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The Effectiveness of Nurse-Driven Early Mobility Protocol

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Submitted in partial fulfillment of the Requirements for the degree of
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Seton Hall University
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Dedication

I would like to dedicate this project and DNP degree in memory of my father Victor, who was a medical doctor and first inspired me to become a nurse and motivated me further to advance my degree. In my heart, a memory will always be kept, of a man who was a healer to thousands of people he served. I would like to dedicate the success of this three-year long journey to my husband Vitaliy, my children Daniel and Ethan, and my mother, Ludmila. Their continued love, household support, and inspiration were essential to the successful accomplishment of this journey.
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I would like to acknowledge the following individuals, without their guidance, wisdom, and support this project would not have been completed. There is no particular order in which the people are mentioned, and if I have neglected to mention someone, I truly apologize in advance.

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First of all, I would like to thank Maimonides Hospital Administration including Tom Smith Chief Nursing Officer at Maimonides Medical Center. Their approval of the implementation of the project was only the beginning. I am grateful for all the guidance to my advisor and mentor Dorothy Jean Graham-Hannah, Vice President of Nursing for active scholarly mentorship and leadership support. She has been influential in assisting me and guiding me along my DNP trek.

I would like to extend additional thanks to Dr. Michael Friedman, PT, MBA and Dr. Erik Hoyer, MD from John Hopkins Medicine for their work and permission to use the Johns Hopkins Highest Level of Mobility (JS-HLM) Scale.

A special thank to Rene Barro, Director of Rehabilitation Services and his team for their endless support. I could never accomplish this project without the help of the unit Nurse Manager Luis Medina, RN and Assistant Nurse Manager, Marie Dixon-Brown for helping out
with the project implementation and evaluation. I need to give a special thank you to Kelly Reilly Senior Director of Nursing Education, Innovation, and Research for her continues guidance, expertise, and support.

I would like to take this opportunity to thank the Institutional Review Board at Maimonides Hospital for approving my project.

In conclusion, I need to thank the most important people in my life, my husband Vitaliy and our beautiful children. Without their support, love, and understanding, I may never have accomplished my dream of earning the DNP degree.
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EXECUTIVE SUMMARY

Purpose: The purpose of this quality initiative is to introduce the nurse driven evidence-based practice change related to patient mobility in the hospital setting with the aim to improve nurse knowledge, attitude, and behavior on a medical-surgical unit. The early mobility program emphasized importance on mobilizing adult patient during acute care hospitalization and provided the nurse with the necessary decision protocol as evidenced by improved nurse knowledge and patient mobility activities.

Significance of Project: A significant aspect of patient care in a hospital setting is patient mobility. Implementation of mobility level decision/algorithm with nursing interventions can promote physical activity and enhance nurse expertise in mobilizing hospitalized older adult patients. For many older people, hospitalization is often accompanied by a decline in physical function and full mobility not always restored by the time of discharge or by the next period of a hospital stay. The mobilization of hospitalized adult patients is an often overlooked aspect of nursing care.

Methods: The project was implemented large independent teaching hospital. The practice change was grounded on the Johns Hopkins Highest Level of Mobility (JH-HLM) Scale that provided the nurse with the necessary decision algorithm to provide prompt and efficient decisions and interventions to increase emphasis on mobilizing adult patients during acute care hospitalization. A two-hour educational training program was developed and implemented by Advance Practice Nurse (APN) based on the literature and the clinical experience. The training program focused on the JH-HLM Scale, adverse consequences of immobility in hospital settings, patient assessments about mobility, the benefits of mobilizing patients, safe body mechanic techniques and the role of the nurse and the physical therapist with patient mobilization. The
implementation of the program included administration of the web-based pre and posted surveys as well as a program evaluation.

**Project Outcomes:** Nursing staff and leadership well acknowledged the project. Results indicated a ten-point improvement in knowledge scores from the pre and post surveys, and a positive program evaluation from the nursing staff. The anticipated effect will be improvement in the knowledge, attitudes, and behaviors of the nursing staff in the improved patient mobility.

**Clinical Relevance:** This evidence-based practice is a crucial component of delivering higher quality patient care. Applicable clinical management of patient mobility and improvements in nurse knowledge, attitude, and behavior as evidenced by improved patient mobility activities can positively impact patient outcomes and reduce the number of complications associated with immobility of the patients.
Background

Introduction

The DNP quality improvement project is devised from the American Academy of Nursing (AAN) Choosing Wisely campaign unique to the elements of “don’t let older adults lay in bed or only get up to a chair during their hospital stay” to achieve a practice change (American Academy of Nursing [AAN], 2014). One of the most common health issues as people age is functional status decline. Patients in acute care settings are at a greater risk for immobility. Bed-rest is a hazard of hospitalization that may predispose an already vulnerable population to an even more significant loss of physical function. For many older people, admission to a hospital is often accompanied by a decline in physical function and full mobility not always restored by the time of discharge or by the next period of a hospital stay. Unwarranted bed-rest during a hospital stay has been associated with pressure ulcers, falls with injuries, and iatrogenic infections (Boltz, Resnick, Capezuti, Shuluk, & Secic, 2012). There is an apparent connection between adverse consequences of immobilization concerning non-elective re-hospitalizations and an increase in the length of hospital stay (LOS) (Boltz et al., 2012).

Clinical Issue

The mobilization of hospitalized adult patients is an often-overlooked aspect of nursing care. Frequently, nurses are relying on a physician to attribute direct responsibility of an alternative discipline even though it's solely within the nursing domain of practice (Kneafsey, Clifford, & Greenfield, 2013). Studies have found that nurses are not consistently ambulating patients, but are often rather waiting for the physician order or referring it to a Physical Therapist (PT) (Drolet et al., 2013). Often, the PT is the first member of the health care team to begin mobilizing the patient. Even though negative consequences of immobility are well known to
medical-surgical nurses, gaps in the nurses' knowledge, expertise, and ownership of care process may lead to a patient's decline in ability to perform activities of daily living (ADL) after recovery from an acute illness.

**Potential Harms**

- Functional decline (ADL), impaired mobility
- Falls and falls with injuries, Delirium, Pressure ulcer, Hospital-acquired infections
- Organizational outcomes: longer hospital stay (LOS), higher 30-day readmission rate
- Hospital patient and family satisfaction with the hospital stay

**Contributing Factors**

- Ambulation regularly missed in the provision of nursing care
- Often, the Physical Therapist is the first member of the healthcare team to begin mobilizing the patient
- There is little knowledge about nursing decisions on whether to ambulate, how they ambulate, and when they ambulate older hospitalized patients. Lack of knowledge and training
- Lack of a systematic mobilization assessment algorithm and EVB protocol
- Staff attitude, time, valuing and priority of mobilization
- Lack of interprofessional team collaboration
Definition of Terms

**Best Practices**: Methodologies supported by evidence that produces desired results (Tomey, 2009).

**Evidence-based practice**: The use of research in clinical decision making (Brower, 2017).

**Teach-back methodology**: The way to check understanding by asking the nurse to state in their own words what they need to know about a particular topic (Centrella-Nigro & Alexander, 2017).

**Length of Stay (LOS)**: the average number of days that patients spend in hospital (Stein, Misselwitz, Hamann, Kolodziej, Reinges & Uhl, 2016).

**Simulation activities**: is an experience designed to help nurses to develop competence and conviction through a combination of modeling and instructional elements (Dennis, Furness, Duggan & Critchett, 2017).

**Safe patient handling**: use of mechanical equipment and various safety procedures to lift and move patients to avoid manual exertion and reduce the risk of injury in healthcare workers (Bonomi, Brooks, Chapman, Garrison & White, 2017).

**Survey Monkey**: online survey software that helps to create and run professional online surveys.

**Hoyer Lift device**: this device allows a patient to be lifted and transferred from the hospital bed with a minimum physical effort.

**IMOVE**: nurse driven early mobility algorithm grounded on the Johns Hopkins Highest Level of Mobility (JH-HLM) Scale.
Project Description and Purpose

This is a DNP quality improvement project aimed to implement practice change in the acute care settings. The goal of this study is to identify and target perceived barriers to mobilizing hospitalized adult patients by med/surgical nurses and grounded on AAN's Choosing Wisely campaign unique to the elements of "don't let older adults lay in bed or only get up to a chair during their hospital stay." (American Academy of Nursing [AAN], 2014). The program was designed to address practice change and to investigate the effectiveness of structured education to impact nurse knowledge to provide prompt and efficient decisions aligned with evidence-based interventions. This project was supported by the Chief Nursing Officer (CNO) and Vice President (VPN) who are vastly invested in quality improvement and professional development in the organization.

The initial planning phase started with the pre-implementation early-mobility survey to identify gaps in knowledge, attitude, and behavior delivered via Survey Monkey platform. The survey data analyses uncovered baseline barriers to patient mobility, opportunities to the practice change and improved early mobility strategies. Once the baseline has been established, it was followed by structured educational sessions grounded on evidence-based nurse-driven mobility protocol. An Advance Practice Nurse (APN) and expert on early mobility assumed the role to educate study participants (pilot unit nurses) via power-point educational sessions. The nurse education was conducted in the classroom environment with the power point presentation, technique demonstration, and teach-back methodology.

Also, the PT interdisciplinary team expertise and collaboration were employed to deliver safe patient handling and body mechanic skills. Additional education objectives included mobility protocol: assessment, plan of care, nurse-driven early mobility algorithm and
collaboration with the interdisciplinary team, based on gaps in practices and pre-implementation
Survey Monkey. The ongoing bedside daily coaching sessions supported the implementation
process and unit huddles, assure day-to-day practice change.

*Intended Audience*

The project was implemented in a medical pilot unit at a large academic medical center
located in one of the boroughs in New York City. An advanced practice nurse (APN) with
diverse experience in clinical, performance improvement, educational and administrative settings
assumed the role of project leader. The APN was involved from the beginning of this project
through gap analysis, implementation, and evaluation.

The content of this training program was designed to meet the educational needs of the
nursing staff at the pilot unit based on information provided by the nursing leadership team. This
DNP Quality Initiative workforce demographics were also taken into consideration. The
demographics for the nurses at the participating pilot unit consisted of 86% had obtained or
pursuing bachelors of nursing degree, and 14% of the nurses are holding a master’s in nursing
degree. The age demographic at the site was somewhat younger, with the average age in 2017 is
40 years old. This is lower than the national age demographic that was reported by the American
Nurses Association in 2014 with the median age of 50 for the nursing workforce (American
Nurses Association, 2014). Nursing leadership team describe the nurses at the participating pilot
unit as being highly receptive to professional development activities. The educational sessions
we guided by the characteristics, level of knowledge, and generational variations in nursing staff
by the organizational priorities.

*Goals and Objectives*
Aim: The ultimate purpose of this initiative is to introduce nurse driven evidence-based practice change as evident by improved nurse knowledge, attitude and behavior.

Objectives:

- The *first* aim of this performance improvement initiative is to investigate the early mobility barriers and gaps in practice.
- The *second* objective of this performance improvement initiative is to investigate the effectiveness of structured education to impact nurse knowledge to provide prompt and efficient decisions aligned with evidence-based interventions.
- The *third* objective of this performance improvement initiative is to investigate the effectiveness of nurse-driven early mobility protocol to impact behaviors and attitudes in mobilizing adult patients during acute care hospitalization.

*Significance of Project to Nursing*

The necessity to increase knowledge and change the nursing practice concerning early mobility is a key role for the advanced practice nurses. Literature provides evidence of improved outcomes with early mobility, but changes associated with patient mobilization in nursing practice present challenges. Development of an ambulation program using the IMOVE algorithm to educate nurses can positively impact nurses’ knowledge related to the dangers of immobility and benefits of mobility can create positive patient outcomes through increased mobility (Fisher et al., 2011). Nurse protect, promote, and optimize patients’ health and abilities. Part of the nurses’ job is to prevent injuries and illnesses, facilitate healing through diagnosis, treatment, and advocacy in the care of individuals, families, groups and communities (American Nurses Association, 2017). Patient mobilization is part of health promotion in nursing that is used to transform patients by directly impacting their health and improving their healing. The
educational system using the IMOVE algorithm will provide nurses with information to improve the health of their patients. Development, implementation, and evaluation of evidence-based early patient mobility programs supports nursing science and contributes to advanced nursing practice.

**Literature Review**

A comprehensive search of English-language literature regarding adult inpatients in acute care hospital settings was conducted to reveal quantitative empirical studies. Literature search engines used included CINAHL, EBSCOhost, Science Direct, Cochrane, and Medline Plus databases. Published data from the past ten years have demonstrated poor outcomes in various patient cohorts corresponding with a lack of awareness regarding best practices on patient mobility. Even though there is decisive evidence on the importance of patient mobility, clinical practices have not changed considerably.

Prolonged bed rest in hospitalized patients leads to functional decline, impaired mobility, and the likelihood of longer hospital stay. All of these factors reflect the need for nursing care. Findings from Zisberg’s study imply that patients whose function deteriorates throughout hospitalization have a higher need for additional contact with professional nursing care staff, and consequently, report greater satisfaction with specific aspects of nursing care (Zisberg et al., 2011). The mobilization of hospitalized adult patients is an often omitted element of nursing care. Why? Drolet and colleagues concluded that there is a gap in knowledge "about how nurses make judgments regarding whether to ambulate, how they ambulate, and when they ambulate hospitalized adult patients" (Drolet et al., 2013, p. 198). Often, nurses are relying on a physician to link primary responsibility of an alternative healthcare discipline even though it’s entirely within the nursing domain of practice. "The nurse plays a pivotal role in providing
direct care activities, comprising those related to activities of daily living (ADL) and physical activities" (Boltz, Resnick, Capezuti, Shuluk, & Secic, 2012, p. 273).

Kneafsey, Clifford and Greenfield (2013), reflected a ground theory of the nursing team engagement in the process of promoting and sustaining the early mobility of hospitalized adult patients. It helped to have a clear understanding how frontline nursing team members perceived their duties in relation to psychotherapists with thought the hospital policy on patient handling. The researchers conducted semi-structural interviews within three clinical settings and thirty-nine rehabilitation staff. Through the rigorous analysis of data, it was found that the nursing team viewed their work as “care to keep safe” by reacting, rather than proactively focusing on rehabilitation goals. The authors indicate that it’s vital role in conceptualizing nurse-led initiatives allow the nursing team to carry an aggressive role in prioritizing early mobility among hospitalized adult patients.

The national guideline clearinghouse published a standard-of-practice protocol to optimize physical functioning, which minimizes the decline in ADL function (Agency for Healthcare Research and Quality [AHRQ], 2017). The main recommendations comprise embedding a comprehensive functional assessment along with increasing strategies to maximize functional status and to prevent decline (AHRQ, 2017). There are reliable results from the reviewed literature regarding the effect of structured mobility programs in the hospitalized adult population. Research strongly recommends adopting an evidence-based mobility protocol led by the frontline nursing team as a hallmark of best practices in the prevention of functional decline.

A literature review uncovered two quantitative studies that were supported by nurse-driven early mobility protocol and increased adult patient mobilization activities during acute care hospitalization, therefore improved adverse consequences of bed rest during a hospital stay.
Drolet et al. (2013) adopted an early mobility order set with an embedded assessment algorithm to formulate mobility pathway to be used by the bedside nurse within ICU and IMCU settings. The objective of this study was to investigate the effectiveness of a nurse-led mobility protocol to increase patient mobilization activities within first seventy-two hours of their hospital stay. The project implementation was supported by a multidisciplinary team including APN, nurse champions, physical therapist, pharmacist, and physician. The Droplet early mobility initiative has “enabled a nurse to drive the care for the patient within evidence-based protocol” (Drolet et al., 2013, p. 201). As a result, nurse-driven mobility protocol significantly increased the number of patients who ambulated during the episode of acute care (Drolet et al., 2013). Similar to our quality initiative, in the Droplet study team advanced the process of implementation with the Plan-Do-Check-Act framework. An important lesson learned was that to achieve a change in practice, the staff and leadership required an environment and culture that promoted learning and supported commitment to the best practice.

Messer, A., Comer, L., & Forst, S. (2015) conducted a well-grounded early mobility initiative that facilitated nurses with a clear understanding of negative consequences of immobility, therefore, influenced the change in patients’ early mobility during acute illness. The researchers of this study recognized the value of implementation of early mobility protocols aligned with increasing knowledge about the positive impact of mobility among intensive care team members. The researchers conducted a pretest-posttest analysis of an educational intervention for forty-one intensive care nurses to analyze changes in knowledge and performance. The posttest records revealed statistically significant influence on knowledge and attitude than pretest scores before the educational interventions (t= 2.02; P< .001). Overall, mobilization activities raised after educational interventions.
Padula et al. (2009), hired nurse-driven mobility protocol by guiding medical/surgical nurses to question orders for bed rest, walk patient 3-4 times per day, assist the patient to the chair for meals and bathroom related activities. Ambulation was viewed as a top priority and vital component of quality nursing care. The process of an implementation was led and implemented by an APN with expertise in gerontology. Padula and colleague’s placement of emphasis on mobilizing adult patients during acute care hospitalization had a significant implication on high-quality nursing care, impact on patients and organizational outcomes.

Although prolonged bed rest is a hazard of hospitalization, it has not been well examined outside of ICU settings. Pashikanti and Von (2012), conducted a thorough search of literature to analyze the efficacy of an early mobilization protocol in hospitalized medical-surgical inpatient population. The review of nine empirical studies revealed that an early mobilization protocol for the medical-surgical population improved outcomes for patients with deep vein thrombosis (DVT), reduced LOS in patients with pneumonia and preserved functional status from admission to discharge.

In a systematic review on effects of early mobilization in patients after cardiac surgery Santos, Ricci, Suster, Paisani and Chiavegato (2017), determined that there are multiple benefits including improved ventilation, ventilation/perfusion matching, improved muscle strength and functional capacity associated with early mobilization following surgery. There is a diversity of mobilization techniques that are used by the healthcare organizations, and there are various definitions for the period that is considered "early." The impact of early mobilization of patients also included decreased length of hospital stay (LOS), improvements in functional capacity and prevention of postoperative complications when compared with no mobility treatment.
The literature suggested that deconditioning during a hospital stay may be a significant predictor of re-hospitalization. The authors, researchers at the John Hopkins University, conducted a single-center retrospective cohort study of 9405 patients to determine an association between functional status at the time of hospital discharge and acute care readmission. The Functional Independence Measure (FIM) tool was employed to assess patients' functional status at the time of discharge and linked with 30-day readmission rate. The findings strongly supported an association with acute care readmission in adult patients with lower FIM score, while patients with low functional status showed statistically higher readmission rate. The authors indicate that reducing functional status deterioration during acute care stay may be a vital strategy to decreasing hospital 30-day readmission rate.

In an exploratory, the cross-sectional study by Sepulveda-Pasci, Soderman and Kertesz (2016) the nurses' perception of their knowledge and barriers to ambulating hospitalized patients in acute settings was investigated using self-reported surveys. This research study identified particular challenges that the nurses faced within acute inpatient setting that competed with their ability to ambulate patients on their unit. Nurse-to-patient ratio and acuity levels were the primary barriers that were identified. This study supported the necessity of patient-centered nursing educational programs embedded in evidence-based practice that will aim to improve knowledge, promote various skills and competencies, develop confidence and encourage teamwork in the practice of patient mobilization on the inpatient units.

Castro, Turcinovic, Platz and Law (2015), conducted quality improvement project employed the Plan-Do-Study-Act (PDSA) model to evaluate and overcome barriers in changing the mindset therefore attitude and behavior of SICU frontline staff approaching early patient mobilization receiving mechanical ventilation. The authors reported that changing the mindset
on early mobilization contributed to a decreased length of stay (LOS), deep vein thrombosis (DVT), skin breakdown and decreased the occurrence of ventilator-associated pneumonia. Also, the article authors indicated that multidimensional education, interdisciplinary collaboration, and leadership support played a vital role in removing staff bias against mobilizing patients.

In a cross-sectional study in two different hospitals completed by 120 nurses and physical and occupational therapists evaluation of nurses’ knowledge, attitudes, and behaviors about patient mobilization were measured using a specially developed survey (Hoyer, Brotman, Chan & Needham, 2015). Success in implementing patient mobility quality improvement processes requires evaluating providers’ knowledge, attitudes, and behaviors. The authors of this study utilize published guidelines, the prior literature on the subject, and provider meetings to develop the survey. This study identified barriers to mobilizing medical inpatients that lead to an implementation of the quality improvement projects for increasing early patient mobility. The survey questions created by Hoyer, Brotman, Chan and Needham were used as a guide for the survey utilized in this project.

Based on the literature review, there are is not a lot of evidence of the mobility protocols in the ICU/progressive care settings. Numerous healthcare organizations do not feel that early mobility is an issue in the medical/surgical patient population. This study was designed to close the gap in practice and introduce the patient mobility protocol that can be applied to various medical/surgical settings. Studies have found that nurses are not consistently ambulating patient and are often waiting for the physician order or leaving it up to the physical therapy services to provide this service. Literature has not showed any evidence about the way that nurses make decisions on whether or not to ambulate, how to ambulate, and when to ambulate patients. There is no concrete evidence in the literature about systematic mobilization assessment algorithm and
EVB protocol. Staff attitude, time, valuing and priority of mobilization, as well as, interprofessional team collaboration were not investigated or properly discussed in any prior research studies on early mobilization protocols. As a result early mobilization of patients is an often an overlooked aspect of nursing care.

The comprehensive examination of the literature revealed that nurse-driven mobility protocol significantly impacts mobilizing adult patients during acute care hospitalization, therefore may have a substantial implication on high-quality nursing care, impact on patients and organizational outcomes. The literature highlights that early mobilization during an acute care event strongly indicated and safe unless contraindicated. Although, prolong immobility during acute care illness has been associated with adverse consequences of hospitalization multiple researchers recognized it often takes a low priority in acute care settings. Several research studies highlighted success in implementing patient mobility quality improvement processes requiring evaluating providers’ knowledge, attitudes, and behaviors. Research emphasized the implementation of early mobility protocols aligned with increasing awareness about the positive impact of mobility, promoted various skills and competencies, developed confidence and encouraged team-work in the practice of patient mobilization on the inpatient units. However, literature review uncovered that there are is not a lot of evidence of the mobility protocols outside of the ICU/progressive care settings. Numerous healthcare organizations do not feel that early mobility is an issue in the medical/surgical patient population while focusing in ICU/progressive care settings. This study was designed to close the gap in practice and introduce the patient mobility protocol that can be applied to various medical/surgical settings. Several studies shared common challenges to implementing early mobilization of hospitalized adults including competing for care demands, relying on physical therapist evaluations, and
relies on patients’ physical symptoms such as pain, fatigue, and the gap in knowledge about how
nurses make decisions about the level of ambulation. Early mobilization supported by the nurse-
driven mobility protocol has been vital in mitigating negative consequences of adult patients
during acute care hospitalization. The literature reviews strongly supported that early
ambulation should be deemed as a priority and recognized as a fundamental aspect of quality
nursing care. It would be beneficial changing the mindset on early mobilization that contributed
to positive patient and organizational outcomes.

**Theoretical Framework**

Health promotion programs are produced maximum positive impact when they are
strengthened by a clear understanding of the investigated health performances and their context.
A theoretical framework provides a methodical perspective of identifying events and situation
that guides the research study. The theoretical framework lays out the groundwork of concepts
and explanations that define, explain or predict various events and situations through the
evidence of relationships between the variable in the research study. The early mobility practice
change was developed and implemented utilizing the driving forces of Kurt Lewin’s Theory of
Change (1947). Kurt Lewin is a theoretical pioneer of (Burnes, 2004) change. The Lewin
believes that driving forces facilitate transformation because they push followers in the desired
direction (Kritsonis, 2005). Change is crucial to success associated with the culture
transformation into action. The Kurt Lewin's change theory (see Figure 1) embraces three
different phases known as *unfreezing, moving and refreezing*. The *unfreezing* stage is about
assessing readiness and convincing people toward motivation for change (Burnes, 2004).

The *unfreezing stage* of the early mobility initiative was the driving force of team
empowerment and distinguished determinant of needed actions. Staff motivation was the key to
behavioral change in respect of attitude and positive culture transformation. This stage opened an opportunity to elevate awareness of gaps in practice through the communication to the frontline staff to embrace new ways of practice.

The second, *moving stage* was an implementation stage that shifted the project into a new paradigm. This is the stage that allowed to achieve new behaviors, values, and attitudes through educational sessions to address evidence-based guidelines for early mobility.

The last, *refreezing stage* occurred after the change has been implemented. According to Lewin, the final step in the platform of changing behavior is an integration of new values to stabilize the new equilibrium emerging from the modification by supporting both the driving and restraining forces (Kritsonis, 2005). The purpose of the refreezing stage for participating nursing team was well fitted to demonstrate the integration of an efficient nurse-led early mobility practice as they produced practice sustainability with new attitude and behavior. This was accomplished through the daily unit huddles, bedside coaching and interdisciplinary rounds. Additionally, the post-implementation survey was launched to assess change in knowledge, attitude, and behavior of early mobility at the end of the implementation phase. The sustainability of change was essential.
Figure 1. Lewin’s Change Theory Model approach for the implementation of an early mobility practice change (Burnes, 2004).

**Methodology**

**Risks and Benefits**

A project risk analysis was employed to identify potential compartments that may negatively impact the project success. Several priority risks have been uncovered which might cause internal or external obstructions toward successful project implementation.

The risks of the early mobility program implementation could have been health care provider associated and cost related. Building a new initiative such as early mobility program may be closely related to the budget cuts and insufficient staffing level threats. Therefore, it may have led to the multiple challenges that APN as a principal investigator was dealing with. APN
assumed the position of good steward of limited implementation support in charge of improving care quality. Another part of the problem which APN faced was resistance to change which gets people disengaged and created a blind spot in the project success. The teams' resistance to change is one of the most well-known threats to new initiative implementation. This element is linked, amongst other intentions, to the lack of engagement. There is a growing concern for the nurses' workload, due to inadequate staffing and lack of resources. Furthermore, personal staff safety is a greater risk when mobilizing hospitalized adult patients, including back and other injuries. Therefore, it was critical to engage rehabilitation team members to provide the nurse with the principals and methods of safe body mechanics into everyday practice of safe patient handling (Appendix G) and utilization of assisted mobile devices such as a rolling walker and a Hoyer Lift device for the patient mobilization.

The associations between appropriate staffing levels, staff satisfaction, positivity of patients and organizational outcomes are critical. As principal investigator on the project, APN was positioned to overcome barriers limiting the early mobility program implementation by building a robust strategic plan that was well aligned with organizational priorities and supported nurses in holding positive attitude, knowledge, and beliefs about interventions in providing the best care to hospitalized older adults.

Phase I- Needs Assessment

The original aim of this initiative was to identify and target perceived barriers to mobilizing hospitalized adult patients by medical/surgical nurses. The main force of this objective was to change the mindset of the frontline nurse toward early mobilization of an adult hospitalized adult patient. It provided an excellent opportunity to adopt an evidence-based early mobility protocol to enhance nurse knowledge and promote a prompt and efficient assessment,
intervention and evaluation of the hospitalized patient for risk of immobilization and functional decline. The project implementation opened an opportunity for an APN to deliver high-quality nurse education for an evidence-based early mobility protocol. Nursing education was comprised of safe body mechanics, collaboration with the interdisciplinary team, nurse-driven early mobility algorithm, improved nurse knowledge, attitudes, and behavior based on gaps in practices and gap analysis.

Phase II - Stakeholder Support

Implementation of this project required support on multiple levels. The project required assistance from nursing informatics to obtain access to electronic medical records, the application request for workflow and processing. Due to strong and positive work relations in the past, the nursing informatics department provided fast and easily accessible information in a short period of time. APN have excellent work relationship with MIS clinical program developer therefore making the process quick, effective and successful. The department was of tremendous help in implementation of this project. The physical therapy department was vital to this project in actively engaging and supporting educational sessions in safe body mechanics. The Information Technology department assisted in creation and implementation of the reports for the data evaluation that was collected during project at the hospital. Top level management executives such as the chief medical officer, vice president of nursing, director of nursing informatics, director of rehabilitation services and nursing managers all helped this project to move forward and ensured that all the necessary resources were available at earliest convenience.

Phase III - Initial Implementation

The initial planning phase started with the pre-implementation early-mobility survey to identify gaps in knowledge, attitude, and behavior delivered via Survey Monkey platform. The
survey data analyses uncovered baseline barriers to patient mobility, opportunities to the practice change and improved early mobility strategies. Once the baseline has been established, it was followed by structured educational sessions grounded on evidence-based nurse-driven mobility protocol. As an APN and expert on early mobility principal investigator assume the role to educate study participants (pilot unit nurses) via Power-Point educational sessions. Also, the PT interdisciplinary team expertizes and collaboration was employed to deliver safe patient handling and body mechanic techniques. Collaborative effort with the support from the Director of Rehabilitative services led to the active presence of the physical therapist during all educational sessions for the nursing participants. The safe patient handling techniques that were introduced during the educational portion of the project was supported using the teach-back methodology and simulation activities. Engagement of the nursing staff to demonstrate the effective patient safe handling techniques was supported through the observation and provision of necessary assistance and clarification on certain topics related to patient mobility. Additional education objectives included mobility protocol: assessment, plan of care, nurse-driven early mobility algorithm and collaboration with the interdisciplinary team, based on gaps in practices and pre-implementation Survey Monkey. The ongoing bedside coaching sessions supported the implementation process and unit huddles, assure day-to-day practice changes. The implementation was planned around best practice recommendations, interdisciplinary collaboration and ongoing group huddles to optimize project integration into daily practice. Through the active and positive support of the IT and MIS departments the project was grounded and successfully moved along according to the set objectives and deadlines. The algorithm used in the project was integrated into the electronic medical records by the IT department, which resulted in proper nursing documentation of the patient mobility according to the Johns Hopkins
Highest Level of Mobility Scale. As a result, the nurses were able to document the mobility activities and the APN was able to monitor and control across the implementation phase. Furthermore, the educational seminars strengthened nurse safe body mechanic practice skills grounded on the comprehensive guide to safe patient handling and movement. The practice change was built on the Johns Hopkins Highest Level of Mobility (JH-HLM) Scale to provide the nurse with the necessary decision algorithm, so he or she could make prompt and efficient decisions, and interventions focused on mobilizing adult patients during acute care hospitalization (Hoyer et al., 2015). Researchers developed JH-HLM Scale at Johns Hopkins University, permission for use was obtained (Appendix I). With the support of the Senior Nursing Leadership, the JH-HLM Scale was well aligned with organizational performance operations and will be adopted by the study unit. The JH-HLM Scale was integrated via the electronic medical records system to create an interface for nurses to document mobility assessment and interventions.

This quality/performance improvement project was approved by the Medical Center Institutional Review Board (IRB) (Appendix H) and was implemented on one of the pilot medical unit over twelve weeks. It was selected to implement and anchor changes to the early mobility protocol initiative. The pretest-posttest evaluation was conducted for 24 medical/surgical nurses to evaluate the impact of program implementation. The practice change was adopted through the Plan-Do-Study-Act (PDSA) quality improvement model. The PDSA cycle was shorthand for testing a change in the real work environment by planning, implementation, and evaluation to assess the change (Institute for Healthcare Improvement, 2017). This process of documentation of patient mobility activities by the nursing staff allowed the APN to study and evaluate the algorithm at work. For this project, APN administered a
dynamic Survey Monkey charts through a web-based platform to estimate the nurse knowledge, attitude and behavior improvement among the unit participants. The survey data analysis uncovered baseline barriers to patient mobility, opportunities to the practice change and improve early mobility strategies. Once the baseline has been established, it was followed by structured educational sessions grounded on evidence-based nurse-driven mobility protocol. The interventions were planned for all project participants including power point presentation, simulation activities, and teach back methodologies. The ongoing interdisciplinary team rounds, bedside coaching sessions supported the implementation process, and unit huddles assure day-to-day practice change. Patient mobility during the hospital stay is a hallmark of high quality care and preparedness for discharge and transition across the continuum of care. Therefore it was vital to include the patient mobility protocols during the interdisciplinary team rounds, to be discussed among nurses, physicians, and other healthcare professionals involved in patient’s care. The unit huddles were conducted by the APN in collaboration with unit nurse mangers on a daily basis to reinforce the importance and core early mobility protocols, as well as, answer any questions by the nursing staff to assist in the daily utilization of the protocols on the patients in the unit. The APN performed daily rounds and assisted the nurses at patients’ bedside through the bedside coaching sessions to reemphasize the patient mobility protocols, evaluate the effectiveness of nurse-patient interaction, and to improve the nurses’ expertise on the early mobility assessment.

Phase IV- Project Evaluations/ Outcomes

Results

Participants
There was a total of 22 participants in the entire study with 24 (52.20%) in the pre-intervention phase and 22 (47.80%) in the post-intervention phase. There was 100% response rate from all the participant in the pre and post survey. Two of the initial participants left the organization during the study that resulted in a reduction of the sample size by two participants.

**Pre-intervention sample.** As seen in Table 1, there were 21 (87.5%) participants that identified as female and 3 (12.5%) that identified as male. The majority of participants \( n = 18, 75.0\% \) had obtained a Bachelor’s of Nursing Degree followed by a \( n = 4, 16.7\% \) Master’s in Nursing Degree, 1 (4.2%) pursuing a Bachelor’s of Nursing Degree and 1 (4.2%) pursuing a Master’s in Nursing Degree. When asked how long they had been a nurse, most said \( n = 7, 29.2\% \) 10 years or more followed by \( n = 5, 20.8\% \) at least 1 year but less than 3 years, \( n = 4, 16.7\% \) less than one year, \( n = 4, 16.7\% \) at least 3 years but less than 5 years and \( n = 4, 16.7\% \) at least 5 years but less than 10 years. When asked if they held a certification, 6 (25.0%) said yes, and 18 (75.0%) said no. Finally, as to what shift they worked, 15 (54.2%) said Day (7am-7 pm) and 11 (45.8%) said Night (7 pm-7 am).

Table 1

*Demographics of the Pre-Intervention Sample*

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is your gender?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>21</td>
<td>87.5</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>What's the highest level of nursing degree you have received?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Nursing (BSN)</td>
<td>18</td>
<td>75.0</td>
</tr>
<tr>
<td>Currently pursuing BSN</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Master of Science in Nursing (MSN)</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>Currently pursuing MSN</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>About how many years have you been a nurse?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>At least one year but less than three years</td>
<td>5</td>
<td>20.8</td>
</tr>
<tr>
<td>At least three years but less than five years</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>At least five years but less than ten years</td>
<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>Ten years or more</td>
<td>7</td>
<td>29.2</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Do you hold ANCC (or any other nationally recognized) certification?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>25.0</td>
</tr>
<tr>
<td>No</td>
<td>18</td>
<td>75.0</td>
</tr>
</tbody>
</table>
### Table 2

**Demographics of the Post-Intervention Sample**

<table>
<thead>
<tr>
<th>Question</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is your gender?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>19</td>
<td>86.4</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>13.6</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>What's the highest level of nursing degree you have received?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor of Science in Nursing (BSN)</td>
<td>16</td>
<td>72.7</td>
</tr>
<tr>
<td>Currently pursuing BSN</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Master of Science in Nursing (MSN)</td>
<td>4</td>
<td>18.3</td>
</tr>
<tr>
<td>Currently pursuing MSN</td>
<td>1</td>
<td>4.5</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>About how many years have you been a nurse?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than one year</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>At least one year but less than three years</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td>At least three years but less than five years</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>At least five years but less than ten years</td>
<td>4</td>
<td>18.2</td>
</tr>
<tr>
<td>Ten years or more</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Do you hold ANCC (or any other nationally recognized) certification?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td>No</td>
<td>17</td>
<td>77.3</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>What shift do you work?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day (7am-7 pm)</td>
<td>12</td>
<td>54.5</td>
</tr>
<tr>
<td>Night (7pm- 7am)</td>
<td>10</td>
<td>45.5</td>
</tr>
</tbody>
</table>
Demographic data were analyzed using descriptive statistics. Descriptive statistics were used to describe the average age of the participants, their education level, and their current shift at work. Data collected from the surveys on mobility knowledge, attitude and behavior were analyzed using a t-test. T-test was used to assess the means of the pre and post-intervention groups on knowledge, attitudes and behaviors (Sheskin, 2011). The strength of the linear relationship between individual items and their subscales was calculated using the Pearson correlation coefficient. Upon the collection of responses on the Survey Monkey website, the data for pre and post-intervention were input in the Microsoft Excel 2013 program and analyzed for content (Appendix E).

The groups were independent, and the dependent variables were an interval, so three independent samples t-tests were run to see if there were significant differences between the means of each group (Sheskin, 2011). In Appendix E and F, there was the important difference between the pre-intervention patient mobility knowledge group (M=18) and the post intervention patient mobility knowledge group (M=21) which shows a possibly significant results of the study.

There was no possible significant difference between the pre-intervention attitude towards patient mobility (M=12.4) and post-intervention attitude toward patient mobility group (M=16.1). This makes the results suggested no significance in results. An important difference between pre-intervention behaviors towards patient mobility (M=9.92) and post-intervention behavior toward patient mobility group (M=16.23), which may suggest significant results.
Even though this project’s aim was to assess the nurse’s knowledge, attitude, and behaviors, the project uncovered relevant data to the nursing field. Accidental findings of the study revealed the fact that nursing team were well engaged into the flow sheet documentation and preliminary data on nurse compliance during the mobilization of the 811 patients on the unit. Data showed that 4,662 activities for the 811 patients on the unit was documented by the nurses during the implementation period.

**Summary**

The results of this study mean that the nurse driven evidence-based IMOVE intervention suggested significant impact on patient mobility knowledge, and behavior towards patient mobility by the nursing staff. Mobilizing patient is an important central nursing action that is often neglected in the high acuity environment. The core competencies for mobilizing patients are learned in nursing schools and then are translated into the clinical setting. There are barriers of performing these necessary skills that are characterized by complexity on many levels. Unfortunately, the importance of patient mobilization is often overlooked, and more attention is given to more complex procedures and technological interventions. There is a need for nurses to be aware of the barriers that prevent them from performing early mobility practices with patients. It is necessary to overcome obstacles such as knowledge, attitude and behavior in the implementation of an early in-patient mobilization program. The educational program was created based on the literature review and results of the needs assessment. The intervention consisted of a specialized two-hour training program that emphasizes the need for patient mobilization, discusses the role of nursing staff to patient mobilization, reviews organizational policy on patient mobilization identifies nursing practices regarding assessment and
documentation of mobilization of a patient and the role of physical and occupational therapists in patient mobilization.

Early patient mobilization program included a pre-survey and post-survey (Appendix C) which examined the nurses' knowledge, attitude, and behavior before and after the educational intervention. The program started with twenty-four participants, and during the program two of the participants left the organization. The mean of the pre survey was 40.32%, compared to the post survey mean score of 53.23%. This positive change in the mean score indicates that the nursing staff knowledge about early patient mobilization has increased as a result of this educational program.

Conclusions/Recommendations

Nurses are a part of the healthcare team that is responsible for mobilizing patients. To achieve this end result, nurses require updated knowledge related to the ambulating program in the healthcare organization. An effective leader for this project had to be energized, engaging and able to accomplish various results on any substantial scale. Personal influence, teamwork, communication, creation and management of performance expectations were a big part of this project’s success. It was up to the leader to make difficult decisions, establish performance standards, and improve themselves and their teams. One of the major components of leadership in this particular project was to provide clear vision, strategies, and goals to the nurses in the healthcare organization. The strengths of this project include strong support by evidence-based practice guidelines, strong partnership with frontline staff, leaders, and other stakeholders. One of the major strengths of this project was the current Nurses Improving Care for Healthsystem Elders (NICHE) exemplary designation that acknowledges healthcare organizations’ ongoing high level commitment to geriatric medical care in the provision of high quality system-wide
involvement and initiatives. Strong leadership commitment and support system played a vital role and was one of the strengths of this project due to the effectiveness and efficiency of all the parties involved. This project also faced some limitations such as a limited sample size due to the availability of a single medical unit for the implementation of the project and was a pilot unit at the time. One of the major challenges of this project was the insufficient staffing level. Due to the nursing shortages and the modern organizational healthcare challenges position the process of implementation to meet the staffing requirements for the project implementation was limited. Patient mobility requires sufficient staffing due to the nature of the physical aspects of the protocols. In addition, the health care demands of the organization and various ongoing current projects on numerous units of the facility require adopting the best practices and proper staffing.

During the implementation of the project, two of the staff nurses resigned from the organization creating a RN turnover and produced a negative impact on the sample size creating a project limitation. The sustainability of this project that is crucial to the organization can be possible through continued bedside coaching sessions, daily unit huddles, as well as, nurse managers being vested in the success of the unit and improved patient outcomes. Annual competency review through constant reinforcement and annual checks by the nurse managers can also ensure the sustainability and success of the project. Moving forward, the novice nurses on the unit have to receive proper education on the patient mobility protocols as part of the new hire orientation and be reevaluated as part of the annual performance appraisal to continue the sustainability of the project.

Advanced Nurse Leader plays an essential role in the complexity of healthcare demands. In order to be involved in transforming health care and advance the profession of nursing, it is vital that nurses develop, cultivate, and implement their leadership skills. Advanced Nursing
Practice (ANP) refers to the position of having a positive impact under the provisions of compassionate, safe, and affordable efficient health care. The nation’s revolutionized health care led to numerous changes in health policy, delivery and the need for nurse led transitional care in acute care settings. The transformational leadership style and authentic behavior paradigm were the primary leadership forces to be utilized in order to ensure that transformational change occurred. Transformational Advanced Nurse Leader guided the change by inspiring others through a shared mission, vision, and sense of commitment to pursuing positive outcomes. The followers’ engagement and empowerment in decision-making and risk-taking provoked professional and personal growth. All nurses that participated in this project knew what the project was trying to achieve. The values of the authentic leader were formed around the trust, respect, integrity and dialog between others. It affected not only the nursing workforce but promoted healthcare delivery and a positive work environment.

The mobilization of hospitalized adult patients is a neglected aspect of nursing care. Nurse protect, promote, and optimize patients’ health and abilities. The Advanced Practice Nurse (APN) plays a significant role in educating nursing staff about patient mobility, as well as, in development, implementation, and evaluation of a mobility protocol. Through knowledge exchange, APN is in the position to build mutual respect to promote a culture of open communication and evidence-based practice, leading to the effective implementation and sustainability of early mobility program APN lead.

This DNP quality improvement project was designed to implement practice change in the healthcare organization. The ultimate purpose of this initiative was to introduce nurse driven evidence-based practice change as evident by improved nurse knowledge, attitude and behavior. Patient mobilization is part of health promotion in nursing that is used to transform patients by
directly impacting their health and improving their healing. The purpose of this project was to identify key factors that facilitate ambulating patients on a regular basis and to develop and implement a training program for nursing staff on the topic of ambulation of patients in the hospital setting. A comprehensive needs assessment identified the necessity for a nurse-driven mobility protocol. Further research in the area of patient mobility is various health care settings is needed.
References


Appendices

Appendix A

Johns Hopkins Highest Level of Mobility (JH-HLM) Scale

Updated: July 3, 2014

Background - A decline in functional status is common during acute care hospitalization. This decline can be mitigated through hospital-based early activity and mobility programs. An important component of such programs is the systematic measurement of patient mobility. We developed the Johns Hopkins Highest Level of Mobility (JH-HLM) scale to serve as a regular assessment of patient mobility.

The JH-HLM scale was developed based on input from multiple disciplines (nursing, rehabilitation therapists, physicians, etc.) for the following uses:

- To record the mobility that a hospitalized patient actually does, not what they are capable of doing. Documentation is based on observation and should reflect the highest level of mobility the patient performed since the last documentation. We recommend JH-HLM documentation twice daily, during waking hours, on all patients.
- To standardize the description of patient mobility across multi-disciplinary providers (i.e. physicians, nurses, rehabilitation therapists, support staff).
- To set individual patient mobility goals during hospitalization (e.g. move up 1 step on the scale tomorrow).
- A performance measure for quality improvement projects aimed at promoting patient mobility.

Case examples of JH-HLM scoring:

A) A nurse assumes care of a patient at 8am, after which the patient ambulated to the bathroom (estimated at less than 25 feet) with assistance of walker and another staff member. Otherwise, the patient has been sitting in the chair watching TV since last assessment.
   Correct JH-HLM: 6

B) A patient takes 3 steps from the bed to the commode.
   Correct JH-HLM: 5 (if patient stood ≥1 minute during this mobilization), otherwise 4.
Appendix B

K5 Nurse Survey Letter

Dear K5 Nurse,

I will be inviting you to voluntarily complete an anonymous questionnaire entitled “Early Mobility: IMOVE.”

This performance improvement initiative is part of my capstone project in the Doctor of Nursing Practice (DNP) program at Seton Hall University. Your feedback will provide me better understand your perspective on our hospital's culture of patient mobility and determine opportunities for improvement. The purpose of this study is to identify and target perceived barriers to mobilizing hospitalized adult patients by med/surgical nurses and grounded on AAN's Choosing Wisely campaign unique to the elements of "don't let older adults lay in bed or only get up to a chair during their hospital stay."

The survey should take about 10-15 minutes or less to complete, and you can stop at any time if you change your mind about participating. Please answer each question to the best of your ability. Again, all responses to the survey are completely confidential and anonymous. Neither your name, email or the IP address of the computer you use to fill out the survey will be collected. Responses will be described as group data only. Completion of the survey provides implied consent that your responses may be included in the final results.

You may access the survey, from any computer or mobile device, at the following https://www.surveymonkey.com/r/Y3X6QQ9

I look forward to making improvements in the care we provide to our patients. Thank you in advance for your time and input in this important project.

Please feel free to contact me via email if you have any questions.

Sincerely,

Viktoriya
Appendix C

IMOVE Survey
Welcome to IMOVE Survey
Dear Nurse,
I am writing to invite you to voluntarily complete an anonymous questionnaire entitled "Early Mobility: IMOVE." Neither your name, email nor the IP address of the computer you use to fill out the survey will be collected.
This performance improvement initiative is part of my capstone project in the Doctor of Nursing Practice (DNP) program at Seton Hall University. Your feedback will provide me better understand your perspective on our hospital’s culture of patient mobility and identify opportunities for improvement.
The survey should take about 10-15 minutes to complete. Please answer each question to the best of your ability.
Thank you in advance for your participation in this important project.
I look forward to making improvements in the care we provide to our patients. Thank you for your help in this endeavor.

Please feel free to contact me via email if you have any questions.

Sincerely,
Viktoriya

Demographic

About how many years have you been a nurse?
Less than one year
At least one year but less than three years
At least three years but less than five years
At least five years but less than ten years
Ten years or more

What's the highest level of nursing degree you have received?
Associate of Science in Nursing
Bachelor of Science in Nursing (BSN)
Currently pursuing BSN
Master of Science in Nursing (MSN)
Currently pursuing MSN
Doctorate Nursing Degree Programs
Currently pursuing DNP

What is your gender?
Female
Male
What shift do you work?
Day (7am-7 pm)
Night (7pm-7 am)

Knowledge

Bed-rest during the hospital stay is important for maintaining functional ability in older adults
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

I have received training on how to safely mobilize * my inpatients
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

I understand which inpatients are appropriate to refer to physical therapy
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Unless there is a contraindication, I educate my inpatients to exercise or increase their physical activity while on my hospital unit
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Bed-rest can heighten the risk for hospital-associated complications such as falls, delirium and pressure ulcers
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Attitude

My inpatients often have contraindications to be mobilized
Strongly agree
Agree
Neutral
Disagree
Strongly disagree
**Increasing mobilization of my inpatients will be harmful to them**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**A physical therapist or occupational therapist should be the primary care provider to mobilize my inpatients**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**Increasing mobilization of my inpatients will be more work for nurses**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**Increasing mobilization of my inpatients will be more work for physical and occupational therapists**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**I strongly believe that my patients who are mobilized at least three times daily will have better outcomes**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**I do not feel confident in my ability to mobilize my inpatients**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

**My patients have time during their day to be mobilized at least three times daily**
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
I am not sure when it is safe to mobilize my inpatients

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Behaviors

We don’t have the proper equipment and/or furnishings to mobilize my inpatients

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The physical functioning of my inpatients is regularly discussed between the patient’s healthcare providers (nurses, physicians, physical therapists, occupational therapists)

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Nurse-to-patient staffing is adequate to mobilize inpatients on my unit(s)

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

My inpatients often have contraindications to be mobilized

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Unless there is a contraindication, my inpatients are mobilized at least once daily by nurses

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

My departmental leadership is very supportive of patient mobilization

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree
Increasing the frequency of mobilizing my inpatients increases my risk for injury
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Inpatients who can be mobilized usually require appropriate physician orders to do so
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

My inpatients are resistant to being mobilized
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Family members of my inpatients are frequently interested in helping mobilize them
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

I document the physical functioning status of my inpatient during my shift/work day
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

I do not have time to mobilize my inpatients during my shift/work day
Strongly agree
Agree
Neutral
Disagree
Strongly disagree
### Appendix D

**IMOVE Algorithm/SCM Flowsheet**

<table>
<thead>
<tr>
<th>I MOVE Medicine</th>
<th>Implementation Bundle</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ WALK &gt;10 STEPS</td>
<td>o Ambulate to bathroom</td>
</tr>
<tr>
<td>□ WALK &gt; 25 FEET</td>
<td>o Ambulate with assistive device</td>
</tr>
<tr>
<td>□ WALK &gt; 250 FEET</td>
<td>o Ambulate with assistance</td>
</tr>
<tr>
<td></td>
<td>o Ambulate independent</td>
</tr>
<tr>
<td></td>
<td>o Eat meals sitting in chair</td>
</tr>
<tr>
<td>□ STAND &gt;1 MIN</td>
<td>o OOB to chair, maximum 2 hours</td>
</tr>
<tr>
<td>□ TRANSFER TO CHAIR</td>
<td>o Personal care to greatest extent</td>
</tr>
<tr>
<td></td>
<td>o Assisted to toileting needs &amp; commode</td>
</tr>
<tr>
<td></td>
<td>o Active Range of Motion</td>
</tr>
<tr>
<td>□ LYING, RESPOND TO VERBAL STIMULI</td>
<td>o HOB &gt;30*</td>
</tr>
<tr>
<td>□ TURN SELF, SIDE TO SIDE</td>
<td>o Active Range of Motion</td>
</tr>
<tr>
<td>□ SIT AT EDGE OF BED</td>
<td>o Passive Range of Motion</td>
</tr>
<tr>
<td></td>
<td>o Hoyer Lift to Chair</td>
</tr>
<tr>
<td></td>
<td>o Bed activity: turning, hygiene, self-feeding</td>
</tr>
<tr>
<td></td>
<td>o Unable to participate in care</td>
</tr>
<tr>
<td></td>
<td>o Upright for meals</td>
</tr>
<tr>
<td></td>
<td>o Bed pan for toileting</td>
</tr>
<tr>
<td></td>
<td>▶ Turned &amp; Repositioned q 2 hours</td>
</tr>
</tbody>
</table>
## Appendix E

### Survey Data

<table>
<thead>
<tr>
<th>I. Knowledge</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bed-rest during the hospital stay is important for maintaining functional ability in older adults</td>
<td>24 17.0 70.8%</td>
<td>22 21.0 95.5%</td>
<td>25.79%</td>
</tr>
<tr>
<td>2. I have received training on how to safely mobilize my inpatients</td>
<td>24 15.0 62.5%</td>
<td>22 21.0 95.5%</td>
<td>34.52%</td>
</tr>
<tr>
<td>3. I understand which inpatients are appropriate to refer to physical therapy</td>
<td>24 19.0 79.2%</td>
<td>22 21.0 95.5%</td>
<td>17.06%</td>
</tr>
<tr>
<td>4. Unless there is a contraindication, I educate my inpatients to exercise or increase their physical activity while on my hospital unit</td>
<td>24 17.0 70.8%</td>
<td>22 20.0 90.9%</td>
<td>22.08%</td>
</tr>
<tr>
<td>5. Bed-rest can heighten the risk for hospital-associated complications such as falls, delirium and pressure ulcers</td>
<td>24 22.0 91.7%</td>
<td>22 22.0 100.0%</td>
<td>8.33%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>24 18.0 75.0%</td>
<td>22 21.0 95.5%</td>
<td>21.43%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. Attitude</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My inpatients often have contraindications to be mobilized</td>
<td>24 8.0 33.3%</td>
<td>22 17.0 77.3%</td>
<td>56.9%</td>
</tr>
<tr>
<td>2. Increasing mobilization of my inpatients will be harmful to them</td>
<td>24 22.0 91.7%</td>
<td>22 20.0 90.9%</td>
<td>-0.8%</td>
</tr>
<tr>
<td>3. A physical therapist or occupational therapist should be the primary care provider to mobilize my inpatients</td>
<td>24 6.0 25.0%</td>
<td>22 16.0 72.7%</td>
<td>65.6%</td>
</tr>
<tr>
<td>4. Increasing mobilization of my inpatients will be more work for nurses</td>
<td>24 7.0 29.2%</td>
<td>22 12.0 54.5%</td>
<td>46.5%</td>
</tr>
<tr>
<td>5. Increasing mobilization of my inpatients will be more work for physical and/or occupational therapists</td>
<td>24 5.0 20.8%</td>
<td>22 2.0 9.1%</td>
<td>-129.2%</td>
</tr>
<tr>
<td>6. I strongly believe that my patients who are mobilized at least three times daily will have better outcomes</td>
<td>24 22.0 91.7%</td>
<td>22 21.0 95.5%</td>
<td>4.0%</td>
</tr>
<tr>
<td>7. I do not feel confident in my ability to mobilize my inpatients</td>
<td>24 16.0 66.7%</td>
<td>22 19.0 86.4%</td>
<td>22.8%</td>
</tr>
<tr>
<td>8. My patients have time during their day to be mobilized at least three times daily</td>
<td>24 8.0 33.3%</td>
<td>22 17.0 77.3%</td>
<td>56.9%</td>
</tr>
<tr>
<td>9. I am not sure when it is safe to mobilize my inpatients</td>
<td>24 18.0 75.0%</td>
<td>22 21.0 95.5%</td>
<td>21.4%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>24 12.4 51.9%</td>
<td>22 16.1 73.2%</td>
<td>29.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. Behaviors</th>
<th>Pre-Implementation</th>
<th>Post-Implementation</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. We don’t have the proper equipment and/or furnishings to mobilize my inpatients</td>
<td>23 7.0 30.4%</td>
<td>22 15.0 68.2%</td>
<td>55.4%</td>
</tr>
<tr>
<td>2. The physical functioning of my inpatients is regularly discussed between the patient’s</td>
<td>23 15.0 65.2%</td>
<td>22 11.0 50.0%</td>
<td>-30.4%</td>
</tr>
<tr>
<td>3. Nurse-to-patient staffing is adequate to mobilize inpatients on my unit(s)</td>
<td>23 3.0 13.0%</td>
<td>22 10.0 45.5%</td>
<td>71.3%</td>
</tr>
<tr>
<td>4. My inpatients often have contraindications to be mobilized</td>
<td>23 7.0 30.4%</td>
<td>22 17.0 77.3%</td>
<td>60.6%</td>
</tr>
<tr>
<td>5. Unless there is a contraindication, my inpatients are mobilized at least once daily by nurses</td>
<td>23 14.0 60.9%</td>
<td>22 21.0 95.5%</td>
<td>36.2%</td>
</tr>
<tr>
<td>6. My departmental leadership is very supportive of patient mobilization</td>
<td>23 15.0 65.2%</td>
<td>22 20.0 90.9%</td>
<td>28.3%</td>
</tr>
<tr>
<td>7. Increasing the frequency of mobilizing my inpatients increases my risk for injury</td>
<td>23 6.0 26.1%</td>
<td>22 14.0 63.6%</td>
<td>59.0%</td>
</tr>
<tr>
<td>8. Inpatients who can be mobilized usually require appropriate physician orders to do so</td>
<td>23 7.0 30.4%</td>
<td>22 15.0 68.2%</td>
<td>55.4%</td>
</tr>
<tr>
<td>9. My inpatients are resistant to being mobilized</td>
<td>23 7.0 30.4%</td>
<td>22 16.0 72.7%</td>
<td>58.2%</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td>10</td>
<td>Family members of my inpatients are frequently interested to help mobilize them</td>
<td>23</td>
<td>11.0</td>
</tr>
<tr>
<td>11</td>
<td>I document the physical functioning status of my inpatient during * my shift/work day</td>
<td>23</td>
<td>18.0</td>
</tr>
<tr>
<td>12</td>
<td>I do not have time to mobilize my inpatients during my shift/work day</td>
<td>23</td>
<td>4.0</td>
</tr>
<tr>
<td>13</td>
<td>Unless there is a contraindication, I mobilize my patients at least once during my shift</td>
<td>23</td>
<td>15.0</td>
</tr>
</tbody>
</table>

*Average*  

|   | 23 | 9.9 | 43.1%| 22 | 16.2 | 73.8%| 41.5%|
Appendix F

Statistical Analysis

<table>
<thead>
<tr>
<th>Knowledge-Pre</th>
<th>Knowledge-Post</th>
<th>Attitude-Pre</th>
<th>Attitude-Post</th>
<th>Behaviors-Pre</th>
<th>Behaviors-Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.0</td>
<td>21</td>
<td>8</td>
<td>17</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>15.0</td>
<td>21</td>
<td>22</td>
<td>20</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>19.0</td>
<td>21</td>
<td>6</td>
<td>16</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>17.0</td>
<td>20</td>
<td>7</td>
<td>12</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>22.0</td>
<td>22</td>
<td>5</td>
<td>2</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
<td>21</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Mean: 18</td>
<td>Mean: 21</td>
<td>Mean: 8</td>
<td>Mean: 17</td>
<td>Mean: 7</td>
<td>Mean: 15</td>
</tr>
<tr>
<td>2.6457513111</td>
<td>0.707106781</td>
<td>12.444444444</td>
<td>16.1111111111</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>S.D: 2.65</td>
<td>S.D: 0.71</td>
<td>Mean: 12.4</td>
<td>Mean: 16</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.001983846</td>
<td>6.009252126</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>T-Test: -1.19214</td>
<td>p-value=.125290</td>
<td>Mean: 9.92</td>
<td>Mean 16.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.94067368</td>
<td>3.467800604</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.D: 4.94</td>
<td>S.D: 3.47</td>
<td>9.3947E-05</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T-Test: -3.76771, p=.00473</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix G

Transferring and Ambulating a General Rehab Patient (Cheat sheet)

by Rene Barro, PT, MS, MBA

A. Read patient’s chart and contact RN if patient is safe for ambulation.
B. Verify patient’s Name and DOB.

C. Preparation

1. Know your game plan.
   ➢ side of the bed, how far you are walking

2. Prepare your environment. Manipulate environment as needed.
   ➢ bed, chair, IV lines, tray, height of assistive devise

3. Prepare patient.
   ➢ eye glasses, socks

4. All required equipment is close by.
   ➢ extra gown, walker/cane, O2 tank

B. Transfers

1. Bed Mobility
   a. Scoot patient to side of bed
   b. Bend both knees
   c. Log roll patient to their side
   d. Move bottom portion of legs off the bed and assist elevating the patient’s top half.

2. Sit to Stand
   a. Let patient’s feet touch the ground.
   b. Place yourself in the proper guarding position. Block the knees.
      Ie: In front or on the side
   c. Patient scoots forward to edge of bed/chair.
   d. Bring strong leg back and weaker leg forward.
   e. Bend patient forward. “Nose over your toes.”
   f. Allow patient to push off from the bed/chair using his/her arms.

C. Ambulation

1. Place yourself in the proper guarding position. Always on the weak side.
2. Place the proper assistive device for use.
   a. Walker - in front of patient
   b. Cane/ Hemi walker - on the stronger side/ leg of the patient.

3. Ambulate
   a. **Rolling walker** – patient ambulates continuously without the need to stop in between steps.
   b. **Cane/ Hemi Walker** – 1\textsuperscript{st} Cane, 2\textsuperscript{nd} Weak leg, 3\textsuperscript{rd} Strong leg

**Assistance Key**

**Independent:** Patient is independent and does not require assistance.

**Modified Independent:** Patient is independent but requires assistive device or set-up of environment.

**Contact Guard (CG):** Patient requires hand placement of therapist during transfers or ambulation.

**Minimal Assistance (Min A):** Patient requires 25% assistance.

**Moderate Assistance (Mod A):** Patient requires 50% assistance.

**Maximum Assistance (Max A):** Patient requires 75% assistance.

**Dependent (Dep):** Patient requires 100% assistance.
DATE: January 6, 2017
TO: Viktoriya Fridman, MSN, ANP
CC: Viktoriya Fridman, MSN, ANP
RE: IRB EXEMPTION for 2016-12-01 - “The effectiveness of nurse-driven early mobility protocol to enhance nurse knowledge, attitudes and behaviors on a medical-surgical unit”

On January 5, 2017 the IRB Chair determined that the above-referenced project met the regulatory guidelines set forth in federal regulations 45 CFR 46.101 for exemption from IRB review.

The Chair and the Privacy Officer Designee reviewed the following documents:
- Johns Hopkins Highest Level of Mobility (JH-HLM) Scale.pdf (Miscellaneous)
- SurveyMonkey_Early Mobility_KS (1).pdf (Appendices)
- I MOVE Medicine_Capstone.pdf (Protocol)
- Choosing Wisely action plan (Miscellaneous)
- SurveyMonkey_IMOVE_P_Post (14).pdf (Data Collection Tool(s))
- SurveyMonkey_IMOVE_P_Post (14).pdf (Questionnaires or Survey(s))
- Viktoriya Fridman Resume.CV_10.06.2015.pdf (CV/Resume/BioSketch)
- Letter K5 Nurse.pdf (Appendices)
- Letter K5 Nurse.pdf (Recruitment Material)
- IRB Application (xForm)

If any of the investigators change or if there are any changes to your study’s research design that may result in the study requiring a higher level of review (e.g. Expedited or Full Board) the change must be reviewed and approved by the IRB before initiating any changes. If you have any questions about whether a modification would require IRB review and approval, please contact the IRB.

If at any time, after IRB approval of exempt research, one or more financial interests or leadership roles of any of the investigators (or their immediate family) on the study changes in any material way, the investigator must promptly notify the IRB.

Audits: If an external audit is conducted, the PI must promptly report the findings in writing to the IRB.

Reminders:
- Prior to initiating a research study at Maimonides Medical Center, the Office of Grants and Contracts must approve the research budget and the Legal Department must approve any contracts related to the research.
- Prior to initiating a study at Coney Island Hospital, please note that additional NYC Health and Hospitals Corporation (HHC) Approval is required for studies conducted at any of the HHC facilities. Please go to www.star.nychhs.org to begin the process.

If you have any questions, please feel free to contact Taylair Hagan, CIP, CHES at 718-283-7239 or THagan@maimonidesmed.org, or you may contact one of the IRB staff members listed on the IRB webpage
(http://intranet mmc/Main/IRB.aspx) or direct questions to the IRB e-mail box at IRB@maimonidesmed.org ("IRB" in global directory).

William Solomon, M.D.
Chairman, IRB
Appendix I

JH-HLM Scale at Johns Hopkins University request / permission (email)

From: Michael Friedman [mailto:mfried26@jhmi.edu]
To: Viktoriya Fridman
Cc: Erik Hoyer; Lynn Patten-McCoy
Subject: Re: Johns Hopkins Highest Level of Mobility (JH-HLM) Scale

Sounds like fantastic work. Consider this email permission for use. Good luck and keep us posted. We will update you as more information becomes available

Lynn if you could please add to the log

Michael Friedman

Sent from my iPhone

"Viktoriya Fridman" <Vfridman@maimonidesmed.org> wrote:

Good morning Dr. Friedman and Dr. Hoyer,
I am writing in reference of the Johns Hopkins Highest Level of Mobility (JH-HLM) Scale that was last update on July, 2014. I found the scale very innovative and easy to apply in the daily practice, especially for the geriatric/medical units. I would like to ask your permission to use the scale in our organization for the patient care purposes.

At the same time, I am pursuing my DNP from the Seton Hall University. I would like to ask your permission to use the scale for the capstone purposes.

Topic: "The effectiveness of nurse-driven early mobility protocol to enhance nurse knowledge, attitudes and behaviors on a medical-surgical unit".

Study design: comparative analysis pre-test post-test

Primary outcome: Improve Nurse Knowledge, attitudes, and behavior,

Study Location: Medical Unit / Pilot

Duration: 3 months

Implementation:
Educate participants via PPT and simulation sessions (safe body mechanics, mobility protocol: assessment, plan of care, collaboration with interdisciplinary team, IMOVE algorithm based on John Hopkins scale, mobility activities walking, ARM/PRM activities, and documentation )

I would be grateful for your feedback and recommendations. Look forward to hearing from you soon.

Thank you,

Viktoriya