Timed Get Up and Go Implementation to Improve Falls Assessment

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Dedication

I dedicate this project to my family, my co-workers, and my classmates, who helped and supported me throughout the process. Special thanks belong to my mother, Robin Sneed, for her unwavering support during this process. She has been my sounding board, final proofreader, and pillar of support for all my life. Thank you for helping me get this far successfully; I could not do it without you.
Abstract

Falls are a large problem in the geriatric population, causing injury to patients and financial strain on the healthcare system. Using Meleis Transition theory and Lewin’s Change theory as a framework, the author implemented a standardized process to evaluate fall risk in a small, suburban primary care practice. The site had a large patient base who were > 65 years of age, making them high risk for falls with no falls assessment in place, which is why it was chosen as the project site. The medical assistants were educated on the STEADI initiative and the project protocol during a live session that was accompanied by a PowerPoint presentation. The medical assistants used the STEADI Algorithm to determine if the patient needs further assessment. If the algorithm determined further assessment was needed, then the patient completed a Timed Get Up and Go, which was documented in the EHR. The adherence rate to TUG assessment was 33% post implementation, which was lower than the target adherence rate of 50%. However, awareness of the issue was raised with this project. The author found that implementing change in a small practice is difficult, but can positively affect patients and the healthcare system, meeting the goals of the Triple Aim and Healthy People 2020.

Keywords: STEADI, Falls, TUG, Geriatric
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Timed Get Up and Go Implementation to Improve Falls Assessment

Falls are a significant concern in the geriatric population. One in every three patients in this population sustains a fall every year (Landis, & Galvin, 2014). The project manager will discuss the incidence of falls, fall-related injuries, and fall-related deaths. Then, the project manager will explore the economic burden of these outcomes at the state and federal levels. The need for falls assessment in primary care will be evaluated. Finally, the project manager will explore the questions guiding the research, the evaluation of the project, and the measures of project success.

**Background Information**

By 2050, 84 million people will be among the older adult population, which suggests the number of falls will increase (Haddad, Bergen, & Florence, 2019). Zimba Kalula, Ferreira, Swingler, Badri, & Sayer (2015) found that 30% to 60% of people > 65 years reported at least one fall during the previous year. For the population 80 years or old, this number averaged 50%. In 2014, the CDC estimated that 28.7% of older adults reported falling in the past year, equating to 29 million falls in 2013 (Bergen, Stevens, & Burns, 2016). According to Bergen et al. (2016), based on the estimated population in 2030, falls will increase to 48.8 million per year unless effective prevention plans exist to reduce falls. Castle (2019) reports that despite the recommendations of the American and British geriatrics societies to implement strategies to reduce falls, falls have increased 30% over the past decade.

Of an estimated 29 million falls that occurred in 2013, seven million resulted in injury (Bergen et al., 2016). 65% of injuries among the elderly are fall-related (Maxwell, 2015). Falls also account for at least 15% of emergency room visits yearly (Pohl et al., 2014). This phenomenon occurs in NC as well. Each day in North Carolina, there are “…531 visits to
emergency departments [EDs], 69 individuals admitted to the hospital, and two fall-related fatalities” (Landis, & Galvin, 2014). A busy practice in suburban North Carolina does not routinely see patients for falls-related visits but feels their patients are contributing to the geriatric fall epidemic.

Additionally, in 2016, North Carolina had 10.9 falls deaths /100,000 people, which is higher than the national average of 9.1/100,000 (Healthy People 2020, 2019). In 2016, nationally, there were 29,668 deaths from falls among patients aged 65 years + (Burns & Kakara, 2018). Burns and Kakara (2018) estimate that by 2030, 49,000 to 53,000 fall-related deaths will happen annually---unless the rate of falls decreases.

Falls may lead to adverse outcomes for patients: nursing home admission, loss of self-esteem, lower functioning, and inactivity (Hajek, & König, 2017). Hajek and König (2017) found an inverse association between the number of falls in the previous 12 months and the patients' perception of negative effects ($p < 0.001$). Furthermore, the largest risk factor for falling is a previous fall (Jia et al., 2019). Additionally, patient falls affect caregivers. Shen, Hu, Liu, & Tong (2015) found that both caregivers and patients were afraid of falls. Treating caregiver fear was necessary for successful patient recovery (Shen et al., 2015).

Fall-related injuries are common (Pohl et al., 2014). Maxwell (2015), wrote that the most common geriatric injuries are lower extremity and hip fractures, which represent 47% of traumatic injuries. Neck, rib, and spinal injuries account for 18% of traumatic injuries (Maxwell, 2015). Aside from physical trauma, falls may cause psychological trauma. Hajek and König (2017) found an inverse association between the severity of depression in the patient and their number of falls ($p < .001$). Depression, chronic conditions, geriatric syndromes, cognitive
deficits, and physical impairments all increase the likelihood that an older adult will fall (Jia et al., 2019).

Adverse outcomes require long term healthcare, which raises the financial burden to patients and the health system (Haddad et al., 2019). Maxwell (2015) estimated that 70%-80% of geriatric trauma patients require transfer to a long-term care facility after acute injury treatment. Among lower extremity fractures, only 6% of patients are discharged home after acute treatment (Maxwell, 2015).

In 2015, Medicare paid 31.3 million dollars to cover non-fatal falls in patients 65 and older (Burns, Stevens, & Lee, 2016). Rajagopalan, Litvan, and Jung (2017) expect this amount to reach $43.8 billion by 2020. Trauma-related hospitalizations are, on average, over $30,000 (Rajagopalan et al., 2017). Burns et al. (2016) estimated that fall-related office visits cost $5,625. $616.5 million is spent annually for fall-related deaths by all payer sources. In 2011, North Carolina spent $806 million to care for patients who had experienced falls (Landis & Galvin, 2014).

**Significance of Clinical Problem**

Falls are a significant problem in US society, especially in the geriatric population. Because this is a growing population, it is necessary to prevent falls (Burns & Kakara, 2018). Despite CDC recommendations to assess patients annually for falls, many primary care providers do not do so (Johnston et al., 2018). There are few reports of evidence-based falls assessment completed in primary care (Landis, & Galvin, 2014).

According to Johnston et al. (2018), less than half of patients report a fall to their primary care provider. The CDC recommends the Stay Independent self-screening tool as part of its STEADI initiative to improve falls screening (Centers for Disease Control, n.d.a). Stay
Independent is the first step in the STEADI algorithm for providers (Centers for Disease Control, n.d.c). After the screening, medical staff should complete a Timed Get Up and Go (TUG), or other recommended formal falls assessment (Centers for Disease Control, n.d.c).

**Question Guiding Inquiry (PICO)**

A primary care practice in suburban North Carolina had no formal falls risk assessment process. Before project implementation, their patients complete the Stay Independent brochure before Medicare Physicals, but they do no other falls assessment. Most of the patients at this practice are 65 years and older. Due to the large patient population who would be at risk for falls, the practice wanted to implement a standardized assessment process: the CDC-recommended Timed Get Up and Go (n.d.b).

**Population.** The project population of interest was the primary care providers, medical assistants, and office staff of a primary care practice in suburban North Carolina. This project required input from all members of the small office. There were two providers, a physician, and a physician assistant, two medical assistants, and two front office staff.

**Intervention.** After patients complete the Stay Independent brochure, the medical assistants used the STEADI Algorithm to determine if the patient needs further assessment. If the algorithm determined further assessment was needed, then the patient completed a Timed Get Up and Go. If the patient scored as a high fall risk, they were to be given the CDC's *What YOU can do to prevent Falls* handout (n.d.d) (Appendix A). The medical assistants and providers documented the falls screening, assessment, and intervention in the electronic health record.

**Comparison.** The practice was targeted to assess 50% of the patients seen for annual exams, which are at an increased risk of falling based on the STEADI algorithm. The medical
assistants felt this was an achievable goal for them. For these patients, the Timed Get Up and Go test and documentation will be completed in the electronic health record.

Outcome(s). The project's primary outcome was adherence to the Falls assessment protocol. The project's secondary outcomes were fall and fall- injury rates.

Summary

Falls are a significant problem for the nation and North Carolina. This is especially true in people who are 65 years and older. As this population increases in number, this problem will become more significant.

Falls are of concern because they can lead to physical and psychiatric trauma to patients. They also increase caregiver burden during the recovery period. Falls also increase healthcare system burdens due to the costs incurred for ED/office visits and treatment.

Fall prevention is necessary to decrease the burden on patients, caregivers, and the healthcare system. Many primary care practices do not have adequate screening processes in place for falls prevention, despite the Centers for Disease Control recommendations.

Furthermore, there is little research about the effectiveness of implementing evidence-based falls assessment in primary care settings.

One primary care practice in suburban North Carolina wanted to increase its body of knowledge. Their providers, nurses, and office staff were trained to use a screening and assessment protocol based on the STEADI initiative. They then implemented the protocol, ultimately hoping to decrease falls and fall-related hospitalizations in this clinic’s patient population.
Chapter Two: Review of the Literature

This chapter will discuss the literature appraisal method, i.e., search strategies and evaluation criteria. Findings and limitations of the literature review will be described. Advantages and disadvantages of the findings, findings applied to practice, and summative findings commentary will conclude this section.

Literature Appraisal Methodology

Sampling strategies. The literature review process began with a search using ECU's Laupus Library OneSearch. The search terms were “standardized assessment to reduce falls in the home.” This resulted in 15,911 articles; Four articles remained after the evaluation criteria were applied. The next search's terms were “Falls risk assessment tools.” This search returned 84,834 titles, from which the project manager selected seven articles. The third search terms were “Falls risk assessment tools in the elderly,” which yielded 19,285 hits, from which the author chose three articles. The final search terms were “Timed get up and go to prevent falls.” This search found 1,048 titles from which five articles were obtained.

A search of the Centers for Disease Control STEADI initiative produced four patient handouts and seven peer-reviewed articles. Subsequently, OneSearch was used to find articles on the project's theoretical framework: Meleis Transitions Theory. The theory search resulted in 476 titles, three of which were appropriate. Finally, “Lewin’s Change Theory” was searched, which returned 407 articles. Only three were pertinent to this DNP project. See Appendix B for the literature search log.

Evaluation criteria. There were several inclusion criteria for this literature review. The primary criteria were that articles were written and published within the last five years. The articles must have been full-text, scholarly, and peer-reviewed. Thus, the author excluded articles
if they were > five years old, not from scholarly and peer-reviewed journals, and the full-text was unavailable online.

PRISMA narrowed the results of each search. Articles were excluded if they were unrelated to primary care practices or the intended intervention. Redundant articles were selected only if they had the most recent and highest level of evidence. The levels of evidence ranged from level three to level seven evidence, with the majority falling into levels four and six. See Appendix C for the literature review matrix.

**Literature Review Findings**

Falls are a growing problem for patients, their families, and the healthcare system. Fall-related injuries are part of the top twenty most expensive medical conditions to treat (Rajagopalan et al., 2017). In response to these concerns, the Centers for Disease Control used the American Geriatric Society’s recommendations to create the STEADI Initiative (Johnston et al., 2018). This initiative combines, in a "toolkit," screening, assessing, and intervening for providers to help prevent falls among their patients (Johnston et al., 2018). This tool kit has resources for providers to educate their patients about falls risk (Phelan, Mahoney, Voit, & Stevens, 2015). However, Howland et al. (2018) found that only 14% of their providers were aware of the STEADI initiative and the toolkit even though 96% of these providers felt that older adults should be assessed for fall-risk.

Several national practices implemented the STEADI initiative. Various researchers conducted studies on the effectiveness of the STEADI interventions and the transition to put them in place (Johnston et al., 2018; Eckstrom et al., 2017; Casey, Parker, Winkler, Liu, Lambert, & Eckstrom, 2017). Casey et al. (2017) wrote that the Kotter framework for organizational change helped introduce STEADI to 870, or 45%, of eligible patients. Eckstrom et
al. (2017) found that 64% of patients who screened at-risk received additional assessments. Providers based additional assessments on their study's algorithm. STEADI champions trained and helped implement this algorithm (Eckstrom et al., 2017).

Johnston et al. (2018) used the RE-AIM Framework to evaluate the processes and outcomes of their intervention. They found that a statistically significant ($p < .01$) downward trend in Broome county falls hospitalizations during the STEADI study. Stevens, Smith, Parker, Jiang, and Floyd (2017) observed varied success in implementing the STEADI initiative, depending on the practice involved. These studies were completed by multi-site medical groups versus the small practice at which this project will be completed (Casey et al., 2017; Eckstrom et al., 2017; Johnston et al., 2018; Stevens et al., 2017). The implementation process and its success will be different at a smaller practice.

One STEADI initiative-recommended assessment tool is the Timed Get Up and Go (TUG) test. This test involves the patient standing, walking ten feet, turning, walking back, and sitting down. If this takes more than twelve seconds, then the patient is at-risk for falls (Centers for Disease Control, n.d.b.). The Centers for Disease Control’s handout provides an area to mark administrator observations.

Jehu, Paquet, and Lajoie (2017) reported that TUG displayed respectable test-retest reliability in community-dwelling adults (Intraclass Correlation Coefficient/ICC= 0.97). Similarly, Lee, Dufek, Hickman, and Schuerman (2016) detected a respectable test-retest reliability of TUG when the timer was started after saying “go” (ICC=0.89). However, they found improved test-retest reliability (ICC=0.99) when the administrator-initiated timing when the patient began attempting to stand up. Conversely, poor test-retest reliability was reported in a study that attributed this difference to procedural variability (Lee et al., 2016).
Moreover, Ponti, Bet, Oliveira, and Castro (2017) reported TUG has a sensitivity and specificity of 0.70. However, researchers also discovered that TUG, when combined with a cognitive and manual task, produced a higher sensitivity of 0.73 and specificity of 0.78. Conversely, Barry, Galvin, Keogh, Horgan, and Fahey (2014) found a sensitivity of 0.31 (95% CI 0.13-0.57) and a specificity of 0.74 (95% CI 0.52-.088) in their systemic review and meta-analysis. They suggested that TUG is a better predictor of falls risk than a lack of falls risk. Tomas-Carus et al. (2019) observed that dual-task TUG testing was better at predicting falls than single task TUG. Alfonso Mora, Bejarano Marín, Sánchez Vera, García Muñoz, & Soto León, (2017) determined that patients with lower educational levels are at a higher risk of falling (p =.000). Additionally, Ibrahim, Singh, and Shahar (2017) found that both gender (p < .001) and age (p < .001) could significantly predict TUG performance. Furthermore, cognitive status was a significant facilitator on TUG performance when researchers controlled for age and gender variables (B 0.24, 95% CI (0.02-0.47), β 0.03, r2.10, p =.36) (Ibrahim et al., 2017).

Polypharmacy is associated with increased falls risk. Haddad, Bergen, and Lou (2018) wrote that 53% of older adults are on one or more medications linked to increased falls events. Additionally, women are at an increased risk for falls related to medication use, especially opioids and benzodiazepines. Medication deprescribing is part of the STEADI initiative (Centers for Disease Control, n.d.c.).

Additionally, Pohl, Nordin, Lundquist, Bergström, and Lundin-Olsson (2014) discovered that patients who had one injurious fall in the past twelve months were at a significantly higher risk for successive injury sustaining falls (hazard ratio 2.78, 95% CI, 1.40-5.50). This may be in part related to fear of falling. Shen et al. (2015) wrote that 70.7% of their study participants report fear of falling after a fall. Interestingly, Shen et al. (2015) observed that 75.4% of the
participants’ caregivers reported fear of falling after their family members fall. Additionally, the actual number of falls reported may be lower than the actual number of falls, as patients are quick to hide their fall due to concerns of losing independent living status (Castle, 2019).

Shuman et al. (2019) found that many participants in their study self-rated their fall-risk as low but then reported several falls that they felt were due to external factors such as medications or environmental factors, not their underlying health.

**Limitations of the Literature Review Process**

There is no evidence about implementing the STEADI initiative at small primary care practices. The Centers for Disease Control funded previous implementation research. All studies were completed at large medical groups, with many locations, to improve the sample size for the research. Providers have used this initiative for several years. Research may exist, though unpublished at present. Further, there is no research about introducing the initiative in stages.

This practice performs the Stay Independent handout; they have partially implemented the process.

**Discussion**

**Conclusion of findings.** Falls are a significant issue in the geriatric population. As one of many geriatric syndromes, there are many reasons patients fall. However, one injurious fall is likely to lead to another injurious fall, which is costly to the patient, their family, and the health system. Prevention of falls is crucial as the aging population is growing. The STEADI initiative was initiated to assist primary care providers with this problem.

Many large medical systems have effectively introduced this initiative in multi-practice environments. Through its implementation, the system sees a reduction in falls, fall-related
hospitalizations, and falls-related costs. The practice completing this project has begun implementing the STEADI initiative but stalled after the initial screening form.

The Timed Get Up and Go (TUG) assessment is a portion of the STEADI initiative. This assessment has been proven effective at determining patients with an increased risk of falling. TUG is simple to perform and has consistent test-retest reliability. Therefore, this was the chosen intervention to implement as the next phase of the STEADI initiative.

**Advantages and disadvantages of findings.** This intervention was well-supported. The TUG assessment was proven more effective at determining patients at risk for falls than identifying patients, not at risk for falls. Initially, this was thought to be a disadvantage. However, as this project was most concerned with determining patients at risk for falling, so the tool was still effective. A disadvantage was that the TUG assessment might over-estimate the number of patients at risk for falling.

**Utilization of findings in practice change.** The practice implemented the Timed Get Up and Go assessment as part of the annual Medicare physicals. This aligns with the American Geriatrics Association's recommendations. Many practices successfully use this assessment as part of the STEADI initiative throughout the country. These clinical practices considered the protocol and assessment easy to use and effective at determining fall risks and preventing falls in their patients (Casey et al., 2017; Eckstrom et al., 2017; Johnston et al., 2018; Stevens et al., 2017).

**Summary**

The Timed Get Up and Go assessment improves the practice’s adherence to the Healthy People 2020 and the Triple Aim. Healthy People 2020 specifically looks at unintentional injuries and falls-related deaths. Falls frequently result in traumatic injuries that lead to hospitalization
and death. Through assessment, prevention can begin. Implementing the next phase of the STEADI initiative improves adherence to the Healthy People 2020 goal of decreasing unintentional injuries. The implementation also assists in meeting the goal of preventing an increase in falls-related deaths.

Project implementation helps the practice adhere to Triple Aim goals. The practice was increasing the patient’s experience of care by implementing fall assessments. The assessment also meets the goal of decreasing per capita healthcare costs. Fall-risk identification will likely result in fewer falls. Fewer falls equals less per capita falls-related costs to the healthcare system. Finally, this assessment meets the goal of increasing the population health. If patients know they are likely to fall, they will try to avoid falls. Less falls lead to better health.
Chapter Three: Theory and Concept Model for Evidence-based Practice

Research is grounded in theory. This section will discuss the project's concepts. The section will also discuss the nursing theory that frames this project. Finally, the section will explain the change theory used to implement the project.

Concept Analysis

Several concepts must be defined. Adherence is the main project concept because it is the main project outcome. Adherence is a measure of how many people accept a practice change. The measure requires researchers to determine their project's acceptable rate, reported as a number or a percentage. This rate indicates how successful the initiated change was. For this project, the project lead determined adherence by the percentage of high falls risk patients that were assessed using the Timed Get Up and Go assessment (Casey et al., 2017; Eckstrom et al., 2017; Johnston et al., 2018; Landis & Galvin, 2014; Stevens et al., 2017).

Falls. Falls are a geriatric syndrome caused by a combination of many common geriatric concerns. Gait, polypharmacy, vestibular disorders, neurological disorders, and visual disturbances combine with environmental factors, i.e., clutter, slippery or uneven surfaces, and poor light, to increase falls-risk. Abrupt positional changes caused by a fall lead to injuries or death. Such outcomes affect patients physically and psychologically (Barry et al., 2014; Haddad et al., 2018; Hajek & Konig, 2017; Maxwell, 2015; Rajagopalan et al., 2017; Shen et al., 2015; Tornvall et al., 2016).

Assessment. Assessment is the process of patient evaluation. Assessment may be targeted, i.e., the Timed Get Up and Go assessment, or generalized, i.e., visual assessment of a patient’s appearance. Assessment is a critical step in patient care. Assessment aids providers to create individualized interventions for them. Fall screening is ineffective in fall prevention
without subsequent assessment (Ibrahim et al., 2017; Lee et al., 2016; Maxwell, 2015; Phalen et al., 2015; Tomas-Carus et al., 2019).

**Transitions.** Transition is a concept that affects individuals and systems simultaneously. Through interactions with the environment, the individual undergoes a conscious change. Health care systems may also undergo conscious transitions as their processes are changed. These transitions may be an environment, health, functional capacity, or psyche change. The process that the individual or system undergoes is the transition. This process is considered effective or ineffective, based on the result of the transition (Meleis, 2010).

**Change.** A change is a process of moving from one thing to another. Change may happen at the individual or systems level. Change occurs when a situation or person has discordant expectations. For example, many primary care physicians fail to perform falls assessment despite best practice guidelines and readily available resources. Change is a process, which challenges many individuals and systems. This process is frequently tricky as the involved party does not see a need for the change to occur: the first step in the process. However, by applying a successful change framework, i.e., Lewin’s Change Theory, the change can be made more simply and effectively (Johnston et al., 2018; Lewin, 1951; Tetef, 2017).

**Timed Get Up and Go.** The Timed Get Up and Go is a formalized assessment tool, recommended by the Centers for Disease Control to assess patients' falls risk effectively in conjunction with their screening tools. For the assessment, the patient stands from a standard chair, walks 10m, turns, walks back 10m, and sits back down in the same chair. The person administering the assessment times the patient and documents this. If the patient takes longer than twelve seconds, they are considered a falls risk. TUG is a simple assessment but gives
objective information for providers and patients about their falls risk (Centers for Disease Control, n.d.b.; Lee et al., 2016; Phelan et al., 2015; Ponti et al., 2017; Tomas-Carus et al., 2019).

**Documentation.** Documentation is essential in health care. For research, documentation monitors intervention adherence. For clinical practice, documentation completes a patient’s record and may be used later, i.e., legal trouble or patient concerns. Documentation comprises the accurate patient history and physical examination information, and diagnosis codes entered into the patient’s electronic health record (Casey et al., 2017; Eckstrom et al., 2017; Johnston et al., 2018; Stevens et al., 2017).

**Prevention.** Prevention is the act of preventing an action from coming to fruition. Primary and secondary prevention comprise the complex process of prevention. Primary prevention includes screening and assessing the patient before a fall. However, prevention of future falls after one has occurred is also required, which is secondary prevention. The Stay Independent handout and the STEADI Algorithm includes a previous fall, which counts as a higher risk factor than some other factors. (Bergen et al., 2016; Burns & Kakara, 2018; Centers for Disease Control, n.d.a.; Centers for Disease Control, n.d.c.).

**Education.** Education is necessary to complete any project. Simply put, education passes knowledge from one person to another. For a successful change, people who implement the change must support the new process. Frequently, change leaders accomplish this through education regarding the reasons the change is needed. Furthermore, education on the new protocol or tools is necessary for the change process (Casey et al., 2017; Eckstrom et al., 2017; Johnston et al., 2018; Lewin, 1951; Stevens et al., 2017).

**Theoretical Framework**
Naming the Theory. The project lead used Meleis transitions theory as the framework for this project. The concepts defined by this theory are the types and patterns of transitions, properties of transition experiences, transition conditions, patterns of response, and nursing therapeutics. Meleis transition theory makes several major assumptions and theoretical assertions (Meleis, 2010).

The first concepts to define are the types and patterns of transitions. Transitions may relate to development, health, illness, situation, or environment. Many transitions happen simultaneously, including transitions from multiple categories. Concurrently, transitions frequently overlap, causing the patient to be in a prolonged state of transition. Multiple and overlapping transitions makes the process more challenging for the person affected (Meleis, 2010).

Next, are the properties of the transition experiences. Meleis (2010) breaks the properties of the transition into awareness, engagement, change and difference, time, and critical points and events, which are all interconnected to create the complex transition process. Awareness refers to the patient’s perception of the transition and recognition that the change process has begun. Patients may have started the change process but lack awareness. Meleis (2010) defines engagement as the level of involvement the patient demonstrates in the transition. Changes are essential to transition and bring direction to internal and external processes. Differences are the areas of discord perceived by the patient in their lives. Time frame refers to the time in which a transition takes place, which may be on-going, but has definite starting and ending points eventually perceived by the patient. Critical points and events are indicators of the transition that link to an intensified awareness of change or dissension (Meleis, 2010).
Meleis defines transition conditions as the personal, community, and social circumstances that surround a transition. These conditions include “…meanings, expectations, level of knowledge and skill, the environment, level of planning, and emotional and physical well-being” (Meleis, 2010, p. 42). Patterns of response are the visible and non-visible reactions to the transition that may positively or negatively impact the patient and the transition (Meleis, 2010).

There are many nursing therapeutics defined by this theory. The three main therapeutics are transitional care, role developing, and debriefing. Transitional care includes aspects such as assessing and planning to help the patient successfully make a transition. Role development allows the nurse to explain the various roles a patient may experience during certain transitions, such as a surgical operation and recovery. Debriefing involves the nurse discussing the transition with the patient after the transition has occurred (Meleis, 2010).

The transitions theory makes several assumptions. First, it assumes that nurses are the primary caregivers. The theory also assumes that transitions are the result of change, but also result in change. Additionally, this theory assumes that transitions are a fundamental process that is complex and multidimensional. Finally, it assumes that the lives and transitions of patients are affected as much by their environment as they are by their internal motivators (Meleis, 2010).

Current research widely uses Meleis’ transitions theory as its framework. Beaudet et al. (2015) successfully created an individualized educational system for couples with Parkinson’s disease using this theoretical framework. Baixinho, Rodrigues, Dixe, and Henriques (2017) used Meleis transition theory to categorizes indicators in their evaluation of the falls protocol in a long-term care facility. Finally, Silva et al. (2017) found that this theory assisted patients with new ostomies in understanding the transition that was occurring.
Application to practice change. There were multiple transitions involved in this project. The main transition involved the change implemented in the practice. This practice is small, and historically, they have struggled to implement change. The practice had already noticed differences in what should be and what is, so the awareness of the need to transition has already begun. History will affect the change process and transition conditions. Once the project lead established engagement in the change, a successful transition could begin. The timeframe of this project was set, which aided in the transition process. The patterns of response of the staff were monitored to help ensure the transition was successful.

Another transition that was present was the aging process. Many of the patients are aging, which is a long-term transition, and generally, have several role changes throughout this time. After a fall, the patient undergoes further transition, as falls generally lead to a decreased level of functioning and increased fear of falling. Through this project, several of the nursing interventions were applied, including role development, transitional care, and debriefing. Role development occurred by giving patients tangible evidence of their risk of falling. Transitional care was applied by assessing each patient’s fall risk and, if appropriate, giving them an educational handout. The educational handout will accomplish debriefing. See Appendix D for Figure 1: Concept map of Meleis Transitions Theory for TUG assessment implementation

Evidence-Based Practice Change Theory

Naming the Change Model. Lewin’s change theory was used to begin the project. This theory is a straightforward theory for effective change, especially at the organizational level. Lewin’s theory is effective because it involves the employees, which allows a better understanding of the need and urgency of the change. The process involves unfreezing, changing, and refreezing. Unfreezing is the first step in the process, which prepares the
organization for a change. Negative emotions are common during this time and must be
transparently handled for the change to be effective. Employees should be involved in this stage
to ensure the success of the change.

The next phase is the change itself. Change must be rapidly introduced to prevent
relapsing to previous habits. Expedited change creates a sense of urgency. The final step is
refreezing the change. This step solidifies the change, which should involve ongoing evaluations
to ensure adherence. This phase may require adjustments to the change because previously
unidentified concerns might occur.

Sparks, Kawi, Menzel, and Hartley (2016) used Lewin’s Change Theory to introduce
their FibroGuide educational modules for recently diagnosed fibromyalgia patients. Tetef (2017)
successfully implemented a new bronchial thermoplasty program using Lewin’s Change Theory
to drive the process. McFarlan, O’Brien, and Simmons (2019) used this theory to begin a daily
and hourly rounding protocol to improve patients’ emergency room experience. Wojciechowski,
Pearsall, Murphy, and French (2016) used Lewin’s theory with the Lean Systems Approach to
initiate bedside shift report at a rehabilitation facility.

**Application to practice change.** For this project, the unfreezing stage required staff and
provider education about falls risks, falls incidence in the practice, the CDC STEADI initiative,
and how the project manager would implement it. The change step was using the Timed Get and
Up Go assessment and intervention among eligible patients. Refreezing began after the project's
first month to review if the new process needs to be changed. Refreezing continued after the
second month. A debriefing of the change and a plan for long-term adherence to the changes
occurred before completion of the project. See Appendix E for Figure 2: Concept map of
application of Lewin’s Change Theory to TUG assessment Implementation.
Summary

The author identified several key concepts in this project. These are adherence, falls, assessment, transition, change, Timed Get Up and Go, documentation, prevention, and education. These concepts create a conceptual framework for this project.

The project lead used Meleis transitions theory as the project framework. This theory describes transitions as multi-faceted progression, with many processes and conditions. Meleis described nursing therapeutics based on this theoretical model. Researchers effectively used this model as a framework in several studies.

Lewin’s Change Theory was used to implement practice change. This process involves unfreezing, changing, and refreezing. These steps contain subcategories that lead to effective change. Researchers have widely used this theory as a change framework in previous studies.
Chapter Four: Pre-implementation Plan

Chapter four will discuss project implementation. The author will discuss the project's purpose and management. This chapter presents a cost-benefit analysis. The project implementation plan will be explained. The project lead will discuss the IRB approval process. Finally, project evaluation will be covered.

Project Purpose

The project's purpose was to implement the Timed Get Up and Go Assessment in patients 65 + years during their Medicare Physicals. The STEADI initiative recommends screening and assessment to determine the need for intervention to treat patients with an elevated risk of falling. A small, suburban primary care practice screened this patient population but did no assessment or intervention based on fall screenings.

Project Management

Organizational readiness for change. Practice providers were ready to change. They observed that falls may occur in their patient population and were motivated to prevent this common geriatric problem. The project lead was approached by the office's physician assistant to complete a QI project on this topic. The practice's physician was excited about this QI study; however, the medical assistants were less motivated to change. They expected the project would create extra work for them. To overcome this barrier, the process was streamlined so that extra work was unnecessary. The project lead also explained the project's need and its purpose to influence medical assistants' cooperation.

Interprofessional collaboration. The secretaries provided patients with the STEADI screening form, which the project lead thought was already part of the intake process. The secretaries also ensured the medical assistants received this form to review. The medical
assistants examined the handout and determined, based on the score, if further assessment was needed. If an additional assessment was required, the medical assistants performed a Timed Get Up and Go Assessment and documented this in the EHR. If the assessment indicated no further evaluation, the medical assistants documented the screening score in the EHR. The providers reviewed the EHR for falls risk screening score and Timed Get Up and Go Assessment score during the patient visit. If applicable, the providers spoke with the patient about their fall risk and provided the CDC's *What YOU can do to prevent Falls* handout (n.d.d).

**Risk management assessment.** The project lead completed a SWOT analysis prior to implementation. There were many strengths associated with this project. The providers at the practice supported the project and were eager to implement change. Because the project applies a CDC recommendation, its resources used were available without charge, which decreased project costs. Patients benefited from project assessments and, thus, received better care than previously.

The main weakness of this project was the increased workload for the office's medical assistants. Although the medical assistants agreed that many of their patients fall, they were resistant to the added work this project was likely to create. If the project lead created a complex implementation process, then it would further weaken the implementation plan.

The project's primary opportunity was to raise patient awareness about their fall risk. Implementing the complete STEADI initiative presented another opportunity. This initiative included several steps to improve patient safety and well-being. Beginning the process will ideally lead to the practice implementing more stages of the STEADI algorithm.

The main threat to this project was the buy-in from the medical assistants. Because the project increased the medical assistants' workload, though it had been streamlined, they may not
have implemented the new protocol. Patient willingness to be assessed presented another
potential threat. Specifically, patients historically were resistant to procedure change or
additional testing.

Organizational approval process. The physician assistant and the project lead at the
practice noticed many of their patients were reporting falls or hospital visits related to falls. The
project lead discussed the practice's fall process and learned that the practice performed no
assessment or falls education. The project lead approached the practice Physician/owner with the
project idea, which he supported. He gave final approval for project implementation. See
Appendix F for the organizational approval letter.

Information technology. The clinic uses Hello Health® as its EHR. The EHR was used
to document the patient's screening score and, if indicated, the Timed Get Up and Go score. The
EHR contains any documentation of intervention related to falls risk assessment. The project
lead reviewed the EHR to obtain data on protocol adherence. Excel was used to collect and
analyze the data. Microsoft PowerPoint was used to create a poster of the project information.

Cost Analysis of Materials Needed for Project

There were several costs associated with this project. These costs included patient
handout printing costs, snacks for training sessions, and the project lead's travel expenses. The
minimally increased time the medical assistants needed to complete fall assessments was
difficult to calculate. Medical assistant's wages will likely be offset by cost savings downfalls
prevention. For example, Burns et al. (2016) estimated that fall-related office visits cost $5,625
per patient; if the project prevents one fall-related visit a month, the project costs are minimal
compared to the practice's financial benefit. Preventing falls also increases patients' quality of
life, which was another benefit of this project. See Appendix G for the project budget.
This practice did not have an Institutional Review Board (IRB) process. Thus, the project lead sought approval through the ECU IRB only. This process began with the project lead submitting an online questionnaire for approval through ECU’s IRB. If the IRB needed further information, they would contact the project lead. As this was a quality improvement project, the project lead did not need to submit further information or pursue full IRB review.

Plan for Project Evaluation

**Demographics.** The project lead measured adherence to the Timed Get Up and Go score documentation with adherence presented as a frequency. Patients seen for evaluation of falls or fall-related injuries/month were reported as a rate. The project lead presented data as figures in subsequent sections. See Appendix H for the project data collection tool.

**Outcome measurement.** The primary outcome was staff adherence to the new protocol. This outcome was a process measure. The primary outcome indicated staff willingness and ability to implement change. The project's secondary outcome was the number of falls and fall-related injuries. This outcome was a patient outcome measure. Decreased falls lead to improved patient care and well-being.

**Evaluation tool.** The CDC's Timed Get Up and Go (TUG) assessment was the project team's evaluation tool (Centers for Disease Control, n.d.b.). This tool for providers is available for download without restriction as part of the STEADI initiative. The TUG assessment is a validated tool. Jehu et al. (2017) and Lee et al. (2016) reported test-retest reliability for the TUG assessment (ICC =0.97, ICC = 0.89). Ponti et al. (2017) reported TUG sensitivity and specificity of 0.70. See Appendix I for the TUG assessment form.
**Data analysis.** The project lead entered data gathered on staff adherence into Excel for analysis. The percent of staff who adhered to completing TUG assessment was determined. This data was reported as a frequency and displayed as a run chart. There was no benchmark with which to compare this frequency.

The project lead entered the number of falls and fall-related injuries pre- and post-intervention into the Excel for analysis. The project lead presented these data as a rate. There was no benchmark related to fall-related injuries to compare this to, so the project lead compared pre- and post-intervention rates.

**Data management.** Data was stored on a secure server through East Carolina University. Patients were assigned a number as the identifier of their data. The only PHI included in the data collection was the age of the patient. The data was kept for three months post-submission of the project paper. Only digital information was collected. The project lead destroyed this information through the deletion of the stored files from the East Carolina University secure server. Only the project lead and the project advisor had access to the data.

**Summary**

Project implementation was a crucial phase of the project. Before execution, the project lead had to establish a plan for implementation. The purpose of the project was clearly defined. Project management was defined. Project management included the practice’s readiness for change and the interdisciplinary aspects of the project. Project management also included a SWOT analysis. The final sections of project management discussed the process to obtain organizational approval and the information technology used in the project.

A cost-benefit analysis, including a budget, was then presented. The project lead discussed the institutional review board process. Finally, the project lead gave a plan for project
evaluation. This plan included the demographic data to be collected and the outcome measures of the project. The project lead further defined outcome measures by discussing the evaluation tool used in the project, the data analysis plan, and the data management strategy.
Chapter Five: Implementation Process

Chapter five will discuss the implementation process. This chapter will discuss the setting and participants for the project. Also, the implementation process, including any variations to the plan, will be addressed.

Setting

This project was completed at a small physician-owned primary care in suburban North Carolina. The practice was started many years ago by the main provider with an additional provider added as the practice expanded. The practice is not associated with any university. However, they are a member of the University of North Carolina (UNC) Health Alliance, which is a physician-driven, clinically integrated network of providers.

The primary customers of the practice are residents of this area. However, many patients drive a considerable distance to the office to be seen by the physician because he was their doctor for years. Most of the patients are over 65; however, the practice does see some younger patients, but rarely children. This practice is privately funded, i.e., the clinic uses the monies it generates to pay for itself. As a member of the primary care community, the practice wished to remain current with best practice recommendations. The providers believed this project would improve their fall assessments and decrease falls among susceptible patients.

Participants

Project participants were the practice's office manager, secretaries, nurses, and providers. All staff members were required to participate in this project. There were no exclusion criteria because the project was considered best practice, and therefore, all were required to participate.

Recruitment
The participants became engaged in the project after the providers agreed that the project lead should implement a plan to help decrease falls among their patients. Participants were a convenience sample because they are practice employees. While all employees participated in the project, there are subgroups within them based on their clinic role and, therefore, the project role. These subgroups were the providers, medical assistants, secretaries, and office manager.

The providers were eager to start the project. The medical assistants, however, were less excited. They thought the project added to their workload and could not see its long-term benefit. They thought most patients already knew they had a high fall-risk and should be cautious. Unfortunately, patient experience refutes this view: there have been several falls within this patient group (T.B., personal communication, June 2019).

The main barrier to project implementation was the medical assistants’ attitudes towards additional work. The primary project facilitator was providers’ support. Another facilitator was research about fall-risk patients. Educating the medical assistants about the number of patients unaware of their actual falls risk promoted project support. Additionally, shortly after implementation began, the project manager learned the staff had been told of the practice owner's plans to retire in the next few years. It was perceived by the project manager that the staff did not feel motivated to change any part of their process.

**Implementation Process**

The first step in the implementation process was office staff education. This step was completed using an in-person educational session using a PowerPoint the project lead created (Appendix J) and the TUG handout (Centers for Disease Control, n.d.b.). The project lead gave a brief presentation on the need to identify high fall-risk patients. This presentation also included
the new assessment process to assess appropriate patients based on the screening form, aged 65+, seen for their yearly Medicare physicals.

The next step of the implementation process was implementing the change. The secretaries were required to instruct the patient to complete the screening form and hand it to the medical assistants when they brought them to the back. The medical assistants would review the screening form to determine if the patient had an elevated falling risk, indicated by a score of 4 or more. If the patient had an elevated score, then the medical assistant performed a TUG Assessment and documented its results in the EHR. If not, the medical assistant documented that the test did not apply to the patient. The provider then reviewed the EHR, and if the patient were a high-fall risk based on their TUG score, the provider would counsel the patient about their fall-risk status. Providers could also provide an educational handout such as the *What YOU can do to prevent falls?* (Appendix A) provided as part of the STEADI toolkit (Centers for Disease Control, n.d.d.) to the patient based on their judgment.

In the final step, the project lead completed chart reviews of patients seen for Medicare physicals to assess for documentation of the TUG assessment score. The project lead also looked for documentation that TUG assessment did not apply to the patient. The project lead documented this in the data collection tool discussed previously. Adherence to the new protocol was monitored as well.

Several times throughout implementation, the project lead reviewed the adherence rate. If the project lead determined there was decreased protocol adherence in an implementation period, the project lead examined the likely causes of this and modified the project plan. This evaluation was completed using the plan, do, study, act (PDSA) cycle. The project lead discussed with the medical assistants and providers to determine what they felt was an appropriate and manageable
adherence rate. The project was deemed successful if a 50% protocol adherence rate was noted upon chart review. See Appendix K for Figure 3: PDSA cycle.

**Plan Variation**

There was a large degree of plan variation that occurred during implementation. First, the physician at the practice was too busy to be the site champion, so the physician assistant took over. This impacted the project as the physician was more hands-off, which decreased buy-in to the proposed change by the medical assistants.

Then, during the education session, the project manager learned that she was mistaken about the fall-risk screening tool the practice was using. Instead of the STEADI falls screening form, they were using a different activity form to evaluate patients. The STEADI screening tool identifies patients that may be at increased risk for falling, therefore indicate those patients that may need further testing. The medical assistants were going to use the patient's score this screening tool to determine which patients needed TUGs. Based on this change, the project manager, the physician assistant, and the medical assistants decided that TUGs would be completed on each patient 65 years and over presenting for a physical exam.

Throughout the project, the project lead noted decreased adherence. After discussing with the medical assistants, the project manager found that there were several reasons for this. First, the medical assistants forgot to complete TUG assessments. The project leader reeducated the medical assistants and moved the project binder to a more visible place.

After no increase in adherence, the medical assistants expressed feedback that more frequent contact could improve adherence. At that time, the project leader implemented weekly contact either in person or via phone calls instead of the originally planned biweekly. After finding still deceased adherence, they requested more frequent calls to remind them to complete
TUGs. The project leader began calling about twice a week and reminding the medical assistants to complete TUGs. By the end of the project, the project lead called the site several days throughout each week to remind the medical assistants to complete TUGs.

**Summary**

This chapter discussed project implementation. First, the setting of the project was described. Then the project lead described the participants for the project and their recruitment. Then the project lead discussed the plan for implementation. Finally, the project lead discussed variations to the plan that occurred during implementation.
Chapter Six: Evaluation of the Practice Change Initiative

Chapter six discusses the evaluation of the practice change. First, the project lead discusses the participant demographics. Then the project lead discusses the intended outcomes. Finally, the project lead presents the findings of the project.

Participant Demographics

The project participants were the staff at the practice. There were two medical assistants. These were the staff members who performed the TUGs and inputted the data into the patients’ charts. They were also the staff members who the project lead interacted with the most to implement the new process change. One of the medical assistants has 15 years of experience as a medical assistant. She trained upon her joining the practice. During the project implementation period, 127 physicals were completed at the practice; 21 of these had TUGs completed. These TUGs were spread throughout the project intervals, with completed TUGs increasing at each interval. The final project interval had the most TUGs completed, providing the maximum adherence rate.

Intended Outcome(s)

The short-term outcome of the project was increased adherence to the new protocol of TUG assessments. Adherence reached 33% during the final interval. The practice completed no TUGs before project implementation. An intermediate-term outcome this project accomplished was raising the providers’ awareness of their patients’ risk for falling. Another intermediate-term outcome this project achieved was opening the door to begin the conversation with the patients about their risk for falling. A future long-term outcome realized by this project is decreasing falls in this practice’s patients.
Findings. At the end of the implementation period, the adherence rate had increased to 33% (see Figure 4). The project lead also found that despite the population of the practice being almost exclusively 65+ years of age, the practice saw no patients for falls or falls-related injuries from July to November. The adherence rate was the best during interval 5 when the project lead was calling the site several times a week and reminding them to complete TUGs.

Figure 4. Percentage of Staff Adherence to TUG Assessment Protocol.

Summary

This chapter discussed the demographics of the project participants, which were the staff at the practice. Additionally, the project lead examined the outcomes of the project. This included short, intermediate, and long-term outcomes the project appreciated. Finally, the project lead
interpreted the findings of the project. These findings included a 33% maximum adherence rate to the implemented protocol.
Chapter Seven: Implications for Nursing Practice

This chapter will discuss the project's implications for nursing practice. The DNP Essentials guided these implications for practice. The project manager will relate each essential to the project and discuss how this affects nursing as a whole.

Practice Implications

Essential I: Scientific underpinnings for practice. This essential deals with the translation of research into practice. This essential was reflected by implementing the TUG assessment for falls. The TUG assessment tool has been implemented successfully to assess for falls both as part of the STEADI initiative and separately (Barry et al., 2014; Casey et al., 2016; Eckstrom et al., 2017; Ibrahim et al., 2017; Lee et al., 2015; Stevens et al., 2017; Tomas-Carus et al., 2019). Furthermore, Jehu et al. (2017) found that TUG had an Intraclass Correlation Coefficient of 0.97, indicating good test-retest reliability in community-dwelling adults. Ponti et al. (2017) discovered that TUG has a sensitivity and specificity of 0.70.

The providers at the practice were concerned about falls in their patient population. The patients in this practice are primarily 65 years and older. While the practice does not see many patients for falls or fall-related injuries, the providers are concerned about the well-being of their patients as many are not as mobile as they used to be. The patients are also resistant to acknowledging that they are not as mobile, so the providers felt an objective assessment might assist patients with this transition. However, Bergen et al. (2016) state that 29 million falls and 7 million falls-related deaths occur yearly, with this number likely to grow as the aging population increases.

Lewin’s Change Theory and Meleis Transitions theory were used as the foundation for project implementation. The project manager found that transitions without motivation are
challenging. The staff at the practice had little motivation to change things; therefore, implementing a seemingly minor change into their busy day proved quite challenging. Motivation must come from internal sources, like a manager, for change to be successful. The project manager started by educating the staff who would administer the TUG assessment. The education included information about the number of falls and fall-related deaths yearly. The project manager also discussed with the staff whether they felt their patients were at risk for falling and how the staff felt the patients would feel being told this information. This was the unfreezing step of Lewin’s change theory. The project manager used the staff’s desire to improve as a motivator throughout the change step of this process. The physician assistant at the practice was also a motivator for change and encouraged the medical assistants to complete TUGs on all her appropriate yearly physicals.

Essential II: Organization and systems leadership for quality improvement and systems thinking. Implementing TUG in a primary care office aimed to improve the quality of care and patient safety of this practice’s population. The CDC created the STEADI initiative as a cost-effective and straightforward plan to decrease falls, fall-related morbidity and mortality, and fall-related costs to the healthcare system. The project manager created useful educational materials for the staff and revised the implementation plan through critical thinking and reflection throughout the project.

The project manager designed the project specifically for the site. After spending a semester working alongside the medical assistants, the project manager knew that the easier the change was, the more likely they were to implement it. The project manager gathered input from the medical assistants throughout the change to keep them involved and motivated them to take ownership of the change process.
The project manager also attempted to account for the patient population. Many patients in their patient population are former executives from a large information technology firm. The patients have always overseen their lives and others' lives; this creates a challenge as they age and become less mobile. Historically these patients have been resistant to information or assessments that may prove they are less functional than they believe they are. The project manager chose the TUG assessment because it is simple, but accurate at predicting patients with an increased risk for falling. Additionally, TUG is part of the CDC STEADI initiative, which is backed by extensive research, which these patients can appreciate.

Additionally, a cost-benefit analysis was completed using evidence-based literature on the costs of falls. The project manager included several types of costs in the analysis beyond the standard financial costs. This practice has seen many of the same patients for over 30 years, meaning the well-being of the patients is as important, if not more important, than the financial costs or benefit to the practice.

**Essential III: Clinical scholarship and analytical methods for EBP.** The project manager used a thorough literature review to determine which falls assessment to use, how to implement the change, and how to quantify the change. The literature was judged based on standardized literature grading. The project manager collected process and outcomes data to evaluate process and outcome measures. The project manager collaborated with many members of the practice as well as many faculty members from the university to plan the quality improvement project and disseminate the findings.

The safety of patients was addressed in the project through the TUG itself. By assessing patients for their fall-risk, the practice will be increasing their patients’ safety. Assessing patients for fall-risk also increases the quality of care the patients are receiving. The model of care
delivery in the United States is moving towards prevention where possible. Preventing falls in patients by creating awareness of their fall-risk and intervening in the fall cycle can help prevent further decline in the elderly population.

**Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.** The project manager conducted a thorough literature review using online-based resources to determine the need for the intervention and the most appropriate assessment. The project manager also used the electronic health record to track adherence to the protocol. Additionally, the data collected was logged, stored, and evaluated using computer-based software.

**Essential V: Healthcare policy for advocacy in healthcare.** The project manager chose to use a protocol that is believed to become a Medicare standard of care for primary care practices shortly (Horton, Dwyer, & Seiler, 2018). While not public policy yet, falls assessment reform is expected to come soon as the general population is aging. The STEADI initiative aligns with the Healthy People 2020 goal of reducing unintentional injuries and unintentional injury-related deaths. Additionally, falls assessment meets the goal of preventing an increase in falls-related deaths (Healthy People 2020, 2019). With the addition of a fall-risk assessment to the standard of care for this practice, the project manager was aiding in creating a more equitable and ethical health care environment through keeping the practice up to date with the best evidence. Through this, the project manager was meeting the goals of the Triple Aim, which are population health, improving the experience of care, and decreasing per capita costs (Institute for Healthcare Improvement, 2019).

**Essential VI: Interprofessional collaboration for improving patient and population health outcomes.** The project manager led several members of an interprofessional team during
this project to implement evidence-based practice. The project manager worked directly with the medical assistants, secretaries, and the Physician Assistant at the project site. The project manager also interacted with the Physician and the office manager.

The project manager found that creating change with the Physician Assistant was simpler than with the medical assistants. The Physician Assistant was more eager to create the change as she could see the benefit for her patients, but it did not disrupt her workflow. The medical assistants had a more difficult time implementing the change as it directly affected their workflow and created additional work for them. Furthermore, the medical assistants struggled to remember that they were to change their process. After a discussion with the medical assistants, the project lead implemented frequent contact with the site via phone calls to remind them to complete TUGs.

The project manager did not have as much interaction with the primary physician as originally planned due to his schedule. He felt the change would be good for his patients but was not an active member of the change initiative. The project manager attributes the limited success of the change largely to this. The leaders in the organization must drive effective change. With the announcement of the physician’s impending retirement, the medical assistants were even less driven to change, which created a challenging change environment for the project lead.

**Essential VII: Clinical prevention and population health for improving the nation’s health.** The project manager used data and epidemiology to determine the need for individual and population health change. Through a thorough literature search and review, the project lead found that falls in the elderly population are a great concern, with as many as 29 million falls yearly (Bergen et al., 2016). With the aging population growing, this is expected to climb to 48.4 million by 2030 if there is not a change in fall prevention (Bergen et al., 2016).
The project manager synthesized information and used health promotion strategies and tools to address a gap in care at the project site. The project manager also evaluated and ultimately attempted to change the model of care related to falls prevention at the practice. The project manager found that even the use of data and recommended prevention strategies are not always enough to create urgency around changing.

**Essential VIII: Advanced nursing practice.** The project manager designed, implemented, and evaluated a nursing intervention during this project. The project manager also provided support for individuals and a system during a change. The project manager used systemic thoughts and advanced clinical judgment to determine the need for improved fall prevention strategies in an attempt to improve patient outcomes. For example, the project manager used advanced clinical judgment to determine an area of concern in the practice. During her time as a student at the practice, the project manager had several conversations with patients stating they had fallen and not sought medical help or fallen and presented to an emergency room (personal communication, Spring 2019). After discussing this with the physician, the project manager proposed a new fall assessment process.

While the practice does not see many patients for falls, their patient population is the target demographic of falls and fall-related injury. The project manager then assessed the system, i.e., the practice, and found that no falls prevention measures were in place. This knowledge led the project manager to determine that a fall risk assessment would benefit the patients and the practice. Finally, the project manager used systems analysis to evaluate care delivery and quality outcomes at the project site.

**Summary**
The DNP Essentials should guide nurse practitioners in their daily practice. However, this is not always the case. These essentials help to create a safe environment for patients, advance nursing practice, and increase the body of nursing knowledge, but they are complex. Through thorough evaluation, the project manager determined how each of the eight essentials related to the project.
Chapter Eight: Final Conclusions

In this chapter, the project lead will discuss the significance of the findings. Then, the project’s strengths and weaknesses will be discussed. Next, the limitations and benefits of the project will be described. Finally, the project manager will discuss the recommendations for practice discovered during the project.

Significance of Findings

The project lead saw a 33% maximum adherence rate during project implementation. This rate was accomplished by the project lead calling the site most days during the week to remind them to complete TUG assessments. Many of the patients assessed at this practice felt that having objective data about fall risk was helpful to their overall well-being. Many patients in this practice are retired engineers and software designers, so objective data weigh heavily in their decisions. The site champion, the Physician Assistant, found that more patients asked about ways to prevent falls after they had TUG assessment (T.B., Personal Communication, November 2019).

The primary lesson the project lead learned is that change is very hard. Change is also greatly affected by motivators to the staff. There were no consequences for staff not completing TUGs or practice provided incentives to complete TUGs. Lack of consequences or incentives worked against the project lead’s goal of 50% adherence. If the project were to be repeated in another practice, the project lead would ensure that there was more involvement from upper management and the providers during the implementation process.

Involvement from providers would also help patients become more engaged in the process. The project lead found that even when the medical assistants remembered TUG assessments, patients were refusing them. The medical assistants felt that some of the patients at
this practice did not want to know if they were at higher risk of falling. Unfortunately, refused TUGs were not documented, therefore there was no tracking of this data; however, this would be something to track if the project was repeated.

Additionally, the project lead found that having a project lead on-site daily would benefit the project. While this was not possible during this implementation, the project lead called the site almost daily towards the end of the implementation period, which increased adherence significantly.

Project Strengths and Weaknesses

The main strength of the project was the medical assistants’ willingness to implement the change. They were eager to help their patients and the project lead. This was a low cost, evidence-based project which the practice saw as a major strength. All the information, including patient handouts, screening tools, and assessment tools are available to providers for free through the CDC’s STEADI initiative website (Centers for Disease Control, n.d.c.). Due to this fact, the practice had no upfront cost to implement this project. Additionally, each office visit for a fall cost $5,625 (Burns et al., 2016). A trauma-related hospitalization is, on average, over $30,000 (Rajagopalan et al., 2017), and in 2011, North Carolina spent $806 million to care for patients who had experienced falls (Landis & Galvin, 2014). By assessing and mitigating patients’ risk for falling, a decrease in healthcare costs can be seen, all while using a free toolkit.

Furthermore, the TUG assessment is brief, easy to complete, and uncomplicated, which is another strength of the project. Due to this, the assessment is easy to teach staff to complete. An assessment that is easy to learn is more likely to be accurately completed. The handout provided to staff (see Appendix I) has the directions printed on it, which adds to the ability to complete TUGs properly. TUG assessments are also brief in length, unlike many assessment tools. This
means that the assessment is quickly completed, so it does not interfere significantly with patient
throughput at the practice.

The main weakness of the project was the staffs’ inability to remember the new protocol. Due to lack of space, the project lead was unable to post signs or reminders to staff or patients about TUG. A binder was made that contained the education PowerPoint, TUG handouts, and patient information handouts. It was placed in the medical assistants’ work area; however, it did not seem to be an effective reminder to complete TUG assessments.

Additionally, the project lead was not able to integrate TUG into the charting system at the practice as a reminder. The EHR used at this practice is a simple one to use; however, there is no flowsheet or documentation to insert before the appointment. The medical assistants do have a template in word that they use for physicals, but due to time constraints and the pace of the practice, TUG assessment was not able to be added to this template.

The final weakness noted was the lack of provider involvement. The owner and primary provider was happy to have a project completed at his office that could benefit his patients; however, due to his schedule, he was not involved in implementation. This was the project leads third project and third site in a semester, so the project manager and project advisor were happy to complete the project here. However, it was found that lack of provider and management buy-in can greatly impact the success of a quality improvement project. Casey et al. (2016) found that by having actively engaged STEADI site champions in each practice, they were able to implement the entire STEADI bundle at once successfully. This shows the importance of an actively engaged onsite member of the team. Provider and management buy-in and engagement can drive a project forward as the people who work for them are more likely to feel the urgency to be involved.
Project Limitations

The main limitation of this project was that the project lead was not onsite daily. Lack of an on-site project lead hindered staff adherence as they did not remember to complete TUG assessments. An active onsite champion is crucial to the success of quality improvement projects as these are generally implementing or changing an area of current practice. This can be challenging for staff to remember but having an onsite project champion to remind and encourage the staff can be vital.

Another limitation was space; the medical assistants found that it was difficult to complete TUGs and maintain patient privacy due to the size and layout of the practice. Due to the layout of this practice, the TUG assessments were completed in the hallway. One hallway is secluded, but the other hallway borders the check-in/check-out desk. The majority of TUG assessments were completed in the latter, which does not allow for patient privacy.

An additional limitation of the project was the EHR and the practice's policies related to it. The practice uses an EHR that is not changeable, and they do not start notes prior to the appointment, meaning that the project lead could not add a reminder do complete TUG assessments. The project lead attempted to have the medical assistants add this to their physical assessment template, but this did not occur during the implementation period. Due to the pace of the practice, the template they used was never able to be updated.

Project Benefits

The main benefit appreciated by this project was the awareness of falls risk. The medical assistants reported many of the patients voiced that they appreciated having objective data about their falls risk, or lack thereof. The Physician Assistant also told the project lead that she had more patients ask her about ways to decrease falls risk (T.B., Personal Communication,
November 2019). Quality improvement projects, in general, are beneficial to healthcare facilities. By pointing out and fixing areas that need improvement, these projects can open the door for future projects to improve other areas of practice.

**Practice Recommendations**

The main recommendation for future practice change is to have an onsite project lead. Another recommendation is to ensure buy-in and active involvement from the key contributors such as management and providers. Additionally, the project lead recommends implementing the STEADI initiative as a bundle to be most effective, which includes screening, assessing, and intervening. This would decrease the burden on the medical assistants and increase the strength of the project. The project lead had to change the original plan for assessment as the practice was no longer using the same screening tool, which led to more work for the medical assistants than originally planned.

A larger physical site would also be beneficial to project implementation. With more space per patient, medical assistants would be more able to complete TUGs and maintain patient privacy. In the current building, all TUG assessments could be completed down the private hall; however, this would involve placing a chair in this hallway, which could be hazardous. There are other assessment tools in the STEADI toolkit, so an area for further research could include testing a different fall assessment tool at this site.

A larger physical site would also allow for more information about the STEADI initiative to be displayed to remind staff and educate patients. While handouts were available to staff, they were not openly available for patients. If the project lead were to do additional QI research at the site, handouts would be placed in the lobby for patients to look at as they waited for their appointments in hopes of sparking a conversation with providers about falls.
Additionally, to encourage adherence, an onsite project lead and actively engaged site champion would be beneficial. As previously discussed, this is crucial to success. While the site champion for this project was supportive and engaged, she was not the owner/physician at this practice; therefore, support was not as beneficial.

**Final Summary**

The project lead discussed the significance of the project and its outcomes. The project lead then identified the project's strengths and weaknesses. Then, the project’s limitations and benefits were discussed. Finally, the project lead explained the recommendations for future implementation. While the project appreciated a 33% adherence rate, there were many limitations to implementation. The project lead found that change is hard, which is not a new concept to those involved in quality improvement. The project lead also found areas of improvement for future implementation, such as implementing the entire STEADI bundle at once instead of in a piecemeal fashion.
References


among older adults in the U.S. *Preventive Medicine, 126*, 105737.
doi:10.1016/j.ypmed.2019.05.025


Appendix A

Many falls can be prevented.
By making some changes, you can lower your chances of falling.

Four things YOU can do to prevent falls:

1. Have your healthcare provider review your medicines.
2. Exercise to improve your balance and strength.
3. Have your eyes and feet checked.
4. Make your home safer.

Four things YOU can do to prevent falls:

1. Talk openly with your healthcare provider about fall risks & prevention.
   Tell a provider right away if you fall, worry about falling, or feel unsteady. Have your doctor or pharmacist review all the medicines you take, even over-the-counter medicines. As you get older, the way medicines work in your body can change. Some medicines, or combinations of medicines, can make you sleepy or dizzy and can cause you to fall. Ask your provider about taking vitamin D supplements to improve bone, muscle, and nerve health.

2. Exercise to improve your balance and strength.
   Exercises that improve balance and make your legs stronger, lower your chances of falling. It also helps you feel better and more confident. An example of this kind of exercise is Tai Chi. Lack of exercise leads to weakness and increases your chances of falling. Ask your doctor or healthcare provider about the best type of exercise program for you.

3. Have your eyes and feet checked.
   Once a year, check with your eye doctor, and update your eyeglasses, if needed. You may have a condition like glaucoma or cataracts that limits your vision. Poor vision can increase your chances of falling. Also, have your healthcare provider check your feet once a year. Discuss proper footwear, and ask whether seeing a foot specialist is advised.

4. Make your home safer.
   - Remove things you can trip over (like papers, books, clothes, and shoes) from stairs and places where you walk.
   - Remove small throw rugs or use double-sided tape to keep the rugs from slipping.
   - Keep items you use often in cabinets you can reach easily without using a step stool.
   - Have grab bars put in next to and inside the tub, and next to the toilet.
   - Use non-slip mats in the bathtub and on shower floors.
   - Improve the lighting in your home. As you get older, you need brighter lights to see well. Hang light-weight curtains or shades to reduce glare.
   - Have handrails and lights installed on all staircases.
   - Wear well-fitting shoes with good support inside and outside the house.
### Project Title: Nursing Education to Prevent Hospital Readmissions

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# NURS 8269: DNP Project I
## Literature Review Matrix

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<tr>
<th>Student: Megan E Sneed</th>
<th>Faculty: Dr. Michelle Skipper</th>
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<tbody>
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<td>Date of Submission: 4/22/2019</td>
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<tr>
<th>Article</th>
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<th>Data/Evidence Findings</th>
<th>Conclusion or Summary</th>
<th>Use of Evidence in EBP Project Plan</th>
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<tr>
<td>Alfonso Mora, M. L., Bejarano Marin, X., Sánchez Vera, M. A., García Muñoz, L. P., &amp; Soto León, I. A. (2017). Association between the fall risk, age and educational level in active adult and older women. Revista Salud Uninorte, 33(3), 306-314. Retrieved from <a href="http://www.scielo.org.co/scielo.php?script=sci_arttext&amp;pid=S0120-55522017000300306&amp;lng=en&amp;tlng=en">http://www.scielo.org.co/scielo.php?script=sci_arttext&amp;pid=S0120-55522017000300306&amp;lng=en&amp;tlng=en</a></td>
<td>III</td>
<td>An increased falls risk in women with lower education and older was observed (p &lt; 0.05).</td>
<td>Active women with low education levels have a higher risk of falling, according to TGUGM.</td>
<td>This is a high-quality study with good statistical analysis. Falls assessment should be included in women over the age of 65.</td>
</tr>
<tr>
<td>Barry, E., Galvin, R., Keogh, C., Horgan, F., &amp; Fahey, T. (2014). Is the timed up and go test a useful predictor of risk of falls in community dwelling older adults: A systematic review and meta-analysis. <em>BMC Geriatrics, 14</em>(1), 14. doi:10.1186/1471-2318-14-14</td>
<td>V</td>
<td>TUG is more useful at ruling in a fall risk than ruling out a fall risk. TUG score is not a significant indicator of falls.</td>
<td>TUG may not be the best assessment tool.</td>
<td>Evidence against the use of TUG. However, this is still useable as the study also shows it can predict falls when used in combination with other screening or assessment tools.</td>
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<td>Reference</td>
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<td>Beaudet, L., Ducharme, F., L’Écuyer, N., Chouinard, S., Jodoin, N., &amp; Panisset, M. (2015). Development and evaluation of a dyadic intervention for elderly couples living with moderate-stage Parkinson disease. <em>Applied Nursing Research</em>, 28(4), e27. doi:10.1016/j.apnr.2015.02.004</td>
<td>IV</td>
<td>Meleis Transitions theory was used as the framework for successfully implementing an educational plan for families with Parkinson’s Disease. This theory is effective in helping providers transition and helps their patients transition. Meleis' transitions theory will be used as the framework for this project.</td>
<td></td>
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<td>Bergen, G., Stevens, M. R., &amp; Burns, E. R. (2016). Falls and fall injuries among adults aged ≥65 years — united states, 2014. <em>MMWR. Morbidity and Mortality Weekly Report</em>, 65(37), 993-998. doi:10.15585/mmwr.mm6537a2</td>
<td>VII</td>
<td>In 2014, 28.7% of people surveyed reported falling in the past 12 months, which is approximately 29 million falls. 868,000 falls were reported in North Carolina. Falls are a problem nationally and in North Carolina. Evidence of the need for falls prevention in the primary care setting.</td>
<td></td>
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<tr>
<td>Burns, E. R., Stevens, J. A., &amp; Lee, R. (2016). The direct costs of fatal and non-fatal falls among older adults — united states. <em>Journal of</em></td>
<td>IV</td>
<td>In 2012 direct medical costs for fatal falls were $616.5 million and were $30.3 million for non-fatal falls. In 2015 direct for fatal falls was Falls are a significant financial burden. Evidence of the financial burden of falls.</td>
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FALLS ASSESSMENT IN PRIMARY CARE 69
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<th>Source</th>
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<tr>
<td>Burns, E., &amp; Kakara, R. (2018).</td>
<td>In 2016, 29,668 US residents over 65 years of age died from falls. Approximately 70 per 100,000 people died of falls in North Carolina in 2017.</td>
<td>Evidence of the need for falls prevention in the primary care setting.</td>
<td>Falls related deaths are a problem in patients over 65 years of age.</td>
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<tr>
<td>Casey, C. M., Parker, E. M., Winkler, G., Liu, X., Lambert, G. H., &amp; Eckstrom, E. (2017).</td>
<td>The keys to successful implementation were an EHR tool and workflow and proactive leadership champions.</td>
<td>Valid evidence of successful implementation of STEADI in primary care with determined factors that influenced the change. Though this was done at a large, multi-site facility.</td>
<td>STEADI successfully implemented in primary, and certain factors helped this.</td>
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<tr>
<td>Safety Research, 58, 99-103. doi:10.1016/j.jsr.2016.05.001</td>
<td>$637.5 million and was $31.3 million for non-fatal falls.</td>
<td>$637.5 million and was $31.3 million for non-fatal falls.</td>
<td>$637.5 million and was $31.3 million for non-fatal falls.</td>
</tr>
<tr>
<td>Castle, S. C., MD. (2019). Despite active public health campaigns, death from falls increased 30% in the past decade. Clinics in Geriatric Medicine, 35(2), 147-159. doi:10.1016/j.cger.2019.01.002</td>
<td>III</td>
<td>Ageism may be manifested as poor self-awareness of fall risk. This may also lead to decreased reporting of falls because patients don't want to lose independence. Reports falls may be lower than the actual number of falls. Falls may be under-reported, meaning prevention is even more important.</td>
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<td>Eckstrom, E., Parker, E. M., Lambert, G. H., Winkler, G., Dowler, D., Casey, C. M., &amp; Sands, L. P. (2017). Implementing STEADI in academic primary care to address older adult fall risk. Innovation in Aging, 1(2), igx028. doi:10.1093/geroni/igx028</td>
<td>IV</td>
<td>In 6 months, 64% of patients were screened with 22% being high risk. Of the high-risk patients, 64% received STEADI interventions. STEADI successfully implemented in primary care. Valid evidence of successful implementation of STEADI in primary care. Though this was done at a large, multi-site facility.</td>
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<tr>
<td>Reference</td>
<td>Falls Assessment in Primary Care</td>
<td>分別, for North Carolina.</td>
<td>Evidence of medication-related falls occurrence.</td>
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<td>Haddad, Y., Bergen, G., &amp; Luo, F. (2018). Reducing fall risk in older adults. <em>AJN, American Journal of Nursing, 118</em>(7), 21-22. doi:10.1097/01.NAJ.0000541429.36218.2d</td>
<td>Women are at an increased risk for medication-related falls (57% vs. 49%), mostly related to benzodiazepines (19% vs. 11%) and opioids (37% vs. 33%). Falls assessment should include evaluating high-risk medications, especially in women.</td>
<td>Evidence of the psychological burden of falling on patients.</td>
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<tr>
<td>Hajek, A., &amp; König, H. (2017). Falls and subjective well-being. Results of the population-based German ageing survey. <em>Archives of Gerontology and Geriatrics, 72</em>, 181-186. doi:10.1016/j.archger.2017.06.010</td>
<td>Falling in the past 12 months is associated with higher negative affect, lower positive affect, and lower life satisfaction There is a psychological component to falls in this population.</td>
<td>Evidence of the psychological burden of falling on patients.</td>
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<td>Howland, J., Hackman, H., Taylor, A., O'Hara, K., Liu, J., &amp; Brusch, J. (2018). Older adult fall prevention practices among primary care providers at accountable care organizations: A pilot study. <em>PloS One, 13</em>(10), e0205279. doi:10.1371/journal.pone.0205279</td>
<td>VI</td>
<td>96% of providers felt that all older adults should be assessed for fall risk. 85% believed that this assessment would identify modifiable risk factors. Only 14% of these providers had heard of the STEADI initiative.</td>
<td>Providers feel they should be assessing patients for fall-risk, but do not know how to do it.</td>
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<td>Ibrahim, A., Singh, D. K. A., &amp; Shahar, S. (2017). ‘Timed up and go’ test: Age, gender, and cognitive impairment stratified normative values of older adults. <em>PLoS One, 12</em>(10), e0185641. doi:10.1371/journal.pone.0185641</td>
<td>IV</td>
<td>Cognitive status as a mediator, predicted TUG performance even when gender and age were controlled for. (p=.36)</td>
<td>MCI should be taken into account when using TUG to determine falls risk.</td>
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<tr>
<td>Jia, H., Lubetkin, E. I., DeMichele, K., Stark, D. S., Zack, M. M., &amp; Thompson, W. W. (2019). Prevalence, risk factors, and burden of disease for falls and balance or walking problems among older adults in the U.S. Preventive Medicine, 126, 105737. doi:10.1016/j.ypmed.2019.105737.</td>
<td>IV</td>
<td>Falls are more likely in older persons with physical function impairments, cognitive deficits, depression, geriatric syndromes, and other chronic conditions. Also, a fall is a strong risk factor for another fall</td>
<td>Fall-risk is multi-faceted; therefore, prevention should be as well.</td>
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<td>Johnston, Y. A., Bergen, G., Bauer, M., Parker, E. M., Wentworth, L., McFadden, M., . . . Garnett, M. (2018). Implementation of the stopping elderly accidents, deaths, and injuries initiative in primary care: An outcome evaluation. <em>The Gerontologist</em>, doi:10.1093/geront/gny101</td>
<td>IV</td>
<td>Older adults at risk for falls with a fall plan of care in place were 0.6 times less likely to have a fall-related hospitalization than those without one. STEADI successfully implemented in primary and reduced falls in the patients. Valid evidence of successful implementation of STEADI in primary care and reduction in falls-related hospitalizations. Though this was done at a large, multi-site facility.</td>
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<td>Landis, S. E., &amp; Galvin, S. L. (2014). Implementation and assessment of a fall screening program in primary care practices. <em>Journal of the American Geriatrics Society</em>, 62(12), 2408-2414.</td>
<td>III</td>
<td>The sites screened 68.8% of older adults for falls and assessed 87% of those who reported falls. Only 23% of these patients had documentation of the appropriate plan of care. Screening and assessment are important, but a focus should be put on documentation in the plan of care. Evidence of effective screening and assessment. Also, evidence of the importance of putting documentation in place.</td>
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<td>Maxwell, C. A.</td>
<td>2015</td>
<td>The most common traumas in the geriatric population are lower extremity fractures and rib and spine fractures, which both are frequently caused by falls.</td>
<td>Trauma in the geriatric population. <em>Critical Care Nursing Clinics of North America</em>, 27(2), 183-197. doi:10.1016/j.cnc.2015.02.006</td>
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<td>This theory is effective in helping providers transition and helps their patients transition.</td>
<td>Meleis' transitions theory will be used as the framework for this project.</td>
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<td>Pohl, P., Nordin, E., Lundquist, A., Bergström, U., &amp; Lundin-Olsson, L. (2014).</td>
<td><em>BMC Geriatrics, 14</em>(1), 120. doi:10.1186/1471-2318-14-120</td>
<td>During long-term follow-up from hospitalization for falls, 30% of participants had suffered at least one fall. Higher rates of injurious falls were seen if one injurious fall had already occurred (hazard ratio 2.78; 95% CI, 1.40-5.50). Multifactorial falls prevention in community-dwelling elderly is critical to prevent falls, as one fall is likely to lead to more falls.</td>
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<td>Ponti, M., Bet, P, Oliveira, C. L., &amp; Castro, P. C. (2017).</td>
<td>Better than counting seconds: Identifying fallers among healthy elderly</td>
<td>TUG has high sensitivity and specificity (Sensitivity = 0.83, 95% CI, 0.62-0.91). TUG is an excellent assessment tool.</td>
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<td>Evidence that primary prevention of falls is the best option, but secondary prevention is also very important.</td>
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<td>Rajagopalan, R., Litvan, I., &amp; Jung, T.</td>
<td>2017</td>
<td>Fall prediction and prevention systems: Recent trends, challenges, and future research directions.</td>
<td>Current fall prediction and prevention technology have only been tested in laboratories, which does not account for the actual patient experience. Evidence of the need for multifactorial falls risk assessment.</td>
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<td>Shen, J., Hu, F., Liu, F., &amp; Tong, P.</td>
<td>2015</td>
<td>Functional restriction for the fear of falling in family caregivers.</td>
<td>After hip fractures, the mean FES-I score of the family was lower than the patient (85.39 vs. 99.02, p&lt;0.0001). Evidence that families are also psychologically burdened by falls.</td>
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  The participants felt they were low fall-risk, even though they had experienced falls. They related these falls to environmental or medication effects instead of their intrinsic health.  
  Falls are under-reported. Many patients have altered perceptions of their actual fall-risk. | VI   | Evidence that objective data is important to help the patients realize their true fall-risk. |
| Silva, C., Sousa, F., Lima, J., Pinto, M., Brito, M., & Cruz, I.           | 2017 | Meleis Transitions theory was used to explain the transition patients with new ostomies undergo.  
  This theory is effective in helping providers transition and helps their patients transition. | VI   | Meleis' transitions theory will be used as the framework for this project. |
| Sparks, T., Kawi, J., Menzel, N. N., & Hartley, K.                        | 2016 | FibroGuide, an educational application for fibromyalgia education, was implemented using Lewin's change theory.  
  Lewin's change theory is effective for implementing change. | VI   | Lewin's Change theory will be used as the change theory for this project. |
| Technology in routine care for fibromyalgia: Pilot study. *Pain Management Nursing*, 17(1), 54-62. doi:10.1016/j.pm n.2015.10.001 | VI | In the first year of research, 79% of eligible patients were screened for falls, with 18.1% being screened positive. Of the positive patients, 52% were assessed with TUG. | The STEADI initiative can be implemented successfully in primary care. | Valid evidence of successful implementation of STEADI with TUG in primary care. Though this was done at a large, multi-site facility. |
| Tetef, S. (2017). Successful implementation of new technology using an interdepartmental collaborative approach. *Journal of Peri Anesthesia Nursing*, 32(3), 225-230. doi:10.1016/j.jop an.2015.05.118 | VI | A new Bronchial thermoplasty program was implemented using Lewin's change. | Lewin's change theory is effective for implementing change. | Lewin's Change theory will be used as the change theory for this project. |
|---|
| **III** | Single task TUG did not determine patients as fallers or non-fallers, but dual-task TUG did classify patients as fallers or non-fallers. | Dual-task TUG is more accurate at determining patients at risk for falling. | Evidence of TUG in practice. The STEADI initiative does not use the dual TUG, so this something to consider. |
| **VI** | Lower health-related quality of life is associated with increased time to complete TUG. | Preventing falls and increasing mobility can affect patients' quality of life. | Evidence of the psychological burden of falling on patients and the effects of decreased mobility. |
| **VI** | Lewin's change theory was successfully used to implement a new bedside report and compared to the Lean Systems approach. | Lewin's change theory is effective for implementing change. | Lewin's Change theory will be used as the change theory for this project. |

| IV | 30% to 60% of people > 65 years reported at least one fall during the previous year. For the population 80 years or old, this number averaged 50%. | Falls are a significant problem in the geriatric population | Background of the problem. |
Appendix D

Figure 1: Concept map of Meleis Transitions Theory for TUG assessment implementation

(Meleis, 2010).
Appendix E

*Figure 2:* Concept map of application of Lewin’s Change Theory to TUG assessment

**Implementation**

Unfreezing
- Staff education
- Staff buy in

Change
- Project implementation
- PDSA cycles

Refreezing
- Continued adherence to protocol
Appendix F

Organizational Approval Letter

Date: 3/27/2019

To East Carolina University College of Nursing:

We at [redacted] have reviewed Megan Sneed’s DNP Project Proposal “Timed Get Up and Go implantation to improve Falls Assessments”. Ms. Sneed has organizational support and approval to conduct their project within our institution. We understand that the timeframe for this project is from the date of this letter through April 30, 2020. Implementation at the project site will occur August/September through November 30, 2019, unless otherwise negotiated. We understand that for Ms. Sneed to achieve completion of the DNP program, dissemination of the project will be required by the University which will include a public presentation related to the project and a manuscript submission will be encouraged.

Our organization has deemed this project as a quality improvement initiative project. Our organization is aware that this project will be processed first through our organizational IRB and then through the University and Medical Center Internal Review Board of East Carolina University (UMCIRB). Our organization does not have an Internal Review Board (IRB). (In the absence of an organizational IRB, the project will be only submitted to UMCIRB).

Thank you
Appendix G

Budget

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<th>Line Item</th>
<th>Unit cost</th>
<th>Quantity</th>
<th>Item Total</th>
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<td>Falls prevention handout</td>
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<td>Travel for project management and data (8 wks)</td>
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## Appendix H

### DNP project data collection tool

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<th>Weeks</th>
<th>Number of Physicals</th>
<th>TUGs Administered</th>
<th>% adherence</th>
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</table>

### Month

<table>
<thead>
<tr>
<th>Month</th>
<th># Pt's seen for Falls or related injuries per month</th>
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<tbody>
<tr>
<td>July</td>
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<tr>
<td>Aug</td>
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<tr>
<td>Dec</td>
<td></td>
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<tr>
<td>Jan</td>
<td></td>
</tr>
</tbody>
</table>
Appendix I

ASSESSMENT

Timed Up & Go (TUG)

**Purpose:** To assess mobility

**Equipment:** A stopwatch

**Directions:** Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

1. **Instruct the patient:**
   - When I say “Go,” I want you to:
     1. Stand up from the chair.
     2. Walk to the line on the floor at your normal pace.
     3. Turn.
     4. Walk back to the chair at your normal pace.
     5. Sit down again.

2. **On the word “Go,” begin timing.**
3. **Stop timing after patient sits back down.**
4. **Record time.**

**Time in Seconds:**

An older adult who takes >12 seconds to complete the TUG is at risk for falling.

---

**Observations**

Observe the patient’s postural stability, gait, stride length, and sway.

Check all that apply:
- □ Slow tentative pace
- □ Loss of balance
- □ Short strides
- □ Little or no arm swing
- □ Steadying self on wall
- □ Shuffling
- □ En bloc turning
- □ Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

CDC’s STEADI tool and resources can help you screen, assess, and intervene to reduce your patient’s fall risk. For more information, visit [www.cdc.gov/stead](http://www.cdc.gov/stead).
Appendix J

7/16/2019

Timed Get Up and Go Implementation to Improve Falls Assessment

Why Falls?
- 1 in 3 geriatric patients fall every year (Lundy, B & Galvin, 2014).
- 2.9 million falls occur a year (Bergen, Stevens, & Burns, 2016).
- 7 million fall-related injuries yearly (Bergen et al., 2016).
- 29,000 death yearly in patients > 65 y.o. (Bergen et al., 2016).

Cost of Falls
- Medicare spent $11.3 million on non-fatal falls in 2015 (Bums, Stevens, & Lee, 2016).
- Fall-related office visits cost approximately $9,425 (Bums et al., 2016).
- North Carolina spent $86 million in 2011 caring for falls patients (Lundy, B & Galvin, 2014).

What to do?
- The STEAD Initiative
  - Screen, assess, and intervene
  - STEAD toolkit
  - Assessment tools
  - Referral services
- (Centers for Disease Control, n.d.a)

The Project
- Implementing the STEAD algorithm
  - Screen
  - Already do this
  - Assess
  - Timed Get Up and Go Assessment (TUG)
  - Intervention

Administrative Assistants
- Stay independent screening form
- Ensure the medical assistant receives this
- (Centers for Disease Control, n.d.a)
Medical Assistants

- Review Screening form
- If indicated, perform TUG assessment
- Document TUG Score in EHR

Timed Get Up and Go

- Patient Stands. Walks 10 ft. Turns, Walks 10 ft. sits back down
- Timer starts when you say "go"
- Timer stops when patient sits
- Score = time to complete task
- > 12 secs to complete means increased risk for falling
- ( Centers for Disease Control, A.D.A.)

Providers

- Review the TUG score in EHR
- If at elevated risk, speak the patient about their fall-risk

Questions

References

- Centers for Disease Control (2016). Timed get up and go: Measured fall risk?
- Centers for Disease Control (2016). Falls and Fall Prevention.
Appendix K

Figure 3: First project PDSA cycle.