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Preventing Falls in Long-Term Care Using Patient-Centered Fall Interventions

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Preventing Falls in Long Term Care Using Patient-Centered Fall Interventions

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This Manuscript Partially Fulfills the Requirements for the

Doctor of Nursing Practice Program and is Approved by:

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November 26, 2020

University of St. Augustine for Health Sciences
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<i>My signature confirms I have reviewed and approved this final written DNP Scholarly Project. DocuSign electronic signature or wet signature required.</i>		
Type Name in Blue Box Below	Signature	Date
DNP Project Primary Faculty: Dr. Debbie Conner, Ph.D., MSN, ANP/FNP-BC, FAANP		11/25/2020
DNP Project Preceptor: Dr. Christopher Saslo, DNS, ARNP-BC, FAANP	MARK C. SASLO 1495692 <div style="font-size: small; margin-top: 5px;"> Digitally signed by MARK C. SASLO 1495692 Date: 2020.11.25 21:01:00 -06'00' </div>	
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Abstract

Practice Problem: The practice problem identified within the Community Living Center included continuous falls, despite using current fall prevention strategies and provider-driven interventions. Baseline data reflected a fall rate of 4.2 in the long-term care areas despite improving the fall prevention program.

PICOT: The PICOT question that guided this project was: In older adult residents (P), what is the effect of a standing operating procedure (SOP) using patient-centered interventions (I) compared to physician-driven fall interventions (C) on decreasing falls and falls with injuries (O) within one month (T)?

Evidence: In twelve high-quality articles that fit the eligibility criteria and contained EBP literature, the overwhelming evidence revealed that an SOP encompassing patient-centered fall interventions could decrease LTC falls and falls within injury rates.

Outcome: Observations reflected the nursing staff utilized the SOP and patient-centered fall interventions in practice; however, fall rates on both LTC #1 and LTC #2 increased from baseline, but the falls with injury rates remained zero. Patient satisfaction measured a weighted mean score of 4.7 of 5 points, representing satisfaction with the patient-centered interventions and nurses as a whole.

Conclusion: The EBP project did not result in an overall reduction in the fall rates; however, falls with injury rates remained at zero. Furthermore, the patient's overall satisfaction with the nurses and patient-centered fall prevention program was favorable. It is essential to note that due to COVID-19 related events, the project halted after 30 days, and the results might have been different if implemented 90 days as initially projected.

Preventing Falls in Long-Term Care Using Patient-Centered Care Interventions

This scholarly project focused on fall prevention in long-term care (LTC) while using patient-centered care (PCC) interventions. PCC interventions are based on the needs, desires, and inputs of the patient. The project aimed to introduce a new evidence-based care model that has been practically proven to have a positive effect on fall outcomes in LTC residents (Agency for Healthcare Research and Quality [AHRQ], 2013). Falls in LTC continued to be a matter of concern for the interdisciplinary team (IDT) in the Community Living Centre (CLC). In fact, the use of provider-driven fall prevention interventions over the last two years has not yielded favorable outcomes. The fall data for the CLC indicate that there had been no significant reduction in the overall fall rate. The Institute for Health Improvement (Institute for Health Improvement [IHI], 2019a) defines patient-centered care as a care model that responds to patients' values and needs by incorporating their preferences in the decision-making process.

With patient-centered fall interventions, each patient's individual health needs and desired health outcomes were the driving forces behind every healthcare decision and quality measurement (NEJM Catalyst, 2017). Within this framework, the patients worked as partners with their providers. Individuals were treated while maintaining a holistic health perspective to empower and engage them as active participants in their treatment and care, reducing or preventing the number of reported falls. To this end, the patients' emotional, mental, social, spiritual, and financial well-being were considered, and the decision-making process was shared among the patients, their families, and the healthcare providers (NEJM Catalyst, 2017)).

Significance of the Practice Problem

The existing practice problem for the CLC was continuous falls in LTC, despite the current practice guidelines and provider-driven interventions. Consistent efforts were made by

researchers, hospitals, and quality managers to develop effective fall prevention strategies and programs. Despite using these plans and approaches, falls were still a significant health concern for older adults and had increased by 30% over the past decade (Castle, 2019). At the national level, cases reporting falls cost around \$50 billion per year (Centers for Disease Control [CDC], 2019a). Such incidents are one of the leading causes of injury-related death in the population of individuals aged 65 and older (CDC, 2019b). It has been estimated that by the year 2020, more than 4 million older Americans each year would undergo a fall incident, with the country incurring a total cost of \$47 billion (Veterans Administration (VA), 2018).

In the southern American states of Louisiana, Mississippi, Alabama, and Florida, the average regional cost per year due to falls is \$524 million (CDC, 2019b). The age-adjusted fall death rate per 100,000 adults aged 65 and older in the southern region is 47.75 (CDC, 2019b). Biloxi VA, the organization for this proposed project, has spent up to \$1,000,000 per year on falls for amenities, including extended hospitalization, care and treatment, rehabilitation, community-based services, medical equipment, prescription drugs, and cash payouts from legal disputes (Gulf Coast Veterans Health Care System, n.d.). The CLC data indicated an increase in falls over the last two years. The fall rate in LTC had steadily increased, surpassing the benchmark of 2.4, and started at 4.2, which is a high number considering that the national fall rates are within the range of 3.0–5.0 per 1000 patient days (AHRQ, 2019). The current fall interventions focused on preventing falls with injuries. For this purpose, the use of hip protectors, mats, alarms, and helmets was deemed useful; however, these items did not focus on fall prevention in general.

The provision of patient-centered care practices has helped to enhance the fall prevention program while improving the health outcomes in our vulnerable, at-risk long-term veteran

population. Falls could negatively impact the organization through increased costs, decreased patient satisfaction, and outcomes. Moreover, these incidents could impact patients and their family members. Falls caused a diverse range of injuries from minor tears of the skin to major injuries, such as hip fractures, to head injuries leading to bleeding and even death (AHRQ, 2013). As a result of sustaining injuries, the patient and their family could be impacted by an extended hospital stay and the incurred cost. King et al. (2018) stated that falls in older adults are a health concern that might result in chronic pain, functional impairment, disability, premature nursing home admission, increased length of hospital stay, and mortality. A financial strain may become an issue for the patient and their family. Commitment to implementing patient-centered fall prevention strategies seemed to be paramount in the CLC. Appendix A includes details of the project that encompasses implementing a standing operating procedure (SOP) to guide the staff and IDT in using patient-centered fall prevention interventions in LTC.

PICOT Question

In older adult residents (P), what is the effect of a standing operating procedure (SOP) using patient-centered interventions (I) compared to physician-driven fall interventions (C) on decreasing falls and falls with injuries (O) within one month (T)?

Population

The IDT implemented the EP project within the CLC long-term care area at the Veterans Administration (VA). The population included male and female residents aged 65 and older living in LTC neighborhoods. This project included all residents with a fall risk score of > 25 , which indicated a moderate to high fall risk, and individuals with the cognitive and verbal ability to offer feedback. The team excluded family members from the EBP project due to COVID-19 visitor restrictions.

Intervention

The primary intervention in this project involved the development of an SOP, including patient-centered care fall interventions. According to IHI (2019a), Patient-centered interventions (PCIs) include putting the patient at the center of decision-making and empowering them to become committed partners for delivering patient care. As a result of empowering patients as the central determinants in health outcomes, patient engagement increases; thereby, reducing the number of falls and falls with injuries (Avancean et al., 2017). PCIs include, but are not limited to, communication tools, such as hand-off reports, posters, and visual cues, to identify patients at risk of falling, person-centered education sheets, review of patients' medications, and evaluation for the need for corrective lenses or other assistive devices (Avancean et al., 2017).

Comparison

For this project, physician-driven fall interventions constituted the current state of practice and, thus, served as a point of comparison. The current state was not effective in decreasing the fall rate in the LTC area. Hip protectors, floor mats, and bed alarms are physician-driven interventions for preventing falls with injuries; however, they did not prevent falls in general.

Desired Outcomes

The desired outcomes for this EBP project included the following: a) reducing the overall fall rate by 0.5 in one-month, b) decreasing the total number of falls with injuries to zero for one month, c) having positive patient satisfaction regarding fall prevention and care. The goal was for a weighted mean of 4 or greater on the survey.

Time Frame

A three-month time frame was proposed for implementing this project. However, due to COVID-19 restrictions and events, the period was decreased to one month. This period was deemed reasonable for implementing and assessing the feasibility of the proposed patient-centered fall intervention plan. However, the goal of reducing the overall fall rate by one within one month may be a challenge.

EBP Framework and Change Theory

This section provides the context for understanding the framework and the use of Lewin's change theory as a means to conceptualize, implement, evaluate, modify (if required), test, and maintain this EBP project.

EBP Framework

Dand and Dearhold (2017) acknowledged that the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model is a powerful problem-solving approach to clinical decision-making. The model's goal is to ensure that the evidence and best practices are effectively and skillfully instituted in the patient care setting (Dang & Dearhold, 2017). The model encompasses three steps called PET: practice question (PICOT), evidence, and translation, i.e., planning, implementing, evaluating, and communicating. JHNEBP was used to help the IDT address falls and LTC's safety concerns in the CLC.

Change Theory

Lewin's change theory helped build the foundation of this EBP project. Barrow and Toney-Butler (2020) asserted that the causes of change projects' failure include poor planning, unmotivated staff, ineffective communication, or excessively frequent changes. Lewin's change theory of 1947 is a three-step change process that constitutes stages of the change

implementation process (Hussain et al., 2018). They are unfreezing, changing, and refreezing. The use of change theories helped solve the practice problem of falls and falls with injuries in LTC.

Unfreezing

Once there was an understanding that a change was needed (Barrow & Toney-Bulter, 2020), the team would prepare for the project change. The focus would be on understanding what patient-centered care fall interventions are and why they were needed. Change might be resisted at times; therefore, the team needed to utilize this step and prepare to interrupt the status quo. In this stage, the frontline staff needed to be aware of why this holistic fall prevention intervention was necessary and how it could affect patient outcomes.

Wojciechowski et al. (2016) reflected that leaders' responsibility is to create a positive environment in which change can be fostered. Therefore, it would be beneficial for nurse managers to be engaged with and help their teams throughout the unfreezing step. Challenges, barriers, and concerns were addressed to alleviate potential interruptions in the implementation of the change. Key stakeholders and nursing leadership would be crucial in this step, as unforeseen barriers could hinder the impending project implementation's progress.

Changing

During the changing stage, the project was implemented. Wojceichowski (2016) stated that the planning and implementation of projects, ideas, policies, and new practices occur during this stage. The patient-centered care SOP, including fall interventions, was implemented into practice. The staff members were educated on the project, the SOP, their role in the process, and how to implement PCC interventions into practice effectively. Staff members would either adapt or resist. During this stage, staff members contributed by sharing knowledge that reflected the

organization's values (Barrow & Toney-Butler, 2020). Effective leadership is paramount during this stage. If leaders do not support the project, then staff would resist, and ultimately, the project would not be successful. IDT behaviors and thoughts are also paramount (Wojcejchowski et al., 2016). The nurse managers needed to effectively communicate any decisions made by the IDT to their staff members. Communication would help ensure a successful deployment of change into their practice setting.

Refreezing

Refreezing, which is the last stage, would take place after the patient-centered fall prevention project had been implemented. During the change stage, the staff and the team were busy learning, educating patients, and adapting as a whole. However, during the refreezing stage, the environment would stabilize, which Hussain and colleagues (2018) called establishing a new status quo. The IDT would utilize this time to monitor for consistent use of the protocol and patient engagement. The team would be expected to accept the change by creating a plan for internalizing the new practice and establishing new relations within their work setting (Hussain et al., 2018), which could be instrumental in the change's success. The entire team would need to help ensure the consistency of patient-centered fall interventions and patient involvement. After achieving all these factors, the frontline staff would begin to feel comfortable, and the new processes became a part of their practice of preventing falls in LTC.

Evidence Search Strategy

A review of the literature addressed the identified PICOT question. An electronic search was conducted using SearchUSA to scan multiple databases, including the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, MEDLINE, and Google Scholar. All searches began with the following keywords: 'patient-centred care', 'fall prevention', 'patient-

centred interventions', 'long-term care falls', and 'falls'. The qualifiers included a specific publication timeframe (from 2015 to the present) and the type of article (full-text articles, journals, and dissertations). The search was also limited to articles in the English language. CINAHL and MEDLINE searches were limited to the timeframe from 2015 to the present to decrease the likelihood of duplicate references.

The initial search yielded over 5000 citations; however, the search was further narrowed to include those relevant only to falls in LTC, fall interventions, and patient-centered interventions. The final search resulted in a total of 50 articles, 25 from PubMed, 15 from CINAHL, and ten from MEDLINE. The titles and abstracts of these articles were carefully evaluated to determine which articles should be included and excluded. The inclusion criteria considered in this study encompassed a) articles related to fall prevention in nursing homes, LTC facilities, and acute care; b) those focusing on PCIs related to falls, and c) the ones within the timeframe of 2015–2020. The articles that were excluded consisted of traditional physician-driven fall interventions and those published before 2015. In the end, a total of 12 articles were retained for evaluation.

Evidence Search Results and Evaluation

A total of 2880 articles were yielded from searches conducted in four databases: Google Scholar, MEDLINE, CINAHL, and PubMed; however, from the total, 2,730 were eliminated owing to duplicate references, and 150 citations were initially screened. After the application of the inclusion and exclusion criteria, 50 articles were retained for screening. Moreover, 30 full-text articles were assessed for eligibility; thus, half of them were excluded following the exclusion criteria, and the rest were included. The remaining articles were further evaluated utilizing tools such as PRISMA. Those with little evidence, inconsistent results, an insufficient

sample size were eliminated. Although most of the 50 articles selected initially concluded that PCIs are usefully related to fall prevention strategies, only 12 of them provided the highest level of evidence (LoE).

In this project, the appraisal resource used for evidence evaluation was the Johns Hopkins Nursing Evidence-Based Practice (EBP): Evidence Level and Quality Guide (Hopkins, n.d.). This resource helped clarify the literature review and the retrieved clinical data. Using this EBP guide, an analysis of 12 articles was performed. Based on the guide's criteria, the articles listed in Appendix B were graded using a level scale of 1–3 and a quality rating of high to low quality. The 12 articles' strength is as follows: seven Level I articles of high quality; one Level II article of high quality; two Level II articles of good quality; and two Level III articles of high quality. Additional evaluation details, including each article's level and quality, can be found in Appendix B.

Literature Themes

A detailed electronic literature search yielded multiple studies that suggested that patient-centered fall prevention positively influenced falls, falls with injuries, and patient outcomes in older adults and adults in general. After strategically reviewing the literature, several commonalities could be found within the texts and the studies. The articles with the highest quality and level were used for this review. Twelve articles assessed for common themes are elaborated on in the next section.

Interventions Should be Patient-Centered

It was shown that considering patients' values and preferences while creating and implementing interventions reduced falls and falls with injuries (Avanecean et al., 2017; Frederick et al., 2015; Klancnik Gruden et al., 2020; Tricco et al., 2017). The dual approach of

using physical activity and fall prevention interventions improved mobility and decreased falls amongst people aged 60 and older (Blake et al., 2018; Oliveira et al., 2019). In another study, the incorporation of EBP guidelines, namely multifactorial person-centered interventions such as individualized exercise programs and patient-centered education, including a) communicating about previous falls, b) using ambulatory aids, c) preparing toileting schedules, d) establishing when to call for assistance, e) engaging in one-on-one verbal communication, was associated with a fewer number of fall incidents and a reduction in the number of injurious falls in older adults (Blake et al., 2018; Leung et al., 2017). Studies by Klancnik et al. (2020) and Tricco et al. (2017) indicated that the use of patient-centered interventions that considered patient preferences, needs, and ideas produced favorable outcomes and reduced the number of patient safety incidents such as falls.

The individualized approach to fall prevention of nursing home staff using resident characteristics rather than clinical features decreased the number of fall incidents (Colon et al., 2017). Implementing a patient-centered fall protocol referred to as Tailoring Interventions for Patient Safety (TIPS) resulted in the prevention of falls across ethnically diverse medical centers (Dykes et al., 2017). This protocol included personalized icons for fall risk detection, fall risk assessment tools, individualized exercise programs, and ambulatory aids (Colon et al., 2017; Leung et al., 2017).

Patient-centered education for patients and their families included the following: a) fall prevention icons, b) when to call for help, c) the use of assistive devices, d) medications with the potential to cause altered balance or altered consciousness level, e) tidying the features in an environment, such as furniture, mats, and equipment, that may increase fall risks, and f) self-management fall prevention strategies to prevent falls in the older population (Leung et al., 2017;

Schnock et al., 2019). The literature conclusively showed that PCIs, including patient and family education and individualized exercise programs, were useful in fall prevention and decreasing falls with injuries amongst the older population.

Fall Risk Assessments Should Examine Intrinsic and Extrinsic Factors

Intrinsic and extrinsic factors should be considered while assessing fall risk (Avanecean et al., 2017; Blake et al., 2018; Colon et al., 2017). Fall risk assessment tools such as the Hendrich II Fall Risk Model, the Morse Fall Scale, and the New York-Presbyterian Hospital Fall Risk Instrument could be used to adequately and effectively assess patients for fall risk (Avanecean et al., 2017; Blake et al., 2018; Tricco et al., 2017). The intrinsic factors included advanced age, previous falls, muscle weakness, gait and balance problems, poor vision, postural hypotension, and chronic conditions such as arthritis, stroke, Parkinson's disease, and dementia (CDC, 2017b). The extrinsic factors included the absence of stair handles and bathroom grab bars, dim lighting, obstacles, tripping hazards, slippery or uneven surfaces, medications, and improper use of assistive devices (CDC, 2017a; Dukes et al., 2017).

Improved communication using fall risk assessment tools also helped change patient outcomes (Dykes et al., 2017). The researchers of another study found that the performance of risk assessments and PCIs' implementation impacted patient outcomes and prevented unnecessary harm associated with healthcare (Klancnik Gruden et al., 2020). Verghese et al. (2009) tested gait markers to assess speed, cadence, stride length, swing, double support, and variability of stride length and swing time. They concluded that all these markers are predictors of fall risks in older adults.

Fall Prevention Program Should Focus on Outcomes to be Successful

While implementing patient-centered fall prevention interventions, reviewers must focus on patient outcomes (Colon et al., 2017; Dykes et al., 2017; Fredericks et al., 2015). However, sufficient data was needed to monitor patient outcomes effectively, and a lack of data might undermine the program's efficacy and interfere with its sustainability (Blake et al., 2018). The outcomes measured in multiple studies included falls, fall rates, injurious falls, fallers, and fall-related hospitalizations (Avanecean et al., 2017; Blake et al., 2018; Klancnik Gruden et al., 2020; Tricco et al., 2017). A study using PCIs such as an exercise program, patient-centered icons, gait evaluations, individualized walking aids, and person-centered education led to decreased falls and overall fall rate. Stakeholder engagement is paramount to an intervention's success and sustainability, which can be achieved by sharing positive outcome data (Duke et al., 2017).

Practice Recommendations

The CDC (2017b) created a few clinical practice guidelines addressing fall prevention in the older population called Stopping Elderly Accidents, Deaths, and Injuries (STEADI). The program offered a coordinated patient-centered approach to fall prevention with three domains: 'Screen,' 'Assess,' and 'Intervene' (CDC, 2019b). A STEADI toolkit could be accessed using the following link: <https://www.cdc.gov/steady/materials.html>.

From a thorough review of the literature, EBP clinical practice guidelines (CPGs), and national benchmark reports, it was clear that evidence supported the endorsement of a brief detailed practice recommendation. Furthermore, based on the strength of the evidence, which was determined using SORT as a grading tool, the recommended grade was B. After analyzing the 12 articles, it was found that each of them encompassed strong evidence in support of the PICOT question. Based on the strength of the evidence, the overall recommendation of grade B

was achieved. Moreover, due to the presence of overwhelming evidence, 12 good to high quality, or Level I to Level III articles, a conclusive suggestion that PCC fall interventions reduced falls amongst the elderly population. The 12 quality articles were used as evidence to support the implementation of this evidence-based practice project. Level 1 and Level 2 articles were of high quality with profound similarities, indicating that patient-centered care remains a holistic approach to reducing LTC falls. The project manager recommended to key stakeholders, the EBP committee, and the CLC team the implementation of an SOP utilizing patient-centered fall prevention interventions in LTC.

Project Setting

The EBP project was implemented within the LTC area. The population consisted of residents aged 65 years and older, living in LTC neighborhoods, and male and female veterans. Two LTC neighborhoods with 21 residents were included in the population. The CLC is a Veterans Administration nursing home where elderly retired veterans live, and it has a homelike environment where the residents and family are encouraged to personalize their rooms. It consists of eight neighborhoods: three LTC, one hospice, two memory care, and two short-stay.

The CLC team consisted of the chief of geriatrics, a chief nurse, four nurse managers, four assistant nurse managers, three physician providers, five nurse practitioners, a staff developer, two clinical nurse leaders (CNLs), four social workers (SW), and five minimum data set (MDS) staff. Also included are therapy services such as physical therapy (PT), kinesiotherapy (KT), occupational therapy (OT), recreational therapy (RT), restorative care (RC), and speech therapy (ST). This organizational structure represented a centralized structure with a well-defined chain of command.

The key stakeholders included the director, the associate director of patient care services (ADPCS), and the CLC chief. Other CLC team members included the two CLC nurse managers, two assistant nurse managers, frontline staff, and residents. Throughout the project implementation, it was vital to have inter-professional collaborations as each member would need to manage complex issues such as fall prevention. Teams with inter-professional education and experience actively collaborated to foster an environment that could produce positive patient outcomes (Bridges et al., 2011). The CLC interdisciplinary team continued to improve in this area and may benefit from receiving more training. The inter-professional education model emphasizes team-building skills, patient-centered care, service learning, and how organizational culture may impact health care delivery (Bridges et al., 2011). Incorporating a culture of interprofessional collaboration improved the quality of service provided to the residents. The team committed to the concept and fostered the work required to put this project into practice.

Organizational Need

The IDT met to discuss the current fall rate and the need for this EBP project. Falls continued to occur in LTC despite the ongoing efforts of utilizing physician-driven practices and orders. The interventions focused on preventing falls with injuries included bed alarms, hip protections, low boy beds, mats, and helmets. A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, depicted in Appendix C, was performed to assess the current position (Mindtools, n. d.) of the falls project. The identification of the analysis helped the team formulate a strategic plan for further improvement. A Fishbone diagram was used to determine the causes behind the falls and its effects on patient outcomes. Although this process was not a structured root cause analysis, completing this tool helped the team determine the causes of falls and the high fall rate in LTC. The Center for Medicare and Medicaid Services (n.d.) asserted that

understanding factors that contribute to adverse events or system failures could help determine appropriate actions to correct such problems.

Organizational Support

Organizational support from the ADPCS, the chief of Geriatrics and Extended Care (GEC), nurse managers, and the interdisciplinary team was finalized. The team was excited about this holistic, patient-centered approach to fall prevention. One of the long-term goals was to disseminate the practice project in other CLC and acute care medical-surgical areas. Plans for sustainability would be addressed once the project was implemented and evaluated for effectiveness. After the team acquired data and documented successful rollout and outcomes, sustainability toolkits would be used to help the organization maintain and sustain the EBP project. The Agency for Healthcare Research and Quality (2017) defined sustainability as a process or an improved outcome that lasts for an extended period within an organization after implementation. Positive patient outcomes were critical factors that helped determine whether the project was sustainable or not. A reduction in the overall fall rate from 4.2 to 3.2 within one month and a decrease in falls with injuries would suggest that the implementation of the EBP project adequately met the project's goal and have the potential to be disseminated and sustained throughout the organization.

Project Overview

This EBP project's mission was to implement a evidence-based program into practice; this program was structured in a way that ensured that patients had a platform to participate in and offer suggestions and inputs regarding the patient's fall prevention plan of care. Furthermore, the vision of this initiative was to provide a safe fall-free environment for our residents. Under this vision, the IDT created an environment that embodied excellence and upheld the

organizational mission of providing a safe environment for residents. This would decrease fall risks and minimize falls with injuries and maintaining positive patient outcomes.

The IDT connected the mission and vision of this EBP project with the organization's mission. The IDT would continue to care for and protect the patients by providing them with safe, quality healthcare, including fall prevention. This project aimed to implement holistic patient-centered fall prevention in LTC by decreasing the number of falls and falls with injuries while improving overall patient outcomes.

Objectives

The short-term objectives of this project were a) implementing an EBP fall prevention initiative in LTC by August 2020, b) decreasing the overall fall rate by one within one month, c) reducing fall injuries by 0.5 in one month, and 4) increasing patient satisfaction within the same period.

The fall rate of 4.2 was projected to decrease by one within a month by utilizing the patient-centered fall interventions proposed within this EBP project. Furthermore, the falls with injuries rate would also decrease by 0.5 during the implementation phase. The last short-term objective to improve patient satisfaction would be documented through a patient-centered care satisfaction survey. This measuring tool captured responses one month after the project's implementation. Additionally, the primary long-term objective was to disseminate the project to short-stay neighborhoods and acute care within a year after the initial implementation. The secondary long-term goal would be to share the project at a national level through quality programs and collaborative webinars within three years.

Risks and Unintended Consequences

According to Padula et al. (2018), it could be challenging for the team to address the needs of EBP prevention guidelines. Risks and unintended consequences could have occurred, and the team needed to be prepared to mitigate those risks before project implementation. The IDT identified the risks and unintended consequences associated with this patient-centered fall prevention initiative. Although some of those risks were minimal, others could have been detrimental if not addressed before entering the project's implementation phase. The risks and unintended consequences identified by the team included: a) lack of teamwork and effective collaboration will decrease the project's success, b) lack of buy-in from the frontline staff concerning patient-centered care practices, c) disengagement of the providers due to a new approach to providing patient-centered care and not physician-driven care, d) disengagement of patients that would lead to the unlikelihood of the project's success, e) lack of support from key stakeholders such as the director, the ADPCS, the chief of GEC, etc., f) IT data retrieval issues related to timeliness and accuracy, g) inaccurate documentation of the Morse Fall Risk Assessment, h) inability to perform PCC interventions due to inadequate staffing levels, i) financial loss related to education and training and j) ineffective/inefficient education and training. These potential risks increased the chance of an unsuccessful project. Therefore, as a proactive measure, the IDT created strategies to mitigate, eliminate, transfer, or accept these risks.

Project Plan

The team utilized Lewin's change management model to conceptualize organizational and structured change (Belyth, 2015). This model's methodology helped the team adapt to change and the challenges that might arise when the staff was faced with managing the practice changes.

The three steps of Lewin's Change Theory were utilized to simplify and organize the implementation of the project interventions. To that end, Lewin (1947) offers insight to organizations and team members to effectively manage change in their work setting. His theory helps all stakeholders adapt to the change and focus on fall prevention in LTC utilizing PCC interventions.

Project Barriers

Throughout the planning process of this EBP project, barriers were addressed to implement it successfully. A risk matrix was used to evaluate the risks. The risk matrix encompassed unintentional barriers and the risks associated with the practice project identified by the IDT. The matrix also addressed the high-level risks that were addressed before the implementation of the project. The IDT would continue to collaborate to mitigate, transfer, or eliminate risks associated with the project through interprofessional collaboration. Further discussion regarding risks and unintended consequences is outlined below.

Stages of Project Plan

A schedule of project events has been presented in Appendix D. The timeline illustrated how the project was implemented in three phases – planning, implementation, and evaluation. The project would continue to progress through each phase and ultimately disseminated in practice across the organization. The IDT was instrumental in all the phases, especially during implementation, to have a successful project.

Planning

The planning phase, where the project development and project approvals would occur, lasted from August 15, 2019, till April 15, 2020. During this phase, several steps took place like the project topic was chosen, a literature review was conducted, the topic was submitted to the

instructor and preceptor, the project manager reviewed the project ideas with key stakeholders, and created the IDT. The project manager also submitted the EBP project for approval from the medical center director, the ADPCS, GEC chief, nurse managers, Falls Committee, and the EBP committee. The project manager requested a budget for education and training and supplies. Refer to the financial measures below for further information on the budget.

Implementation

The implementation phase would be the most challenging and crucial stage in the project. It began after obtaining the university approval and the organization's investigation review board approval. The project was also submitted to the EBP and Falls committee for approval. The proposed implementation date was set for June 1, 2020, until August 31, 2020; however, COVID 19 restrictions decreased the implementation period to one month. The project manager created the patient-centered care fall intervention SOP in May 2020. During the implementation phase, the following steps took place: a) Patient's fall risk assessments completed, b) education for the staff and the residents, c) collection and reporting of fall data, d) complete patient satisfaction surveys, e) observe employee engagement and satisfaction with the new process.

Evaluation

The evaluation phase began on August 15, 2020, lasting through mid-September. The project manager utilized the process and outcome measures data to assess the effectiveness of the project. Discreet individuals performed observations to determine compliance with using the patient-centered care fall interventions and SOP guidelines. These observations took place for one month after the project's implementation. The project manager and IDT reviewed the data one month after implementation to critique patient outcomes, measure data, and determine the

interventions' effectiveness. Furthermore, the team assessed the need for more education and training.

Project Manager Role and Leadership Skills

It was the responsibility of the project manager to lead the IDT through all the project cycle phases. Critical decisions were made to ensure a successful EBP project. The project manager determined the roles and responsibilities of each team member. A team approach helped facilitate the implementation, management, maintenance, and evaluation of this EBP project. Furthermore, effective leadership in the decision-making process ensured that the project was planned, implemented, and evaluated effectively. Doyle (2019) reflected that leaders require skills that are used to influence team members positively. Influential leaders in their work environment are excellent communicators, can motivate and encourage their subordinates, and handle and delegate responsibilities effectively (Doyle, 2019).

Communication, Motivation, Delegate Responsibilities

For this project, multiple communication forms were used since employees are different, and communication styles vary (Doyle, 2019). Clear communication with concise project goals and objectives needed to be established. Face-to-face communication, email, phone calls, and social media are all communication streams that were considered or used.

It is essential to use motivation as a mechanism to implement change. Nurse leaders must be able to inspire and motivate their teams to adapt to change (Doyle, 2019). This practice project required motivated and engaged staff throughout the process. Instituting patient-centered care fall interventions was a new practice for the team. Continued encouragement, asking for input, allowing self-sufficiency, and being open to employee concerns (Doyle, 2019) regarding the project was essential to keep on the forefront.

The project manager was able to delegate roles and responsibilities. Delegating responsibilities can empower others and take the workload off of the leader (Doyle, 2019). Assigning tasks allowed the nurse leaders and project manager to focus on other project tasks such as observations, engaging the employee, and encouraging team participation.

Evaluation Results

All aspects of the project would be measured to determine whether the program is going in the expected direction. During the project evaluation phase, multiple methods were used to collect and analyze data, evaluate patient-centered care interventions' effectiveness, expose the efficiency of implementing the interventions, and evaluate patient and frontline staff satisfaction. These methods would include chart reviews, surveys, observations, and export from two data warehouses. These data collection methods and the timeframe for the collection have been described further in the 'Validity, Reliability, and Data Source' and Measure sections below.

Selection of Participants

The participants' selection was based on the inclusion criteria, which comprised of male and female residents living in LTC, aged 65 and older. Furthermore, residents with a fall risk score of >25 indicated a moderate to high risk for falls, and residents with the cognitive and verbal ability to offer feedback were included. Residents on LTC who could not verbally provide feedback were excluded.

The LTC neighborhood #1 (LTC #1) baseline census indicated that 11 of 12 beds were occupied. All residents met the inclusion criteria. However, only 6 out of the 11 residents had the cognitive ability to specify their preferences. Based on these findings, only six residents in LTC #1 were included in the project. The baseline census for LTC neighborhood #2 (LTC #2)

indicates 11 of 12 beds occupied. Of the eleven residents, all of them met inclusion criteria. In total, 15 residents met the inclusion criteria and, thus, participated in the EBP project.

Data Details

The following data collected was useful in analyzing the project's success: fall risk assessments, the total number of falls per month, the total number of falls with injuries, patient satisfaction, and staff satisfaction. The details of each have been presented under the 'Categories of the Measures' section below. Due to COVID-19-related restrictions prohibiting family members from visiting within the CLC, family preferences could not be obtained or evaluated.

Validity, Reliability, and Data Source

Inter-rater reliability was used to measure the extent to which data collectors, also known as raters, assign the same score to the same variable (McHugh, 2012); this was used to help determine the reliability and validity of the data. The resident assessment coordinator (RAC) validated the outcomes and process measure data for this practice project using inter-rater reliability procedures.

The fall data were obtained from internal sources, the Data Warehouse, and the Strategic Analytic Integrated in Learning (SAIL) databases. Access to the data would only be granted after the completion of registration and the sign-in procedures. An electronic medical record (EMR) called Computerised Patient Report System (CPRS) was utilized for chart audits by CNL auditors. Security processes were in place to maintain the integrity of the data while using EMR. To access the EMR system, staff members and the IDT utilized their identity verification (PIV) cards and passwords.

Missing Data

Kang (2013) defined missing data as the data value unavailable for a variable. Missing data within a research project reduces statistical power (Kang 2013). The lost data can cause bias in the estimation of parameters and reduce the samples' representativeness, which might complicate the study's analysis (Kang, 2013). These problems may decrease the validity of a project as a whole and might lead to the derivation of invalid conclusions.

This project is not research-based; it is an EBP initiative. If the EBP project has missing data, it could complicate the results and lead to inconclusive outcomes. The team remained proactive and planned accordingly to counter missing data. The presence of missing data was a concern of the IDT, and to avoid this problem, the data was vigilantly collected and stored. Collecting data was specialized only for those appointed to prevent a missing data issue.

Evaluation Design

The evaluation design of this project was non-experimental. A non-experimental design does not involve a comparison group (Rural Health Information Hub [RHIH], 2020). This design might apply to pre-and post-intervention studies with no control or comparison group, case study approaches, and post-intervention-only approaches (RHIH, 2020). The patient-centered falls prevention program utilized a non-experimental outcome evaluation design. The outcomes were only tracked for the intervention participants, and specific questions regarding the project's goals and objectives were answered: a) How well is the PCI project being carried out? b) What improvements were implemented as a result of the project? The answers have supported the evaluation of the project and identify the areas that need improvement.

Formative/Summative Evaluation Criteria

Formative evaluations were used to improve the project's implementation, whereas summative evaluations were used to assess the project post-implementation compared with the benchmarks (Joyce, 2019). While using formative evaluations, the IDT was able to determine which components of the practice project worked and identify the practice(s) that may need to be changed. Moreover, the project would be tested and may require additional work for improvement (Joyce, 2019). Formative evaluations were utilized during the project implementation phase, starting from July 1, 2020. The practice change was compared with the evidence collected using the summative evaluation process, which helped the team evaluate the effectiveness of the patient-centered care fall interventions project and its usefulness in the CLC. Summative evaluations were performed during the latter half of the implementation phase, around mid to late July 2020, and continued through mid-August up to the project's evaluation phase.

Categories of Measures

The following are the four categories of measures monitored for this project: outcome measures, process measures, balancing measures, and financial measures. These measures were monitored, and data were collected at baseline, on Day 15 and Day 30, when applicable.

Outcomes Measures

Outcome measures are the clinical or financial outcomes concerning healthcare facilities (Burton, 2016). The IT department recorded the incidence rate of falls and the percentage of falls causing injuries at the baseline, on Day 15 and Day 30, beginning in June 2020. The data was shared with the IDT and was disseminated among the frontline staff. The following outcome

measures were evaluated: a) the incidence rate of falls; b) percentage of falls causing injuries; and c) the percentage of patient satisfaction related to patient-centered interventions.

Incident Rate of Falls / Percentage of Falls Causing Injuries. The data on falls started to be evaluated on July 15, 2020, 15 days post-implementation. Preliminary fall reports indicated that two falls had occurred by day 15. The data depicted no clinical significance in the use of patient-centered fall interventions regarding the fall rate in both LTC #1 and LTC #2. Still, there might be clinical significance in keeping the fall with injury rate at zero. Table 1 represents the preintervention and post intervention fall rates for LTC #1 and LTC #2.

As shown in Table 2, an unpaired-sample t-test conducted to compare the pre-implementation interventions and interventions post-implementation revealed a p-value of 0.009, which indicates a statistical significance of the falls data from baseline, at Day 15, and Day 30. The goal of the project was to decrease falls and falls with injuries utilizing patient-centered fall interventions. The falls in LTC #1 increased over the 30 days, while in LTC #2, it remained the same. However, the falls with injury rate remained at zero pre-and post-intervention. The statistical data reflected that the interventions effectively kept the falls with injuries rate at zero.

Percentage of Patient Satisfaction. The patient satisfaction data were collected 30 days post-implementation through a patient satisfaction survey form. The survey helped procure ordinal data, a standard for surveys and questionnaires, where the data values follow a natural order (Corporate Finance Institute, 2015). Due to COVID-19 and the visitor restrictions within the CLC, family members were not surveyed. Table 3 shows the five questions on the survey and scoring choices. The RAC assisted in data collection from LTC #1, and the quality consultant helped with collecting data from LTC #2. Six residents from LTC #1 and nine residents from LTC #2 filled in the survey. These residents were interviewed separately in their rooms to ensure

their privacy and confidentiality. Furthermore, the team provided that the staff would not gain knowledge of their responses. The surveys were inserted into a large envelope for discretion. The quality manager then submitted them to the project manager through encrypted email transmission. The hard copies were immediately discarded through the VA shredder box process.

The project manager and a statistician reviewed and analyzed the patient satisfaction surveys. Patient satisfaction for both LTC neighborhoods was represented by 'AGREE," which supports the overall weighted mean of 4.07. There is a breakdown of the scores and the weight of each question in Table 3. The weighted mean is defined as an average. (Statistics How To, 2020). Some of the data points contribute more to weight than others instead of each data point contributing equally (Statistics How To, 2020). Verbal Interpretation represents the residents' verbal responses to each survey question. These data represent favorable results and overall patient satisfaction in the patient-centered care fall interventions and staff engagement in the process.

Process Measures

Process measures are evidence-based that represent an organization's efforts or service towards improvement in performance or processes (Burton, 2016). A baseline measurement was taken for applicable process measures in addition to measurements taken on Day 15 and Day 30.

Staff Compliance Percentage Using Patient-Centred Care Interventions. Staff received education and training on the SOP starting on June 1, 2020, and ended around June 30, 2020. Eighty-seven percent of nursing staff were trained from LTC #1, and 67% from LTC #2 were trained. The COVID-19 surge resulted in the staff member's movement; therefore, not all CLC staff were trained.

PCC interventions compliance was measured randomly daily, and on Day 15 and Day 30. Observations were conducted by discrete personnel in both LTC neighborhoods. The CNLs and the RAC performed observations daily and concluded that staff frequency using patient preferences and patient-centered interventions in both neighborhoods was collectively 100%. LTC #1 and LTC #2 nursing personnel were observed frequently utilizing patient-centered care interventions.

Residents with Fall Risk Assessments/RNs Completing Fall Risk Assessment. The project manager and CNLs collected baseline data of the percentage of residents with completed fall risk assessments in June 2020, which continued post-implementation on Day 15 and Day 30. The baseline CPRS chart reviews revealed the percentage of residents with completed fall risk assessments or frequency data. All residents had moderate to high fall risk scores, and all were documented in the medical records by RNs on both LTC #1 and LTC #2 for those residents that met inclusion criteria. Reviews on days 15 and 30 were unchanged. Eleven (52%) of residents on LTC #1 and 10 (48%) of residents on LTC #2 had moderate to high-risk Morse Fall Risk Assessments. There were 21 residents between the two neighborhoods; 15 participants were included in the project. See Figure 1 for the Frequency and Percentage Distribution of Residents by Fall Risk Scores.

Percentage of Residents with Documented Falls Preventive Care Plans. The percentage of at-risk residents with documented falls preventive care plans, which is the last process measure, was also monitored. The CNLs, the quality consultant, and project manager completed chart reviews to measure compliance at the baseline and subsequently on Day 15 and Day 30. Chart audits discovered that the nurses initiated care plans upon a resident's admission, and the IDT added their list of problems to the individual care plan. Residents that scored

moderate or high on the Morse Fall Risk Assessment on admission were provided a fall prevention care plan. This care plan included treatment goals, follow-up or updates, and the progress towards these goals.

The percentage of at-risk residents with documented patient-centered falls prevention care plans were assessed through chart reviews at baseline, Day 15, and Day 30. At baseline, the compliance frequency was 100%, with 15 of 15 residents having a documented fall prevention care plan in the Caribou care plan database. At the beginning of week two (at Day 15), chart reviews and random observations commenced. The results revealed that the nurses consistently met with the residents and utilized their individualized fall prevention preferences. Although the conversations and interactions were taking place, and patient preferences were being used, the care plan and medical records did not reflect patient-centered fall interventions. On Day 15 and Day 30 post-implementation, in LTC #1, 6 out of 6 (100%) residents had fall prevention care plans; however, no patient-centered intervention was documented. In LTC #2, 9 out of 9 (100%) residents had fall prevention care plans. However, the fall prevention care plans did not include any documented patient-centered fall intervention. The clinical significance of undocumented patient-centered falls care plans and the increase in fall rates were inconclusive. However, observations noted that the nursing staff implemented patient preferences in providing care and adhering to the SOP appropriately.

Balancing Measures

Balancing measures are monitored to determine whether improvement in one area is negatively impacting another or not (Burton, 2016). The team tracked the balancing measure of patient and staff satisfaction. Table 3 describes the patient satisfaction survey results.

Patient and Staff Satisfaction. The balancing measures – patient satisfaction and staff satisfaction with a new process – gave the IDT and key stakeholders an idea about the staff members' and patients' perception of the practice change in fall prevention. It was essential for the frontline staff to be engaged and willing to participate positively. Staff satisfaction was monitored through observation and one-on-one verbal interactions. It is important to note that the staff members had to face dramatic workload changes within the first 30 days of the project implementation due to COVID-19. Some distractions and priorities resulted in disengagement of staff and the lack of documentation of patient-centered fall interventions. These limitations may have skewed the final project evaluation. Patient satisfaction was addressed in detail under the process measure section.

Close observations of both LTC neighborhoods (LTC #1 and LTC #2) at baseline revealed that staff members were involved and appeared to be optimistic about the EBP project. They were engaging with the residents, inquiring about their preferences, and incorporating them into practice. By Day 30, observation results were not favorable for the reason described above. Through observations and verbal reports from CLC nurse leaders, the overall buy-in and perception regarding the EBP project by the CLC staff had digressed due to unforeseen loss of staff within the CLC and increase workload. Thus, leading to the leaders' inability to follow-up with non-compliance, re-educate if needed, and move forward with implementation. Nevertheless, the NMs, the CNLs, the RAC, the staff educator, and the chief nurse were all encouraged to continue the project; however, the pandemic and colossal amount of workload discredited the possibility of continuous progress towards implementation.

Financial Measures

The financial measures pertain to the projected cost and returns of the project. (Naomi, n.d.). These data corresponding to the number of dollars spent helped the team decide whether a project is worth presenting. The IDT monitored the cost of training the nursing staff.

Cost of Training RNs, LPNs, and NAs. The financial measures monitored for this project were the costs associated with educating and training the nursing personnel in LTC, including RNs, LPNs, and NAs. The estimate of the finances needed to train staff was relatively low; however, a budget was requested to determine the total expense. The pre-determined costs have been depicted in Table 4, including the average salaries for RNs, LPNs, and NAs multiplied by the number of hours for education and training. Moreover, the costs associated with supplies for the patient-satisfaction survey cards were also included. The pre-implementation prediction of the financial impact owing to staff training was low, at less than \$100 till Day 30. To further cut costs, the nurse educator and CNLs altered their tour of duty (TOD) to train night shift and evening shift. Neither did the staff, nor the educators required overtime. Copies of the SOP and patient satisfaction surveys were minimal. These documents were distributed amongst the staff as resource materials. The patient-satisfaction surveys were created electronically, further decreasing incurred costs.

Overall, the project did not cause a substantial financial burden on the organization. Furthermore, the nursing service department was not impacted by overtime. The financial goals of the EBP project were not only met but exceeded expectations, with realized savings of more than \$1000.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) was used with the assistance of a statistician's assistance to help organize and analyze the data. According to Terharr and Sylvia (2014), importing data into SPSS increases the probability of accuracy. The reliability and validity of the process and outcome measures were tested using inter-rater reliability (IR) methods. Inter-rater reliability is a measure of reliability used to determine the degree to which raters agree (Phelan & Wren, 2006). The RAC evaluated the measures using the IR process to assess their validity. The process measures were used to determine whether the team was following the expected direction. The outcome measures showed the team if the patient-centered interventions prevented falls in LTC.

An unpaired t-test was used to compare falls data that differ with time. Meaningful improvements were evaluated using a p-value. The fall data results have reflected a p-value of 0.009, indicating a statistical significance in the fall outcome data. However, the statistical significance is not reliable. Although observations reflected patient preferences in LTC, documentation in the care plan did not reflect the interventions used. Thus, statistical significance may be skewed. However, there were no falls with injuries and no costs associated with either fall. It has been concluded that the inclusion of patient-centered fall interventions in LTC kept the fall with injury rates at zero. The data depicts no clinical significance in the use of patient-centered fall interventions regarding the fall rate on both LTC #1 and LTC #2. Still, there could be a clinical significance in keeping the fall with injury rate at zero.

Human Rights and Privacy

The participants were protected through the approval process from the EBP committee, key stakeholders knowledge and approval of the project, patient understanding and education

regarding the project, and following Health Insurance Portability and Accountability Act (HIPPA) guidelines and practices. The project manager requested approval in May of 2020 by submitting to the organization's IRB and the university IRB.

The IDT explained the purpose and goals of the project to the residents. All the residents were given the option of participating in the project. There were no incentives for participation. Education and training for the residents started during the first week of May 2020. Informed consent was also received prior to patient education and training. HIPPA-compliant data was protected as per the guidelines and regulations set forth by the organization. Information Technology (IT) or the Clinical Applications Coordinators (CACs) retrieved the data and forwarded it to the project manager upon request.

Impact

The intent of this evidence-based practice (EBP) project was to introduce patient-centered fall interventions using an SOP in long-term care. The project's impact on nursing practice, resident outcomes, and the project's future state will influence its viability and sustainability. Falls in LTC was a concern for the interdisciplinary team (IDT) in the CLC. Provider driven fall interventions led the way in fall prevention; however, falls continued to occur, so there was an urgent need to enhance the fall prevention program.

Project Impacting Practice Problem

One month after implementation, falls data for the CLC indicated that there had been no significant reduction in the overall fall rate. The impact of the project in practice was not as favorable as projected. The falls with injuries rate remained at zero during the assessment period. The data did not suggest that patient-centered fall interventions impacted LTC falls and fall rates. Moreover, the overall fall rate increased on both LTC #1 and LTC #2 at the assessment

mark. CLC leadership halted the project after the first month due to the COVID-19 workload and staff loss in the CLC.

Practice Setting Change

Patient-centered care interventions were based on the needs, desires, and inputs of the patient. An SOP, created to establish staff guidelines, offered a process for instituting the project in practice effectively. Appendix A reflects the full protocol for initiating patient-centered fall interventions in LTC. The evidence-based care model used to reduce falls was intended to yield positive outcomes such as reducing falls and falls with injuries and increased patient satisfaction among LTC residents. The team introduced residents as partners in their healthcare. The residents relied upon providers and nurses to offer a holistic health perspective empowering engagement and active participation in their fall prevention care plan. Patient-centered care was not a new phenomenon; however, falls interventions that were patient-centered was new. The providers and staff alike had to adjust to the concept of patient-centeredness and allow the patients to participate as team members and offer their preferences for their care plan.

At baseline and over the first month, staff engagement was positive, and the residents accepted the concept of patient-centeredness. They were enthusiastic about the practice change. However, the COVID-19 workload and the staffing changes in the CLC negatively impacted forward movement and the environment where the project occurred.

Future Implications

To achieve the sustainability and success of this EBP project and desired outcomes, limitations would need to be addressed. The team's recognition and management of constraints will influence sustainability. Limitations such as the reduction in the implementation and data assessment period may have negatively impacted outcomes. A period of 60 to 90 days may

increase compliance with ongoing follow-up and monitoring. Due to COVID-19 restrictions, including staff members' movement and increased workload, CLC leadership discontinued the project implementation. Other limitations such as non-compliance with documentation of care plans, the possible need for re-education and training, and the lack of engagement and buy-in of frontline staff may have impacted project results and outcomes. The project manager and IDT met to develop a plan to counter these setbacks.

After the COVID-19 restrictions are lifted, the project may require a recommendation for re-implementation, staff re-education, and training. The fall data could move upward when the project is successfully implemented, evaluated, and disseminated. An evaluation must continue to occur at intervals, including quantitative data from process and outcome measures, collecting and analyzing data, reporting and sharing data, and addressing barriers and adjusting as needed. Surveys and observations would need to continue to determine both patient and staff satisfaction. Furthermore, the project's future state relies upon overcoming the limitations, the approval to move forward from key stakeholders, and planning for project re-implementation in the CLC and dissemination across other inpatient areas.

Plans for Dissemination

The dissemination plans commenced the first week of October with the CLC chief nurse. The project manager referenced the goal to continue with implementation once the COVID-19 pandemic ceased. The GEC chief and the ADPCS were contacted via email with the dissemination plans within the CLC. The project manager notified the CLC nurse managers and the IDT via email communication as well. Initially, dissemination will ensue in the LTC and short-stay neighborhoods; however, the goal would ultimately be to disseminate in the acute care areas. Due to social distancing restrictions related to COVID-19, a PowerPoint presentation will

be prepared and emailed to the team, including the acute care nursing leadership, by October 19, 2020, to include the project aim, evaluation, and outcomes data, and dissemination plans.

As a member of Sigma Theta Tau and the American Association of Colleges of Nursing (AACN), submitting a request to present at a local chapter meeting will align with other dissemination plans. Furthermore, the American Journal of Nursing (AJN), a peer-reviewed and evidence-based professional magazine (AJN, 2020), would be the magazine selected to submit a manuscript for publication. Consideration for a peer review of the EBP proposal will ensure quality control measures for accuracy, relevancy, and significance (Medical News Today, 2019) before publication.

Conclusion

Falls continue to be a matter of concern in LTC. Although physician-driven orders and protocols exist and were used as fall prevention measures, falls continue to occur. The baseline fall rate in LTC was 4.2, and evidence suggests that PCC interventions and patient-centered care plans are beneficial in preventing falls and falls with injuries in LTC (Avanecean et al., 2017), which results in a decrease in the overall fall rate. The IDT in the CLC collaborated and determined that fall prevention is a critical practice problem, and continuous monitoring and efforts are needed to address this issue. The evidence indicated that PCIs for fall prevention effectively improve patient outcomes (Bridges et al., 2011). The evidence supports that patient-centered care practices, patient involvement, and individualized care plans help prevent falls (IHI, 2019).

After reviewing 12 high-quality articles that fit the eligibility criteria and contained EBP literature, an SOP introducing patient-centered care fall interventions was implemented in the LTC neighborhoods in the CLC. Patients served as members of the team in the development of

care plans. The IDT ensured that the residents were engaged and participated actively by offering their preferences and choices. To determine effectiveness, outcome, process, financial resources, and balancing measures were monitored. Due to COVID-19 restrictions and the loss of staff in the CLC, the project was abruptly halted. CLC leadership and IDT are open to the re-implementation of the project in the future. Dissemination of the project to the short-stay neighborhoods and acute care areas would be the project manager's ideal goal. However, the conclusion of the COVID-19 pandemic would be essential to move forward. The project's success would then depend on team participation, resident engagement, and overall resident outcomes.

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Table 1*Summary Result of Falls / Falls with Injury*

	<i>Total no. of Fall</i>		<i>Fall Rate</i>		<i>Fall with injuries</i>	
	<i>LTC #1</i>	<i>LTC #2</i>	<i>LTC #1</i>	<i>LTC #2</i>	<i>LTC #1</i>	<i>LTC #2</i>
<i>Pre-Implementation Period (June 2020)</i>	0	1	0.00	2.90/1000 bed days	0	0
<i>Post-Implementation (July 2020)</i>	1	1	3.60/1000 bed days Unchanged at Day 30	3.2/1000 bed days Unchanged at Day 30	0	0

Table 2*Pre and Post Intervention Paired with Sample Statistics*

<i>Variables</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Df</i>	<i>t-value</i>	<i>p-value</i>
Pre-Intervention	15	50.13	13.56			
				14	3.024	0.009
Post-Intervention	15	41.20	12.74			

Note: Significant at the 0.05 level (2-tailed).

Table 3*Patient Satisfaction Survey Results*

<i>Criteria</i>	<i>Weighted Mean</i>	<i>Verbal Interpretation</i>
	<i>WM</i>	<i>VI</i>
1. I feel involved in making decisions about my fall prevention care plan.	3.67	A
2. I feel that my fall prevention care plan was mostly influenced by me and my family member(s).	3.80	A
3. I feel that my nurse and the care team are concerned about my safety.	4.47	SA
4. I feel that my nurse and the care team respond well to my needs and concerns regarding fall prevention.	4.00	A
5. I feel that my fall prevention plan is working.	4.40	SA
Overall Weighed Mean	4.07	A

Legend:

Options	Equivalent	Verbal Interpretation	Symbol
5	4.20–5.00	Strongly Agree	(SA)
4	3.40–4.19	Agree	(A)
3	2.60–3.39	Neither	(N)
2	1.80–2.59	Disagree	t(D)
1	1.00–1.79	Strongly Disagree	(SD)

Table 4*Patient-Centered Care Fall Intervention Budget*

EXPENSES	OVERTIME NEEDED	COST
Nurse Educator Average hourly rate of \$32.00/hr	4.0	\$128.00
CNL Average hourly rate \$30.00	4.0	\$120.00
RN Training- 16 RN's x \$35.00	1.0	\$560.00
LPN Training- 6LPN's x \$20.00	1.0	\$120.00
NA Training- 4 LPN's x \$12.00	1.0	\$48.00
Supplies and Services:		
• Patient Satisfaction Cards		\$25.00
• Services by Medical Media for printing cards		\$50.00
Total Expenses	11 Hours OT.	\$1051.00

Figure 1

Frequency and Percentage Distribution of Residents by Fall Risk Scores

Appendix A

Standing Operation Procedure

COMMUNITY LIVING CENTER
STANDARD OPERATING PROCEDURE
GULF COAST VETERANS HEALTHCARE SYSTEM
BILOXI, MISSISSIPPI

SOP # 27
INITIATED DATE: 6/10/20
REVIEW DATE: 6/10/23

Preventing Falls Using Patient-Centered Care Fall Interventions

1. **PURPOSE:** The purpose of this memorandum is to implement a holistic, quality falls prevention initiative into the Community Living Center utilizing patient-centered care falls intervention.
2. **POLICY:** It is the policy of this health care system to continuously work to improve falls and falls with major injuries within the CLC. Patient involvement and feedback in the CLC are encouraged to build fully engaged interdisciplinary collaboration and partnerships with their families and their health care teams. Fall prevention is a high priority, and the outcomes of our veterans remain at the forefront. Through interprofessional communication and collaboration, the CLC will commit to preventing falls by including our patients and their family members in their plan of care. The patient's wishes, input, suggestions, and concerns will be implemented to improve the overall fall rate and falls with injuries in the CLC.
3. **ACTION:**
 - a. **Assess Fall Risk-** All veterans will be assessed for risk factors on admission or change in condition, both intrinsic and extrinsic. A Morse Fall Scale will be used to determine risk status. Any veteran scoring moderate to high risk will be further assessed and evaluated. Those veterans will also be able to partake in the patient-centered care fall intervention program.
 - b. **Education of Patient and Family regarding SOP-** The patient and their family, if applicable, will be given a fall prevention education on admission to include patient-centered care fall prevention interventions
 - c. **Review fall prevention risk and strategies with the resident and their family-** The RN admitting the veteran will talk to the veteran about his/her risk factors. The nurse can ask the veteran and family, if applicable, the following questions to gather data:
 - Have you fallen in the last 90 days?
 - Why do you fall?
 - What do you believe can prevent you from falling?
 - Are there any assistive devices you might need?
 - How is your vision?
 - What activities are you interested in?

Allowing the patient to verbalize will be necessary. The goal of this program is to hear from the residents, incorporate their ideas, suggestions, wants, and desires into the care plan. The evidence reflects that patient engagement and patient-centered care interventions decrease falls in the elderly population (Avanecean, 2017).

- d. Using Figure 2 as a guide, the nurse will identify intrinsic and extrinsic risk factors.

- e. Using Figure 2 as a guide, the nurse will identify interventions specific to the resident. Allow the patient to verbalize which intervention would work best for him/her.
- f. The nurse will review the risk factors and interventions with the resident using by repeating what the resident has verbalized.
- g. The nurse can also ask the resident to repeat his/her risk factors and interventions that can help prevent falls.
- h. All patient-driven risk factors and patient-centered interventions will be care planned accordingly.
- i. The RN will address any interventions that are selected that require a provider's order. The RN will notify the provider of the need to enter an order in CPRS, for example, walkers, specific shoes needed, or cane.
- j. The Caribou Care Plan will be updated, indicating patient-centered fall interventions and risk factors.
- k. Figure 1 shows the framework for spread endorsed by the Institute for Healthcare Improvement, addressing local improvements to system-wide change (Dykes et al., 2017).
- l. The implementation and adoption of innovation require a process whereby there is the communication of leadership support, ideas to improve practice, and associated changes are negotiated through the social system and reinforced over time through measurement and feedback to stakeholders (Dykes et al., 2017).
- m. The program will be evaluated by reviewing falls data monthly as well as by utilizing the patient-centered patient satisfaction survey (Figure 3).

4. RESPONSIBILITIES

- A. The RN will Implement the patient-centered falls interventions program in practice
- B. The LPN will assist the RN by ensuring all interventions are at the bedside and are implemented.
- C. The NM will ensure that the staff is utilizing the patient-centered falls intervention program.
- D. The CN will ensure the SOP is updated according to policy.
- E. The provider will assist by ordering supplies and equipment identified by the resident needed to prevent falls.

REFERENCES

- Avanecean, D., Calliste, D., Contreras, T., Lim, Y., & Fitzpatrick, A. (2017). Effectiveness of patient-centered interventions on falls in acute care setting compared to usual care: a systematic review. Retrieved from DOI:10.11124/JBISRIR-2016-003331
- Dykes, P., Duckworth, M., Cunningham, S., Dubois, S., Driscoll, M., Feliciano, Z., Ferrazzi, M., Fevrin, F., Lyons, S., Lindros, M.E., Monahan, A., Paley, M., Pierre, S.J., & Scanlan, M. (2017). Pilot testing fall tips (tailoring interventions for patient safety): a patient-centered fall prevention toolkit. Retrieved from <http://dx.doi.org/10.1016/j.jcjq.2017.05.002>

Chief, Geriatrics & Extended Care

SOP Attachments

FIGURE 1

The Components of the Framework for Spread as Applied to Engaging Stakeholders

FIGURE 2

Tailoring Interventions for Patient Safety (TIPS)

Patient Name: _____		Date: _____	
☐ Increased Risk of Harm If You Fall		Fall Interventions (Circle selection based on color)	
Fall Risks (Check all that apply)		Walking Aids	
☐ History of Falls	☐ Medication Side Effects	☐ Crutches	☐ Cane
☐ Walking Aid	☐ IV Pole or Equipment	☐ Bed Pan	☐ Assist to Commode
☐ Unsteady Walk	☐ May Forget or Choose Not to Call	☐ Bed Alarm On	☐ Assistance Out of Bed
		☐ Bed Rest	☐ 1 person
		☐ 2 people	

FIGURE 3

CLC Patient-Centered Care Patient Satisfaction Survey

Using the following scale, **STRONGLY DISAGREE=1, DISAGREE=2, NEITHER AGREE OR DISAGREE=3, AGREE=4, and STRONGLY AGREE=5**, please rate the following questions:

Questions	Strongly Disagree 1	Disagree 2	Neither Agree or Disagree 3	Agree 4	Strongly Agree 5
I feel engaged in making decisions about my fall prevention care plan.	☐	☐	☐	☐	☐
I feel that my fall prevention care plan was mostly influenced by me and my family member.	☐	☐	☐	☐	☐
I feel that my nurse and care team are concerned about my safety.	☐	☐	☐	☐	☐
I feel that my nurse and care team respond to my needs and concerns regarding fall prevention.	☐	☐	☐	☐	☐
I feel that my plan to prevent falls is working.	☐	☐	☐	☐	☐

Thank you for your participation. Your opinion matters to the CLC team.

Resident Name: _____

Resident Room Number: _____

Appendix B

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Participants	Intervention/ Comparison	Study Limitations	Outcome Definition	Usefulness Results Key Findings
Avanecean, D., Calliste, D., Contreras, T., Lim, Y., & Fitzpatrick, A. (2017). Effectiveness of patient-centered interventions on falls in an acute care setting compared to usual care: a systematic review. Retrieved from doi:10.11124/JBISRIIR-2016-003331	Quantitative Level 1 High Quality	Adult patients admitted to the Medical-Surgical Unit for any condition or illness	Patient-centered Interventions compared to Usual Care	Poor communication among nursing staff	The primary outcome included fall rates and the total number of falls. Secondary outcomes included falls with related injuries.	Three studies demonstrated a statistically significant reduction in falls rates $p < 0.04$) utilizing personalized care plans and patient-centered education. Two studies showed no difference in fall rates ($p > 0.5$).
Blake, J.G., Michael, Y., Perdue, L., Coppola, E., Beil, T., & Thompson, J. (2018). Interventions to prevent falls in community-dwelling older adults: a systematic review for the u.s. preventive services task force. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK525700/	Quantitative Level 1 High Quality	Community-dwelling older adults at average or high risk of falls	Primary care interventions vs. patient-centered (exercise)	Limited to the English language; patients with neurologic conditions and vitamin D deficiency	Falls and falls with injuries were the outcome measures.	Findings suggest There is a fall-related benefit associated with both multifactorial and exercise interventions, but the evidence is most consistent across multiple fall-related outcomes for the exercise trials. 62 trials used (n=35,058)
Colon-Emeric, K., Corazzini, K., McConnell, E., Pan, W., Toles, M., Hall, R., Batchelor-Murphy, M., Yap, T.L., Anderson, A.L., Burd, A. & Anderson, R. (2017). Study of individualization and bias in nursing home fall prevention practices. <i>Journal of the American Geriatrics Society</i> , (65), 815-821. Retrieved from DOI: 10.1111/jgs.14675.	Quantitative Randomized Trial Level I High Quality	Nursing, rehabilitation, and social services staff	Individualization and bias regarding fall prevention	Racial Bias	How nursing home staff use resident characteristics to individualize fall prevention care delivery or whether care is affected by implicit bias	NH staff used a standardized approach to fall prevention for all residents regardless of their specific clinical characteristics, although they do report increasing all fall prevention activities for residents with prior falls. A significant racial bias was detected for one of four intervention categories.

Citation	Design, Level Quality Grade	Participants	Intervention/ Comparison	Study Limitations	Outcome Definition	Usefulness Results Key Findings
Dykes, P., Duckworth, M., Cunningham, S., Dubois, S., Driscoll, M., Feliciano, Z., Ferrazzi, M., Fevryn, F., Lyons, S., Lindros, M.E., Monahan, A., Paley, M., Pierre, S.J., & Scanlan, M. (2017). Pilot testing fall tips (tailoring interventions for patient safety): a patient-centered fall prevention toolkit. Retrieved from http://dx.doi.org/10.1016/j.jcjq.2017.05.002	Quantitative & Qualitative Level III Good Quality	Two large, geographically and Ethically diverse medical centers	Use of falls TIPS program: a patient-centered care intervention toolkit. No comparison.	Insufficient duration to determine the effectiveness of Falls TIPS program	Falls and fall-related injuries were the outcome measures.	Results from the pilot study suggest that the level of adoption of the Fall TIPS protocol on high-risk units is reasonable. In addition, the framework helped maintain toolkit adoption, sustain evidence-based fall prevention practices, and ultimately prevent patient falls.
Fredericks, S., Lapum, J., & Hui, G. (2015). Examining the effect of patient-centered care on outcomes. <i>British Journal of Nursing</i> , 24(7), 394–400. https://doi.org/10.12968/bjon.2015.24.7.394	Systematic Review Level II High Quality	Adults who were provided a Patient-Centered Care (PCC) Intervention comprising patient education and counseling	Patient-Centered Care interventions; no comparison.	Duration of time in which interventions were used. Lack of consistency in how data was presented. Only partial results were reported in some instances. Also, the quality of the data was not adequate to calculate an effect size.	Outcomes assessed relate to the quality of care during hospitalization or performance of self-care behaviors post-hospital discharge	PCC interventions are not effective in the use of patients with chronic illnesses, especially if not extended over some time.
Gruden, M. & McCormick, B. (2020). Impact of person-centered interventions on patient outcomes in acute care settings. <i>Journal of Nursing Care Quality</i> , 00(00), 1-8. Retrieved from doi: 10.1097/NCQ.0000000000000471	Quantitative Systematic Review and Meta-analysis Level I High Quality	Hospitalized patients at any age.	Patient-Centered Care Interventions; No comparison.	No control group, short follow-up period, and small sample size	To determine the impact of person-centered interventions on patient outcomes	Minimal evidence showing patient-centered interventions improve outcomes.

Citation	Design, Level Quality Grade	Participants	Intervention/ Comparison	Study Limitations	Outcome Definition	Usefulness Results Key Findings
Leung, W. Y., Adelman, J., Bates, D. W., Businger, A., Dykes, J. S., Ergai, A., Hurley, A., Katsulis, Z., Khorasani, S., Scanlan, M., Schenkel, L., Rai, A., & Dykes, P. C. (2017). Validating Fall Prevention Icons to Support Patient-Centered Education. <i>Journal Of Patient Safety</i> . https://doi.org/10.1097/PTS.00000000000000354	Quantitative and Qualitative Level II Good Quality	Eighty-eight patients and sixty- six nurses and two academic medical centers consisting of a high volume of non-white stakeholders	Patient-centered education and the use of fall prevention icons.	Single icons representing multiple concepts	The effectiveness of the use of patient-centered fall prevention icons as fall prevention strategies.	CVI scores after patient-centered icon modifications improved. Icons that depicted multiple concepts need further review.
Oliveira, J.S., Sherrington, C., Paul, S., Ramsay, E., Chamberlain, K., Kirkham, C., O'Rourke, S.D., Hassett, L., Tiedmann, A. (2018). A combined physical activity and fall prevention intervention improved mobility-related goal attainment but not physical activity in older adults: a randomized trial. <i>The Journal of Physiology</i> , 16(2019), 16-22. Retrieved from https://doi.org/10.1016/j.jphys.2018.11.005	Quantitative Randomized Trial Level I Hig Quality	People aged >= 60	Physical Activity and Fall Prevention	Number of dropouts in the study; self-report measures with potential bias	Mobility gait attainment, falls, quality of life, fears of falling	Combined physical activity and fall prevention was associated with significantly higher mobility gait attainment and decreased falls.
Schnock, K., Howard, E., & Dykes, P. (2019). Fall prevention self-management among older adults: a systematic review. <i>American Journal of Preventive Medicine</i> , 56(5), 747-755. Retrieved from https://doi.org/10.1016/j.amepre.2018.11.007	Systematic Review Level II Good Quality	Community-dwelling older adults	Self-management fall prevention Strategies	Study design, sample size, and outcome measures were diverse.	The effectiveness of self-management of falls prevention interventions.	Specific characteristics of older adults engaged more in self-management of fall prevention. i.e. younger older adult males, not living alone, self-reported good health. Attention to modifiable characteristics may enable healthcare providers to implement preliminary interventions aimed at repositioning older adults so that they will become willing participants in self-management of fall prevention

Citation	Design, Level Quality Grade	Participants	Intervention/ Comparison	Study Limitations	Outcome Definition	Usefulness Results Key Findings
Tricco, A., Thomas, S., Veronkiki, A.A., Hamid, J.S., Cogo, E., Strifler, L., Khan, P., Robson, R., Sibley, K.M., MacDonald, H., Riva, J., Thavorn, K., Wilson, C., Holroyd-Leduc, J., Kerr, G., Feldman, F., Majumdar, S.R., Jaglal, S., Hui, & Straus, S. (2017). Comparisons of interventions for preventing falls in older adults a systematic review and meta-analysis. <i>The Journal of the American Medical Association</i> , 318(17), 1687-1699. Retrieved from doi:10.1001/jama.2017.15006	Quantitative Systematic Review and Meta-analysis Level I High Quality	Participants age 65 years and older.	Usual care, other fall-prevention interventions, and placebo.	Insufficient data	The number of falls with injuries, overall fall rates, number of fallers, number of fall-related emergency room visits, number of fractures, and costs.	Personalized exercise alone and other combined interventions were associated with a lower risk of injurious falls compared with usual care.
Tzeng, H.M. & Yin, C.Y. (2015). Patient engagement in-hospital fall prevention. <i>Nursing Economics</i> , 33(6), 326-334. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed?term=%22Nurs+Econ%22[jour]	Systematic Review Level III Good Quality	Inpatient hospitalized patients	Patient engagement and patient-centered interventions. No comparison.	No limitations mentioned	Impact of patient engagement on inpatient fall prevention.	Empowering patients to become active participants in fall prevention during hospitalization could serve as a means to prevent falls in hospitals
Verghese, J., Holtzer, R., Lipton, R.B., & Wang, C. (2009). Quantitative gait markers and incident fall risk in older adults. <i>Journal of Gerontology</i> , 64A(8), 896-901. doi:10.1093/gerona/glp033	Quantitative Study Level I High Quality	Community-residing adults 65 years and older	Quantitative Gait Markers to determine Fall Risk	Did not study all aspects of gait, poor recall of falls is linked to cognitive impairment and longer assessment intervals	Predictors of falls in older adults	Gait speed and other markers, especially variability, should be further studied to improve current fall risk assessments and to develop new interventions

Legend:

CVI	Content Validity Index	PCC	Patient-centered Care
EBP	Evidence-Based Practice	TIPS	Tailoring Interventions for Patient Safety
NH	Nursing Home		

Appendix C

SWOT Analysis Worksheet- Fall Prevention in LTC

Worksheet

SWOT Analysis Worksheet

- For instructions on using SWOT Analysis, visit www.mindtools.com/rs/SWOT.

Strengths What do you do well? What unique resources can you draw on? What do others see as your strengths?	Weaknesses What could you improve? Where do you have fewer resources than others? What are others likely to see as weaknesses?
1. IDT Response Time to falls 2. EBP Resources in place 3. Staff Engagement 4. Staffing knowledge re: availability of resources	1. Turn around time for supplies to prevent falls 2. Inconsistencies data reporting 3. Environmental Falls like floors needing non-skid coating 4. Reactive vs Proactive Culture
Opportunities What opportunities are open to you? What trends could you take advantage of? How can you turn your strengths into opportunities?	Threats What threats could harm you? What is your competition doing? What threats do your weaknesses expose you to?
1. Improve Reporting of Falls 2. Inter-professional Relations 3. Buy-in to fall program 4. Employee Recognition regarding no falls on neighborhood	1. IPEC Reporting of Falls and CLC Compare is different 2. Not having proper equipment timely 3. Design of nursing unit; (not person centered) Backs to residents

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Project Schedule

ACTIVITY	NUR7801								NUR7802								NUR7803							
	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	
7801																								
Preceptor and Student Meetings		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Project approval with Preceptor		x																						
Meet with preceptor and instructor to discuss plan.		x																						
Identify key stakeholders			x																					
Nurse Manager Approval			x																					
IDT approval				x																				
Complete SWOT analysis with IDT				x																				
Complete Fishbone diagram with IDT				x																				
Conduct Assessment of Business Settings					x																			

[illegible]