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Fall 12-21-2017

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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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.

Acknowledgements

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.

I would like to acknowledge Dr. Mary Ellen Roberts, the DNP Program Director of Seton Hall University. Dr. Roberts has guided me through my doctoral academic career. She assisted me in creating and completing my project. Dr. Roberts is an excellent mentor, teacher and a true visionary in nursing education. It has been a blessing to have her as my guide while completing my coursework and as an exemplary role model in displaying the profoundness of being an advanced practice nurse.

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, expertize, 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 expertize 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, expertize, 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, Garrision & White, 2017).

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

Hoyer Lift device: this device allow 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 expertize 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 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 *w*ithin 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 team work 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, inter-

professional 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.
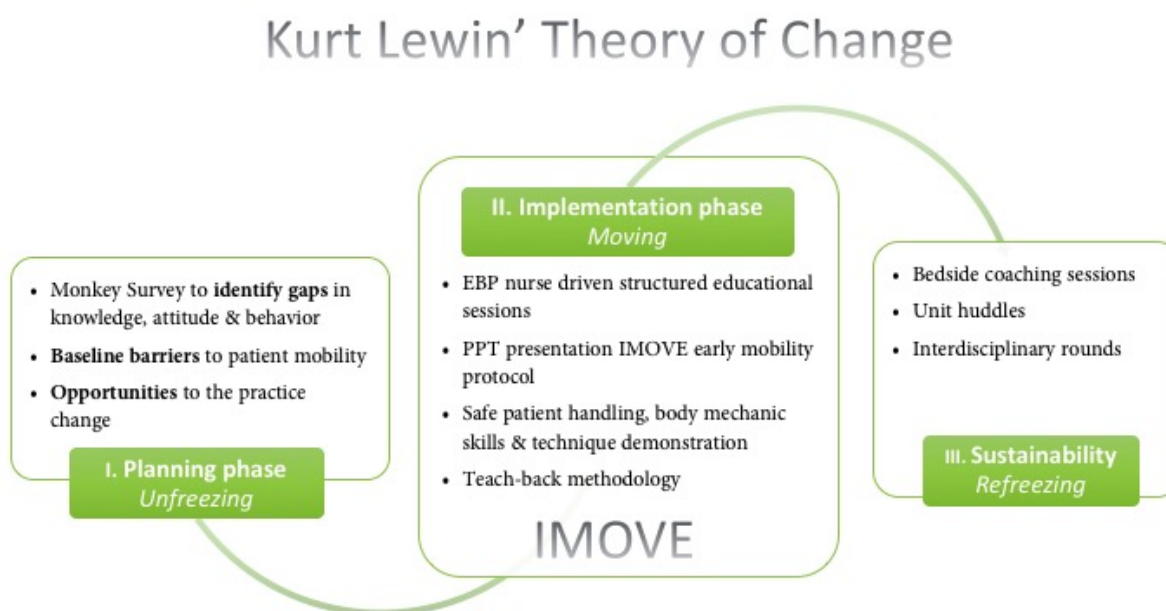
Figure 1. Lewin's Change Theory Model approach for the implementation of an early mobility

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

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

Total	24	100.0

What shift do you work?

Day (7am-7 pm)	13	54.2
Night (7pm- 7am)	11	45.8
Total	24	100.0

Table 2

Demographics of the Post-Intervention Sample

Question	Frequency	Percent
What is your gender?		
Female	19	86.4
Male	3	13.6
Total	22	100.0
What's the highest level of nursing degree you have received?		
Bachelor of Science in Nursing (BSN)	16	72.7
Currently pursuing BSN	1	4.5
Master of Science in Nursing (MSN)	4	18.3
Currently pursuing MSN	1	4.5
Total	22	100.0
About how many years have you been a nurse?		
Less than one year	4	18.2
At least one year but less than three years	5	22.7
At least three years but less than five years	4	18.2
At least five years but less than ten years	4	18.2
Ten years or more	5	22.7
Total	22	100.0
Do you hold ANCC (or any other nationally recognized) certification?		
Yes	5	22.7
No	17	77.3
Total	22	100.0
What shift do you work?		
Day (7am-7 pm)	12	54.5
Night (7pm- 7am)	10	45.5

Total	22	100.0

Data Analysis

  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.

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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.

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

			Score
		250+ FEET	8
	WALK	25+ FEET	7
		10+ STEPS	6
	STAND	>1 MINUTE	5
	CHAIR	TRANSFER to CHAIR	4
		SIT AT EDGE OF BED	3
	BED	TURN SELF/BED ACTIVITY*	2
		ONLY LYING	1

MOBILITY LEVEL

*Bed activity includes passive or active range of motion, movement of arms or legs, and bed exercises (e.g., cycle ergometry, neuromuscular electrical stimulation).

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- 7am)

<u>Knowledge</u>

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 in patients are appropriate to refer to physical therapy
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Unless there is a contraindication, I educate my in patients 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

<u>Attitude</u>
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 in patients 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 in patients during my shift/work day
Strongly agree
Agree
Neutral
Disagree
Strongly disagree

Appendix D

IMOVE Algorithm/SCM Flowsheet

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

Appendix E

Survey Data

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

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

		Pre-Implementation			Post-Implementation			
	III. Behaviors	**Total**	**RN (+)**	**(+)**	**Total**	**RN (+)**	**(+)**	**% Change**
1	We don't have the proper equipment and/or furnishings to mobilize my inpatients	23	7.0	30.4%	22	15.0	68.2%	55.4%
2	The physical functioning of my inpatients is regularly discussed between the patient's	23	15.0	65.2%	22	11.0	50.0%	-30.4%
3	Nurse-to-patient staffing is adequate to mobilize inpatients on my unit(s)	23	3.0	13.0%	22	10.0	45.5%	71.3%
4	My inpatients often have contraindications to be mobilized	23	7.0	30.4%	22	17.0	77.3%	60.6%
5	Unless there is a contraindication, my inpatients are mobilized at least once daily by nurses	23	14.0	60.9%	22	21.0	95.5%	36.2%
6	My departmental leadership is very supportive of patient mobilization	23	15.0	65.2%	22	20.0	90.9%	28.3%
7	Increasing the frequency of mobilizing my inpatients increases my risk for injury	23	6.0	26.1%	22	14.0	63.6%	59.0%
8	Inpatients who can be mobilized usually require appropriate physician orders to do so	23	7.0	30.4%	22	15.0	68.2%	55.4%
9	My inpatients are resistant to being mobilized	23	7.0	30.4%	22	16.0	72.7%	58.2%

10	Family members of my inpatients are frequently interested to help mobilize them	23	11.0	47.8%	22	17.0	77.3%	38.1%
11	I document the physical functioning status of my inpatient during * my shift/work day	23	18.0	78.3%	22	19.0	86.4%	9.4%
12	I do not have time to mobilize my inpatients during my shift/work day	23	4.0	17.4%	22	15.0	68.2%	74.5%
13	Unless there is a contraindication, I mobilize my patients at least once during my shift	23	15.0	65.2%	22	21.0	95.5%	31.7%
	Average	23	9.9	43.1%	22	16.2	73.8%	41.5%

Appendix F

Statistical Analysis

Knowledge-Pre	Knowledge-Post	Attitude-Pre	Attitude-Post	Behaviors-Pre	Behaviors-Post
17.0	21	8	17	7	15
15.0	21	22	20	15	11
19.0	21	6	16	3	10
17.0	20	7	12	7	17
22.0	22	5	2	14	21
		22	21	15	20
18	21	16	19	6	14
Mean: 18	Mean:21	8	17	7	15
2.645751311	0.707106781	18	21	7	16
S.D: 2.65	S.D: 0.71	12.44444444	16.11111111	11	17
		Mean: 12.4	Mean: 16	18	19
		7.001983846	6.009252126	4	15
T-Test: -2.44949, p=.019984		S.D: 7.00	S.D: 6.01	15	21
				9.923076923	16.23076923
		T-test: -1.19214 p-value= .125290		Mean: 9.92	Mean 16.23
				4.94067368	3.467800604
				S.D: 4.94	S.D:3.47
				9.3947E-05	
				T-test: -3.76771, p= .00473	

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.
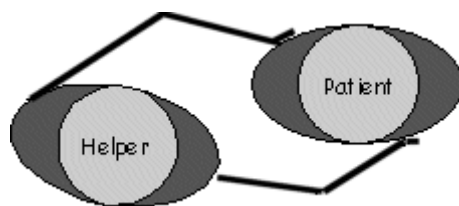
        d. Bring strong leg back and weaker leg forward.

        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 devise for use.

    a. Walker - in front of patient

    b. Cane/ Hemi walker - on the stronger side/ leg of the patient.

3. Ambulate

    a. <u>Rolling walker</u> – patient ambulates continuously without the need to stop in between steps.

    b. <u>Cane/ Hemi Walker</u> – 1st Cane, 2nd Weak leg, 3rd Strong leg

<u>Assistance Key</u>

<u>Independent</u>: Patient is independent and does not require assistance.

<u>Modified Independent</u>: Patient is independent but requires assistive device or set-up of environment.

<u>Contact Guard (CG)</u>: Patient requires hand placement of therapist during transfers or ambulation.

<u>Minimal Assistance (Min A):</u> Patient requires 25% assistance.

<u>Moderate Assistance (Mod A):</u> Patient requires 50% assistance.

<u>Maximum Assistance (Max A):</u> Patient requires 75% assistance.

<u>Dependent (Dep):</u> Patient requires 100% assistance.

Appendix H

Maimonides
Medical Center
IRB/Research Committee
4802 Tenth Avenue
Brooklyn, NY 11219

MEMORANDUM

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_K5 (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.nychhc.org to begin the process.

If you have any questions, please feel free to contact Taylar 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