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Improving Patient Safety by Reducing Falls

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Abstract

In the microsystem setting of this project, there have been two patient falls, within the last year. These falls did not result in injury, hence, did not create additional cost for the hospital, nor the patient. Evaluation of the patient's charts concluded that the fall risk assessments for the patients in question were not entirely indicative of their risk for falls. Additionally, the fall risk care plans were not patient specific in that they did not fully address the designated fall risks of the patient. An abundance of evidence exists supporting the need to reduce falls, and that fall reduction can be attained by adequately assessing fall risk, as well as by care planning in a multidisciplinary manner. The aim of this project is to improve patient safety by reducing falls. To attain this goal, staff teaching was done regarding the necessity of patient-specific fall risk assessments, as well as care planning specifically for these individualized fall risks. The duration of the evaluation of the process began upon admission to the microsystem, and ended upon discharge from the same microsystem. The resulting conclusion of this process improvement project is projected to be that the fall incidence rate will be reduced to zero, and will remain at zero, through the end of the year. However, final outcomes remain pending.

Improving Patient Safety by Reducing Falls

Introduction

The microsystem of this project is a 24-bed, medical-surgical intensive care unit (ICU), of a 248-bed acute care hospital. In this ICU, there have been two falls within the last year. Review of the charts for these two patients revealed that the fall risk assessments failed to fully define the patient's fall risks. Furthermore, the fall risk care plans for these patients were ineffective, unmeasurable, lacked effective interventions, did not adequately address the fall risks, and/or did not plan for a multidisciplinary approach. Additional chart audits were done, with similar findings, indicating that a process improvement was needed.

This paper will discuss a project to improve patient safety by reducing falls. The project is not a research project (see Appendix A), but is an evidence-based change of practice project (see Appendix B).

Problem Description

Any patient can be at risk for falls (Joint Commission, 2015). Posing a serious threat to patient safety, falls of hospitalized patients are widespread (Oliver, Healey, Haines, Physiotherapy Hons, & Cert Health Economics, 2010), with rates ranging from 3.3 to 11.5 falls per 1,000 patient days (Hitcho et al., 2004). Representing major health concerns, falls continue to be the number one adverse event of hospitalized patients (Quigley & White, 2013).

Importance of Fall Reduction. Prevention of falls is a goal of patient safety, so as to prevent additional harm to the already hospitalized patient (Agency for Healthcare Research and Quality, n.d.). Fall prevention has become a major focus in acute-care organizations, and fall risk assessments, along with periodic reassessments, are a national patient safety goal (Currie, 2008). Accordingly, as a condition for accreditation, The Joint Commission (TJC) requires

hospitals to conduct fall risk assessments and have preventive measures implemented into the patient's plan of care (The Joint Commission, 2013).

Impact on Patients. Hundreds of thousands of patients fall every year, with 30-50% of the falls resulting in injury (Joint Commission, 2015). As the population ages, fall incidences are expected to increase (Edmonds, 2013). Notably, mobile patients may be at a higher risk of falling (Bouldin et al., 2013), as hospital falls often occur during unassisted activities related to elimination (Hitcho et al., 2004). However, numerous circumstances, activities, and complex patient characteristics can contribute to falls (Hitcho et al., 2004). Reducing falls contributes to patient safety, and enhances positive patient outcomes.

Impact on Systems. Falls are a threat to patient safety and a pressing issue for hospitals (Von Renteln-Kruse & Krause, 2007), and have also become increasingly of greater concern for the fiscality of hospitals. Falls resulting in serious injury are consistently among the top 10 sentinel events reported to The Joint Commission Sentinel Event Database (Joint Commission, 2015). While hospitalized, the safety of a patient is the responsibility of the hospital (Ruckstuhl, Marchionda, & Salmons, 1991). As of 2008, the Center for Medicare and Medicaid Services (CMS) concurred, by determining inpatient falls to be a Hospital Acquired Condition (HAC), and thus would no longer cover the cost of care resulting from an inpatient fall (Center for Medicare and Medicaid Services, 2009). In essence, CMS began a no-pay policy for reimbursement of patient fall-related costs (Fehlberg et al., 2017)

Injuries from falls require additional treatments and can prolong hospital stays (Joint Commission, 2015). With approximately 30% of patient falls resulting in some type of morbidity, and as much as 6% of the morbidities being serious, or life-threatening (Hitcho et al., 2004), higher hospital charges are incurred (Fields et al., 2015). The average cost of a fall is

\$14,000 (Joint Commission, 2015). Consequently, hospitals are motivated to decrease falls, not simply for patient safety, but also for financial reasons.

As the occurrences of falls are frequently used as a nursing care outcome indicator (Halfon, Egli, Van Melle, & Vagnair, 2001), hospitals have yet another motivation to reduce patient falls. Reducing falls increases positive patient outcomes, and quality of care is imperative for the patient, as well as the hospital (Ruckstahl et al., 1991).

Available Knowledge

Current Knowledge. Evidence-based practices addressing the risk of falls have been gaining momentum, and the evidence is clear that an interdisciplinary approach is key, as fall-prevention programs that rely solely on nurses are not effective: To make a difference, it takes a team (Quigley, 2015). Prevention of hospital falls depend on multidisciplinary input as well as multifactorial interventions (Oliver et al., 2010). There is evidence that the incidences of falls can be reduced, using a multidisciplinary team approach (Morris & O’Riordan, 2017). Working collaboratively in setting goals, making decisions and sharing resources and responsibilities, members from different disciplines can provide and implement a care plan that meets the patient’s goals and needs (Department of Health and Human Services, State Government of Victoria, Ariss, Smith, Enderby, & Roots, 2018). Thus, the nurse initiating the care plan can help to provide crucial knowledge that the interdisciplinary team can use to help in obtaining positive patient outcomes, by reducing falls.

Standard fall assessments and fall precautions seem to be well known by most nurses. The Agency for Healthcare Research and Quality (n.d.) has identified the best practices for preventing hospital falls to be

- universal fall precautions;

- bed locked, and in low position;
- help the patient to be familiar with the environment;
- keep personal items and the call light within reach;
- ensure that the patient knows how to use the call light;
- sturdy handrails in the patient rooms, bathrooms and halls;
- maintain non-slip footwear for patients when out of bed;
- provide adequate lighting;
- keep floors clean and dry;
- keep patient area uncluttered;
- follow safe patient handling practices;
- standardized fall risk assessments;
 - history of falls;
 - mobility problems and use of adaptive equipment;
 - medications in use;
 - mental status;
 - continence;
 - possible other patient risks;
 - cluttered pathways;
 - vision impairment;
 - orthostatic hypotension;
- care plans for fall prevention, addressing the fall risks identified;
- assessing and managing patients after a fall;
- post fall procedures;

- clinical review;
- root cause analysis.

Standard fall assessments and fall precautions are usually practiced within the hospitals, almost robotically. Although evidence is inconsistent with respect to the effect of standardized interventions in reducing inpatient falls, this may be due to variables in the fall risk circumstances of the patients, and interventions not being patient specific (Hook, Devine, & Lang, 2008).

Oliver et al. (2010) lists the most often fall risk factors of hospitalized patients to be

- history of falls;
- weakness;
- confusion;
- agitation;
- orthostatic hypotension;
- use of sedatives;
- urinary frequency;
- incontinence.

When studying predisposing and situational risk factors in a cohort study, Tinetti, Doucette, & Claus (1995) further identified situational factors contributing to a risk of serious injury from a fall to be

- female gender;
- white race;
- cognitive impairment;
- gait impairment;

- having two or more comorbidities;
- low body mass index (BMI);
- previous fall having resulted in a fracture.

Synthesis of Existing Literature. Literature regarding fall reduction is ubiquitous. The National Center for Biotechnology Information (NCBI), alone, resulted in an abundance of references regarding fall risk studies.

For this project, a patient population, intervention, comparison and outcome (PICO) search statement was used. The PICO approach consisted of, (1) P: acute-care patients, (2) I: patient-specific fall risk assessments and multidisciplinary fall reduction care-planning, (3) C: standardized fall risk assessments and standardized fall reduction care plans, and (4) O: fall reduction. This allowed for a plethora of information with reference to not only the reduction of falls, but also enlightenment on means to develop individualized fall risk assessments, and fall reduction care plans.

To narrow the search, the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database was used to further synthesize the data presented from the PICO search. This was done using the key words and phrases *inpatient fall reduction, fall risk assessments, and multidisciplinary care planning for falls*. The resulting references presented evidenced-based research supporting the need for this project. As well, the references illuminated understanding as to the need to update the current practice in the microsystem of this project, using evidenced-based practices. Information from 17 studies were selected for this project improvement plan.

Relevant Studies. In a cluster randomized control trial within six Australian hospitals, Barker et al. (2016) studied a nurse-led fall reduction program, over a year. The program, called

the 6-Pack, offered individualized use of six different fall-prevention interventions. They noted positive changes in fall-prevention practices, but no difference in fall rates.

Cameron et al. (2012) completed a systematic review & meta-analysis of randomized controlled trials regarding fall reducing interventions. They concluded that there is evidence that multifactorial interventions can be effective in reducing falls.

Through a systematic review of literature, Coussement et al. (2008) sought to identify the attributes and effectiveness of different hospital programs for fall prevention. Their conclusion was that their meta-analysis did not identify conclusive evidence to support that standardized hospital fall programs are able to reduce the incidences of falls.

Australia's Department of Health and Human Services (2018) described a multidisciplinary approach to create care plans that are discipline specific, but that are created independently, by team members. They describe this as important as patients often have many different diagnoses and complex psychological, social, and multimorbidity's concerns. They suggest that the best patient outcomes are derived from a collaborative approach which also actively involves, not only the patient, but the family, as well as the interdisciplinary team.

Edmonds (2013) discussed a team approach to fall prevention, which was developed by a multidisciplinary team, at a medical center in New Jersey. The team reviewed 28 fall incidents from 2009, determining that 18 of the falls were preventable. The findings were determined and interventions were developed to prevent falls, decreasing the rate of falls by 56%.

In a randomized controlled trial, Haines, Bennell, Osborne, & Hill (2004) assessed the effectiveness of fall programs comprised of multiple interventions. They determined that falls were reduced by utilizing a multiple intervention fall prevention program.

In a prospective study, Hitcho et al. (2004) studied the characteristics and circumstances of falls in a hospital setting. The study lasted 13 weeks and the setting was a 1,300-bed, urban hospital. They were able to conclude that, although young and old patients were affected by falls, most falls occurred when the patient was unassisted, and involved activities relating to elimination.

In a case-control study that comprehensively analyzed the potential risk factors for a patient falling while hospitalized, Krauss et al. (2005) found that abnormal gait, health status, medications, and care-related factors increase the risk of falls. They concluded that falls can be reduced by focusing on strategies to mobilize and toilet patients with gait or balance problems.

Morris & O’Riordan (2017) discuss hospital fall risks, and prevention of falls. The authors offer that falls are not simply accidents, because there exists evidence that a multidisciplinary team approach can reduce the incidence of falls

To evaluate evidence for fall prevention strategies, Oliver et al. (2007) conducted a systemic review and meta-analyses of studies that were grouped by intervention, and setting. They concluded that there is evidence to support that multifaceted fall interventions can reduce the incidences of falls.

Three years later, Oliver completed another extensive systemic review and meta-analyses. This time, with a different group of authors, consisting of a physician, a nurse and a physiotherapist. Ultimately, their findings were that patients who fall tend to have multifaceted fall risk factors, and multifactorial interventions are needed to prevent falls (Oliver et al., 2010).

Ruckstahl et al. (1991) sought to refine a falls-prevention protocol that was already in place, at a 1,145-bed hospital in Florida. The objective was to identify high fall risk patients, and

then to determine interventions that would decrease the chance of the patients having a fall. In doing so, they were able to decrease the rate of falls that resulted in fractures by 83%.

Quigley & White (2013) provide a framework for applying fall prevention concepts from highly reliable organizations. The components of these concepts are discussed in regard to the determination of the impact made on the patient, and the organization. Emphasis is made on integrating the fall-prevention components as to developing a culture of safety.

Quigley's (2015) main focus was that a team approach is needed, if a difference in fall prevention is to be made. Citing statistics provided by the Center for Disease Control and Prevention regarding falls, she challenges the reader to assist in identifying areas where change is needed in the prevention of falls

Stenvall et al. (2007) evaluated multidisciplinary fall reduction programs, and treatment of fall risk factors with a randomized, controlled trial of 199 patients. This study sought out to determine if using a multidisciplinary team approach to the treatment of fall risks, could reduce falls. The conclusion was that prevention, detection, and treatment of fall risk factors can, indeed, prevent patient falls.

With a nested, cohort study, Tinetti et al. (1995) followed 568 people. The subjects were at least 72 years old, and had previously fallen. Predisposing factors were determined. Whereas many behavior and environmental factors were identified as contributory, the conclusion was that preventive programs offered the best result for a positive patient outcome.

Von Renteln-Kruse & Krause (2007) described a fall prevention program and the program's effects. They summarized that a structured and multifactorial interventions reduced fall incidences.

The above-mentioned studies are of varying levels of evidence. Several of the references cited are systematic reviews and meta-analysis', which are considered level 1 evidence (Melnik & Fineout-Overholt, 2015). An evaluation table of the studies that are level 1-4 evidence are recounted within this paper, listing the fall interventions, and the conclusions relating to the effectiveness of the interventions from these studies (see Appendix C).

Rationale

The rationale of this project is that by improving assessments of fall risk and developing multidisciplinary care plans to reduce falls, the incidence of falls can be reduced. By decreasing falls, patient safety will be increased. Increased patient safety means better patient outcomes.

Conceptual Framework Interventions. For this project, a strengths, weaknesses, opportunities, and threats (SWOT) analysis tool was used. This was done to determine the most effective approach to implementing this process improvement plan (see Appendix D).

To implement the change required for the project, Lippitt's change theory was utilized. Lippitt's change theory is broken down into seven phases. These phases address assessment, planning, implementation and evaluation. The first three phases are part of the assessment, phases four and five are within the planning, phase six covers the implementation, and phase seven is the evaluation (Mitchell, 2013).

Phases one through three diagnose the problem, assess the motivation and capacity for change, and assess the change agent's motivation and resources. In phase one, the proposed change should be presented to all who may be affected by the change (Bennett, 2003). Phase two is where communication with those involved would take place, and concerns would be discussed (Mitchell, 2013). In phase three, the motivation of the change agent is assessed (Mitchell, 2013).

Phases four and five are to select a progressive change objective, and choose the appropriate role of the change agent (Mitchell, 2013). Phase four is when the process for change is refined, a final draft completed, a time table proposed and assignments of responsibilities made (Mitchell, 2013). The focus of phase five is to determine a change agent's role (Mitchell, 2013). Being an active part of the change process, the change agent manages the staff and supports the change (Cooke, 1998).

Phase six is about maintaining the change, so that the change will be a part of the system (Cooke, 1998). Significant in this phase is communication, reaction to the progress, team efforts and the impetus of the team (Mitchell, 2013). Essential in this phase is continued training (Martin, 2006). Additionally, for change to be successful, effective leadership is needed (Gesme & Wiseman, 2010).

Phase seven is to terminate the helping relationship. However, change agents should continue to be assessable for information and fortification of the change plan. As well, evaluation of the plan must be done to ascertain as to if improvement exists (Mitchell, 2013). Assessing the effectiveness of the teaching and training began, as well as evaluating the team's efforts (see Appendix E).

Reasoning for Interventions. The SWOT analysis tool was selected because of its usefulness in strategic analysis. Utilizing this tool demonstrates the internal capabilities as well as the external developments which can either be threats, or opportunities to the strong, or weak aspects of internal capabilities (Van Wijngaarden, Scholten, & Van Wijk, 2012). As a tool for assessing resources and potential, SWOT analysis is one of the most-often used managerial tools (Madsen, 2016).

Nurse managers should expect inevitable resistance to change (Price, 2008). Some staff may even feel threatened by change, and may thus present as resistant or even hostile to change (Hader, 2013). Attempts to facilitate change can face various barriers, but many problems with potential barriers can be eliminated with the proactive use of the framework of a change theory (Mitchell, 2013). So, when deciding on an applicable change theory for this project, thought was given to the fact that all nurses are familiar with the nursing process. The nursing process, designed in 1958 by Ida Orlando, is a systematic model for patient-centered care, encompassing the five steps of assessment, diagnosis, planning, implementation, and evaluation (Toney-Butler & Thayer, 2019). The language of Lippitt's change theory mirrors the nursing process (see Appendix F), and was likely to be useful, for this reason (Mitchell, 2013). Accordingly, Lippitt's change theory was applied to this process improvement project.

Specific Project Aim

The aim of this project is to reduce patient falls, in the ICU, by 100%, within 6 months.

The process begins on admission to the ICU.

The process ends with discharge from the ICU.

Nurses will complete fall risk assessments and initiate effective care planning for patients with a risk of falls. By working on the process, the expectation is that the nurses will assess all patients for falls, on admission, and every shift thereafter. Then, the expectation is that the nurses will develop effective care plans for patients with a risk of falls, with the interventions being implemented within 2 hours of admission to the ICU. The goal of success will be that by completing the fall risk assessment for every patient upon arrival to the ICU, and that by having appropriate fall risk interventions being initiated within 2 hours of admission to ICU, that falls will be reduced by 100%.

Methods

Context

Dartmouth-Hitchcock medical center's clinical microsystem assessment tool (Dartmouth-Hitchcock Medical Center, n.d.) was reviewed when assessing the microsystem of this project's setting. The Institute for Healthcare Improvement's culture assessment tool (Institute for Healthcare Improvement, n.d.) was considered when assessing the cultural environment. The microsystem is a 24-bed, medical-surgical ICU, of a 248-bed acute care hospital. This ICU is comprised of intensively ill patients, mostly of the medical surgical variety. There are 69 employees. This includes 57 registered nurses, 7 patient care technicians, and 5 unit assistants. Of the nurses, only one works full time. Many are benefitted, part-time nurses, and some are per diem nurses, most of whom live out of state. There is a nurse unit manager, and 3 ANM's; one on days, one on evenings and one on nights. As well, there is a medical director and several intensivists, with two physicians working each day, on a rotating schedule. However, although the position is open, there is currently no unit-based educator, and there hasn't been one for many months. The day shift ANM has been doing some of the educator's roll, until a suitable candidate can be found.

The nurses are part of the California Nurses Association (CNA). The union contract dictates rules such as seniority, and floating hierarchy. Also, per union rules, each nurse takes no more than two patients, at a time. Occasionally a patient may be deemed to require a nurse to be dedicated solely to that one patient. Grand rounds commence at 10:00AM and progress, chronologically by room, until all patients have been presented. This multidisciplinary team consists of an intensivist, the primary nurse, the nurse manager, the ANM, a physical therapist, a

speech therapist, a case manager, a social worker, a pharmacist, and, at times, a clergy person. And when there is a unit-based educator, that person attend as well.

All charting is done per an electronic medical record (EMR). This includes not only the nurses, but also the doctors, and ancillary staff.

Intervention

For this project, teaching was the major component. Nurses were gathered to be taught the importance and necessity of fall risk assessments. Emphasis was made that, because a patient's fall risk can change, fall risk assessments should be done not only on admission, but every shift thereafter. A SCHMID Fall Risk Assessment Tool was used to assess fall risk (see Appendix F). The prevention of falls should be customized as each patient presents with differing factors for fall risk (Agency for Healthcare Research and Quality, n.d.), and this was reiterated to the nurses.

Furthermore, attention was made to the fact that all patients with a fall risk must have a fall risk care plan generated. Care planning for fall prevention requires that the information provided by the patient's fall risk be adapted into an action plan used to address the particular fall risks of the patient (Agency for Healthcare Research and Quality, n.d.). Formulating interventions that included a multidisciplinary approach was stressed. When a team applies treatment of fall risk factors, falls and injuries can be prevented (Stenvall et al., 2007).

Teaching regarding fall risk assessments and care planning was repeated during beginning-of-shift huddles. Personalized assistance was given to any nurse who needed additional help.

Measures

Outcomes measurement is a crucial component in testing and implementing change. In determining the outcomes measurements for this project, respect was given to The Institute for Healthcare Improvement's, (n.d.) recommendations for using a balanced set of measures, for efforts at improvement.

The outcome measures included

- number of falls.

The process measures, which drive the outcome, included

- percentage of patients assessed for fall risk on admission;
- percentage of patients reassessed for fall risk each shift;
- percentage of patients with a SCMID fall score > than 2;
 - percentage of patients with a SCHMID score > 2, and a care plan for fall prevention;
 - percentage of patients with a SCHMID score > 2, and a care plan for fall prevention, with fall risk interventions which are specific to their fall risks.

Ethical Considerations

Listed as the third provision of the Oregon Nurses Association (2015) code of ethics for nurses, a nurse promotes, protects and also advocates for the safety of patients. Helping to reduce falls promotes a culture of safety, helps to protect the patient from harm, and advocates patient safety. Additionally, provision six of the Oregon Nurses Association (2015) code of ethics for nurses states that a nurse, individually, and also collaboratively, works to ensure that conditions are conducive to safe care. By intervening to prevent falls, a nurse is assisting in establishing a culture of safe care.

Privacy was an ethical concern. Data collection from chart reviews was limited to the components of the charts for which the date of admission to ICU, SCHMID fall assessments, and fall care plans are found. Accordingly, patient's personal information was not shared, nor compromised.

Results

Initially, while auditing the charts to determine if a process improvement plan was warranted, all patients had a SCHMID fall risk assessment completed upon admission, and every shift, thereafter. This compliance continues to be 100%. The reasoning is most certainly due to the fact that the SCHMID fall risk assessment is incorporated into the assessment flowsheet, within the computer charting program of the EMR system in use. Perhaps that was a result of a previous process improvement plan to be sure that fall assessments were completed.

Remarkably, every patient with a SCHMID fall risk assessment >2 , also had a care plan for fall risk. This 100% compliance was evident in the initial determination of the need for a process improvement project, and has continued throughout the outcome measurements.

The need for process improvement was identified as being that the fall risk assessments did not always fully define the patient's fall risks, and that the fall risk care plans were not patient specific, and lacked multidisciplinary interventions. The care plans that were used were simply the standard EMR care plan for falls.

As a result of the teaching implemented for this project, fall risk assessments are increasingly more often to fully address the individualized patient fall risks. Additionally, more attention is being made to create care plans that are patient-specific to the individualized fall risk. Moreover, there have been no falls. The data collected from the outcome measurements are plotted into a run chart (See Appendix I).

There were no costs incurred in this process improvement project. The audits and data collection were done by this student, and the teaching was done during the beginning-of-shift huddles.

Summary

The nurses were receptive to the teaching that was provided to them, and this contributed to the success of the project. Follow-up chart audits showed gradual improvement in the process. Slight variations may have been related to the timing of chart audits: Perhaps the patient was a new admit, and the nurse had not yet had an opportunity to chart. However, and most importantly, no new falls occurred. The key finding is that educating the nurses proved to have a positive effect on the results, and promoted better patient outcomes, by preventing falls.

It is evident that teaching and chart auditing will need to continue, to be able to ascertain continued compliance to the teaching. As well, outcomes will still have to be measured, so as to ensure that the process improvement plan is, indeed, improving the process.

A clinical nurse leader (CNL) is an ideal clinical leader, to identify, plan, implement, teach, and evaluate process improvement plans. For this project, a CML would be a clinician, an educator, an outcomes manager, and a client advocate (see Appendix J).

Conclusions

Preventing a patient fall is challenging. Even with universal fall precautions widely utilized, patients still fall, and the statistics are astounding. Although some evidence disputes the effectiveness of universal fall precautions, there is ample evidence-based research that has been able to show a positive cause-and-effect that patient-specific fall risk interventions can prevent falls.

By applying evidence-based research to the assessing of fall risks and the care planning for the specific fall risks identified, improvement in the process of the assessing and care planning for fall risk was accomplished. Most importantly, there have been no falls, which is the ultimate goal of this project. Patient safety by reducing falls is being accomplished.

References

- Agency for Healthcare Research and Quality. (n.d.). Preventing falls in hospitals. Retrieved July 18, 2019, from U.S. Department of Health and Human Services website:
<https://www.ahrq.gov/professionals/systems/hospital/fallpxtoolkit/fallpctx3.html>
- American Association of Colleges of Nursing (AACN). (2013). Competencies and Curricular Expectations for Clinical Nurse Leader Education and Practice. Retrieved July 22, 2019, from American Association of Colleges of Nursing website:
<https://www.aacnnursing.org/News-Information/Position-Statements-White-Papers/CNL>
- Barker, A. L., Morello, R. T., Wolfe, R., Brand, C. A., Haines, T. P., Hill, K. D., ... Kamar, J. (2016). 6-PACK programme to decrease fall injuries in acute hospitals: cluster randomised controlled trial. *BMJ (Clinical Research Ed.)*, 352, h6781.
<https://doi.org/10.1136/bmj.h6781>
- Bennett, M. (2003). Implementing new clinical guidelines: The manager as agent of change. *Nursing Management*, 10(7), 20–23. <https://doi.org/10.7748/nm2003.11.10.7.20.c1952>
- Bouldin, E. L. D., Andresen, E. M., Dunton, N. E., Simon, M., Waters, T. M., Liu, M., ... Shorr, R. I. (2013). Falls among adult patients hospitalized in the United States: prevalence and trends. *Journal of Patient Safety*, 9(1), 13–17.
<https://doi.org/10.1097/PTS.0b013e3182699b64>
- Cameron, I. D., Gillespie, L. D., Robertson, M. C., Murray, G. R., Hill, K. D., Cumming, R. G., & Kerse, N. (2012). Interventions for preventing falls in older people in care facilities and hospitals. *Cochrane Database of Systematic Reviews*, 12, CD005465.
<https://doi.org/10.1002/14651858.CD005465.pub3>
- Center for Medicare and Medicaid Services. (2009). Hospital-Acquired Conditions. Retrieved

July 30, 2019, from Center for Medicare and Medicaid Services website:

https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/Hospital-Acquired_Conditions.html

Cooke, B. (1998). Participation, process and management: Lessons for development in the history of organization development. *Journal of International Development*, 10(1), 35–54.

[https://doi.org/10.1002/\(SICI\)1099-1328\(199801\)10:1<35::AID-JID434>3.0.CO;2-U](https://doi.org/10.1002/(SICI)1099-1328(199801)10:1<35::AID-JID434>3.0.CO;2-U)

Coussement, J., De Paepe, L., Schwendimann, R., Denhaerynck, K., Dejaeger, E., & Milisen, K.

(2008). Interventions for Preventing Falls in Acute- and Chronic-Care Hospitals: A Systematic Review and Meta-Analysis. *Journal of the American Geriatrics Society*, 56(1), 29–36. <https://doi.org/10.1111/j.1532-5415.2007.01508.x>

Currie, L. (2008). Fall and Injury Prevention. In R. G. Hughes (Ed.), *Patient safety and quality: An evidence-based handbook for nurses* (pp. 195–250). Rockville, MD: Agency for Healthcare Research and Quality (US).

Dartmouth-Hitchcock Medical Center. (n.d.). Clinical Microsystem Assessment Tool. Retrieved August 12, 2019, from Institute for Healthcare Improvement website:

<http://www.ihl.org/resources/Pages/Tools/ClinicalMicrosystemAssessmentTool.aspx>

Department of Health and Human Services, State Government of Victoria, A., Ariss, S., Smith,

T., Enderby, P., & Roots, A. (2018). An interdisciplinary approach to caring.

<https://doi.org/10.1186/1478-4491-11-19>

Edmonds, C. (2013). A Team Approach to Fall Prevention. Retrieved July 18, 2019, from Patient Safety and Quality Healthcare. website: <https://www.psqh.com/analysis/a-team-approach-to-fall-prevention/>

Fehlberg, E. A., Lucero, R. J., Weaver, M. T., McDaniel, A. M., Chandler, A. M., Richey, P. A.,

- ... Shorr, R. I. (2017). Impact of the CMS No-Pay Policy on Hospital-Acquired Fall Prevention Related Practice Patterns. *Innovation in Aging, 1*(3).
<https://doi.org/10.1093/geroni/igx036>
- Fields, J., Alturkistani, T., Kumar, N., Kanuri, A., Salem, D. N., Munn, S., & Blazey-Martin, D. (2015). Prevalence and cost of imaging in inpatient falls: The rising cost of falling. *ClinicoEconomics and Outcomes Research : CEOR, 7*, 281–286.
<https://doi.org/10.2147/CEOR.S80104>
- Gesme, D., & Wiseman, M. (2010). How to implement change in practice. *Journal of Oncology Practice, 6*(5), 257–259. <https://doi.org/10.1200/JOP.000089>
- Hader, R. (2013). The only constant is change. *Nursing Management (Springhouse), 44*(5), 6.
<https://doi.org/10.1097/01.NUMA.0000429006.47269.22>
- Haines, T. P., Bennell, K. L., Osborne, R. H., & Hill, K. D. (2004). Effectiveness of targeted falls prevention programme in subacute hospital setting: randomised controlled trial. *BMJ, 328*(7441), 676. <https://doi.org/10.1136/bmj.328.7441.676>
- Halfon, P., Egli, Y., Van Melle, G., & Vagnair, A. (2001). Risk of falls for hospitalized patients: A predictive model based on routinely available data. *Journal of Clinical Epidemiology, 54*(12), 1258–1266.
- Hitcho, E. B., Krauss, M. J., Birge, S., Claiborne Dunagan, W., Fischer, I., Johnson, S., ... Fraser, V. J. (2004). Characteristics and circumstances of falls in a hospital setting: a prospective analysis. *Journal of General Internal Medicine, 19*(7), 732–739.
<https://doi.org/10.1111/j.1525-1497.2004.30387.x>
- Hook, M. L., Devine, E. C., & Lang, N. M. (2008). Using a computerized fall risk assessment process to tailor interventions in acute care. In K. Henriksen, J. Battles, M. Keyes, & M.

Grady (Eds.), *Advances in Patient Safety: New Directions and Alternative Approaches (Vol. 1: Assessment)*. Rockville, MD: Agency for Healthcare Research and Quality.

Institute for Healthcare Improvement. (n.d.-a). Institute for Healthcare Improvement: Disclosure Toolkit and Disclosure Culture Assessment Tool. Retrieved August 14, 2019, from <http://www.ihl.org/resources/Pages/Tools/DisclosureToolkitandDisclosureCultureAssessmentTool.aspx>

Institute for Healthcare Improvement. (n.d.-b). Science of Improvement: Establishing Measures. Retrieved July 18, 2019, from Institute for Healthcare Improvement website: <http://www.ihl.org/resources/Pages/HowtoImprove/ScienceofImprovementEstablishingMeasures.aspx>

Joint Commission, T. (2015). *Sentinel Event Alert, Issue 55: Preventing falls and fall-related injuries in health care facilities*.

Krauss, M. J., Evanoff, B., Hitcho, E., Ngugi, K. E., Dunagan, W. C., Fischer, I., ... Fraser, V. J. (2005). A case-control study of patient, medication, and care-related risk factors for inpatient falls. *Journal of General Internal Medicine, 20*(2), 116–122. <https://doi.org/10.1111/j.1525-1497.2005.40171.x>

Madsen, D. (2016). Analysis: A Management Fashion Perspective. *International Journal of Business Research, 16*(1), 39–56. <https://doi.org/10.18374/IJBR-16-1.3i>

Martin, V. (2006). Learning to lead: part 2. *Nursing Management, 12*(10), 34–37. <https://doi.org/10.7748/nm2006.03.12.10.34.c2046>

Mitchell, G. (2013). Selecting the best theory to implement planned change. *Nursing Management, 20*(1), 32–37.

Morris, R., & O’Riordan, S. (2017). Prevention of falls in hospital. *Clinical Medicine (London,*

- England*), 17(4), 360–362. <https://doi.org/10.7861/clinmedicine.17-4-360>
- Oliver, D., Connelly, J. B., Victor, C. R., Shaw, F. E., Whitehead, A., Genc, Y., ... Gosney, M. A. (2007). Strategies to prevent falls and fractures in hospitals and care homes and effect of cognitive impairment: systematic review and meta-analyses. *BMJ (Clinical Research Ed.)*, 334(7584), 82. <https://doi.org/10.1136/bmj.39049.706493.55>
- Oliver, D., Healey, F., Haines, T. P., Physiotherapy Hons, B., & Cert Health Economics, G. (2010). Preventing Falls and Fall-Related Injuries in Hospitals. *Clinics of Geriatric Medicine*, 26, 645–692. <https://doi.org/10.1016/j.cger.2010.06.005>
- Oregon Nurses Association. (2015). Code of ethics for nurses with interpretive statements. *Oregon Nurse*, 9.
- Price, B. (2008). Strategies to help nurses cope with change in the healthcare setting. *Nursing Standard*, 22(48), 50–56. <https://doi.org/10.7748/ns2008.08.22.48.50.c6637>
- Quigley, P. (2015). We've made gains in preventing falls, but more work remains: It takes a team to make a difference in falls prevention. *American Nurse Today*, 10(7), 28.
- Quigley, P., & White, S. (2013). Hospital-based fall program measurement and improvement in high reliability organizations. *The Online Journal of Issues in Nursing*, 18(2).
- Ruckstuhl, M., Marchionda, E., & Salmons, J. (1991). Patient falls: An outcome indicator. *Journal of Nursing Care Quality*, 1, 25–29.
- Stenvall, M., Olofsson, B., Lundström, M., Englund, U., Borssén, B., Svensson, O., ... Gustafson, Y. (2007). A multidisciplinary, multifactorial intervention program reduces postoperative falls and injuries after femoral neck fracture. *Osteoporosis International*, 18(2), 167–175. <https://doi.org/10.1007/s00198-006-0226-7>
- The Joint Commission. (2013). The joint commission comprehensive accreditation and

certification manual. Retrieved July 18, 2019, from The Joint Commission website:

https://www.jointcommission.org/standards_information/edition.aspx

- Tinetti, M. E., Doucette, J. T., & Claus, E. B. (1995). The Contribution of Predisposing and Situational Risk Factors to Serious Fall Injuries. *Journal of the American Geriatrics Society*, 43(11), 1207–1213. <https://doi.org/10.1111/j.1532-5415.1995.tb07395.x>
- Toney-Butler, T. J., & Thayer, J. M. (2019). Nursing Process. In *StatPearls*. StatPearls Publishing.
- Van Wijngaarden, J. D. H., Scholten, G. R. M., & Van Wijk, K. P. (2012). Strategic analysis for health care organizations: the suitability of the SWOT-analysis. *Internal Journal of Health Planning and Management*, 27, 34–49. <https://doi.org/10.1002/hpm.1032>
- Von Renteln-Kruse, W., & Krause, T. (2007). Incidence of In-Hospital Falls in Geriatric Patients Before and After the Introduction of an Interdisciplinary Team-Based Fall-Prevention Intervention. *Journal of the American Geriatrics Society*, 55(12), 2068–2074. <https://doi.org/10.1111/j.1532-5415.2007.01424.x>

Appendix A

Statement of Non-Research Determination Form

<p style="text-align: center;">Title of Project:</p> <p style="text-align: center;">Improving Patient Safety by Reducing Falls</p> <p>Brief Description of Project:</p> <p>A) Aim Statement: To improve patient safety by reducing falls</p> <p>B) Description of Intervention: Intervention includes improving assessments of fall risk and developing multidisciplinary care plans.</p> <p>C) How Will This Intervention Change Practice? The intervention will improve patient safety by reducing the incidences of falls.</p> <p>D) Outcome Measurements: The outcome measure will aim for improvement of the assessments of fall risk, improving the development of multidisciplinary care plans, and ultimately decreasing the incidence of falls to zero.</p>
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Figure 1. Statement of non-research determination form

Appendix B

Evidence-Based Change of Practice Project Checklist

Project Title: Improving Assessments of Fall Risk and Developing Multidisciplinary Care Plans to Reduce Falls in the Intensive Care Unit (ICU)	YES	NO
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change.	X	
The specific aim is to improve performance on a specific service or	X	
The project is NOT designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT	X	
The project is conducted by staff where the project will take place and	X	
The project has NO funding from federal agencies or research-	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: <i>“This project was undertaken as an Evidence- based change of practice project at X</i>	X	

Figure 2. Evidence-based change of practice project checklist

Appendix C

Table 1

Evidence-Based Research Fall Intervention and Conclusion Evaluation Table

Author	Type of study	Evidence	Fall interventions listed in study	Conclusions
Barker et al. (2016)	Randomized control trial	Level 2	Fall alert sign Supervision with toileting Walking aids kept within reach Toileting schedule Low beds Bed and chair alarms	Positive changes in fall-prevention practices but no difference in fall rates
Cameron et al. (2012)	Systematic review and meta-analysis	Level 1	Education and knowledge Medication management Exercise Environmental and assistive technological	Multifactorial interventions can be effective in reducing hospital falls
Coussement et al. (2008)	Systematic review and meta-analysis	Level 1	Fall risk identification bracelets Bed alarms Modification of environment Vitamin D supplements Exercises for building of strength Medication review Assisting with transfers and toileting	No conclusive evidence that standard hospital fall prevention programs reduce falls

			Fall-risk assessments Fall care plan modification Education of nurses	
Haines, Bennell, Osborne,& Hill (2004)	Randomized control trial	Level 2	Fall risk card Information brochure Exercise program Education program Hip protectors	Falls were reduced by utilizing a multiple intervention fall prevention program
Krause et al. (2005)	Case-controlled study	Level 4	Frequent mobilization Toileting Minimize use of psychotropic medications	Falls can be reduced by mobilizing and toileting patients
Oliver et al. (2007)	Systematic review and meta-analysis	Level 1	Medication review Change the physical environment Fall risk care planning Fall risk assessments Environmental and assistive technological Education of patients, staff, and families Exercise Restraint removal	Evidence to supports that multifaceted fall interventions reduce the incidences of falls
Oliver et al., 2010	Systematic review and meta-analysis	Level 1	Non-slip flooring Good lighting Observation by staff	Multifaceted fall risk factors require multifactorial interventions

			<ul style="list-style-type: none"> Reducing threats to mobilization Use of appropriate signage Keep personal items close Use of appropriate furniture Use of safe footwear 	
Stenvall et al. (2006)	Randomized controlled trial	Level 2	<ul style="list-style-type: none"> Assessment and treatment fall risks Active prevention 	Prevention, detection and treatment of fall risk factors can prevent patient falls
Von Renteln-Kruse & Krause (2007)	Cohort study	Level 4	<ul style="list-style-type: none"> Fall risk assessments on admission Fall risk reassessments, after a fall Fall risk alerts Supervision and assistance with toileting Supervision and assistance with transfers Fall prevention information leaflet Family fall prevention counseling Appropriate use of glasses and hearing aids Appropriate use of footwear Appropriate use mobility devices Staff education 	Structured and multifactorial interventions reduced fall incidences

Appendix D

SWOT Analysis

<p style="text-align: center;">I N T E R N A L</p>	<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Potential to improve fall risk assessments • Potential to improve care-planning for fall risks • Potential to reduce falls 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Staff time required to implement teaching • Possibility that nurses will view as an additional burden
<p style="text-align: center;">E X T E R N A L</p>	<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Improve the assessments for fall risks • Improve the care-planning of patients with a risk of falls • Decrease falls • Increase patient safety 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Potential of lack of compliance of nurses, that could lead to complications • Limited time for teaching • Possibility of no decrease in falls

Figure 3. SWOT analysis of falls reduction project

Appendix E

Process Improvement Map

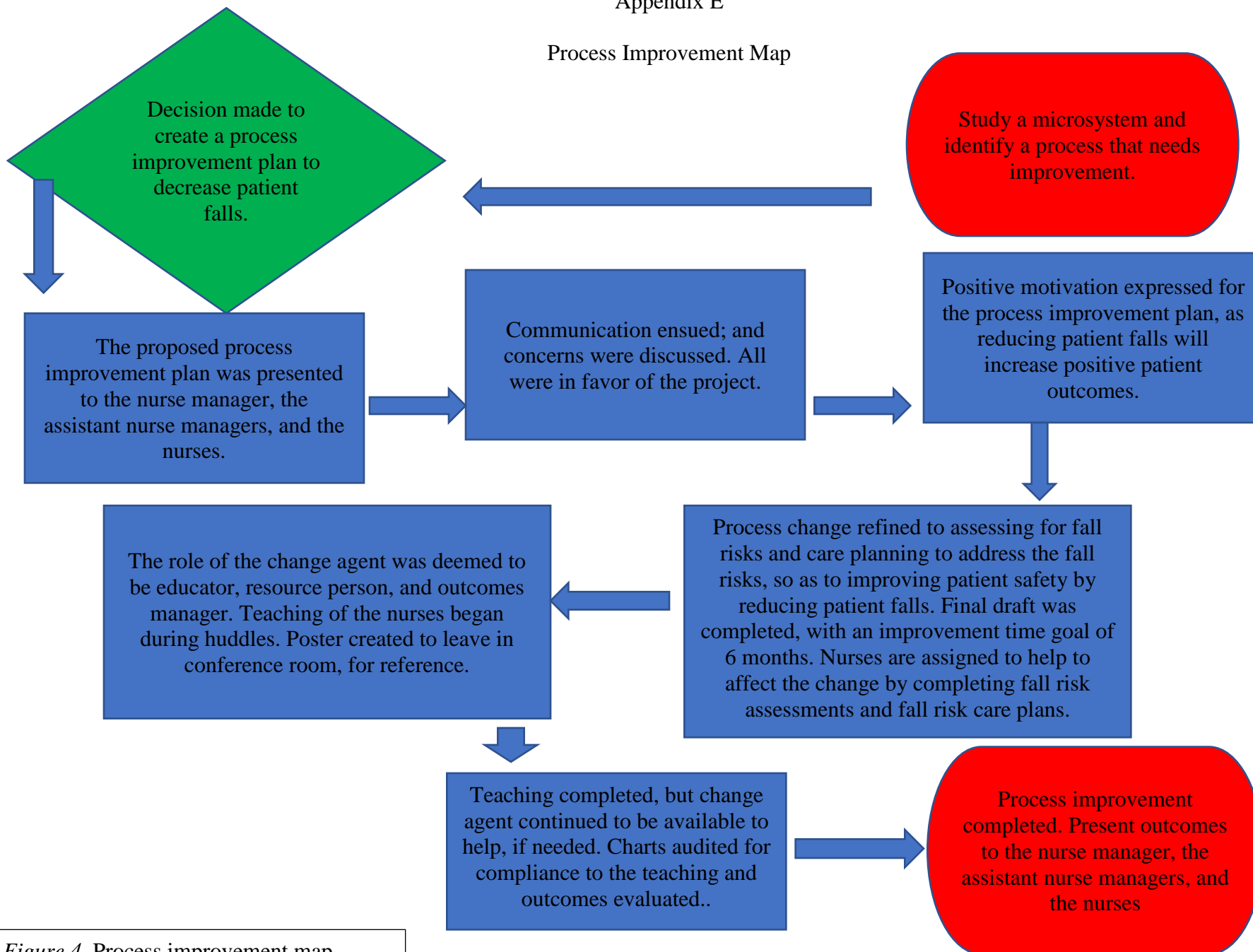


Figure 4. Process improvement map

Appendix F

Lippitt's Change Theory and the Nursing Process

As Compared to the Nursing Process	Phases of Lippitt's Change Theory	
Assessment (Phases 1-3)	Phase 1	Diagnose the problem
	Phase 2	Assess the motivation and capacity for change Assess the change agent's motivation and
	Phase 3	resources
Planning (Phases 4-5)	Phase 4	Select a progressive change objective
	Phase 5	Choose the appropriate role of the change agent
Implementation (Phase 6)	Phase 6	Maintaining the change
Evaluation (Phase 7)	Phase 7	Terminate the helping relationship

Figure 5. Lippitt's change theory as it relates to the nursing process

Appendix G

SCHMID Risk Assessment Tool

Score	Mobility
0	Ambulates with no gait disturbance
1	Ambulates or transfers with assistive devices or assistance
1	Ambulates with unstable gait and no assistance
0	Unable to ambulate or transfer
	Mentation
0	Alert, oriented X 3
1	Periodic confusion or disorientation X 1 or 2
1	Confusion at times
0	Comatose or unresponsive
	Elimination
0	Independent in elimination
1	Independent, but with frequency or diarrhea
1	Needs assistance with toileting
1	Incontinence
	Prior Fall History
1	Yes, before admission
2	Yes, this admission
0	No
1	Unknown
	Current Medications
1	Anticonvulsants, sedatives, psychotropics, hypnotics, new antihypertensives, opioids, diuretics and/or laxatives
	Total Score

Figure 5. SCHMID fall risk assessment tool (Agency for Healthcare Research and Quality, n.d.)

Appendix H

Gantt Chart of Project Progression

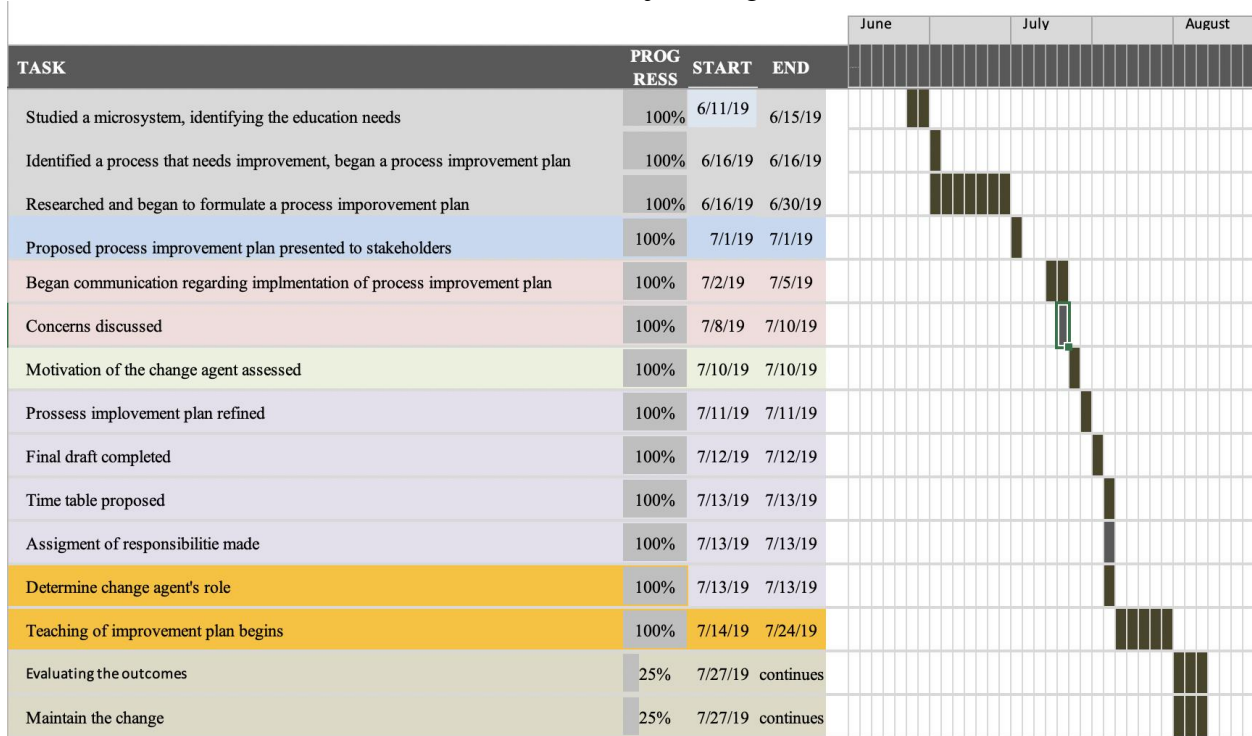


Figure 7. Gantt chart of project progression

Appendix I

Fall Reduction by way of Fall Assessments and Fall Risk Care Planning Results

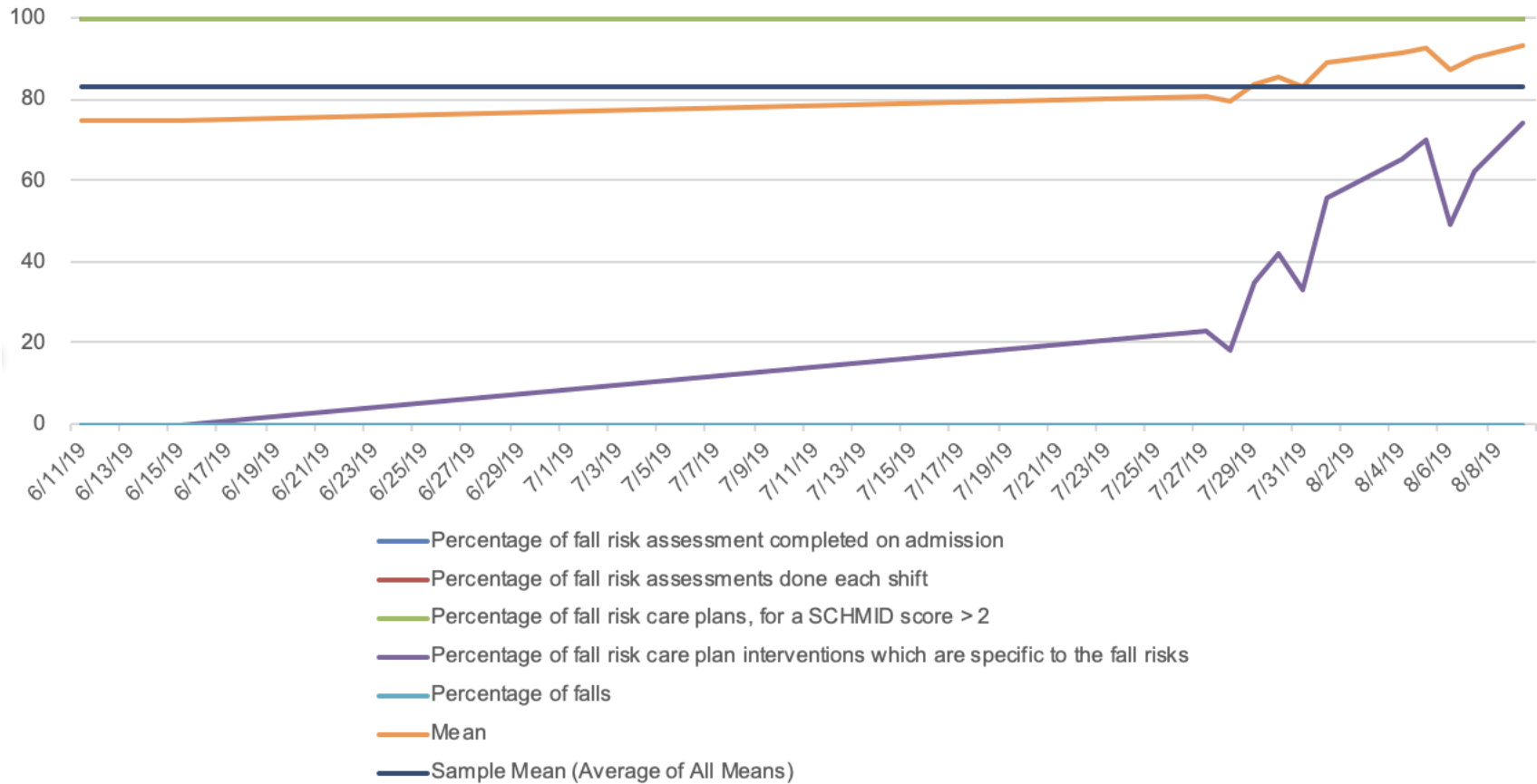


Figure 8. Fall reduction by way of fall assessments and fall risk care planning results run chart

Appendix J

Clinical Nurse Leader (CNL) Competencies Addressed

Clinician

The CNL serves as a clinician when observing a microsystem and identifying a process improving need. Through the instilled clinical knowledge of not only the patient care of the system, but also the work flow of the system, a CNL is in a key position to be able to determine when a need for improvement exists, and to incorporate evidence-based best practice to promote better patient outcomes.

Educator

The CNL acts as an educator by presenting staff with best-practice research pertinent to the proposed change of practice. Also, by teaching the nurses the importance of completing fall risk assessments, and care planning specifically for the fall risks.

Outcome Manager

The CNL, as a Masters prepared nurse, has the knowledge base to know how to review literature, synthesize complex data and to create process improvement plans.

Patient Advocate

The CNL advocates for the patient by enhancing patient safety. Reducing falls promotes better patient outcomes

(American Association of Colleges of Nursing (AACN), 2013)

