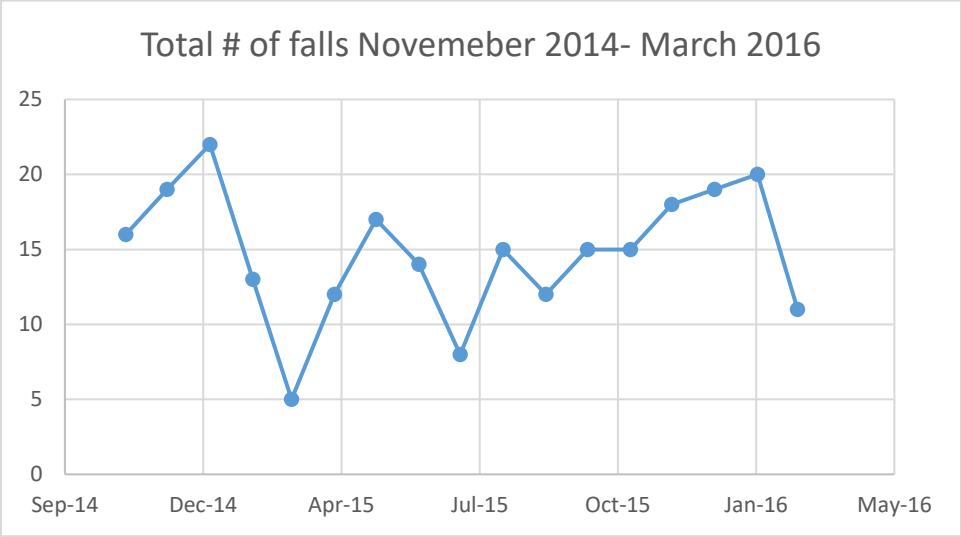

Figure 2. Illustration of Total Falls Pre-project Implementation.

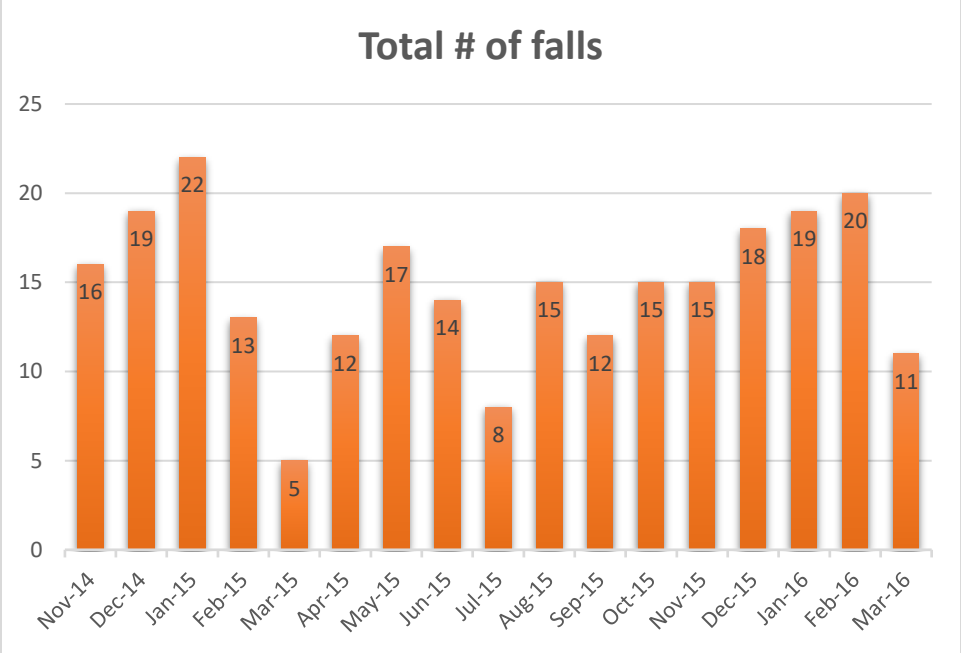

Figure 3. Total Facility Falls November 2014- March 2016.

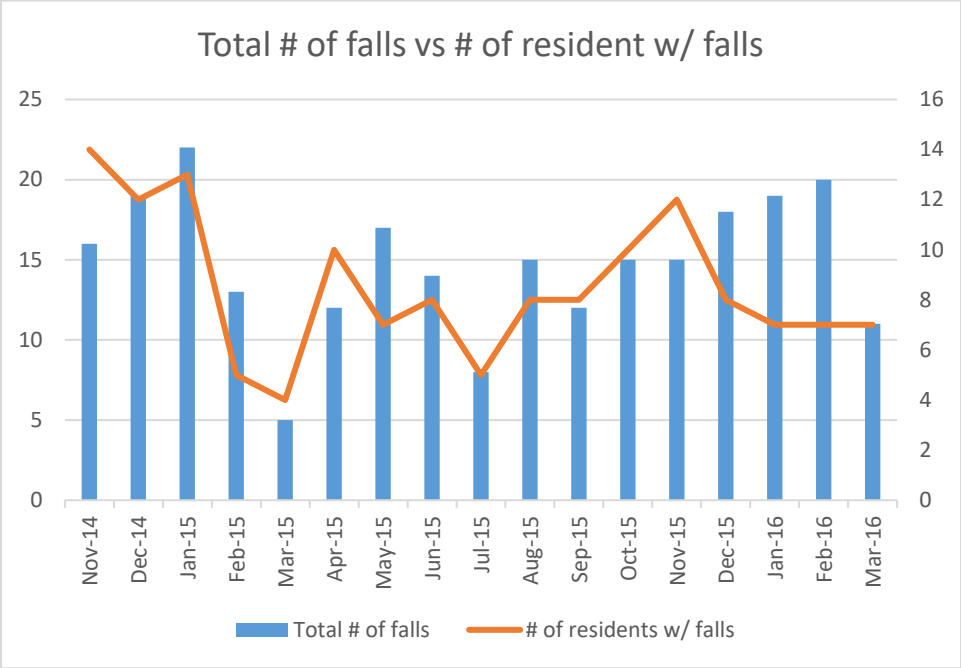

Figure 4. Total number of facility falls compared to number of residents with falls.

The corporate team identified the importance of developing a fall prevention program to reduce the number of falls within one facility. If significant results were noted, the program could be reviewed for implementation throughout the corporation. The modification of facility behaviors related to fall prevention using a standardized fall prevention program that included a fall risk assessment and an individualized fall prevention care plan, was an effort to increase safety by assessing the resident's potential for falls and creating a patient-centered plan to meet individual resident needs.

Role of the DNP Student

I was responsible for gathering and analyzing the literature related to fall prevention within the skilled and rehab settings. When looking at the facility's current fall management process prior to implementation, I was responsible for looking at what strategies were effective versus ineffective for preventing resident falls within the

proposed community. I assisted the facility with implementing a fall prevention quality improvement pilot with the intentions of decreasing the number of falls within the facility and increasing patient safety. I oversaw this project and managed data collection, oversight of the evidence-based education program, collection, and analysis of the pilot study findings. I will present the final analysis of the project to the project team described in the next section.

Role of Project Team

To ensure that the quality improvement pilot was successfully implemented and carried out, there was a small project team that ensured corporate approval was received timely, the needed resources were obtained and that I and the facility had the support throughout implementation. This team consisted of the facility administrator, regional nurse, and Corporate Director of Quality and Performance Improvement. The Corporate Director of Quality and Performance Improvement and the regional nurse ensured that the project aligned with the values and policies of the company. The Director of Quality and Performance Improvement is the individual who was responsible for reviewing the proposal once approved by my committee for implementation. The administrator ensured that the quality improvement pilot did not interfere with patient care, the pilot met corporate, state and federal guidelines. In order to assist with increasing patient safety and improving the quality of care, the Administrator and Director of Nursing took part in motivating and educating staff on the importance of falls prevention within the facility. As a team, the goal was to create a program that would reduce falls within this

community and within other nursing units throughout the facility and company. The entire project team assisted with collecting data.

Section 3: Collection and Analysis of Evidence

Introduction

The CMS (2015) identified falls as a preventable health issue. Falls have significant physical and emotional implications for patients, as well as increased financial cost for organizations (Godlock, 2016). A patient fall can result in hospital readmission, increase the length of hospital stay, result in unexpected surgeries, and even death (Godlock, 2016). Within the elderly population, the cost of fall-related injuries is currently estimated at $30 billion and by 2020 the direct cost of fall-related injuries is expected to reach an all-time high of $54.9 billion (Godlock, 2016). When comparing different patient populations and settings, skilled nursing patients have an estimated fall incidence of 1.6 falls per bed per year, with almost half of admitted residents falling more than once a year (Vlaeyen et al., 2015). Falls within the skilled nursing setting is a problem that requires immediate attention to ensure the safety and highest quality of life for all patients within the organization's system.

The organizational setting for this pilot study was a 42-bed skilled and rehabilitation unit located in the southeastern region of the United States.The facility had approximately 14 to 22 falls per month and currently did not employ a fall risk assessment tool or a standardized fall prevention program at any point. This project served as a quality improvement pilot using the BOUNCE Back fall initative. Results of the pilot were reviewed with plans for facility-wide implementation pending findings generated from the pilot. It was anticipated that a reduction in the number of falls within the facility would increase health outcomes including improved patient safety and quality

of life. Additional outcomes included lower hospital readmissions, death rates, as well as enhanced patient social interaction.

Practice-Focused Question

The number of falls will steadily increase as the number of older Americans 65 and older is projected to increase from 11 million in 2010 to 18 million in 2030, due to 10,000 Americans turning age 65 every day from 2011 to 2029 (Bragg & Hansen, 2015). When looking at the 18 million elderly individuals to reach 65 in 2030, two out of three will live in a residential or long-term care facility (Hicks, 2015). This projection raises the level of importance related to fall prevention within the skilled nursing and other residential care facilities. As displayed in Table 2, since November 2014, the residents in the setting sustained 14 to 22 falls per month without a significant decrease. The practice-focused question for this DNP project was: Will the implementation of a multifactorial fall quality improvement pilot using the BOUNCE Back fall management initiative, reduce the number of resident falls over a 60-day period within the local skilled nursing and rehabilitation facility?

Sources of Evidence

A review of the literature on fall prevention indicated that studies on fall prevention in the acute care setting has grown over the years with a limited number of studies on fall prevention in skill and residential settings. The geriatric population sustains the majority of falls with the largest number of falls occurring in the long-term care settings (Majkusova & Jarosova, 2014). As falls can decrease the quality of life for residents, many organizations have created programs and initiatives to reduces falls. In

additon, initiatives were also put into place in response to the 1% payment penalty imposed by CMS for healthcare cost that is related to preventable incidences such as falls (CMS, 2015).

Most fall prevention programs do not ultimately lead to individualized fall care plans for residents. Currently what is available for residents at risk for falls are interventions that are standard throughout healthcare systems such as safety alarms and rounding. However, 78% of the falls are incurred by patients who were previously predicted to be more prone to falls and incidents (Baek et al., 2014). It is important that each resident's fall care plan is created to meet the individual needs and identified risk for that particular resident immediately following admission into the facility.

This quality improvement pilot identified residents at risk for falls, their level of fall risk and contribution to the creation of an individualized plan of care. With the use of the MFS, the staff was able to assess the patient's fall risk level immediately on admission and following a repeat fall. With the use of this tool and the level of fall risk calculated, the staff was able to create a fall care plan that was individualized based on the level of risk calculated. With the use of a patient safety team, the staff reassessed the residents' fall care plan during the week of admission, upon any significant changes in the residents's condition, and following each fall, ensuring that the care plan was specific to that particular resident's needs and condition. Implementing fall education for all staff assisted the staff in understanding the importance of fall prevention and enforced a standardized method for assessing a resident's risk for falls.

Operational Definitions

Fall: An incident in which a patient suddenly and involuntarily comes to rest upon the ground or surface lower than their original station (Chapman, Banchard, & Hyrkas, 2011).

Fall prevention program: A program that attempts to prevent patient falls that begins with an accurate assessment of a patient's risk of falling, followed by the initiation and continued evaluation of a fall prevention program based on patient-specific identified risks (Murray, 2016).

Fall prevention education: Fall prevention educaution is a program designed based on literature and proposed program for implementation. The facilitator of the program will begin the implementation process through a series of educational in-services, that should include all staff on all shifts (Lloyd, 2011). For the purposes of the BOUNCE Back fall initiative a one hour mandatory training for all staff members was implemented. The education program reviewed topics such as general fall statistics, facility fall statistics, consequences related to falls, risk factors, the MFS tool, how to properly administer the tool to patients upon admission and following a fall and the BOUNCE Back fall initiative. This education will also discuss the patient safety team, how it contributes to decreasing falls within the facility and its responsibilities.

Frequent Faller: A frequent faller is a resident who has experienced two or more falls in a particular period despite proper assessment of interventions (Kobayashi, Kusuma, Yamamoto, Sugiyama, & Sugai,2009)

Patient Safety Team: Designated group of staff consisting of the members of the interdisciplinary team within the facility. Staff members may include nurses, nonprofessional nursing personnel, therapists and other members of the team who are working towards the common goal of preventing falls and creating a safer environment for all residents.

Literature Review

The established literature was reviewed to identify evidence regarding falls, fall prevention, fall risk assessment tools, and fall-related interventions in the acute care and residential care facilities. The quality of literature retrieved was evaluated based on the Melynk Pyramid and the Melynk Pyramid assisted with distinguishing the different levels of evidence reviewed for this project.

The online databases used to explore the topic of fall prevention included:

- CINAHL
- MEDLINE
- ProQuest Nursing & Allied Health Science
- CINAHL Plus with Full Text
- PubMed
- CINAHL & MEDLINE Simultaneous Search
- OVID Nursing Journals

The online databases were explored November 2015 through June 2016 to ensure an intensive review of the literature surrounding the topic. To ensure that the literature retrieved was current and relevant, the date delimitations for the search engine was set at

2011 to the present time. The filter restrictions were set to produce full text articles only and articles written in the English language. The following key terms were used: *falls, fall prevention, rehab facility, long-term care, fall prevention program, baby boomers, fall risk assessment, fall risk, fall risk tool, Morse Fall Scale, elderly, Kurt Lewin's,* and *theory of change.*

To assist with organization of retrieved literature, an evidence table was created to include information such as:

- Reference
- Keywords
- Research method
- Main Findings
- Level of Evidence

The literature review matrix (Appendix A) assisted with organizing and ensuring that the publication and articles included quality information and the most up to date information needed to create a quality improvement program that will assist with quality improvement within this organization.

Falls

The CMS (as cited in Godlock, 2016) identified falls as a preventable health care acquired condition. Falls are also considered the second most common adverse event during hospitalization (Baek et al., 2014). The incidence of falls increases after the age of 60 and leads to consequences such as higher levels of anxiety, increased fear, fractures, decreased mobility, and loss of confidence (Godlock, 2016). The resident's length of stay

in the hospital and rehabilitiation time is increased, leading to additional cost to the health care system due to Medicare considering this a preventable issue.

Falls often lead to serious life-threatening conditions and long-term consequences for our patients, their families, and health systems, while also contributing to astonishing costs for health care facilities (Bechdel, 2014). Approximately 62% of adverse events result from falls in the hospitalized patient (Chapman et al., 2011). Falls in hospitalized patients are due to things such as mobility problems (e.g., surgery), medications for sedation and pain relief, aging (e.g., older adults), and mental status changes (e.g., delirium; Huey-Ming, 2015). When a fall occurs in the acute care setting, the patient remains in the hospital an average of 6.3 extra days longer incurring a cost or $13,000 or more compared with patients who do not fall (Huey-Ming, 2015).

A study was conducted in an Lisbon hospital that was completed to assess the cut off score for the MFS (Martins da Costa Dias & Ferreira, 2014). During this study it was noted that most falls (42%) took place during the hospitalization of patients in need of skilled and rehabilitation care, or with an incurable, progressive and advanced chronic disease (Martins da Costa Dias & Ferreira, 2014). With the use of the MFS during this study, 52% of the patients admitted to this service had a high fall risk, 90% had a secondary diagnosis, 51% were forgetful of their limitations, 29% had previous history of falling, 33% had a weak posture while walking, 25% depended on aid, 21% grasped onto the furniture for ambulation support, and 17% used walking aids (Martins da Costa Dias & Ferreira, 2014).

Falls increase with age and the number of older adults is expected to increase from 11 million in 2010 to 18 million in 2030 and this is due to 10,000 individuals turning 65 everyday until 2029 (Bragg & Hansen, 2015). Approximately 70% of the above individuals will require long-term care services and support (Bragg & Hansen, 2015). The fall rates in nursing homes range from 0.6–3.6 falls per bed annually and most falls do not end in death or result in significant physical injury; but, in comparison with community-dwelling elderly persons, falls in institutions tend to result in more serious complications,with 10–25% of them resulting in fracture or laceration (Jakovljevic, 2009). In order to create an effective program within a skilled nursing or rehabilitation facility, it is important that all members of the interdisciplinary team promote safety within the environment and actively participate in creating a program that is safer for all residents.

Fall Risk Assessment and Tools

Within different healthcare settings and organizations there are a variety of different fall assessment tools that can be used to determine a resident's risk for sustaining a fall. Fall risk assessment scales are tools that assign numerical values to various risk factors and are then calculated to assess the resident's likelihood of falling (Costa-Dias, Martins, & Araújo, 2014). Regular monitoring on fall risk with a reliable and valid assessment tool is a key element in fall prevention (Baek et al., 2014). The Joint Commission International recommended using valid and reliable assessment tools, with particular emphasis on whether the method is suitable for addressing residents symptoms, is effective and usable, and considers the workload of nurses (Morse, 1997). A fall risk

assessment tool needs to be accurate, simple and quick to complete effectively on units without adding a considerable burden on already hard-pressed staff (Morse, 1997). The most common assessment tools used in fall-related clinical trials are the MFS, Hendrich Fall Risk Model, and the St. Thomas Risk Assessment Tool In Falling Elderly Inpatients and Care Dependency Scale Costa-Dias et al., 2014. Among these tools, the MFS reportedly has the highest validity and reliability scores (Baek et al, 2014).The first stage of any fall intervention program is risk assessment (Costa-Dias et al., 2014).

A descriptive and comparative cross sectional study was conducted by Chapman et al. (2011) who reviewed and tested the (a) MFS, (b) Hendrich II Falls Risk Scale, (c) Falls and Injury Risk Assessment Tool/New York-Presbyterian, and (d) Maine Medical Center, Fall Risk Assessment/Interventions. The goal of the researchers during this study was to determine which fall risk tool was more reliable, specific and sensitive for predicting and assessing a patient's risk for falls within the hospital setting. Patients were assessed simultaneously using all four fall risk scales and following completion of data collection the researchers noted that the risk assessment education provided to the nurses was ineffective (Chapman et al, 2011). It was noted that the data collected through the use of the risk assessments did not result in consistent and reliable completion of the various assessment tools. Some of the findings documented were misinterpretations regarding the scoring criteria, documentation errors on the assessments and manual miscalculation of the scores (Chapman et al., 2011).

Creating a standardized fall program and using a standard assessment tool within an organization assists with creating uniformed standards for fall prevention. Creating a

standard system creates an environment within an organization for goal setting, positive health outcomes, decision making, and increased quality of patient care.

Morse Fall Scale

The MFS is a tool that has been used for decades and is viewed as one of the most specific and reliable fall risk tools available today. The MFS was developed by Morse in 1985 as an assessment method used to identify patients at risk of falling in the acute and chronic care environments (Baek et al., 2014). The MFS is described as a simple and quick method to assess a patient's likelihood of falling, and has been researched over 2 decades (Costa-Dias et al., 2014). This scale was created to be completed as an interview, by reviewing the patient's record and with a completion time of less than 3 minutes. The MFS assesses a patient's risk for falling by looking at six variables (Baek et al., 2014):

- history of falling (possible score of 0 or 25)
- secondary diagnosis (0 or 15)
- ambulatory aid (0, 15, or 30)
- IV or IV access (0 or 20)
- gait (0, 10, 20)
- mental status (0 or 15)

Once the assessment has been completed, based on the total points, the level of fall risk will be determined and the total score can range from 0–125. During its development the interrater reliability was 96%, the cut off score was documented at 45 points, its sensitivity was 0.78% and the specificity was 0.83% (Sung et al., 2014).

Baek et al. (2014) conducted a retrospective study to assess the validity of the MFS by analyzing the electronic medical records on fall risk during different phases of a patient's hospitalization in a university hospital in Korea. Baek et al. analyzed the fall risk scores during different times in the patient's stay: (a) the initial assessment score upon admission and (b) the last and the maximum scores recorded from admission to the fall or discharge (Baek et al., 2014). With the collection of the historical data, the validity indicators showed the highest performance rating of 0.72 for sensitivity and 0.91 for specificity (Baek et al., 2014). According to this study ,the MFS showed a reasonably high analytical performance for the Korean population and was efficient in predicting a patient's fall risk during different times of the patient's hospitalization (Baek et al., 2014).

In 2014, José Martins da Costa-Dias along with fellow researchers completed a case control retrospective study in a hospital in Lisbon, Portugal. The researchers reviewed and analyzed retrospective data from units such as the medical, surgical, long-term care, and palliative care units within the hospital. The study was conducted to analyze the cut off point for the MFS used within the hospital setting to ensure that the tool is effective in predicting the patient's risk for falls. Following the completion of this study it was concluded that the recommended cut off point of 45 with a sensitivity of .78% should be applied to patients residing on the above units to efficiently predict falls (Back et al., 2014)

The MFS was selected for the current quality improvement pilot, as it is a tool that has been validated and tested in multiple countries and a variety of clinical settings.

It has been continuously noted to have a high level of validity and reliability in predicting those residents at risk for falling. This tool allows members of the team to rank the patient according to their level of risk and also create a standardize care plan or program for that level. The tool is easy to administer, and with yes or no questions, there is little room for user misinterpretation.

Elderly Mobility Scale

Mobility and balance is a major factor that contributes to falls in the elderly population, in various settings. Decreased mobility, impaired confidence, weakness and poor safety awareness all contributes to an increase risk for elderly falls (Yu, Chan, & Tsim, 2007). As a means of assessing the patient's mobility, there are numerous tests available to assess mobility and balance, however many of these techniques present difficulty in application due to cost, subjectivity, specificity of assessment or other problems (Raju, Maiya & Manikandan, 2013). In spite of laboratory measures of balance offer greater precision, clinical and Functional tests of balance such as the EMS, share the advantages of ease of administration, low cost and more directly interpretable functional relevance. (Raju, Maiya, & MAnikandan, 2013).

The EMS was developed by Smith in England as a mobility assessment tool for frail older adults. The EMS is commonly used in the hospital setting and data confirming its reliability and validity as a standardized scale by which geriatric health care professionals, particularly physical therapists, can assess the physical ability of the elderly patient, monitor the outcome of the therapy and determine when an elderly person

can function independently and safely at home (Morton and Nolan, 2011). The EMS assesses 7 domains when looking at mobility and balance:

- Gait
- Lying to sitting
- Sitting to lying
- Timed walk
- Sit to Stand
- Functional Reach
- Standing

Scoring for the EMS goes up to a maximum of 20 points and a higher score indicates that a person can perform the task better (Morton and Nolan, 2011).

In a correlational study conducted by Linder, Winkyist, Nilsson, and Sernert (2006), the reliability and validity of the EMS was assessed in stroke patients. The study was conducted on a stroke unit in Sweden were a total of thirty stroke patients assessed on admission and at the time of discharge by two separate physiotherapists to effectively assess reliability and validity. As a result of this study the inter-rater reliability and validity was found to be between 0.98 and 0.99 for assessing elderly mobility and progression (Linder et al.,2006).

Patient Specific Interventions

Although having a standardized fall risk assessment tool for all resident's is important, it is also important to create a care plan with interventions that are individualized to meet residents need. Successful fall prevention strategies include staff

education about the fall-injury risk assessment tool, post fall assessments, alarm device usage, side effects of medications, hourly rounding, and offering frequent toileting (Godlock, 2016). Many times, fall assessments are completed based on the resident's current status, however interventions are not tailored to the resident's needs at that time. It is important that residents are aware of the care plan and the care plan should be created based on interventions that will work for that specific resident and changes are made as needed. Patient awareness and participation will increase health outcomes, contribute to improvements in patient safety, and help control health and overall health care costs (Huey-Ming, 2015).

In creating a fall prevention program, there needs to be approaches that are creative and innovative in order to be effective in reducing the number of falls within an organization. In 2012, a descriptive feasibility study explored the use of an educational digital video disc (DVD) on fall prevention in cancer patients and family members (Potter, Olsen, Kuhrik, Kuhrik, & Huntley). This study was conducted in a chemotherapy unit utilizing pre and post evaluation mehods. The goal of this study was to assess the effect of an educational DVD entitled *Moving Safely in the Home* on the caregivers' perceptions of knowledge and preparedness in fall prevention and reducing the occurrence of falls in this patient care setting (Potter et al., 2012). The study also was completed to assess if using a DVD to meet the educational needs of the patients and family members was effective and satisfying. Once the patients were admitted to service, the family/patient was given a survey assessing their fall prevention knowledge. Following admission, the educational DVD was given and they were given 4 weeks to

watch the DVD at home. Participants were then given a post intervention survey to assess the knowledge gained from the DVD and the ratings regarding the content and method of delivery. From this study, the researchers were able to document a significant increase in family knowledge related to safe mobility and fall prevention. Potter et al., followed the patients four months' post intervention and a significant decrease was noted in falls for those patients due to the increase knowledge and educational DVD (2012). Potter et al. also noted that having material that the patient/family can review at their own pace and refer to at a later time is very helpful (2012).

Schepens et al. (2011) conducted a randomized control trial that consisted of 53 participants related to the use of educational interventions for fall prevention. With 53 participants aged 65 years and older, researchers assessed the knowledge of fall threats using different instructional methods. Schepens et al. separated patients into three groups. The authenticity intervention geared the education and scenarios based on the patient's everyday living arrangements and lifestyles (Schepens et al., 2011). The information provided to the patient was not just general information that applied to all patients but it included information the patient would need to prevent falls within his or her current living environment and situation. The third group's educational session was tailored by motivation. The motivational-based educational sessions consisted of setting program goals, motivating the patient to meet the goals that were set forth, the patients were educated on the importance and benefits of following the program and intervention; moreover, the patient took part in selecting the content, participated in selecting interventions and the goals that were incorporated into the educational program

(Schepens, 2011). Following the implementation and follow-up it was noted that both groups showed an increase in educational knowledge related to fall threats and prevention. The researchers also concluded that those participants receiving motivational education engaged in significantly more fall prevention behaviors than did the control group and that motivational education effectively promotes fall prevention behaviors (Schepens et al., 2011).

Fall prevention programs are based on several different interventions. However, to ensure that interventions and the fall care plan is adhered to, it is important that education occurs. If residents and family members are unaware of the interventions in place, they will be unable to assist with preventing falls. Each resident encounter is an opportunity for education and should be used to remind residents about safety within their current environment. For the purpose of this pilot, fall prevention education was provided to all staff members, residents and family members to ensure that fall prevention is the priority of all individuals involved in the patient's care. In addition, points were documented on the patient's fall assessment to ensure that all patients are receiving consistent fall education.

Patient Safety Team

To ensure collaboration of members of the interdisciplinary team and teamwork when looking at fall prevention, the use of a patient safety team (PST) was established and used during this program pilot. Godlock (2016) conducted a pilot study to assess how a structured fall safety team, teamwork and increase communication could decrease the number of falls and increase the level of patient safety within an organization. During

this study, the fall safety team met and collaborated at the end of each month. During these scheduled meetings, all falls that occurred since the previous meeting were discussed based on the information documented in the records by the assigned nurse. After three months of implementation, it was noted that the fall rate decreased to 0.69 falls per 1,000 bed days and after a year the average was 1.63 falls per 1,000 bed days (Godlock, 2016). Through this quality improvement program, Godlock demonstrated that teamwork and situational awareness are useful in alleviating risk for falls and improving patient safety in inpatient clinical settings.

Berg et al. (2011) also noted how the use of a safety committee can increase the quality of patient care related to a specific outcome such as falls. The goal of this study was to look at how different structured elements could help make the trauma performance improvement and patient safety committee more effective in improving quality patient care (Berg et al., 2011). During this study, factors such as accountability, authority for decision making, structured communication, common language, along with clearly defined goals, processes and parameters affected the outcomes (Berg et al., 2011). For the completion of this study, it was noted that teamwork is essential beyond direct patient care and should be developed within committees that value the above principles to ensure an increase in patient safety and performance improvement within any organization (Berg et al., 2011).

The patient safety team is an important aspect of this fall prevention quality improvement program. Having a committee or team of individuals working together towards a common goal or quality improvement issue is beneficial in the success of a

program. This team will ensure that the appropriate steps are being completed, in order for a common goal to be achieved. In addition, teamwork is recognized as an essential component to ensure the most favorable outcomes in patient safety, quality care, improved health outcomes and is increasingly encouraged to achieve optimal performance (Berg et al., 2011).

Archival and Operational Data

When a resident of the facility falls, an incident report is completed by the assigned nurse. The incident report documents information such as the location, date, time, injury sustained, notification, and a brief description regarding the fall. Prior to signing the incident report, the nurse completing the form documents the post fall intervention. An SBAR (Situation, Background, Assessment, and Results) form created by Interact, was completed. Both forms were placed in the facility's 24-hour report book for review by nursing management the following business day and reported in the corporate database to determine how many residents fell, those who fell multiple times, and residents who sustained injury during a fall. At the end of each month, the facility along with the corporate team reviewed their quality indicators to assess for trends and attemps to implement interventions to address any identified problems.

Permission was received via e-mail approving the collection of the facility's de-identified fall data and the proposed fall prevention study (Appendix B).. The database was used to collect historical data related to falls within the facility for each month within the last year prior to implementation of the fall prevention projet. Following implementation of the quality improvement program the historical data were compared to

the data completed post implementation. This information was used to assess if the use of a standardized fall risk tool and an individualized fall care plan decreased the number of falls within the facility.

Evidence Generated for the Doctoral Project

All nursing professionals, non-nursing staff and members of the interdisciplinary team participated in this pilot project. Employees were invited to become members of the PST. The patient safety team members was a group of staff members composed of therapy staff, staff nurses, nursing aides, and at least one member of administration. An interest meeting was held prior to implementation of the project to introduce the goals and the proposed dynamics of the patient safety team. Those interested were able to learn about their roles in preventing falls and increasing patient safety within the facility. The PST was limited to approximately 12 staff members. This facility has approximately 20 nurses, consisting of licensed practical nurses and registered nurses. These nurses have various levels of education and experience in the skilled and rehabilitation environment.

The nurses were instructed on the use of the MFS. They were responsible for administering the Morse Fall ScaleTool to all new residents within 60 minutes of admission, along with reassessing the residents following a fall. The nurses were instructed on the process of initiating the initial interventions that was abuilt into the program based on each level of risk. They were also educated on how to effectively develop an individualized fall care plan for each resident. Figure 5 is a graphic displaying the process associated with staff admitting a resident under the quality improvement pilot BOUNCE Back. As this is a rehabilitation and a skilled nursing setting there are

approximately eight to 10 patients who are long-term care and their fall risk assessment will be completed on admission, following a fall and quarterly.

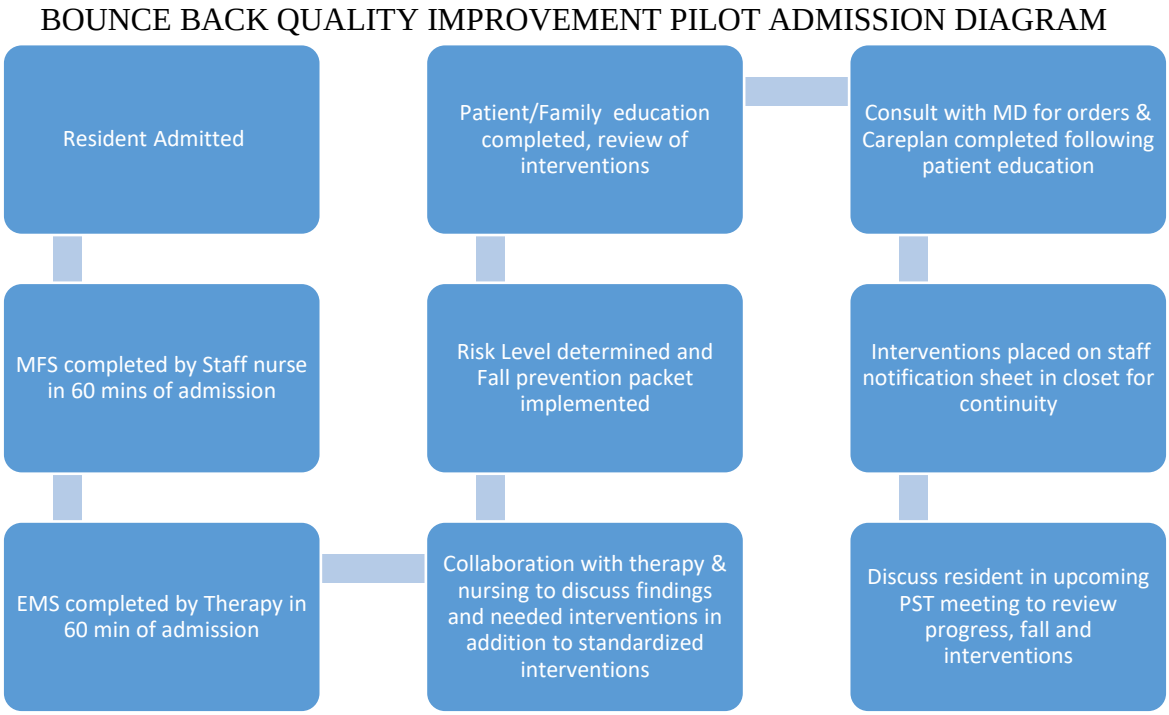

Figure 5. Workflow for the admission of new residents.

All members of the interdisciplinary team were responsible for ensuring that the interventions were implemented appropriately. The Morse Fall Scale determines a resident's level of fall risk as (a) low, (b) medium, and (c) high risk, based on contributing factors related to patient falls. Within the proposed setting there are several other intravenous and access devices that patients may have such as a peripherally inserted central catheter and also percutaneous endoscopic gastrostomy tube or a wound vac. The above access method was added to Section 4 of the MFS. Within each block of the fall risk tool there was a brief explanation of which each section of the assessment means to ensure that each nurse is administering the assessment with the same

understanding. The MFS along (Appendix C) with the EMS (Appendix D) were used within 30 minutes of admission, 7 days following admission, following each fall and quarterly to assess if the resident's care plan needed to be changed in an attempt to prevent falls. The admitting nurse administered the assessment, delivered the patient education, and created the individualized fall care plan along with the resident, will sign the document as an agreement to adhere to the safety measures set forth by both resident and staff. The different levels of risk will be signified by color bands that will be placed on the patient to alert the staff:

- Red=High Risk
- Yellow=Moderate Risk
- Green= Low Risk

Many times residents are not compliant with fall precautions and safety interventions because they are unaware of what the staff has put into place. It was important that when staff administered the MFS and EMS, they also educated the resident on falls and risk level determined by the tool. To ensure that the education covers the same general topics of falls and the important statistics related to falls, there was a section on the document prior to the MFS that alerted the nurse to specific talking points and statistics to be covered for each resident/family member. The resident received a color armband, non skid socks and door hanger that coincided with the fall risk level determined by the MFS. In addition, the PST developed a list with general interventions for each level of risk that was available to the nurse to assist with creating the initial care plan. The members of the PST reviewed all new admission assessments and care plans to

ensure that interventions are appropriate and implemented properly. To ensure that all members of the staff are aware of the interventions in place for a specific resident, the information was documented on the designated color paper for that risk level and kept inside the patient's wardrobe closet.

To effectively implement the project, historical data were collected from the corporate quality measure database regarding the facility's fall data from July 2014 until the time of implementation of capstone project. There were several educational and training sessions scheduled during a period of a week that will include information on:

- Fall prevention
- General fall statistics gathered from the literature review
- Historical Fall data
- The Morse Fall Scale
- Introduction of the PST

The staff were given scenarios to ensure that they were able to complete the tool accurately. The training was mandatory for all members of the staff. A schedule was posted on the information boards throughout the facility. In addition, a memo was sent out to all members of the nursing staff and members of the interdisciplinary team, regarding a meeting to discuss the function and job of the PST related to fall prevention. For the informational meeting, those interested in becoming a member of the PST will receive a schedule for weekly meetings. Following the formation of the PST the quality improvement project would be implemented using Lewin's change theory for 60 days from July 1, 2016 until August 31, 2016. The staff was observed during different shifts

to assess compliance with the MFS and the creation of the fall care plan for each resident. Following week one of implementation, changes to the process were iniated following staff input. All members of the staff were given a contact e-mail following the educational session. This ensured that there is adequate support and clarification for staff members that are involved or participating in the quality improvement project.

The quality improvement pilot was approved by the Institutional Review Board (IRB) of Walden University prior to implementation of the pilot. This was done to ensure ethical protection of all participants involved. A documented consent was obtained via e-mail giving consent for the quality improvement program to be implemented within the proposed skilled nursing and rehab facility. The consent outlined the activities that were conducted and monitored within the facility along with the data that were collected and analyzed during the quality improvement program.

Analysis and Synthesis

The historical data were provided from the coporate quality measures system. These data included the number of falls, percentage of falls, number of residents, and percentage of residents that fell from July 2014 up until the time of implentation within the proposed setting. The above data were collected and analyzed based on incident reports completed by the staff nurses following each fall with incident reports entered into a database by the Director of Nursing (DON).

The quality improvement program was implemented for 60 days within the proposed skilled nursing and rehailiation facility. The MFS forms and fall care plans will be kept inside the patient's chart after data has been completely analyzed. When meeting

with the PST, the charts for all new admissions and those patients who have fallen within the week, were examined during the meeting. When a fall occurred, the assigned nurse documented the fall on the appropriate form and this information will be turned in to the DON. The DON inputs the information into the corporate quality measure system to be analyzed. Once the information had been analyzed, the data was printed for the DNP student from the data base regarding the number of resident falls, percentage of resident falls, and both the number and percentages of residents that experienced a fall. With this data an analysis can be made to assess whether the quality improvement program and a individualized fall care plan has assited with decreasing the number of falls within the facility and meeting the corporate goal of 7% or below.

Summary

Fall prevention is a topic that has been widely studied in many areas. However, there is scarce research on how fall prevention is addressed in the skilled and rehabilitation settings. The purpose of this quality improvement project was to assess the effectiveness of implementing the BOUNCE Back fall initiative within a skilled nursing facility in reducing the number of resident falls. With the use of a PST, the MFS and an individualized care plan, the facility attemped to identify those residents at risk for falls. Although all inpatient falls may not be preventable, impact can be made by raising situational awareness, increasing mutual support, engaging leaders, encouraging open communication, and providing frontline staff education and involvement (Godlock, 2016). With the implementation of the quality improvement fall program for 60 days, the

goal to significantly decrease the number of falls within the facility met the corporate goal of 7% or less.

Section 4: Findings and Recommendations

Introduction

Falls are a leading cause of mortality and morbidity in the elderly population. According to the CDC (as cited in Schimke & Schimke, 2014), one in three individuals over 65 years of age experience a fall every year. According to the Geriatrics Society (as cited in Schimke & Schimke, 2014), falls are responsible for two thirds of deaths resulting from unintentional injuries in older adults and in 2011, unintentional falls in individuals 65 years of age and older was the top cause of non-fatal injuries treated in the United States. In conducting the literature review, it was noted that there was a gap related to fall prevention in nursing homes and residential care facilities. The majority of evidence regarding fall prevention in the elderly population, had been in the hospital and other acute care settings. It was also noted that current fall prevention programs assessed patients for falls; however, the evaluation did not result in an individualized care plan based on the completed assessment. Kato et al. (2006) reported that elderly persons in long-term care or residential facilities had a 20% fall rate, which was twice as high as that for elderly persons in general hospitals. It is important that the level of fall risk is assessed along with the implementation of specific interventions to prevent resident falls within residential care facilities. Falls have been determined to be one of the main causes of disability, anxiety, injury, and mortality among older adults and therefore constitute a major important public health issue that requires the immediate attention of healthcare institutions and policy makers. The practice focused question for this DNP project was: Will the implementation of a multifactorial fall quality improvement pilot using the

BOUNCE Back fall management initiative, reduce the number of resident falls over 60 days within the local skilled nursing and rehabilitation facility?

A skilled nursing and rehabilitation facility was designated as the pilot site for the BOUNCE Back fall prevention and management pilot. In the months, preceding implementation of the BOUNCE Back initiative, the facility was at 20% of falls which was one of the highest in the company and there was also no designated fall management program in place to reduce or prevent falls in the facilities within the corporate organization. The corporate organization has a 7% goal and expected for falls each month within each facility. The purpose of the quality improvement project was to assess the effectiveness of implementation of the BOUNCE Back fall initiative within a skilled nursing facility in reducing the number of resident falls. The overall goal was to improve the quality of care along with resident's safety within the local skilled nursing and rehabilitation facility through education and the implementation of a designated fall management program.

The BOUNCE Back fall program was developed by the student based on current evidence to decrease the number of resident falls and reoccurring falls within the facility. Prior to implementation of the BOUNCE Back fall initiative, the corporate Quality Assurance and Improvement Director reviewed the program to ensure that no new fall policies needed to be written or revised in order for implementation of the fall initiative to occur. The Director of Quality Performance and Improvement gave written approval for the pilot to be conducted at the pilot site (Appendix B) and IRB approval was received from Walden University (Appendix E). The pilot was implemented based on

Lewin's theory change theory to ensure that change was implemented in a systematic manner.

Historical Fall Data

Prior to implementation of the BOUNCE Back fall pilot, de-identified historical fall data from November 2014 to July 2016 were provided to me from the facility's quality measure system for post implementation comparison (Table 3). A review of the historical data indicated that the facility averaged approximately 14 to 22 falls per month with repeat fallers noted and no substantial decrease in the number of fall occurrences over a 2 year period. In the past 2 years, the facility had not met the 7% threshold that the corporate quality measure team had set forth with the exception of 1 month, March 2015.

Table 3

Fall Data from November 2014 -July 2016

Month	Total Falls	Percentage of total falls	Falls with significant injury	% of Fall with significant injury	# of Residents with falls	% of Residents' w/falls	# of patient days for the month
Nov 2014	16	16%	2	1.98%	14	14%	1009
Dec 2014	19	19%	0	0%	12	12%	1015
Jan 2015	22	19%	0	0%	13	12%	1129
Feb 2015	13	14%	0	0%	5	5%	922
March 2015	5	5%	0	0%	4	4%	932
April 2015	12	13%	0	0%	10	11%	933
May 2015	17	18%	0	0%	7	8%	928
June 2015	14	15%	0	0%	8	9%	930
July 2015	8	9%	0	0%	5	6%	866
August 2015	15	16%	0	0%	8	8%	945
Sept 2015	12	12%	0	0%	8	8%	996
Oct 2015	15	17%	0	0%	10	11%	905
Nov. 2015	15	15%	0	0%	12	12%	974
Dec. 2015	18	18%	0	0%	8	8%	1020
Jan. 2016	19	21%	0	0%	7	8%	892
Feb. 2016	20	22%	0	0%	7	8%	921
March 2016	11	13%	0	0%	7	8%	860
April 2016	7	8%	0	0%	4	4%	897
May 2016	9	9%	0	0%	7	7%	977
June 2016	15	18%	0	0%	10	12%	819
July 2016	9	10%	0	0%	5	6%	765

A frequent faller is a resident who has experienced two or more falls in a particular period (Kobayashi, Kusuma, Yamamoto, Sugiyama, & Sugai,2009). When reviewing the historical fall data and comparing the number of falls with the number of residents that sustained a fall during that specific month, data showed that during several months there were residents who were considered frequent fallers (Figure 6). With this information, it is possible to conclude that appropriate interventions or proper assessment was not completed in an effort to prevent the resident from sustaining a second fall within that month.

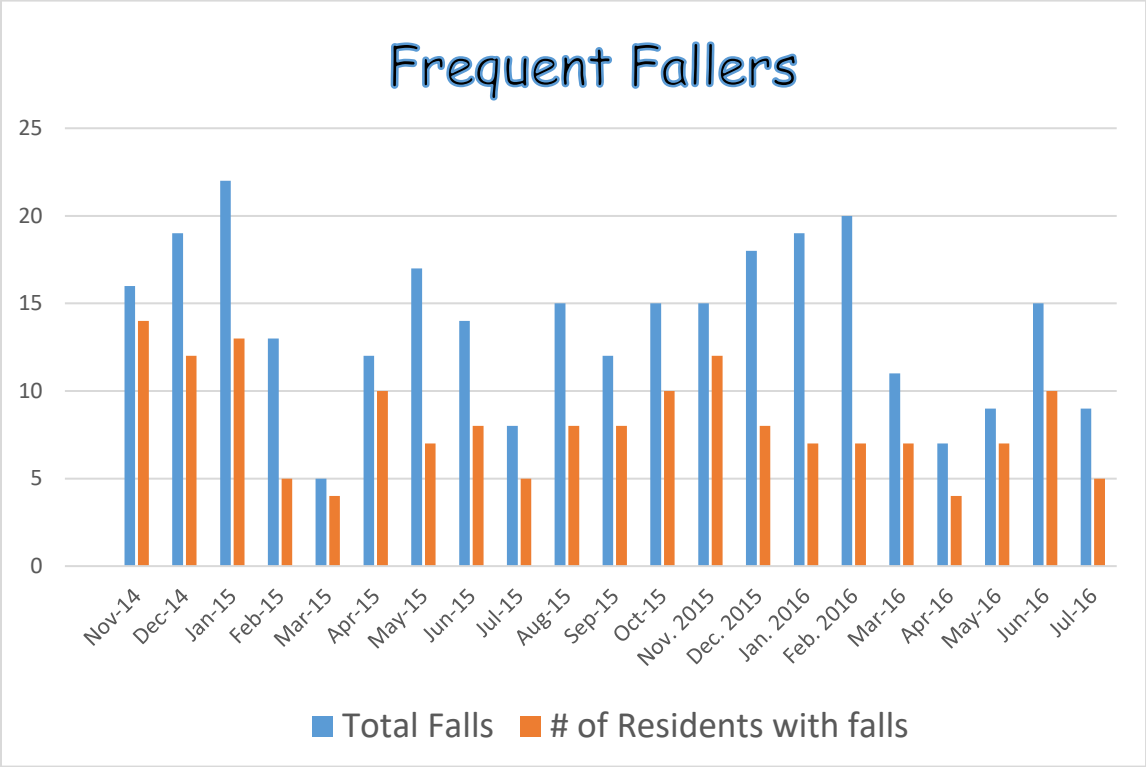

Figure 6. Comparison of falls and number of residents with falls.

Figure 6 shows that there were multiple residents who sustained more than one fall during each month; however, during that past 2 years, November, 2014 has been the only month when two residents sustained a significant injury as a result of a fall.

Education

There were multiple 45 minutes-to-1 hour educational sessions held starting 10 days before the pilot, offered at various times during the day to ensure that all departments were given the opportunity to participate. Forty-nine staff participated. Education was provided to all departments within the organization on the following topics:

- Fall management

- Facility specific fall data
- Corporate Fall data
- BOUNCE Back Fall initiative (Morse Fall Scale, Elderly Mobility scale, Color Coded Risk Levels, Lewin's theory of change, Patient Education, Fall management care plan & Intervention Notification Sheet, Neurological Assessment, Post Fall Evaluation and Notification Form, Introduction of Patient Safety Team (PST)

The BOUNCE Back program education also included a flow chart (Appendix F) that explained the fall management program on admission and following each fall of a resident. The flow chart demonstrated a stepwise approach for addressing a fall and assessing a patient on admission to assist the staff with completing the assessments with consistency throughout the pilot. Management was also available to assist with questions either in person or via phone throughout the pilot.

To ensure that the entire staff was aware of the resident's designated level of fall risk, the levels were described using the concept of the stop light (Table 4).

Table 4

Fall Risk Level and Explanation Based the Concept of the Stop Light

Level of Risk	Color	Meaning
High Risk	Red	Requires staff assistance with all care
Moderate Risk	Yellow	Requires some levels of assistance with activities of daily living & care
Low Risk	Green	Independent with most activities

Once assigned a risk level following the MFS and EMS evaluation, the patient was given a bracelet, nonskid socks and an Intervention notification Sheet to be placed in their closet with the appropriate color, corresponding to the level of fall risk (Figure 7).

Figure 7. Color-coded Bounce Back Fall packet, given per the results of the MFS assessment. The fall notification sheet would notify any staff member of the standard interventions for that risk level and all individualized interventions put into place for that resident.

During the educational sessions, a priority was made to elaborate on the importance of each departments role on fall prevention. Many members of the staff from various departments were eager to contribute to patient care and improving the quality of care within the facility. To ensure understanding, participants were given an opportunity to ask questions regarding the Bounce Back initiative at the completion of each educational session. Each educational session included an announcement of August 1, 2016 as the date to launch the Bounce Back initiative. In-service packets were placed on

each unit in the facility for staff members who were unable to attend a scheduled educational session.

To assess the staff's retention of knowledge, a pre and posttest was administered. Following the completion of the educational sessions de-identified data from the pre and posttest was provided to the student for analysis. The data included how many participants from each department participated in the educational sessions. Each participant was identified by a number and their department such as housekeeping, dietary or nursing. The pre and posttest were attached by matching numbers. I graded the tests in order to evaluate the effectiveness of the educational sessions provided based on whether there was a significant increase in scores on the posttest following education the educational session. The scores were entered into an Excel spreadsheet and was used to track and assess effectiveness of the educational session. The differences in each employee's pre post test scores were calculated to assess if the educational seminars increased their knowledge on the assessment tools, facility fall statistics, fall management and the BOUNCE Back fall initiative.

Table 5

Statistical Data for Attendance at the Live BOUNCE Back Educational Trainings

Department	# of Employees in Attended
Nursing	21
Dietary	2
Therapy	6
Maintenance	5
Activities	3
Housekeeping	3
Receptionist	1
Admission/Dept. Heads	8

There was a total of *n*=49 out of 65 staff members who attended the live BOUNCE Back educational training sessions (Table 5). There were eight staff members under Admission/Dept. Heads and this included the Director of Social Services, Admissions, Therapy, Activities, Dietary, Maintenance, Dementia Care, and the Assistant Director of Nursing. When looking at Nursing this includes the two restorative aides, unit manager and the RN/MDS coordinator. The six employees documented under therapy included physical, occupational and speech therapist. There were other employees that were unable to attend a scheduled educational review that reviewed the self-study package, but this data were not tracked. As nursing is the largest department within the facility, nursing had the highest attendance at the educational trainings. Moreover, therapy is the second largest department and they had the next highest attendance at the educational trainings (Table 5 and Figure 8).

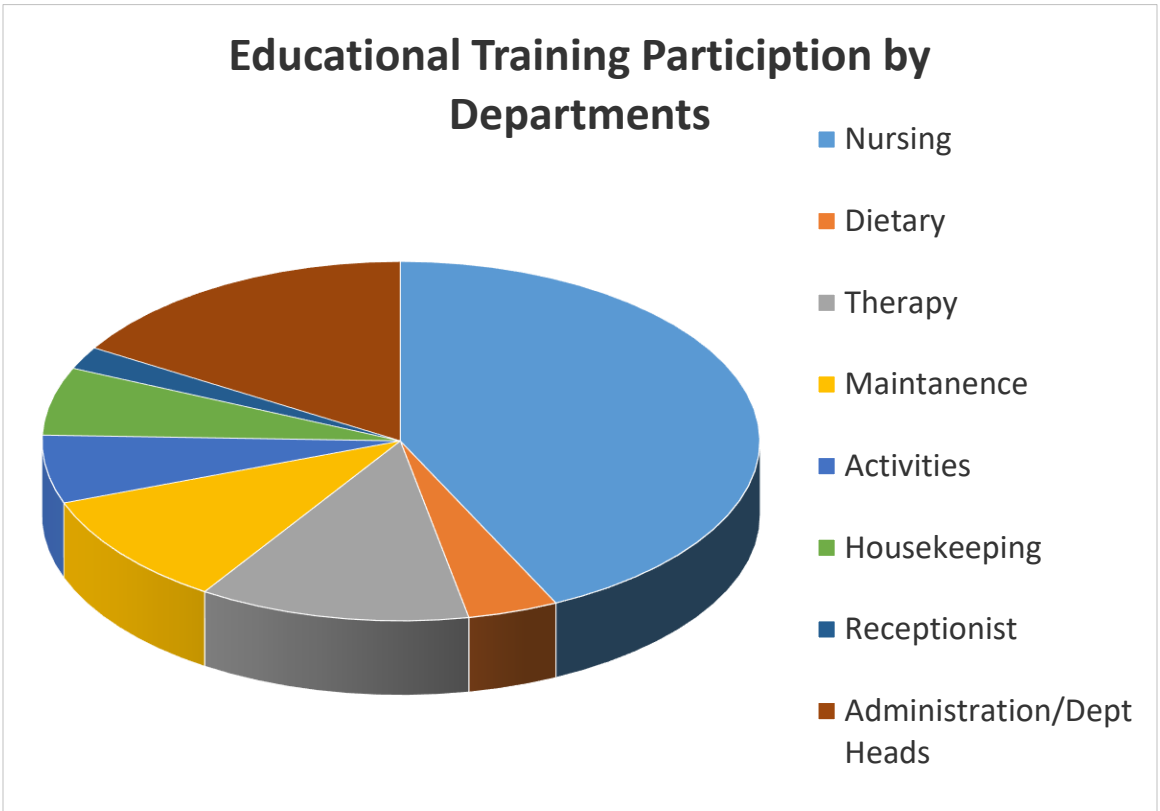

Figure 8. Educational training participation by departments.

The pre and posttest consisted of 18 questions and the questions were identical on both test. The scores were provided to the DNP student in a de-identified manner, using numbers to identify employees. The information was entered into an Excel spreadsheet and analyzed for comparison. See Table 6 for the analyzation of the BOUNCE Back pre and posttest scores.

Table 6

BOUNCE Back Pre and Posttest Scores

Employee	Pre-score	Postscore	**Difference**	% improve
1	61	89	**28**	28%
2	67	89	**22**	22%
3	56	89	**33**	33%
4	72	94	**22**	22%
5	44	78	**34**	34%
6	67	94	**27**	27%
7	28	67	**39**	39%
8	50	61	**11**	11%
9	61	61	**0**	
10	78	89	**11**	11%
11	28	72	**44**	44%
12	56	67	**11**	11%
13	50	89	**39**	39%
14	56	94	**38**	38%
15	50	94	**44**	44%
16	56	94	**38**	38%
17	61	89	**28**	28%
18	61	94	**33**	33%
19	72	94	**22**	22%
20	78	89	**11**	11%
21	83	89	**6**	6%
22	17	94	**77**	77%
23	67	78	**11**	11%
24	33	56	**23**	23%
25	61	100	**39**	39%
26	67	100	**33**	33%
27	67	100	**33**	33%
28	83	94	**11**	11%
29	67	100	**33**	33%
30	78	94	**16**	16%
31	61	83	**22**	22%
32	44	61	**17**	17%
33	78	94	**16**	16%
34	56	72	**16**	16%
35	67	83	**16**	16%
36	83	83	**0**	
37	67	83	**16**	16%
38	61	61	**0**	
39	67	67	**0**	
40	56	78	**22**	22%
41	89	89	**0**	
42	89	94	**5**	5%
43	89	94	**5**	5%
44	67	78	**11**	11%
45	61	78	**17**	17%
46	100	100	**0**	
47	67	83	**16**	16%
48	50	89	**39**	39%
49	67	89	**22**	22%

When looking at the pre and posttest scores there were *n*=6 staff members that had no change in scores. All other *n*=43 staff members exhibited an increase in their posttest and this would suggest that the BOUNCE Back educational sessions increased the staff's knowledge on fall prevention, facility statistics, staff's role in fall management and the BOUNCE Back fall initiative (Figure 9).

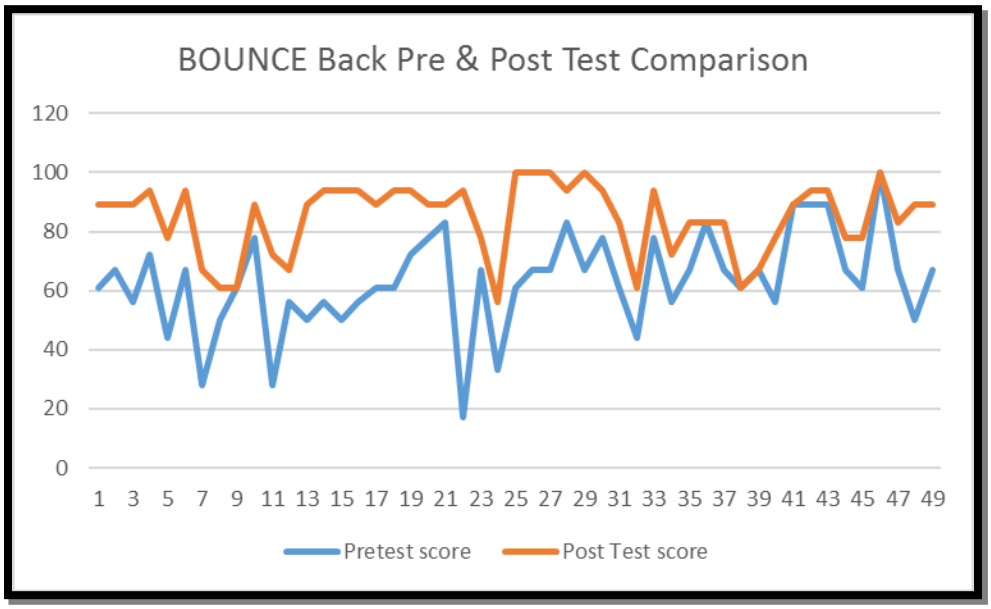

Figure 9. Line Graph displaying the comparison of the staff pre-& posttest prior to implementation of the BOUNCE Back Initiative.

The average pretest score was 63.1% and the average posttest score was 84.7% with a SD of the posttest of 21.6%. It was also noted that once the fall education started in July 2016 prior to implementation of the BOUNCE Back fall initiative, there were no further falls during the month of July. This resulted in nine falls for July 2016 which was a decrease, and this can be due to the change in staff attitudes and behaviors towards fall prevention within the facility

Patient Safety Team

Falls injury prevention in long-term care (LTC) settings involves multifactorial approaches. Based on current literature, these approaches can include conducting comprehensive assessments of the resident and environment, identifying factors creating risk, and implementing a set of interventions that address those factors (Dilley et al., 2014). It is important to note that achievement of these factors served as the goal of the Patient Safety Team (PST) for this project The formation of the PST was discussed during each educational session, inviting staff members that were not designated by the pilot to attend in order to have collaboration from all members of the interdisciplinary team. An initial meeting was held with the key people of the PST meeting one week prior to implementation to set expectations, review prospective procedures and to answer any lingering questions. There were eight participants in the initial PST meeting including DON, Material Data Safety Coordinator, Director of Therapy, Social Services Director, Medical Records, Unit Manager, and the Restorative Nursing Aide. The initial meeting was used to schedule future dates and times for PST meetings.

During the month of August, there were five PST meetings held and one initial meeting. During the month of September there were four PST meetings that occurred in September. The meetings in August were conducted by me and the September meetings were conducted by the MDS Coordinator and a staff registered nurse. The attendees for each meeting ranged from eight to 12 employees consisting of the DON, Assistant Director of Nursing, Unit Manager, wound care nurse, Director of Therapy, staff therapist (speech, physical and occupational therapists), maintenance, dietary, activities, social

services, and nursing staff (registered nurses, licensed practical nurses, nursing assistants and restorative aides). Each meeting occurred in a timeframe of 45 minutes to one hour depending on the number of patients on the agenda to be discussed.

The first meeting was held and the requirements for the PST were reviewed and each attendee signed stating that they were participating voluntarily with coercion. Appendix G is a copy of the protocol for participation in the PST weekly meetings including designated roles and the voluntarily consent that each participant signed. When a new employee attended the meeting, they were required to sign the form. During each meeting a new form was created that included:

- New admits (Name, Diagnosis, EMS score, MFS score, risk level, and current interventions)
- Residents who sustained a fall from the week before (Incident surrounding the fall [date & time] and current interventions)
- Resident who the PST designated to be at risk for falls
- Topics for discussions (Current fall data by shift, incentive provided to the staff on the shift with the least number of falls weekly, assessments that were due or missing, additional needed training and possible changes to the Bounce Back Fall initiative)

The facility provided the DNP student with de-identified demographic data to include the risk level and admitting diagnosis of each resident on an Excel spreadsheet. The post implementation falls quality measure data was provided to the student to

compare to the historical data to assess whether the fall management pilot was effective in reducing falls within the facility.

Findings and Implications

Falls

The BOUNCE Back fall initiative was implemented and monitored for a total of 60 days for the months of August and September 2016. De-identified data were provided to the DNP student from the corporate quality measure system following completion of implementation of the *BOUNCE Back* fall initiative. In addition, data regarding the assigned risk level following assessment and the patient's admitting diagnosis were also provided for analysis.

Beginning August 1, 2016 all new admissions were assessed and placed on the BOUNCE Back fall initiative program within 30 minutes of admission. Additionally, all in-house residents who were admitted to the facility prior to prior to August 1, 2016 were assessed for falls and added to the BOUNCE back initiative program by August 5, 2016. Total residents assessed using the BOUNCE Back fall initiative in August was n=42 and during the month of September all new admissions were assessed and this consisted of a total of n=18 patients. In total, there were n=60 patients who were assessed and managed under the BOUNCE Back fall initiative between August 1 and September 30, 2016. The n=60 patients that were assessed and managed under the BOUNCE BACK fall initiative were admitted under different criteria within the facility. Figure 10 displays the number of patients that were admitted under each criterion. Most of the residents (n=48) were admitted under Medicare Part A and received therapy services during their stay.

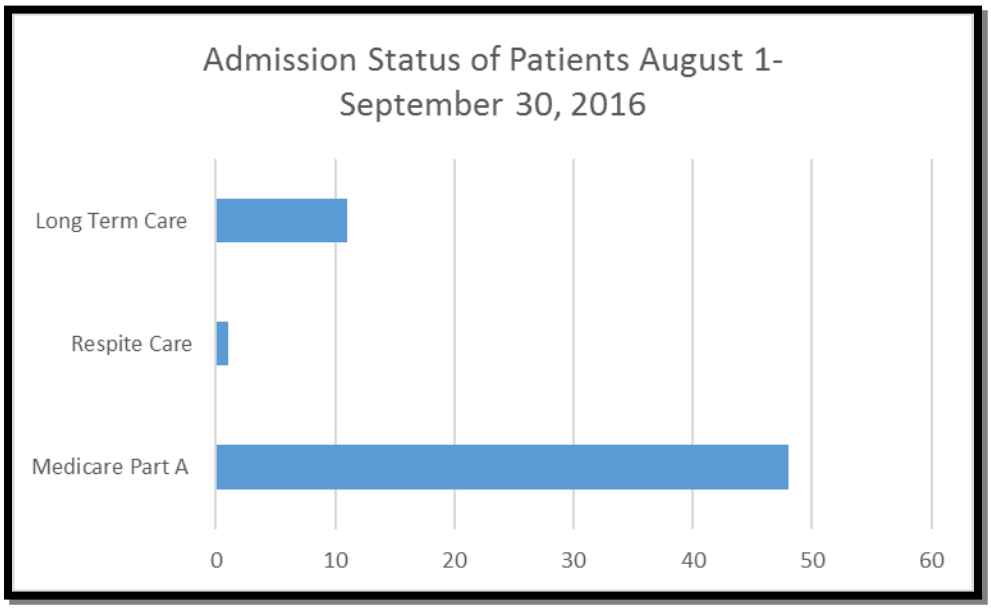

Figure 10. Residents admitted under each designated criterion.

There was a total of 40 female residents assessed and managed by the BOUNCE Back fall initiative and 20 male patients that were assessed during the 60 days of implementation. Each resident was assessed with the MFS and EMS and then assigned a level of risk based on their assessment. Once assigned to a fall risk level, standardized interventions that were designated for each level of risk was implemented and the nurse could implement individualized interventions based on observations. This resulted in the initial fall care plan for that resident being formulated based on standardized interventions and multifactorial intervention based on the team's collaboration (Appendix H). On this care plan, the admission nurse checked the appropriate risk level, and the recommended risk interventions that were indeed implemented and the individualized interventions were written in. Table 7 displays how the 60 residents were categorized at high, moderate or low level of risk for falls on the BOUNCE Back fall initiative during the 60 days of implementation.

Table 7

Fall Risk Level for n=60 Residents During 60 Days of Implementation

Risk Level Following Assessment	Risk Color	# of patients	%
Low Risk	Green	1	1%
Moderate Risk	Yellow	16	27%
High Risk	Red	43	72%
	Total Patients	*N*=60	100%

Most of the residents (*n*=43) admitted into the facility were categorized as being high risk (72%) during the 60 days of implementation and only *n*=1 resident was categorized as being a low risk for falls. When looking at the 7-days post admission fall risk scores, there were no changes in the categorization of risk level. Figure 11 illustrates how the risk levels were divided among the *n*=60 residents at the pilot facility during the month of August 2016 and September 2016.

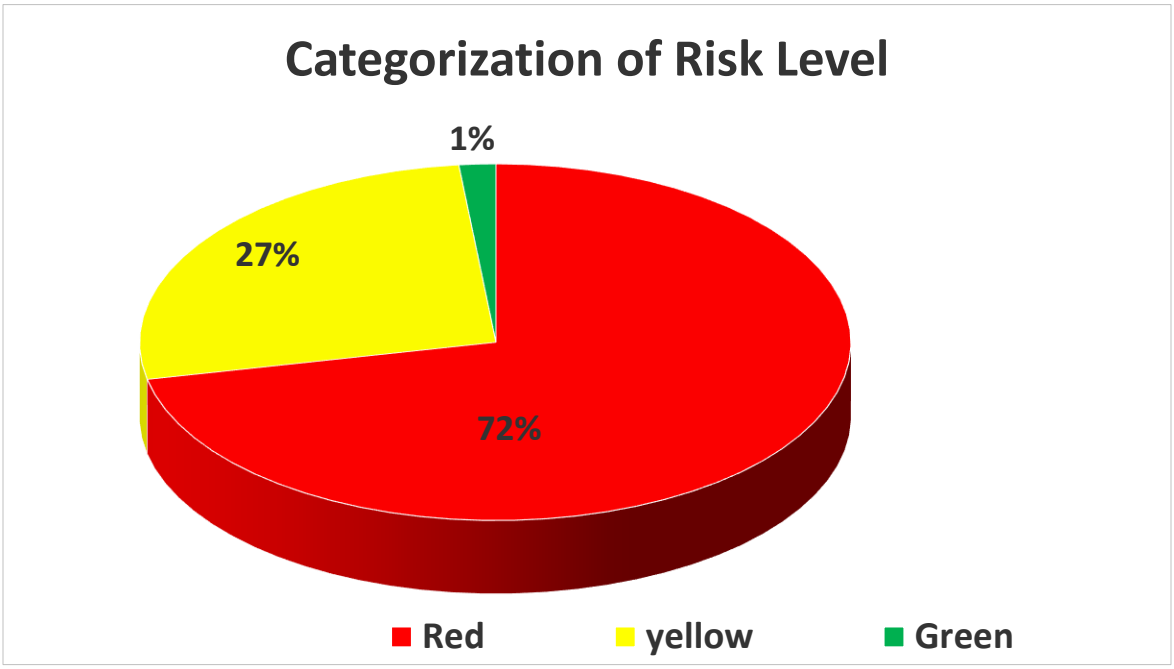

Figure 11. Categorization of Risk levels for *n*=60 residents. Red=High Risk, Yellow= Moderate Risk & Green= Low Risk.

The pilot site is a rehabilitation and skilled nursing facility, and the facility serves residents with a variety of admitting diagnoses. In addition, all residents served within these 60 days had multiple diagnosis and there were 11 patients who had a documented diagnosis of dementia. See Table 8 and Figure 12 for the breakdown of diagnosis for residents managed on the BOUNCE Back fall initiative.

Table 8

Diagnosis of Residents Managed on the BOUNCE Back Fall Initiative

Diagnosis/Category	# of Patients with the specific Diagnosis
Renal	3
Cardiac	9
Orthopedic/Fracture	16
GI	1
Respiratory	6
Acute Infection	9
CVA	5
Dementia	5
Neurological	2
Other	4

Most of the patients were admitted with an orthopedic diagnosis (*n*=16) with 15 the result of a fracture and one diagnosed with lumbar stenosis. The five patients that were admitted with a diagnosis of dementia were the long-term care residents that considered the facility their home. The residents that were categorized under acute infection *(n*=9) were admitted with a diagnosis such as urinary tract infection, cellulitis and acute respiratory infections. The residents categorized under respiratory (*n*=6) were admitted with diagnoses such as pneumonia and acute respiratory infection. There were four residents that were categorized under "other", and they were admitted with a diagnosis of brain cancer, failure to thrive and pressure ulcer. With residents that were included in this pilot being admitted with a variety of medical diagnoses, it shows that the BOUNCE Back fall initiative is adaptable to managing falls with all patients no matter the diagnosis including those residents with dementia.

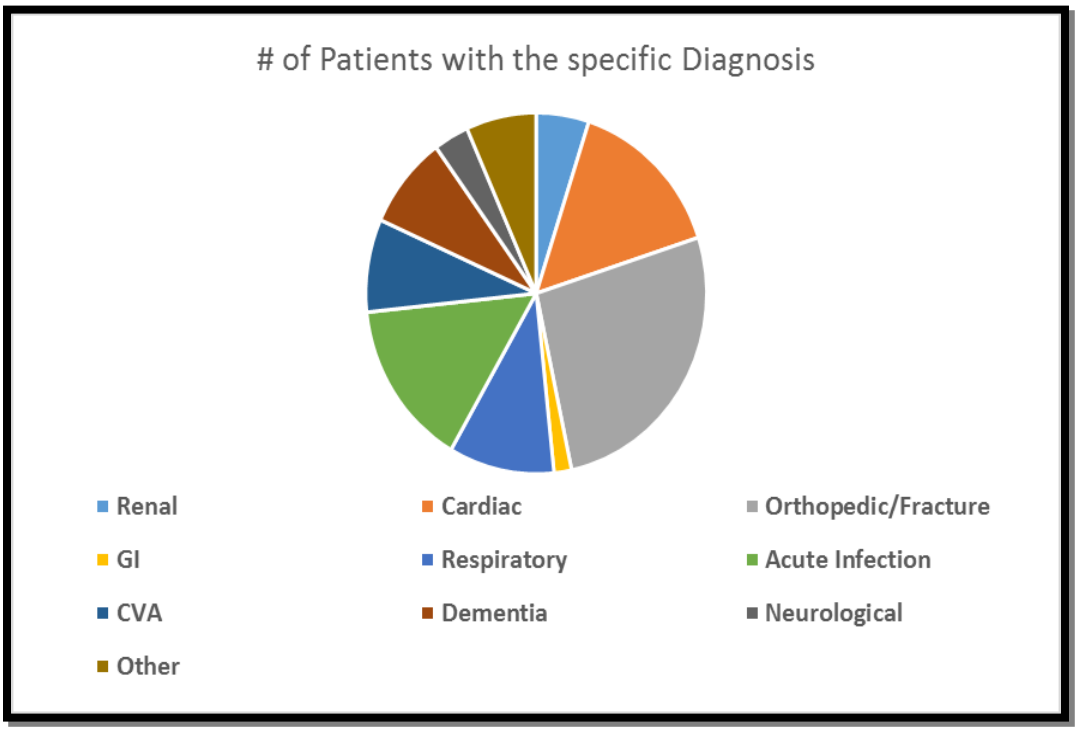

Figure 12. Detailed breakdown of specific diagnosis of residents assessed on the BOUNCE Back fall management initiative.

The purpose of implementing the BOUNCE Back fall initiative was to determine if the above multifactorial fall prevention program would reduce the number of resident falls within the facility. When looking at the de-identified data provided to me during the month of August there was a 34% decrease of resident falls with only five resident falls. In addition, there were only five residents that fell, signifying that there were no repeat fallers. When looking at September 2016 data there was a decrease number of resident falls with only three falls sustained within the facility (See Figure 13). When looking at the eight residents that fell within 60 days, *n*=7 was documented as a high risk on admission without change. The other resident *n*=1 was designated as a moderate risk for falls. In comparison to August 2016 (Table 9) there were two residents that sustained a

fall, signifying that one resident fell twice. Since November 2014, September 2016 is the month where the facility has had the least number of falls (*n*=3) and with only two residents falling the least number of repeat fallers sustaining a fall. The de-identified data provided pre-implementation showed that the facility has not met the corporate threshold of 7% since March 2014. However, during the 60 days of implementation the facility scored below the 7% threshold at 5% during both months.

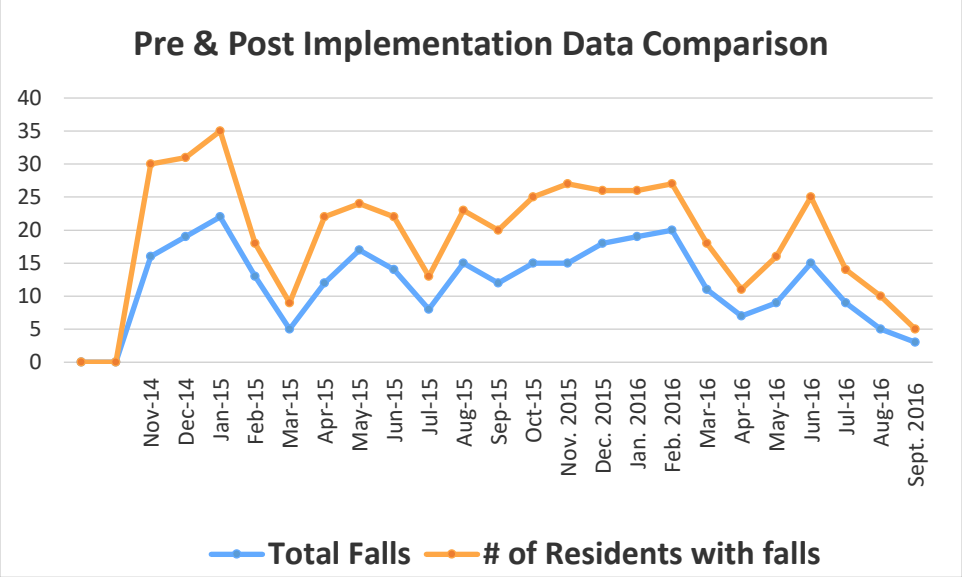

Figure 13. Pre and postimplementation fall data comparison.

Table 9

De-identified Fall Data Post Implementation

Month	Total Falls	Percentage of total falls **(threshold 7%)**	Falls w significant injury	% of Fall w/ significant injury	# of Residents with falls	% of Residents' w/falls	# of resident days for the month
Nov 2014	16	16%	2	1.98%	14	14%	1009
Dec 2014	19	19%	0	0%	12	12%	1015
Jan 2015	22	19%	0	0%	13	12%	1129
Feb 2015	13	14%	0	0%	5	5%	922
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May 2016	9	9%	0	0%	7	7%	977
June 2016	15	18%	0	0%	10	12%	819
July 2016	9	10%	0	0%	5	6%	765
August 2016	***5***	***5%***	***0***	***0%***	***5***	***5%***	***779***
Sept. 2016	***3***	***5%***	***0***	***0%***	***2***	***3%***	***659***

When looking at the eight falls that occurred during the 60-day implementation, these falls were due to the residents attempting to transfer without staff assistance and non-compliance with the set of interventions. Institutionalized elderly are most likely to fall while transferring from a bed to a wheelchair, but they may fall even while walking across a flat floor (Kato, Izumi, Hiramatsu, & Shogenji, 2006) Prior to the falls the residents were categorized as high risk for falls according to the MFS. During the 60 days of implementation there were falls that were sustained on each eight hour shifts. See Figure 14 and Table 10 for a comparison of August 2016 and September 2016 pilot fall

data by each eight hour shift. The night shift had the least number of falls compared to day and evening shift which had two falls during the entire 60 days of implementation. During the first 30 days of implementation a weekly incentive such as a candy bar was given to the shift with the least number of falls as a method of motivation. During the month of September, the incentives were not given as fall prevention is a required expectation of all staff member job assignments. Per the data this did not affect the outcome of falls during the 60 days of implementation.

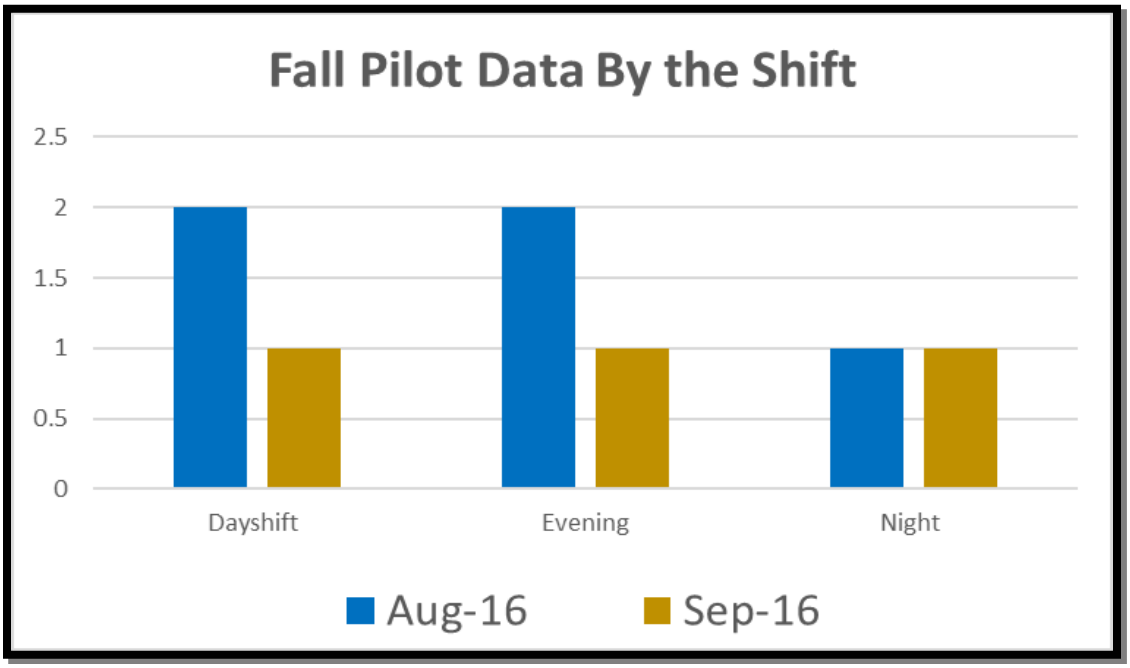

Figure 14. Comparison of post implementation fall data by shift.

Table 10

Results of the BOUNCE Back Pilot 60 Days Post Implementation

Month	Dayshift 7-3p	Evening Shift 3-11p	Night Shift 11-7 a	Total
August 2016	2	2	1	5
September 2016	1	1	1	3

The data presented supports the effectiveness of the BOUNCE Back fall initiative in reducing residents falls. With the pilot facility average of 14 to 22 falls per month previously, these data demonstrate that the PST meetings, interventions, interdisciplinary approach, and staff education positively impacted the number of falls and reoccurring falls.

Limitations

When reviewing the pilot, there was one unanticipated limitation that occurred. With the use of the MFS assessment, if a patient received IV therapy, received feedings through a percutaneous endoscopic gastrostomy (PEG tube), received negative-pressure wound therapy (NPWT), along with a combination of a history of falls, this would score the patient at a high risk for falling. There were two patients who fell under this scenario and were independent with activity. They were noncompliant with the color-coded system which was used to distinguish their level of fall risk; but, this did not affect the data as neither resident sustained a fall during their stay. They were reviewed during a scheduled PST meeting to ensure that appropriate interventions were in place to prevent falls and ensure their safety. The two patients received fall prevention education at frequent intervals and they agreed and adhered to all set forth interventions except for the color-coded slip resistant socks. The amount of time allowed for staff education was limited due to the amount of time allowed following IRB approval and the corporate

desires implementation date. However, there were staff members from each department within the facility that participated in one of the scheduled in-services.

Implications

The results of the BOUNCE Back fall initiative suggested that a standardized fall prevention program that includes a fall risk assessments, patient and staff education, individualized fall care plan, and team work can reduce the number of falls within a facility. As an added benefit, the falls decreased and this positively correlated with the emergency room transfers for the facility for the months of August and September 2016. This reiterates why continuous education and fall management implementation is important in this setting and similar settings, as it increases the safety and quality of care for the patients. Elderly falls within residential care facilities and fall prevention are constant topics related to quality improvement.

Implications for Social Change

Older adults who live in long-term care (LTC) facilities are highly vulnerable to falls and fall-related injuries and approximately 60% will sustain at least one fall per annum (Dilley et al., 2014). Due to the morbidity and mortality associated with elderly falls, fall prevention within residential care facilities is an important topic for discussion to decrease and prevent harm to facility residents. When a resident sustains a fall, it can increase healthcare costs, length of stay, risk for injury and legal liability for the company. Through implementation of this pilot, a method has been established that can effectively assess the resident's risk for falls, in order to create a plan of care to decrease the chances of an occurrence. With the number of elderly patients estimated to reach 18

million by 2030 and with two out of three possibly living in a residential or long-term care facility, it is critical that effective fall management programs are established (Hicks, 2015). Without an effective fall management program and action by researchers and healthcare providers, the economic and societal burden of falls will increase widespread in the next few decades. The BOUNCE Back program presents a multifactorial and systematic approach that includes members from all aspects of the interdisciplinary team to provide support that is essential for the integration of fall prevention in practice within any company or facility.

Recommendations

To decrease the gap in nursing practice, the corporate office should develop a corporate policy that aligns with the BOUNCE Back program or adopt the policies developed along with the program, as it has been effective in the skilled nursing and rehab setting. The BOUNCE Back fall management program should be implemented in memory care and assisted living prior to implementing the program throughout the company. Each arena has different regulations and the staff members have different scopes of practice that have to be followed. It is important to review the documents within this program to ensure that all employees are practicing within their scope of practice. Documents that require review and possible revision include the

- Neurological Assessment form
- EMS

The neurological assessment is considered an assessment and in memory care/assisted living a nurse is not staffed 24 hours a day and the current BOUNCE Back

guidelines following each fall the patient receives neuro-checks. The form may need to be revised to include tasks the caregiver managers can complete or the form may need to be removed from the assisted living program, independent living and dementia care implementation. The caregivers on the above units have no formal nursing training, they are able perform and assist with basic activities of daily living.

The Elderly Mobility Scale (EMS) is completed by therapy and if therapy is not present in the facility nursing has been trained to complete the screening tool. The EMS scale is billed as a screen in skilled nursing, however on the assisted living units the patients receive therapy and therapy screen only per physician's order under Medicare Part B. The requirement of a physician order would then warrant a cost to the family, without the patient being under part B therapy. The organization needs to decide whether the EMS would be part of the evaluation the nurse conducts on admission and following evaluation consults with the physician and therapy as needed. Another option would be for the company to include the cost of the EMS screen by therapy upon admission to ensure that each resident is properly screened by therapy.

The educational PowerPoints have proven to be effective; however, it should be conducted on a biannual basis and for all new hires to ensure that the information is updated and that all employees are receiving education based on updated evidence along with facility data. Frequent education is done to ensure compliance and a review of knowledge on a consistent basis. When presented in a different facility the PowerPoint should also be altered to display data from the specific facility that the program is serving at that time. The facility's fall data in comparison to other facilities in the company,

should be included in the education. To ensure that more staff members are able to attend the educational sessions, there should be educational sessions set two weeks prior to implementation. During this pilot, this was not accomplished due to time restraints following IRB approval and the desired start date set for by the site.

The BOUNCE Back Fall initiative includes the completion of a MFS and EMS for each resident admitted, 7 days following admission and after each fall. Initially, at the start of the pilot there were isolated incidents whereby the 7-day reassessment was not completed on the due date. There should be periodic auditing done by the Director of Nursing and Therapy to ensure compliance and consistency during the completion of the MFS and EMS assessments. During the weekly PST meeting, the residents that have assessments due can be included in the report to alert the staff assigned to residents to complete the assessment by the due date. I would also recommend an alternative method for rolling out the MFS and EMS and that would be to roll these assessment forms out a week prior to initiating the program. This will give staff the opportunity to become familiar with completing the forms and allow time for questions regarding compliance with the forms.

Contribution of the Doctoral Project Team

The project team consisted of me, facility administrator, regional nurse and Director of Quality Performance and Improvement. The project team was vital to the success of the project. As this pilot was implemented the support from the corporate Director of Quality Performance and Improvement was never ending and priceless. When implementing change, it is imperative that there is support from the organization and its

stakeholders. The Director of Quality Assurance and Improvement ensured that all documents were approved by the corporate office in a timely manner following IRB approval. The corporate Director of Quality Performance and Improvement ensured that the pilot was within corporate, state and federal guidelines. To ensure that the corporate team was informed about the pilot and the status this individual ensured that the student was an active part of the corporate falls committee. This allowed the student to interact and assist with creating policies on a corporate level and share evidence-based research related to falls. With the exception of approving the facility's participation in the BOUNCE Back initiative, the facility administrator did not have much interaction or participate in PST meetings.

The Director of Quality Performance and Improvement along with the members of the corporate falls committee ensured that the student had the necessary data and support to make this pilot successful. Following implementation and completion of the pilot, the team provided the student with de-identified data to analyze and report data. The team was euthanasic about the success of the project and eager to implement at the next site.

BOUNCE Back has been successful in reducing falls within the skilled and rehabilitation setting within this facility. After reviewing this information with the corporate team from the initial 30 days, the corporate team has requested that the fall committee begin re-evaluating the program to ensure it meets the regulation of assisted living for future implementation (Appendix I). The company has set a tentative goal to implement this project out to the entire company by March 2017 with established

policies. This will include 239 buildings consisting of assisted living, memory care, skilled and rehab facilities across the nation. The student has also applied for a provisional patent with the United States Patent and Trademark office and awaiting approval. The ultimate goal is to present this fall management initiative that was created to local facilities in effort to reduce the number of elderly falls, decrease healthcare cost related to falls, and company liability.

Strength and Limitations of the Project

Strengths

As with any pilot or change program, there will be strengths and limitations. Through this pilot the staff gained education regarding facility statistics, fall prevention in relation to quality resident care and the importance of a fall risk assessment. Success of the education sessions were noted through different pre-and posttest scores. The staff from all departments were enthusiastic about the change and once educated on the pilot they put forth great effort to reducing the falls within the facility. De-identified demographic data were also provided to add knowledge about the sample of patients that were assessed during the pilot such as admitting diagnosis and designated level of fall risk. The PST, a vital part of this pilot, and a team such as this should be included in any fall management programs. This team allowed the facility to view each resident in the eyes and perspective of all departments. By coming together, the team was able to create and revise a weekly care plan that was inclusive of all the resident's needs and prevent falls. The pilot was implemented for 60 days and this was a good length of time to demonstrate program effectiveness in reducing falls within the facility. Lastly, the pilot

assessed residents with a variety of admitting diagnoses, medical history and even those with a diagnosis of dementia or those on psychotropic medications. This shows that this program can easily adapt to any patient population and be effective in preventing falls.

The staff education was not posted as mandatory; however, all employees were encouraged to attend. However, due to time constraints and work schedules many of the as needed employees were not able to attend the live training sessions. To ensure that the information presented during the educational seminar was made available, the PowerPoint presentations were made available in every department to ensure some level of education was provided. However, the pre and posttest could not be administered to these employees as the data would not have been reliable.

The BOUNCE Back initiative has been successful in reducing the number of falls within the pilot facility. However, to improve the completion rate for the EMS by therapy it is important to ensure that therapy understands that the EMS is a screen and not an evaluation. Evaluations are billed and screens are a short assessment and they can be completed on patients without a physician order. It may have been beneficial to have the Director of Therapy conducting this in-service to ensure that the therapist was clear on the process. When looking at implementation in the future, it is very important to include a team such as the PST and ensure that task of fall prevention stretches to all departments of the interdisciplinary team, as with the BOUNCE Back. Fall prevention education is important as this increases the level of safety that is being provided for residents. The educational in-services should have been mandatory for all staff and enforced as such by management and this is the recommendation for future implementation. Those staff

members who did not attend a live training session required several instances of one-on-one education and did not seem as enthusiastic about the change initiative compared to the employees who attended the live fall prevention trainings.

Section 5: Dissemination Plan

Dissemination Within the Organization

The BOUNCE Back fall initiative has assisted the pilot facility with decreasing their overall fall rate 34% within the first 30 days and continued that decrease after 60 days post-implementation. To ensure that this fall initiative is beneficial in improving the safety and quality of care throughout the company, the results of the pilot will be discussed with the company stakeholders and corporate fall committee via conference call. Due to the success of the pilot, the corporate team is working with me to re-evaluate the program for implementation in other arenas of the company such as Assisted Living and Dementia Care Units. The post implementation data will be presented to all departments and line staff in the form of a handout, highlighting the success of the program. This will be done to applaud their successful efforts during the initial 60 days of implementation and to show all departments how team work is an important aspect of quality improvement.

To disseminate the post implementation data and encourage fall prevention throughout the facilities in the company, the post implementation data along with a brief introduction of the BOUNCE Back initiative will be posted on the company's intranet. To educate the families and visitors about the pilot and the importance of fall prevention, flyers will also be placed in the common area of the facility with a brief introduction of the program and the results 60 days post implementation.

Dissemination in the Field of Nursing

The BOUNCE back fall management initiative is a program that would be beneficial in residential care facilities and possible other inpatient healthcare institutions. The student has applied for a patent for the BOUNCE Back fall initiative, with the goal of marketing the product in other residential care facilities to assist with fall prevention and management using a systematic approach. I will create a brochure that highlights the BOUNCE Back fall initiative and the data post implementation at the pilot facility to encourage interest in the product at other local residential care facilities. I also plan to submit abstracts for publication to appropriate health journals targeting the elderly, falls prevention, residential care facilities and quality improvement. Through the use of the BOUNCE Back fall initiative, healthcare institutions can decrease healthcare costs, emergency room visits, legal liability, improvement of patient outcomes and overall safety.

Analysis of Self

Self-Analysis

When initially looking at the topic of fall prevention, the intention was not to build an entire fall management program. However, after becoming a member of the corporate fall committee, I realized how important fall prevention was, but more importantly the need for an effective fall management program. As I participated in the corporate fall meetings, I realized that more often than not, programs are based on perception only and not research. In addition, in my experience I have noticed that programs and policies are based on standards that are not realistic in the workplace or

with floor staff. My goal was then to build a program that was based on research, could reduce falls and would also be doable for my fellow nurses. In addition, BOUNCE Back is a program that could be duplicated in other residential care settings with little or no change and remain effective.

Research evidence and creating the BOUNCE Back initiative allowed me to see how it is to work all ends of the spectrum of program development. To complete the research, create the program based on research, implement based on theory and watch the success of the program was amazing. To be able to discuss fall prevention at a scholarly level and as a practitioner with individuals on the corporate level was remarkable. The DNP program and this pilot has equipped me with the necessary tools to be an effective change agent and improve the overall quality of patient care. It has enhanced my research, critical thinking and analytical skills. My long term professional goal is to work in the area of quality improvement, however, my drive and passion is to develop a disease management program that will serve rural areas and the underserved population. This effort will improve health comes and the quality of life for patients in those areas. Through the completion of this project has equipped the DNP student with the experience and understanding of program development and implementation through the application of theory and research.

Project Completion

The project was completed with great success. For the month of August and September 2016, the number of falls within the facility significantly decreased. Moreover, the number of residents that fell decreased and there were no repeat falls. The

overall safety of the residents within the facility improved and through the use of the PST, resident care was individualized to meet individual needs. The PST meetings assisted the staff with understanding how effective and important a team approach is in caring for residents. Dickinson et al. (2011) stated that all health professionals working in the community, including nurses and other personnel, have a role in promoting fall prevention activities, including exercise. The PST also shows how one discipline may have observed something regarding a resident's care that the other discipline may have never picked up on and through discussion the resident's care plan can be updated to meet their needs.

Challenges

There were a few challenges during the beginning of implementation as this was a project promoting change. During the pilot the MFS and the EMS assessments were introduced to assess the resident's risk for falls on admission. Audits were conducted to confirm that therapy and nursing staff were completing fall assessments correctly. When noncompliance was observed, one-on-one and team educational sessions were held. The consistency in the beginning of the pilot was one of the biggest challenges. However, through reinforcement by the Director of Therapy and Nursing, the staff modified their behavior and become efficient in this area throughout the remainder of the pilot.

At the start of the pilot, many staff members did not recognize the importance of the PST meetings. The first week the PST meeting was held, there were only six members of the facilities interdisciplinary team present. By the last week of the pilot, there were 13 employees present at the weekly PST meeting and theses employees could

effectively discuss the residents and their fall care plan. During the meeting, all participants were active and enthusiastic about preventing falls within the facility, along with being an active part of change within the facility.

Through the process of education and implementation, the biggest insight gained was the importance of education. As I presented the fall prevention information that included national and facility fall statistics, where the facility ranks in the company, research data, and the effect of falls, the staff's response was alarming. What I noted was that the staff did not understand how detrimental a fall could be to a patient's health, data regarding falls and how falls could affect revenue for the facility. Following educational training, the post test scores showed an increase in staff's knowledge regarding fall prevention. This taught me how important presenting education with data and research is to the consumption and interpretation of information.

Summary

Older adults who live in LTC facilities are highly vulnerable to falls and fall-related injuries and 60% living in LTC will sustain at least one fall per year (Dilley et al., 2014). Since falls are a leading cause of injuries in LTC or residential care facilities, addressing this issue is a priority as it has so many consequences. Implementing the BOUNCE Back fall initiative decreased the number of falls significantly within the pilot facility. After 60 days of implementation the number of falls decreased to an astounding five falls during August 2016 and three falls during September 2016. The facility met the monthly fall threshold of 7% set forth by corporate, decreased emergency room transfers by 50% and improved the overall safety of the patients within the community. The fall

initiative also increased staff education and team collaboration through use of weekly patient safety team meetings. Elderly falls are occurring at alarming rates with significant consequences to both residents and facilities. It is important that residential care facilities take an evidence-based approach and make a solid commitment to fall reduction and prevention within their residential care communities.

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Appendix A: Literature Review Matrix

Reference	Keywords	Research Method	Main Findings	Level of Evidence
Barker, W. (2014). Assessment and prevention of falls in older people. *Nursing Older People, 26*(6), 18-24. doi:10.748/nop.26.6.18. e586	Falls, falls assessment, falls clinical guidelines, falls prevention, inpatient care	Expert Opinion	Targeted prevention and intervention are important because they will enhance self-care, improve confidence and promote choice and self-control. In supporting people to reduce their falls risk, clinicians need to ensure that the falls prevention intervention promptly addresses the person's identified individual risks for falling and takes into account whether the risk factors can be treated, improved or managed	Level VII
Baek, S., Piao, J., Jin, Y., & Lee, S. (2014). Validity of the Morse Fall Scale implemented in an electronic medical record system. *Journal of Clinical Nursing, 23*(17/18), 2434-2441. doi:10.1111/jocn.12359	Accidental fall, electronic medical record system, Morse Fall Scale, validity	Retrospective Case control Study N=845	The Morse Fall Scale showed relatively high predictive performance for the Korean population for predicting falls. With the best cut off point of 51	Level IV
Bechdel, B., Bowman, C., & Haley, C. (2014). Prevention of falls: Applying AACN's healthy work environment standards to a fall campaign. *Critical Care Nurse*, *34*(5), 75-79. doi:10.4037/ccn2014987	Fall, fall prevention, Morse Fall Scale	Pilot Study	The team applied the AACN's concepts of healthy work environment to a fall campaign in order to prevent falls. Concepts included sklilled communication, true collaboration, effective decision making, proper staff, authentic leadership and meaningful recognition. The pilot was effective and for 148 days the staff on the PCU went without any falls.	Level VII
Berg, G. M., Acuna, D., Lee, F., Clark, D., & Lippoldt, D. (2011). Trauma performance improvement and patient safety committee. *Journal of Trauma Nursing, 18*(4), 213-220. doi:10.1097/JTN.0b013e31823a454f	Teams, patient safety, performance improvement, Trauma, team building, teamwork	Systematic literature Review	This review looked at how they could build an effective patient safety team in a trauma unit to apply performance improvement. They found that in order to have team work you must have application of these 11 principles that can streamline and demystify processes and foster inter-organizational cooperation. These principles included 1. appropriate team, clearly defined goals 2. clearly defined process	Level I

			3. clearly defined parameters 4. structured communication 5. common language 6. shared understanding 7. power/authority for decision making and implementation 8. champion, shared norms and accountability 9. skilled facilitation 10. understanding of systems theory 11. self-evaluation	
Booth, V., Logan, P., Harwood, R., & Hood, V. (2015). Falls prevention interventions in older adults with cognitive impairment: A systematic review of reviews. *International Journal of Therapy & Rehabilitation*, 22(6), 289-296	Falls, rehabilitation, fall prevention, cognitive impairment, dementia and Alzheimer's disease.	Systematic Literature Review	Researching fall prevention on the elderly population specifically those with dementia. The evidence shows that exercise and multifactorial interventions are most frequently reported in adults with and without cognitive impairment in community, residential care and hospital settings in reducing falls in patients with dementia.	Level I
Brito, T. A., Coqueiro, R. S., Fernandes, M. H., & Jesus, C. S. (2014). Determinants of falls in community-dwelling elderly: Hierarchical analysis. *Public Health Nursing*, 31(4), 290-297. doi:10.1111/phn.12126	Accidental falls, aged, health services for the aged	Epidemiologic cross-sectional population based household study N=316	It was noted that there were 25.8% of falls among the elderly living in the community. However, female had 82.0% higher prevalence of falls compared to males. Individuals who were married had 63.0% higher prevalence of falls compared with those who were not married. Findings from the study noted that there was a positive association with between the occurrence of falls and the number of chronic diseases. Elderly with depressive symptoms had 87.0% higher prevalence of falls compared to non-symptomatic. Furthermore, individuals with impaired cognition showed prevalence of falls 58.0% higher than those without cognitive impairment. The occurrence of falls was positively associated with	Level V

			four tests of motor performance (balance, sitting and standing up, lowering and picking up a pencil, and walking). Individuals with balance limitations had 95.0% higher prevalence of falls compared those without limitations. The prevalence of falls was 75% higher for those with limitations in sit down and stand up, it was 52% among those with limitations in lower and pick up a pencil , it was 87% higher for those with walking limitations.	
Buckinx, F., Beaudart, C., Slomian, J., Maquet, D., Demonceau, M., Gillain, S., & Bruyère, O. (2015). Added value of a triaxial accelerometer assessing gait parameters to predict falls and mortality among nursing home residents: A two-year prospective study.*Technology & Health Care, 23*(1), 195-203. doi:10.3233/THC-140883	Mortality , falls, risk factors, nursing home	2 year prospective follow-up study of nursing home resident from 2011- 2013 N=100	Gait is a determine factor in falls and the analysis of changes in gait it important. However, in this study it was noted that quantitative gait analysis performed using a tri-axial accelerometer is not predictive of falls and mortality among nursing home residents, over a two-year period. In this study, only a decreased body mass index seems to be a predictor of mortality among patients living in nursing homes. This research showed no change over a 24-month period for the Tinetti test. However, the degradation of some gait parameters: gait speed and regularity of gait cycles measured by simple and dual tasks, and step length measured by simple task were significantly reduced at the end of the study. t. Consequently, it was noted that the Tinetti test seems to be less sensitive to changes than some gait parameters assessed quantitatively with an accelerometer.	Level V
Chapman, J., Bachand, D. & Hyrkas, K. (2011). Testing the sensitivity, specificity and feasibility of four falls risk assessment tools in a clinical setting. *Journal of Nursing Management, 19*(1), 133-142. doi:10.1111/j.1365-2834.2010.01218.x	Acute care facility, adults, fall risk assessment, methodology, nursing questionnaire, sensitivity, specificity	Descriptive and comparative cross-sectional study N=1546 patient	Sensitivity was mirrored when comparing the MMC tool and the Hendrich Falls Risk Scale (64.9%) while the NY tool and the Morse Fall Scale were similar (78.9% and 77.2%, respectively). Specificity was highest with the Morse Fall Scale (72.8%) and lowest with the use of the NY tool (58.4%). Review	Level V

			of the data also revealed that the education sessions for the nurses who collected the data did not result entirely in consistent and reliable use of the assessment tools.	
Cangany, M., Back, D., Hamilton-Kelly, T., Altman, M., & Lacey, S. (2015). Bedside nurses leading the way for falls prevention: An evidence-based approach. *Critical Care Nurse, 35*(2), 82-84. doi:10.4037/ccn2015414	Falls, Morse Fall Scale, fall prevention	Quality Improvement Project N=246	After the implementation of the quality improvement project "No Fall Zone", that consisted of a video for the patient and family to watch and staff in services related to the fall policy, documentation requirements and the MFS. A patient/family fall teaching contract was developed and implemented with all patients. New fall signage was designed and placed on the ceiling above the patients' beds. Following implementation, The total number of falls, the fall rate, and the cost of falls dramatically decreased after the implementation of these interventions (Table 2). The total number of falls decreased by more than 50%, and the fall rate is now below the NDNQI benchmark. The fiscal impact associated with this project was $505 440 (cost of 2011 falls minus cost of 2013 falls).	Level I
Dickinson, A., Machen, I., Horton, K., Jain, D., Maddex, T., & Cove, J. (2011). Fall prevention in the community: what older people say they need. *British Journal of Community Nursing, 16*(4), 174-180.	Falls, older people, fall prevention, knowledge of services, ethnic groups	Qualitative study	The results of this study documented that there was very poor knowledge about falls and their prevention among older people. It was also noted that older people believed that personal invitation and talks, and mass media public health campaigns using the media most frequently used by older people, such as television and radio, newspapers and magazines may be effective in disseminating knowledge regarding fall prevention.	Level VI
Dilley, L. B., Gray, S. M., Zecevic, A., Gaspard, G., Symes, B., Feldman, F., Sims-Gould, J. (2014). An educational video to promote multi-factorial approaches for fall and injury prevention in long-term care facilities. *BMC Medical Education, 14*, 102.	Fall education, multi-factorial fall program, falls.	EBP pilot Study	Creating the two fall prevention videos offered nurse educators a novel compliment or alternative to a traditional lecture format. The portability of the video provides learners and educators the opportunity to view the videos in a variety of	Level I

doi:http://dx.doi.org/10.1186/1472-6920-14-102			settings and on mobile devices.	
Fielding, S. J., McKay, M., & Hyrkas, K. (2013). Testing the reliability of the fall risk screening tool in an elderly ambulatory population. *Journal of Nursing Management*, *21*(8), 1008-1015 8p. doi:10.1111/jonm.12192	Ambulatory outpatient clinic, fall risk assessment, fall risk screening tool	Clinical Practice guideline	The scripted Fall Risk Screening Tool demonstrated good reliability in this sample. Rewording two Physical Environment items will be considered.	Level I
Godlock, G. (2016). Implementation of an evidence-based patient safety team to prevent falls in inpatient medical units. *MEDSURG Nursing*, *25*(1), 17-23	Falls, team work, patient safety, nursing, hourly rounding, communication	EBP quality improvement project	Examined the use of the TeamSTEPPS to enhance communication and teamwork related to finding risk factors contributing to inpatients falls. The fall rate after the intervention decreased to 0.69 falls per 1,000 bed days. A year after implementation, the average was 1.63 falls per 1,000 bed days. This project suggests teamwork and situational awareness are useful in mitigating risk for falls and improving patient safety in inpatient clinical settings	Level I
Hicks, D. (2015). Can rounding reduce patient falls in acute care? An integrative literature review. *MEDSURG Nursing*, *24*(1), 51-55.	hospital, fall prevention, and nursing hourly rounds	Integrative systematic Literature Review	Fall rates were unchanged in two studies and varied in another, however fall rates decreased in the majority of the reviewed studies («=10). The reviewed studies showed promising effects of hourly rounding on decreasing patient falls rates.	Level I
Huey-Ming, T. (2015). Patient Engagement in Hospital Fall Prevention. *Nursing Economic$*, *33*(6), 326-334 9p.	Patient falls, falls, fall prevention, fall assessment, fall care plans	Expert Opinion	Empowering patients to become active participants in fall prevention during hospitalization could be the answer. This means inpatients are entitled to receive quality health care in fall prevention depending on their risk for falling and such patient centeredness could lead to safe hospital stays. To engage patients, bedside nursing staff must first seek understanding of the concept of patient centeredness and then incorporate patient centeredness into clinical practice by moving from being experts to being	Level VII

			enablers in hospital fall prevention.	
Hye-Young, J., Trivedi, A. N., Grabowski, D. C., & Mor, V. (2016). Does more therapy in skilled nursing facilities lead to better outcomes in patients with hip fracture? *Physical Therapy*, *96*(1), 81-89. doi:10.2522/ptj.20150090	Skilled nursing, therapy, hip fracture, elderly, skilled nursing facilities.	retrospective cohort study	Findings suggest that increasing the number of hours of therapy improves outcomes for these patients, as reflected in the increased likelihood of being discharged to home. The results of our secondary analyses indicated that this relationship was true for both occupational therapy and physical therapy. Sensitivity analyses indicated that the association between increased therapy and discharge to home was strongest for patients in lower RUG categories and was not apparent for those in the highest RUG category.	Level IV
Jakovljevic, M. (2009). Predictive validity of a modified fall assessment tool in nursing homes: experience from Slovenia. *Nursing & Health Sciences*, *11*(4), 430-435. doi:10.1111/j.1442-2018.2009. 00471.x	assessment tools, elderly, falls, nursing homes, risk assessment.	Qualitative study	Using the estimated criterion of 20 points, the sensitivity of the MFAT score was 61%, its specificity was 80%, its classification accuracy was 64%, its positive likelihood ratio was 3.1, its negative likelihood ratio was 0.5, its positive predictive value was 46%, and its negative predictive value was 88%. The MFAT appears to be a useful tool for identifying fall-prone residents in the studied nursing home, irrespective of the fall cause, even within the time frame of only a few months. By using the estimated optimum threshold of 20 points, moderate sensitivity and good specificity are achieved, yielding acceptable prediction accuracy	Level VI
Jensen, J., Nyberg, L., Gustafson, Y., & Lundin-Olsson, L. (2003). Fall and injury prevention in residential care -- effects in residents with higher and lower levels of cognition. *Journal of The American Geriatrics Society*, *51*(5), 627-635. doi:10.1034/j.1600-0579.2003.00206.x	accidental falls, prevention and control, femoral fractures, cognition, dementia	A preplanned subgroup comparison of the effectiveness of a cluster-randomized, non-blinded, controlled trial.	The higher Mini Mental Status Exam (MMSE) group experienced fewer falls after this multifactorial intervention program, whereas the lower MMSE group did not respond as well to the intervention, but femoral fractures were reduced in the lower MMSE group.	Level II

Jose Martins da Costa-Dias, M. M., & Lopes Ferreira, P. (2014). Fall risk assessment tools. *Revista De Enfermagem Referência*, *4*(2), 153-161. doi:10.12707/RIII12145	accidental falls, hospital services, adult, scales	Meta-analysis & systematic review	The MFS and the STRATIFY fall risk assessments were developed in hospital settings, are easy-to-use, quickly applied and were designed to be used in adult patients. The MFS is more comprehensive than the STRATIFY, because it is intended for adults in general while the MFS is more adapted to patients aged 65 years or more. There were more studies conducted with the MFS than the STRATIFY scale. Similarly, the MFS was culturally and linguistically adapted to more countries than the STRATIFY scale.	Level I
José Martins da Costa-Dias, M., Martins, T., & Araújo, F. (2014). Study of the cut-off point of the Morse Fall Scale (MFS). *Revista De Enfermagem Referência*, *4*(1), 63-72. doi:10.12707/RIII13101	accidental falls, risk management, hospital services	A case-control study	For adults who are admitted to medical-surgical and long-term and palliative care services, it is recommended that the cut-off point of 45 be applied. This value is also suggested by the author of the scale. It is also recommended that the cut-off points of the scale be studied in each specific reality or context. Also nurses should focus on putting the correct interventions in place for the patient.	Level IV
Jung, D., Shin, S., & Kim, H. (2014). A fall prevention guideline for older adults living in long-term care facilities. *International Nursing Review*, *61*(4), 525-533. doi:10.1111/inr.12131	Evidence-Based Guideline, Falls, Fall Intervention, Fall Prevention, Long Term Care, Older Adults, Risk Factors	Developmental research for practice guidelines.	The guideline was developed in accordance with the guidelines of the SIGN. The evidence-based fall prevention nursing guideline developed herein is notable in that it is a specific, work-oriented guideline for use in LTC facilities that reflects existing guidelines as well as the opinions of LTC experts. This guideline also makes individual, customized intervention possible by using an evidenced-based approach for nurses to classify risk groups. This guideline can be used by nurses to screen patients who are at a high risk of falling to provide patient interventions to help prevent falls.	Level I
Kalyani, R., Stein, B., Valiyil, R., Manno, R., Maynard, J., & Crews, D. (2010). Vitamin D treatment for the prevention	vitamin D; falls, elderly, randomized controlled	Systematic Review and Meta-Analysis	Vitamin D treatment effectively reduces the risk of falls in older adults. The effects of vitamin D on fall	Level I

of falls in older adults: systematic review and meta-analysis. *Journal of The American Geriatrics Society*, *58*(7), 1299-1310. doi:10.1111/j.1532-5415.2010. 02949.x	trials, systematic review		reduction was significant in several subgroups of individuals: community-dwelling participants with a mean age younger than 80, adjunctive calcium therapy, no history of fracture or fall, duration longer than 6 months, dose of 800 IU or greater, and cholecalciferol therapy, although no evidence was found of a linear association between higher doses of vitamin D or longer duration of vitamin D therapy and treatment effect.	
Kato, M., Izumi, K., Hiramatsu, T., & Shogenji, M. (2006). Development of an exercise program for fall prevention for elderly persons in a long-term care facility. *Japan Journal of Nursing Science*, *3*(2), 107-117.	elderly, exercise program, fall prevention, long-term care facility	quasi-experimental clinical trial	Staff developed an exercise program consisting of a warm-up, static stretching, muscle strengthening in the lower extremities, toe exercises, proprioceptive neuromuscular facilitation, and cooldown. The significant outcomes showed that the exercise program helped the participants maintain mobility and decrease postural sway. The number of fallers and falls was reduced as a result of the exercise program.	Level I
Kobayashi, N., Kusuma Wati, D., Yamamoto, M., Sugiyama, T., & Sugai, Y. (2009). Severity of dementia as a risk factor for repeat falls among the institutionalized elderly in Japan. *Nursing & Health Sciences*, *11*(4), 388-396. doi:10.1111/j.1442-2018.2009.00465.x	elderly, Japan, falls, risk factors, severe dementia, repeat falls	secondary replication analysis of original data-Descriptive Study	When looking at risk factors for repeat fallers in this study it was noted that: 1 A total of 61 (13.1%) single fallers and 25 (5.4%) repeat fallers were identified. Out of the 25 repeat fallers, 13 (52%) fell twice, seven fell thrice, three fell four times, and two fell 12 times during the 3 months of the study period. 2 An unstable gait was a dominant factor in the case of both the single and repeat fallers. Severe dementia also was identified as a risk factor for the repeat fallers. If elderly persons with an unstable gait had severe dementia, the risk of being a repeat faller was ~ 14-fold higher than that for the normal elderly. However, mild dementia had no impact on repeat fallers.	Level VI
Lowes, L., Robling, M. R., Bennert, K., Crawley, C., Hambly, H., Hawthorne, K., &	complex research intervention, pediatric	multi-centered randomized controlled trial.	Lay stakeholders identified the need for and contributed to the design of a patient-held tool, strongly	Level II

Gregory, J. W. (2011). Involving lay and professional stakeholders in the development of a research intervention for the DEPICTED Study. *Health Expectations*, *14*(3), 250-260. doi:10.1111/j.1369-7625.2010. 00625.x	diabetes, service user involvement, teenagers and parents, The DEPICTED study		influenced the detailed design and content of the research intervention and outcome questionnaire, thus making a major contribution to the trial design.	
Majkusová, K., & Jarošová, D. (2014). Fall risk factors in an acute care setting: A retrospective study. *Central European Journal of Nursing & Midwifery*, 5(2), 47-53.	falls, patient, hospital, retrospective analysis	Retrospective Study	The largest incidence of falls was recorded among older seniors aged over 80 years. Statistically significant difference was not found in the incidence of falls between men and women. Most of falls occurred at patients hospitalized in long-term care and internal wards. Patients hospitalized in the acute care wards often fell down when getting up from bed, directly from the bed and due the instability when walking. In long-term care institutions there was the highest incidence of falls when moving from wheelchair to bed, when waking up from not halted mobile wheelchair and for the instability when walking.	Level V
Mcgarry, D., Cashin, A., & Fowler, C. (2012). Child and adolescent psychiatric nursing and the 'plastic man': Reflections on the implementation of change drawing insights from Lewin's theory of planned change. *Contemporary Nurse: A Journal for The Australian Nursing Profession*, *41*(2), 263-270. Mitchell, G. (2013). Selecting the best theory to implement planned change. *Nursing Management - UK*, *20*(1), 32-37.	Simulation, nursing education, child and adolescent psychiatric nursing, Lewin's theory of planned change	Systematic review	Action research is well suited to nursing application as it embraces nurses in practice in the research process – defining both the problems and interventions – and by providing the researcher with direct access to the practice environment.	Level I
Potter, P., Olsen, S., Kuhrik, M., Kuhrik, N., & Huntley, L. R. (2012). A DVD program on fall prevention skills training for cancer family caregivers. *Journal of Cancer Education*, *27*(1), 83-90. doi:http://dx.doi.org/10.1007/s13187-011-0283-2	Cancer, Family caregiving, Electronic media, Fall prevention	descriptive feasibility study using pre- and post-evaluation	Family caregivers of cancer patients were surveyed before and after viewing the DVD program on "Moving Safely" in the home. Cancer patients were followed 4 months' post-intervention to determine if fall occurrence was reduced. There was a decrease in the number of patients who fell post-	Level VI

			intervention compared with those who fell pre-intervention. Caregivers' perceptions of knowledge about fall prevention improved significantly after viewing the DVD. An instructional DVD program is an effective educational tool for preparing family caregivers with the knowledge and skills needed to reduce the incidence of falls in the home setting.	
Rapp, K., Lamb, S., Erhardt-Beer, L., Lindemann, U., Rissmann, U., Klenk, J., & Becker, C. (2010). Effect of a statewide fall prevention program on incidence of femoral fractures in residents of long-term care facilities. *Journal Of The American Geriatrics Society, 58*(1), 70-75. doi:10.1111/j.1532-5415.2009.02630.x	nursing homes; fall prevention; femoral fractures	Observational study	The fall prevention program was not associated with a significant effect on the incidence of femoral fractures in either analysis. There were no differences in findings if the data were analyzed for the year of the intervention or the year after. There was no effect modification between intervention status and sex, age, year of intervention, and size of the nursing home	Level VI
Schepens, S. L., Panzer, V., & Goldberg, A. (2011). Randomized controlled trial comparing tailoring methods of multimedia-based fall prevention education for community-dwelling older adults. The American Journal of Occupational Therapy, 65(6). Retrieved from http://ezp.waldenulibrary.org/login?url=http://search.proquest.com/docview/906328741?accountid=14872	accidental falls, health behavior, health education, multimedia	Randomized Control trial	Fall prevention education has been proposed as a means of addressing the problem of falls in older adults. This study supports multimedia-based, tailored fall prevention education as an effective intervention for improving fall threats knowledge and engagement in fall prevention behaviors	Level II
Schriner, C., Deckelman, S., Kubat, M., Lenkay, J., Nims, L., & Sullivan, D. (2010). Collaboration of nursing faculty and college administration in creating organizational change. *Nursing Education Perspectives (National League For Nursing), 31*(6), 381-386. doi:10.1043/1536-5026-31.6.381	organizational structure, Lewin's change theory, nursing education leadership, nursing administration, administrative change, and school of nursing change	Expert opinion	Strategies have been presented that led to an organizational restructuring of a school of nursing. Although the net gain in administrative resources was incremental and less than requested, the faculty and administration the reorganization has resulted in a more efficient use of resources in the school of nursing.	Level VII
Schimke, L., & Schimke, J. (2014). Urological Implications of Falls in the Elderly: Lower Urinary Tract Symptoms and Alpha-Blocker Medications. *Urologic*	Falls, lower urinary tract symptoms, alpha-blockers, elderly, nocturia.	Expert Opinion	Treatment of nocturia, frequency, and urinary incontinence can help decrease fall risk factors. Encouraging supplementation of vitamin D 800IU daily, when	Level VII

Nursing, *34*(5), 223-229. doi:10.7257/1053-816X.2014.34.5.223			necessary; being willing to refer for physical therapy for gait evaluation and strengthening if indicated; and questioning if any falls have occurred should b	
Stubbs, B., Brefka, S., & Denkinger, M. D. (2015). What Works to Prevent Falls in Community-Dwelling Older Adults? Umbrella Review of Meta-analyses of Randomized Controlled Trials. *Physical Therapy*, *95*(8), 1095-1110. doi:10.2522/ptj.20140461	Falls, fall prevention, exercise, elderly, falls in community dwelling adults	Meta-analysis of randomized controlled trials	There is consistent evidence that exercise and individually tailored multifactorial interventions are effective in reducing falls in community-dwelling older adults.	Level I
Schwenk, M., Lauenroth, A., Stock, C., Moreno, R. R., Oster, P., McHugh, G., & ... Hauer, K (2012). Definitions and methods of measuring and reporting on injurious falls in randomized controlled fall prevention trials: a systematic review. *BMC Medical Research Methodology*, *12*(1), 50-50. doi:10.1186/1471-2288-12-50	accidental falls, health behavior, health education, multimedia	Randomized Control Trial	Tailoring fall prevention education by addressing authenticity and motivation successfully improved fall threats knowledge. Combining motivational strategies with multimedia education increased the effectiveness of the intervention in encouraging fall prevention behaviors.	Level II
Vlaeyen, E., Coussement, J., Leysens, G., Van der Elst, E., Delbaere, K., Cambier, D., & Schriner, C., Deckelman, S., Kubat, M., Lenkay, J., Nims, L., & Sullivan, D. (2010). Collaboration of nursing faculty and college administration in creating organizational change. *Nursing Education Perspectives*, *31*(6), 381-38. doi:10.1043/1536-5026-31.6.381	organizational structure, Lewin's change theory, nursing education leadership, nursing administration, administrative change, and school of nursing change	Systematic Literature review	The authors describe a collaboration between faculty and administrators at their Midwestern liberal arts college that aided a reorganization of the school of nursing. Kurt Lewin's 1951 change theory provided the framework for the restructuring, from the initial phases of data collection through implementation of the new administrative structure. The reorganization has resulted in a more efficient use of resources in the school of nursing.	Level I
Vlaeyen, E., Coussement, J., Leysens, G., Van der Elst, E., Delbaere, K., Cambier, D., & 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 Geriatrics Society*, 63(2), 211-221. doi:10.1111/jgs.13254	accidental falls; prevention; multifactorial interventions; residential aged care facilities; meta-analysis	Systematic review & meta analysis of RCT	Six fall prevention programs were single , one was multiple (two or more intervention components not customized to individual fall risk), and six were multifactorial (two or more intervention components customized to each resident's fall risk). Meta-analysis found significantly fewer recurrent fallers in the intervention groups. Multifactorial interventions significantly reduced falls and the number of	Level I

			recurrent fallers, whereas single or multiple interventions did not. Training and education showed a significant harmful effect in the intervention groups on the number of falls.	

Appendix B: Letter From Corporate Granting Approval to

Conduct Quality Improvement Pilot

June 10, 2016

To Whom It May Concern,

Mrs. Shanetta Ancrum- Lee, DNP student at Walden University, is participating in local skilled and rehabilitation facility in Southeastern region of the United States, SC quality improvement project related to decreasing resident falls at the facility. The student along with the facility will implement a risk assessment protocol consisting of administration of the Morse Fall Risk Tool and development of individualized patient care plans on all patients admitted into the facility. Mrs. Lee will participate in several education sessions instructing providers on developing individualized patient care plans and proper administration of the tool. The Corporate office will provide her with de-identified data from the corporate quality measure database regarding the facility's fall data from November 2014 as well as fall data after implementation of the pilot project in order for her to evaluate the effectiveness of this quality improvement project.

Shanetta we are delighted to support your participation with this quality improvement project on Falls Prevention in our Southeastern region of the United States Facility. Please ensure that during the implementation process, the community name and location remain internal, between yourself and Walden Only. Should your research become accepted for publication, The facility needs your assurance that the data source will remain deidentified.

We are happy to support your academic enhancement and thank you for your time and expertise.

Appendix C: Nurses Fall Risk Assessment, That Includes the Morse Fall Risk Tool

Resident Name _____ Rm #_____
Time of Admission_____ Time of Completion_____
Assessment to be completed within 60 min of Admission, 7 days f/u & each fall

Falls Risk Assessment: Morse Fall Scale

	Date →				
Variables	**Scoring**				
History of Falling (immediate history)	☐ No (score 0) ☐ Yes (score 25)	_____	_____	_____	_____
Secondary Diagnosis (>1 Dx)	☐ No (Score 0) ☐ Yes (Score 15)	_____	_____	_____	_____
Ambulatory Aid	☐ Bed rest/nurse assist(score 0) ☐ Crutches/Cane/walker (score 15) ☐ Furniture (score 30)	_____	_____	_____	_____
IV, IV access, Peg Tube, PICC line, Wound Vac	☐ No (score 0) ☐ Yes (score 20)	_____	_____	_____	_____
Gait	☐ Normal/Bed rest/immobile(score 0) ☐ Weak (score 20) ☐ Impaired (score 20)	_____	_____	_____	_____
Mental Status	☐ Knows own limits (score 0) ☐ Overestimates or forgets limits (score 15)	_____	_____	_____	_____
	Total Score →	_____	_____	_____	_____
Risk Level Low risk- 0-24 Moderate risk- 25-44 High 45 & higher	Initials →	_____	_____	_____	_____

Risk Level	Risk Color	Mandatory Action/Interventions
☐ Low risk 0-24	Green	☐ Place Green fall kit on the patient (band, non skid socks, star) ☐ Patient & family education ☐ Monitor patient at a minimum every 2 hours ☐ Ensure call bell & water pitcher & remote is within reach at all times ☐ Ensure the all the necessary equipment is within reach such as the WC, walker, etc
☐ Moderate Risk 25-44	Yellow	☐ Place Yellow fall kit on the patient (band, non skid socks, star) ☐ Patient Education ☐ Ensure call bell & water pitcher & remote is within reach at all times. ☐ Monitor resident at a minimum every 1 hr x 48hr then 2 hrs ☐ Create a purposeful rounding sheet based on that pt's needs ☐ Consult MD for an order for a bed alarm for monitoring & bed in lowest position
☐ High Risk 45 & Higher	Red	☐ Place Red Fall Kit on the patient (band, socks, star) ☐ Patient Education ☐ Ensure call bell & water pitcher & remote is within reach at all times. ☐ Monitor resident at a minimum every 1hr rounding. ☐ Create a purposeful rounding sheet based on that pt's needs. ☐ Consult MD for an order for a , floor mats, bed & chair alarm for monitoring & bed in lowest position ☐ Restorative Toileting Program or frequent incontinent checks (q2 hrs, before & after meals & before bed)

Patient Risk Score _____ Designated Risk Level_____

Patient Education & Fall Facts

1. According to the Center for Disease Control and Prevention (CDC, 2015), one out of five falls causes a serious injury such as a fracture or a significant head injury (2015).

2. The direct medical cost related to falls is $30 billion, and by the year 2020, the annual direct cost related to falls is expected to be near $54.9 billion (Bechdel, 2014).

3. Falls in skilled or residential care facilities will often lead to serious injuries, an estimated hip fracture incidence rate of 4% annually and within 1 year after a fall-related hip fracture, 12% of residents incur a new fracture, and 31% die as a result (Valaeyen et al., 2015).

4. Research stated that at least 30% of persons aged over 65 years' experience one or more falls each year and this proportion increases to 40% after age of 75 (Schwenk, 2012).

Fall Prevention Acknowledgement

Resident & Family:

As a resident or family, I am committed to adhering to the interventions that has been set forth by the facility and physician, in effort to reduce my risk for falling. I am committed to calling for assistant using my call bell at all times until I have been released by therapy to complete these tasks on my own.

Resident or Family Signature _____ Date _____

Facility Representative:

The facility and staff is committed to reducing your risk for falls during your stay. We will assess and collaborate as a team to ensure that the proper interventions are put into place to ensure your safety. We will make every attempt to answer your call bell within 2-5 minutes.

Facility Representative Signature _____ Date _____

Please sign documenting that you have completed the task below:

- ☐ Completed the Risk Assessment. - Signature _____ Date _____
- ☐ Identified the pt's level of risk and educate the pt regarding the interventions. - Signature_____ Date _____
- ☐ Interventions have been placed on the resident's care plan. - Signature _____ Date _____
- ☐ Safety Bracelet, non skid socks and interventions have been placed in the resident's closet. Signature _____ Date ____

Appendix D: Elderly Mobility Scale (EMS)

Resident Name _____ **Date of Admission** _____ **Rm #**_____

Time of Admission_____ **Time of Initial Completion**_____

Elderly Mobility Scale

	Dates ➡	Admission	7 Day F/u	
Tasks	**Results**			
Lying to Sitting	2- Independent 1-Needs help of 1 person 0-Needs help of 2+ people	_____	_____	_____
Sitting to Lying	2-Independent 1-Needs help of 1 person 0-Needs help of 2+ people	_____	_____	_____
Sitting to Standing	3-Independent in under 3 seconds 2-Independent in over 3 seconds 1-Needs help of 1 person 0-Needs help of 3+ people	_____	_____	_____
Standing	3-Stands without support and able to reach 2- Stands without support but needs support to reach 1-Stands but need support 0-Stands only with physical support of another person	_____	_____	_____
Gait	3- Independent (+/- stick) 2- Independent with frame (walker) 1-Mobile with walking aid but erratic/unsafe 0-Needs Physical help to walk or constant supervision	_____	_____	_____
Timed Walk (6meters=20ft)	3- Under 15 seconds 2- 16-30 seconds 1-over 30 seconds 0-unable to cover 6 meters ***Record time in seconds*** ➡	_____ _____secs	_____ _____secs	_____ _____secs
Functional Reach (measure from fingertips to the reaching point)	4-Over 20cm 2-10-20cm 0-under 10 cm ***Actual Reach*** ➡	_____ _____cm	_____ _____cm	_____ _____cm
	Total Score ➡	**/20**	**/20**	**/20**

Appendix E: IRB Approval

Dear Ms. Lee,

This email is to notify you that the Institutional Review Board (IRB) confirms that your study entitled, "Reducing Falls: Implementation of a Standardized Fall Risk Assessment with an Individualized Plan of Care within a Rehab/Skilled Facility," meets Walden University's ethical standards. Our records indicate that you will be analyzing data provided to you by as collected under its oversight. Since this study will serve as a Walden doctoral capstone, the Walden IRB will oversee your capstone data analysis and results reporting. The IRB approval number for this study is 07-21-16-0404380.

This confirmation is contingent upon your adherence to the exact procedures described in the final version of the documents that have been submitted to IRB@waldenu.edu as of this date. This includes maintaining your current status with the university and the oversight relationship is only valid while you are an actively enrolled student at Walden University. If you need to take a leave of absence or are otherwise unable to remain actively enrolled, this is suspended.

If you need to make any changes to your research staff or procedures, you must obtain IRB approval by submitting the IRB Request for Change in Procedures Form. You will receive confirmation with a status update of the request within 1 week of submitting the change request form and are not permitted to implement changes prior to receiving approval. Please note that Walden University does not accept responsibility or liability for research activities conducted without the IRB's approval, and the University will not accept or grant credit for student work that fails to comply with the policies and procedures related to ethical standards in research.

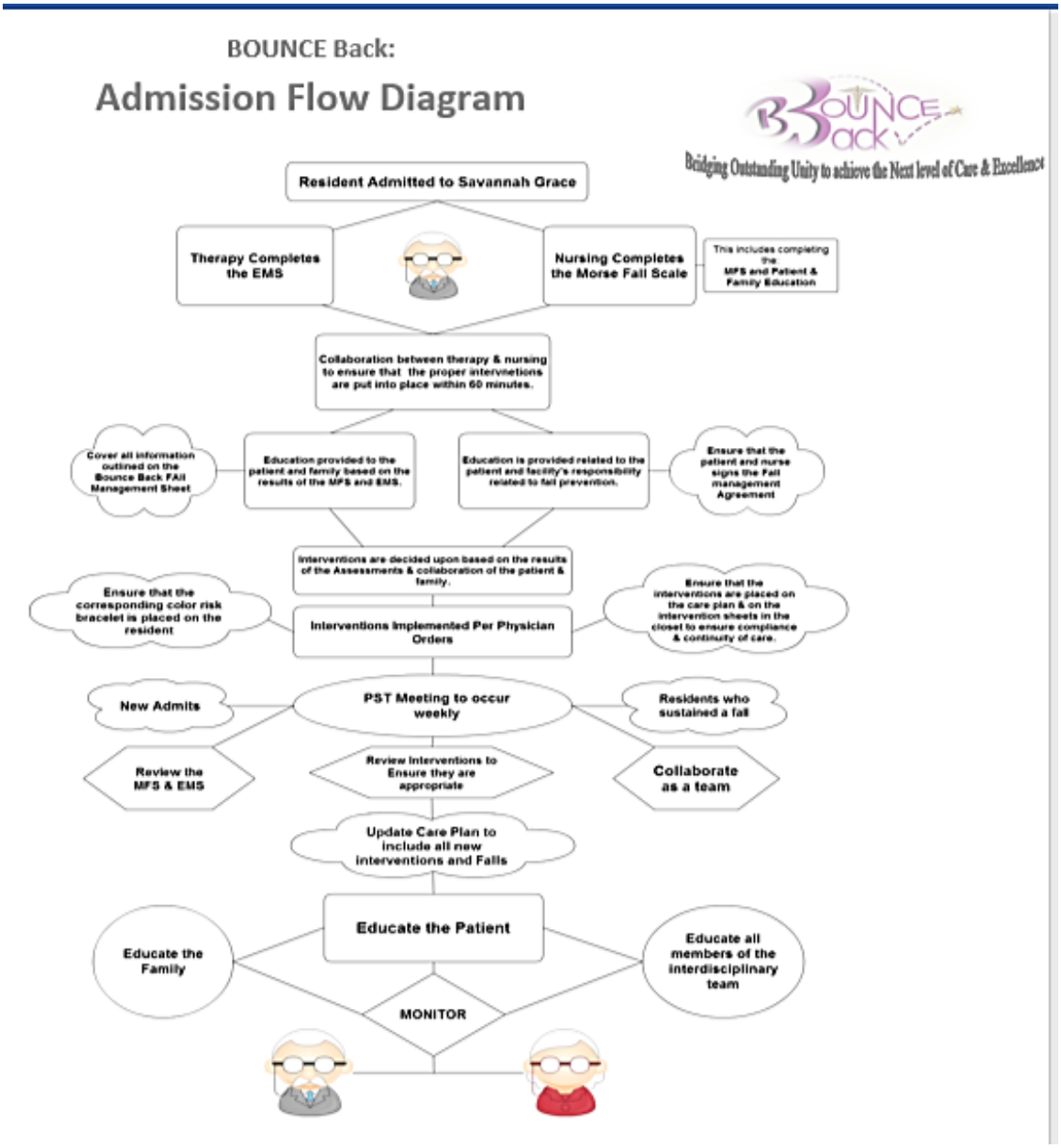
When you submitted your IRB materials, you made a commitment to communicate both discrete adverse events and general problems to the IRB within 1 week of their occurrence/realization. Failure to do so may result in invalidation of data, loss of academic credit, and/or loss of legal protections otherwise available to the researcher.

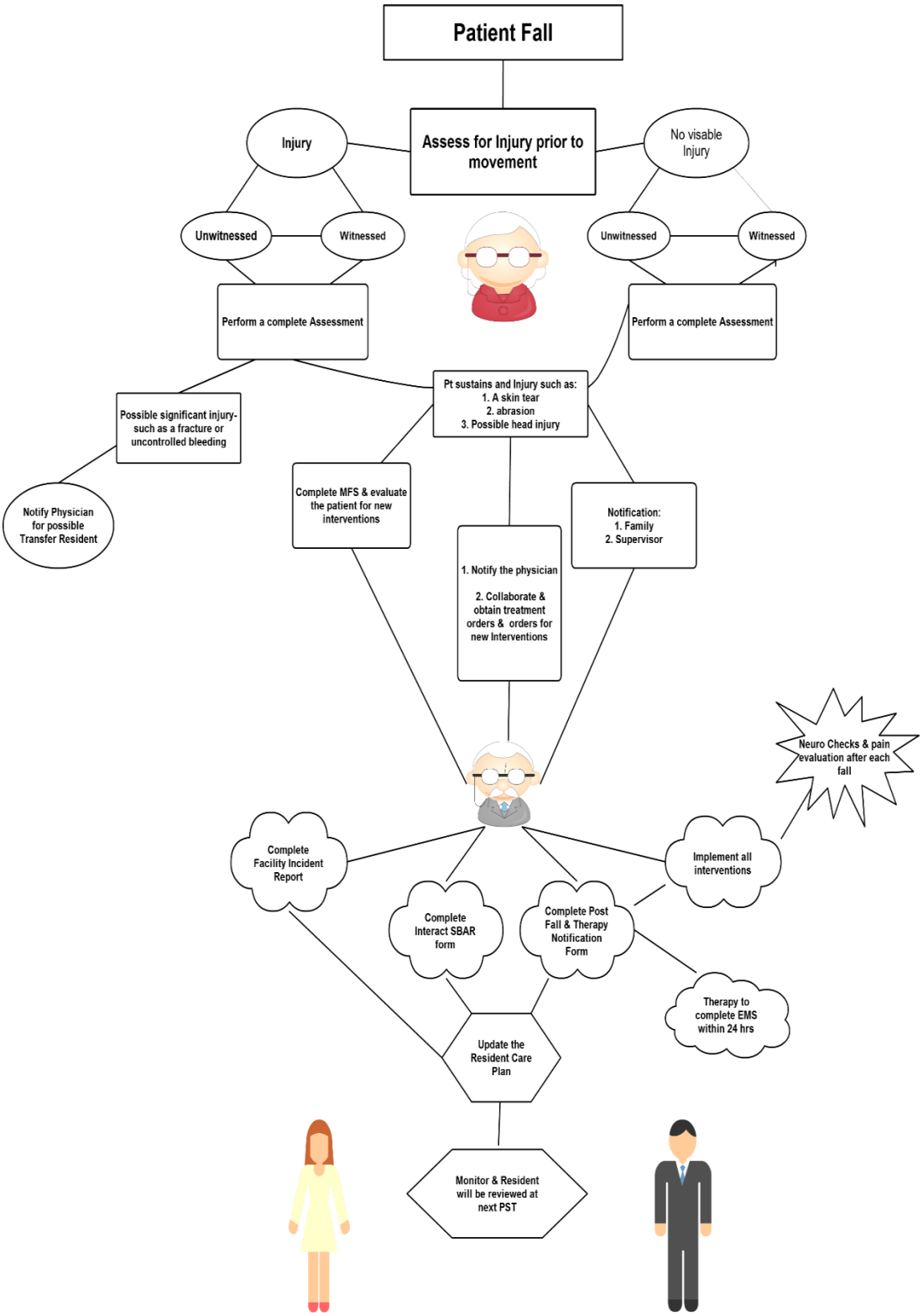
Both the Adverse Event Reporting form and Request for Change in Procedures form can be obtained at the IRB section of the Walden website: http://academicguides.waldenu.edu/researchcenter/orec

Researchers are expected to keep detailed records of their research activities (i.e., participant log sheets, completed consent forms, etc.) for the same period of time they retain the original data. If, in the future, you require copies of the originally submitted IRB materials, you may request them from Institutional Review Board.

Sincerely,
Libby Munson
Research Ethics Support Specialist
Office of Research Ethics and Compliance
Email: irb@waldenu.edu

Appendix F- Flow Diagrams for Assessment Upon Admission and Following a Patient Fall




Patient Fall
Assess for Injury prior to movement
Injury
No visable Injury
Unwitnessed
Witnessed
Unwitnessed
Witnessed
Perform a complete Assessment
Perform a complete Assessment
Pt sustains and Injury such as:
1. A skin tear
2. abrasion
3. Possible head injury
Possible significant injury- such as a fracture or uncontrolled bleeding
Notify Physician for possible Transfer Resident
Complete MFS & evaluate the patient for new interventions
Notification:
1. Family
2. Supervisor
1. Notify the physician
2. Collaborate & obtain treatment orders & orders for new Interventions
Neuro Checks & pain evaluation after each fall
Complete Facility Incident Report
Complete Interact SBAR form
Complete Post Fall & Therapy Notification Form
Implement all interventions
Therapy to complete EMS within 24 hrs
Update the Resident Care Plan
Monitor & Resident will be reviewed at next PST

Appendix G: Patient Safety Team (PST) Protocol and Voluntary Agreement to Participate

FALL MANAGEMENT INIATIVE
PATIENT SAFETY TEAM

Purpose
The patient safety team (PST) is responsible for facilitating the BOUNCE Back fall prevention initiative within the community. The participants of this group will act as champions within the community and work towards the common goal of fall prevention and reduction. The committee chair reports to Director of Nursing if DON is not present

Responsibilities
Specific responsibilities include:

- The team will monitor trends of:
  - BOUNCE back fall management initiatives
  - Fall rates within the community
  - Patient falls and patient related interventions
- Communicate and collaborate with other members of the interdisciplinary team & patients to ensure continuity of care, along with improved patient outcomes related to fall management.
- Recommend interventions for fall prevention and management based on evidence-based practice and specific patient needs.
- Evaluate all fall-related initiatives as needed.

Participation
Participation is voluntary, but should include representation of all departments within the interdisciplinary team. This is done with ensure that fall management and patient specific interventions are implemented & evaluated from all perspectives.

- Physician- physician participation is optional, however the minutes from the meeting must be given to the MD for review and residents that sustained a fall should be assessed.
- Administrator- Participation is optional, but is responsible for ensuring that the meetings occur.
- Nurse Manager (DON)- Must be present in the meeting and responsible for managing the meeting. The DON should provide a list too medical records/or the record keeper for each scheduled meeting.
- MDS- is responsible for updating the nursing care plan during the meetings with the falls and updated interventions.
- Restorative Aide- (1)- responsible for updating the CNA care plan during the PST meeting to ensure interventions are updated. Responsible for updating the intervention list
- Registered Nurse (1) – contributing participant
- Pharmacist (1) – participation is optional but vital
- Physical or Occupational Therapist (2)- contributing participant
- Nurse Aide- (1-2)- contributing participant
- Medical Records- Documents all meeting minutes and create spreadsheet for the meetings. Assist with bringing necessary charts to the meetings

Meeting Frequency
The patient safety team will meet every week on Tuesdays from 2p-3p in the conference room.

Distribution of Minutes
The distribution of minutes will be to the following:

- Administration
- Healthcare Provider

By signing below I understand that my participation in the Patient Safety Team (PST) is voluntary and not mandatory for my position. I understand that requirements participation and willing to assist with decreasing the falls within the facility.

Printed Name _____ **Signature** _____ **Date** _____

Appendix H: BOUNCE Back Initial Fall Care Plan

Resident:			
Date Identified	**Problem**	**Goal**	**Approaches-** *check corresponding risk level*
	Risk for falls R/T: - deconditioning - hospitalization and is considered:	Will decrease risk of injury (including from falls) till next review	**GREEN** ☐ Place Green fall kit on the patient (band non-skid socks, star, etc.) ☐ Patient & Family education ☐ Monitor patient at a minimum every 2 hours ☐ Ensure call bell & water pitcher & remote is within reach at all times ☐ Ensure all necessary equipment is within reach (walkers, WC, etc.)
	☐ **GREEN** *low risk*		
	☐ **YELLOW** *Moderate risk*	*score:*	**YELLOW** ☐ Place Yellow fall kit on the patient (band non-skid socks, star, etc.) ☐ Patient & Family education ☐ Ensure call bell & water pitcher & remote is within reach at all times ☐ Monitor resident at a minimum every 1 hr x 48 hrs then every 2 hrs ☐ Create a purposeful rounding sheet based on patient needs ☐ Consult MD for orders for *bed alarm & bed in low position*
	☐ **RED** *High risk*	*score:*	**RED** ☐ Place Red fall kit on the patient (band nonskid socks, star, etc.) ☐ Patient & Family education ☐ Ensure call bell & water pitcher & remote is within reach at all times

			☐ Monitor resident at a minimum *every 1 hour* ☐ Create a purposeful rounding sheet based on patient needs ☐ Consult MD for orders for *bed alarm & bed in low position* ☐ Consult MD for orders for *floor mats, bed/chair alarm, bed in low position* ☐ Restorative Toileting program or frequent incontinent checks (every 2 hrs, before & after meals & before bed)

Appendix I: Corporate Appreciation and Desire to Implement in

Other Areas of the Facility

9/4/16

To Whom It May Concern,

Five Star would like to thank Shanetta Lee, DNP student for Creating the *BOUNCE Back* Fall Prevention Program in efforts to reduce elderly falls.

The program was implemented on 8/1/16, in one of our skilled and rehabilitation facilities in southeastern United States with great success.

Staff education began immediately following Walden's IRB approval. The facility averaged 15-22 falls per month pre implementation. The following 30 days post education and implementation there were 5 falls documented; representing a 34% reduction in the overall fall rate. There were no significant patient injuries noted during the initial phase of the work.

As elderly falls is a constant concern and area for focused improvement at , as it is in many healthcare settings, the use of The BOUNCE Back Fall Prevention Program is encouraging.

At this time would like to evaluate the program for further development along with implementation in other Communities, and other lines of business such as Assisted Living and Dementia Care.

Thank you for considering this request.

Joan Trottier