

REDUCING HOSPITAL READMISSION RATES IN SKILLED-NURSING FACILITIES

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By

Bryce Montalbo

Committee:

Clementina Ceria-Ulep, Chairperson

Karen Tessier

Darlene Nakayama

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Dedication

This project is dedicated to my entire family who have supported all of my endeavors, through failures and successes. To my fiancée who brings joy in everything that we do together. To my friends and colleagues who have pushed me to be my best and who have been a source of support during this program. None of this is possible without all of you.

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Abstract

Hospital readmission and outpatient emergency department visits within 30 days of index admission to a skilled nursing facility (SNF) is a widespread issue caused by a combination of procedural, technical, and cultural contributors. The most commonly cited reasons for unplanned hospital readmissions are inadequate care planning at time of discharge, lack of coordination between hospital and SNF, and acute illness at the time of discharge. The purpose of this EBP project was to reduce hospital readmission rates and outpatient emergency department visits at Palolo Chinese Home (PCH) by implementing an evidence-based progressive mobility protocol during initial admission.

Methods

The clinical question was, “How can we reduce the number of patients who are readmitted to the hospital or sent to the emergency department shortly after being admitted to a skilled-nursing facility? This was an EBP project which utilized a progressive mobility protocol for all new residents admitted to PCH and staff education on progressive mobility benefits and guidelines. Retrospective data was collected after a 3-month implementation period, comparing the rates of hospital readmission and outpatient emergency department visits between pre- and post-intervention periods using audits of monthly quality assurance data from PCH and official data from The Centers for Medicare and Medicaid Services (CMS).

Results

The progressive mobility program reduced 30-day hospital readmissions from 13% in August 2019 to 4% in December 2019. The number of emergency department visits also decreased from four in the previous quarter to only one in the last quarter of 2019.

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Reducing Hospital Readmission Rates

Hospital readmission rates continue to be a major focus of national health care policy and are a key measure for the quality of patient care in the United States. Under current federal guidelines a readmission is defined as an admission to an acute hospital within 30 days of being discharged from the initial hospital stay (The Centers for Medicare and Medicaid Services, 2019). This 30-day readmission rate remains a benchmark in assessing quality of healthcare and determines the penalty fees associated with hospital readmission for facilities throughout the country.

An estimated 3.3 million patients were readmitted to an acute hospital within 30 days of discharge in 2011 with total costs exceeding \$41.3 billion. The unsatisfactory quality of care and large financial burden that these numbers place on the community was the reason for implementation of the Hospital Readmissions Reduction Program (HRRP), which penalized facilities for having higher-than-average hospital readmission rates under the Affordable Care Act (ACA). In 2015, data from the Center for Health Information and Analysis (CHIA) estimated that Medicare decreased the annual cost of hospital readmissions to a total of \$26 billion of which \$17 billion arose from preventable causes (Performance of the Massachusetts Health Care System Series: A Focus on Provider Quality, 2015).

Hospital readmissions after index admission to a skilled-nursing facility are caused by multiple factors. The most commonly cited reasons for preventable hospital readmissions include lack of coordination between hospital staff and SNF and inadequate care planning. On average, healthcare costs increase exponentially with age and the older adult population (over 65 years of age) constitutes 36 percent of all healthcare expenditures in the United States while making up

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only 16 percent of the total population. Therefore, it is essential to reduce the number of hospital readmissions in the SNF population as over 90 percent of residents are over the age of 65 and enrolled in the Medicare program, which spends billions of dollars annually for preventative hospital readmissions.

While there is ample evidence to suggest that hospital readmissions among those enrolled on Medicare are decreasing, the burden placed on individuals and the overall healthcare system remains a high priority and must be addressed by healthcare organizations across the healthcare spectrum.

Description of Problem or Need

Reducing the health and economic burdens associated with hospital readmissions at PCH were the primary triggers for this project. The aim was to reduce hospital readmission rates and outpatient emergency department visits to increase patient well-being and satisfaction; and to comply with updated, national Medicare guidelines, and to obtain full reimbursement for the facility to continue its operation. In 2018 CMS reported that PCH had an 11.8% hospital readmission rate which was 3% lower than the state average, however, PCH had an 11.1% rate of outpatient emergency department visits, which was slightly higher than the state average. More importantly, the readmission rates and outpatient emergency department visits still had to be decreased to meet new federal guidelines for full Medicare reimbursement, which are dependent on the patient outcomes listed above.

Starting in October 2019, Medicare changed to a patient-driven payment model (PDPM), which adjusted patient reimbursement at SNF facilities according to outcomes based on clinically relevant factors instead of the volume of services provided as it did in previous years.

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The change in payment structure provides incentive for facilities to base therapeutic regimens on striving to bring patients to their highest functional capacity rather than simply spending time with the patients and accomplishing very little. Early mobility care planning is essential in meeting these new PDPM requirements for clinically relevant services and increasing positive outcomes.

As a non-profit organization PCH requires adequate federal funding and community support to continue its operation. Adapting to the new payment model and meeting the PDPM thresholds maximizes the facility's reimbursement potential and fosters maximal healthcare outcomes. These factors increase the operating budget of the facility and generate the community support which keeps the facility open. PCH remains one of a few skilled-nursing facilities in the Palolo area and continuing its operation is essential to providing much needed healthcare services to the local community.

Review of Literature

Progressive mobility programs vary according to department and facility but each program maintains a core philosophy which increases mobility from bed rest to ambulation. Typical progressive mobility programs start with bed rest and passive range-of-motion with eventual advancement to upright sitting and active range-of-motion. The primary end-point of any progressive mobility protocol is to acquire fully independent or partially dependent ambulation.

Literature Search Strategy

The literature search strategy began with compiling terms related to the patient population, intervention, comparison group, outcomes, and timeframe (PICO(T) question) and

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utilized alternate key words and associated medical subject headings (MeSH) terms. Electronic databases used in compiling evidence included CINAHL, EBSCOhost, and PubMed. The key terms *mobility, progressive, skilled nursing facility, SNF, early mobilization, care planning, readmission, nursing home, nursing, occupational therapy, and emergency* were used in combination with the Boolean phrases AND and OR to narrow or widen the search results respectively. Using the advanced search options such as date of publication (restricted to the previous five years) and research type along with appropriate Boolean operators narrowed results to approximately 160 articles that were closely or directly related to the intended problem statement. After repeating the search strategy again and stratifying the remaining results according to Mosby's Quality and Strength of Evidence Tool (Appendix A), 10 articles were used in the final synthesis. A literature review and evaluation table was constructed which summarized the purpose and main findings of each article (Appendix B).

Patient Benefits of Progressive Mobility Protocols

Progressive mobility protocols have wide-ranging benefits from simply increasing ambulation capacity to reducing health-related complications in patients in a variety of medical settings. Hastings, Sloane, Morey, Pavin, and Hoenig (2014) performed a study on 92 older adults admitted to a Veteran's Administration hospital and found that early progressive mobilization resulted in 92% of patients being discharged to home while 74% of patients receiving usual care were discharged to home. These statistically significant findings were corroborated studies performed by Drolet et al. (2014) and Almkuist (2017), which evaluated the effects of progressive mobility protocols on patients in a 26-bed intensive care unit (ICU) and intermediate care unit (IMCU) facility. The studies found that in the three months prior to intervention 6.2% of ICU patients and 15.5% of IMCU patients were able to tolerate ambulation.

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During the six months following implementation 20.2% of ICU patients and 71.8% of IMCU patients were able to tolerate ambulation. Results from this study show that IMCU patients benefit greatly from early mobility protocols.

Furthermore, Hester et al. (2017) performed a systematic review of several progressive mobility studies with a total of 1,118 patients admitted to a neuro-ICU. The study found that the average ICU length-of-stay decreased from 6.5 days to 5.8 days after the introduction of a progressive mobility protocol and the average hospital length-of-stay decreased from 11.3 days to 8.6 days. Floyd, Craig, Topley, and Tullmann (2016) performed a study on 30 patients admitted to the ICU after cardiothoracic surgery and found that a progressive mobility protocol implemented immediately upon admission reduced hospital length of stay (LOS) from an average of 8.6 days to an average of 6.5 days and reduced the 30-day hospital readmission rate from three in the pre-intervention group to only one in the post-intervention group. Wood et al. (2014) conducted a study on 521 patients admitted to a general medical unit and found that unplanned hospital readmission rates decreased from 19.1% on average during the three-month pre-implementation period to 17.3% on average during the three-month post-implementation period. Research by Messer, Comer, and Forst (2015) showed that nursing education is a key component to progressive mobility protocols and that just one session of department-wide progressive mobility education and proper follow-up can have lasting effects on patient mobility and associated sequelae of prolonged bed rest.

Institutional Benefits of Progressive Mobility Protocols

The same systematic review performed by Hester et al. (2017) also found a substantial economic impact with a reduction of \$12 million in direct costs over two years after the implementation of a progressive mobility care plans. One of the greatest benefits of progressive

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mobility protocols are their ability to reduce the harmful effects of prolonged bed rest during hospitalization. A retrospective, longitudinal study performed by Spetz, Brown, and Aydin (2015) concluded that falls during hospitalization may cost up to \$30,000 per each individual case depending on the severity of the injury. Vashikanti and Von Ah (2012) found that 34 to 50% of elderly who are hospitalized experience a functional decline. They also found that a progressive mobility care plan decreased functional decline in elderly patients and reduced the number of falls accordingly. Low et al. (2015) conducted a systematic review on ways to change staff practices in nursing facilities, including implementation of a mobility champion, and found that patient outcomes improved with changes in staff practices. Results from these studies imply that a progressive mobility protocol implemented during admission can significantly reduce the economic burden of prolonged bed rest and lead to better patient outcomes.

Interventions

The evidence-based strategy chosen for this project includes a progressive mobility protocol, which is a program designed to initiate early movement with step-wise progression to full ambulation in patients admitted to medical units. The implemented program was adapted from various protocols found within the literature and modified to address the specific patient population at Palolo Chinese Home (Appendix C). The rationale for the selection of this strategy was that there was no single protocol that addressed all of the needs of the elderly population at PCH. Most studies were performed in acute care units and step-down care units while the units at PCH vary from intermediate care, including hospice, to short-term rehabilitation, and skilled-nursing units. The variation in unit and patient population types at PCH necessitated an adaptation to prior mobility protocols which typically focused on one type of patient population.

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The overall findings show that early implementation of progressive mobility protocols reduces the risk for health-related complications and re-hospitalization for patients in the acute care setting. The literature also provided evidence of the benefits of progressive mobility in various healthcare settings from intensive care unit to medical/surgical floors to intermediate care units. PCH currently has patients in both the SNF and IMCU settings, therefore, results from these studies apply directly to patients in the IMCU but will have to be translated to the patients residing in the SNF portion of the facility.

Theoretical/Conceptual Framework

The IOWA model of evidence-based practice was used as a guide for this proposal (Appendix D). The first step of the model is to identify problem-focused and knowledge-focused triggers. The trigger for this project is a current lack of progressive mobility care planning to reduce 30-day hospital readmissions which are preventable with patient mobilization. Next, the team determines whether these triggers are a priority for the organization. The intervention for this project not only promotes patient health and satisfaction at PCH but is also important in gaining full Medicare reimbursement due to upcoming changes in the payment schedule. Third, the PCH team is assembled including rehabilitation nurses, the director of nursing, physical therapists, and the DNP student. The review of literature provided enough evidence to move forward with a pilot program before full implementation of the project. The final step involves implementation of the progressive mobility program with subsequent dissemination of the results, positive or negative, to provide comprehensive information about best practices in this particular field. This model was specifically chosen because each step provides a feedback loop which ensures that researchers do not move beyond the bounds of their knowledge and compels them to revisit the previous step if adequate data or relevancy is not achieved.

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PICO Question/Statement of Problem to be Addressed

Population: newly admitted patients to PCH over the age of 65 with Medicare coverage who are willing to participate in study protocols

Intervention: implementation of a progressive mobility care plan to reduce 30-day hospital readmissions which are preventable with patient mobilization

Comparison: lack of progressive mobility care plan to reduce 30-day hospital readmissions which are preventable with patient mobilization

Outcomes: a 10% decrease in rates of 30-day hospital readmission which are preventable with patient mobilization

Purpose/Goals/Aims

The purpose of this evidence-based quality improvement project was to decrease hospital readmission rates among newly admitted patients to Palolo Chinese Home (PCH) by developing and implementing progressive mobility care plans upon admission to the facility. Inputs, outputs, and anticipated outcomes were assessed prior to project implantation using a Logic Model (Appendix E). The following project objectives were implemented utilizing a Gantt chart for project timeline management (Appendix F). The first objective was to assess current staff practices and evaluate the ability for nurses to complete tasks related to the project. A group of staff nurses, physical therapists, other healthcare leaders, and the DNP student identified core objectives and procedures, which was then approved by the CEO.

The next intervention included education of staff members by a core group of nurses and the DNP student regarding the benefits and implementation protocols of a progressive mobility

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program adapted to the SNF population. Many staff members were familiar with progressive mobility protocols and care planning within the hospital environment and others were new to the concept of early mobilization with newly admitted patients. Nurses, physical therapists, and restorative nurse aides were made aware that mobility protocols would be implemented throughout the day and not subject to certain time periods as was current practice prior to implementation of the project. The DNP student oversaw daily operations of the project through direct visual observation, continuous dialogue with appropriate staff members, and gathering of weekly feedback to address concerns as they arose.

Methods/Procedure

Project Design

This DNP project was an evidence-based quality improvement project designed to decrease overall incidence of 30-day hospital readmission rates by implementing evidence-based, progressive mobility protocols upon admission to Palolo Chinese Home. The project aimed to improve patient quality of life while at the facility and to comply with updated Medicare guidelines.

Human Subjects Consideration

The author has completed the Collaborative Institutional Training Initiative (CITI) Training for research ethics and compliance, and Health Insurance Portability and Accountability Act (HIPAA) Training on patient privacy protections. This DNP project involves making judgments about a program to improve or further develop program effectiveness and inform decisions about future programming within an organization (University of Hawaii Human Studies program, personal communication, August 2, 2018). All these tasks are related to quality

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improvement and will not produce generalizable knowledge. Thus, this project will not require IRB application and review.

Site/Sampling Plan

The DNP project took place at Palolo Chinese Home which is a skilled nursing facility near downtown Honolulu. The facility accommodates both short-term and long-term residents over the age of 65 and provides a wide range of services from respite care to physical therapy, speech therapy, and rehabilitation. The facility has a capacity of 130 beds including 113 nursing home beds and 17 care home beds. A multidisciplinary healthcare team is required to meet the ongoing demands of the services provided. The team includes charge nurses, staff and rehabilitation nurses, physical therapists, speech therapists, and management to oversee daily operations.

The accessible population was the residents currently residing at Palolo Chinese Home and those who were admitted after the implementation of the project and who were given individualized mobility care plans. This project utilized convenience sampling as all participating patients came from Palolo Chinese Home. Convenience sampling was used to contain costs of the project and to decrease the bureaucratic burden associated with random sampling. Besides, random sampling is not required for a DNP project that is similar to a quality improvement effort. The limitations of convenience sampling include sampling bias; the accessible population may not accurately reflect the target population, and sampling error; statistical analyses may be flawed due to biased sample selection. The sample size included all newly admitted residents in the facility who were capable and willing to participate. Inclusion criteria for the project were: over the age of 65, admitted to a skilled nursing facility for short-term or long-term care, and willingness to participate in study protocols. Exclusion criteria for the project were: severe

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mental limitations (dementia, psychosis) or physical limitations (multiple sclerosis, quadriplegia), which prevented a patient from physically participating in the prescribed activities.

Measurements

Baseline data collection of hospitalization and outpatient emergency department visits was collected using monthly audits of quality assurance measures provided by Palolo Chinese Home from October to December 2019. The monthly audits of quality assurance measures was again used in formal data collection during and after the completion of the project and for final comparative analysis.

Evaluation/Results

A comparative analysis of baseline data and post-implementation data using increasing or decreasing trends of hospitalization and outpatient ED visit was used in determining the effectiveness of project implementation. Secondary measures related to success of project implementation, although not reported here, included changes in rates of Medicare reimbursement coinciding with changes in rates of primary end-points. The rationale for using upward and downward trends in statistical data is that accurate assessment and analysis of post-intervention data needed to be directly related to baseline measurements.

The framework for program evaluation described by the IOWA model utilizes a dialogue between all variables of the project which include the concepts of purpose, ethics and morality, stakeholders, and credible evidence. Each of these concepts are in dialogue with each other and utilize higher-order concepts including identifying a problem, describing program-related goals,

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determining data collection methods, collecting and measuring data, and using data to make program changes.

A pilot program was instituted one week prior to the official start date of program implementation during the last week of September 2019 and feedback was garnered to address concerns and grievances before the initial data collection period. Feedback included minor changes to charting daily mobility activities and staff time requirements. After the one-week pilot program staff were notified to continue providing feedback and following protocols as instructed during the pilot period. Program implementation began on October 1, 2019 coinciding with initiation of the new federal PDPM guidelines for Medicare.

Post-implementation data was extracted from audits of PCH quality assurance reports. The goal of reducing both 30-day hospital readmissions and outpatient emergency department measures by 10% was met. Statistical data was analyzed on a monthly basis with a downward trend during each of the consecutive post-implementation months with a slight leveling off toward the middle of the implementation period. Statistical variance was expected due to variance in patient's health status upon admission and unexpected complications due to underlying disease processes during admission period. Overall, patients at PCH appeared to benefit from implementation of a progressive mobility program and staff were satisfied with program requirements and educational content.

Facilitators and Barriers

Staff members who were engaged in the project at much earlier dates in the process were integral to facilitating education and helping with early coordination of the project in collaboration with the author. EBP project educational opportunities were difficult to obtain and

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were completed during change of shift when nurses were most available. Nurses were not willing to come to a training session on their day off and thus it was necessary to train during the change of shift time period. Staff who were trained early in the process were able to supplement teaching to other nurses and nursing aides during change of shift which expedited the process and allowed for easy transition into project implementation.

Staff commitment to the project, or lack thereof, could have been a barrier to project implementation, therefore, compliance was emphasized and all participating staff members were asked to sign a form indicating that they understood the educational content and the importance of following project implementation guidelines (Appendix G). A post-educational survey was conducted at the same time with staff rating their educational experience and acknowledging that they would be able to implement project guidelines independently. The guidelines for project implementation were also printed on a handout and left at each nursing station as a reference for nurses and supporting staff to utilize at any time.

Resources

Prominent resources for the project included staff time commitments and financial resources. Project education timing had to consider that staff were still on the clock while education was being conducted. Therefore, it was essential to use as little time as possible while not compromising the quality of education. Engaged staff who expedited the educational process were an integral part of instituting this EBP project. Staff were also expected to chart their mobility interventions in the newly adopted EMR, which added to the time commitment required by each staff member throughout the shift. Similar to educational time commitments, the goal was to minimize time spent charting on project implementation while retaining integrity of the project as a whole. The marketing plan for the project included flyers left at each nursing station

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with available training dates. Consistent verbal and email contact with appropriate staff was also utilized prior to project implementation.

Cost of printouts including project references, educational content, and post-educational surveys were also considered. Financial costs remained relatively low and were fully covered by the author of the project. The facility was not asked to provide direct financial support for any of the materials used throughout the project. The facility was responsible for providing the location, patient population, EMR, and electronic data collection tools necessary to analyze relevant data and effectiveness of the intervention.

Discussion and Conclusion

This EBP project demonstrated a multi-disciplinary approach to implementing a progressive mobility program to reduce 30-day hospital readmissions and outpatient emergency department visits in the SNF setting. Compilation of relevant literature and a rigorous scientific process was utilized in developing practical and sustainable project goals. This project aimed to integrate the foundations of advanced nursing practice and the core competencies of a DNP student, including advanced leadership, literature research, scientific analysis, and advocacy in healthcare policy, to drive institutional change.

This project was successful in reducing 30-day hospital readmissions and outpatient emergency department visits by adopting and translating evidence-based progressive mobility programs intended for inpatient use to the SNF setting. The success of this project has implications for future outcomes in the SNF population, increased reimbursement from Medicare, and overall patient satisfaction.

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Sustaining Practice Change

Staff education regarding benefits and goals of progressive mobility in the SNF setting is essential to creating a culture of sustainable practice. A multi-dimensional and multi-disciplinary team is the foundation for significant change in the approach to reducing hospital readmissions and outpatient emergency department visits in this vulnerable population. Continuing education and ongoing communication to newly hired nursing and ancillary staff will be key in sustaining this practice change. Monthly data will continue to be collected and rates of hospital readmission and outpatient emergency department visits may continue to be compared to the implementation period.

Implications/Recommendations to DNP Essentials

There are eight DNP core competencies described in *The Essentials of Doctoral Education for Advanced Nursing Practice* (American Association of Colleges of Nursing, 2006). Table 1 describes the implications of this project and its relation to the core DNP competencies.

Table 1

Integration of DNP Essentials to project

Essential	Description	Association with EBP Project
I	Scientific Underpinnings for Practice	<ul style="list-style-type: none">• Integrated peer-reviewed research and scientific methods to progressive mobility in the SNF setting• Utilized scientific data analysis to trend statistical data and to corroborate research findings
II	Organizational and Systems Leadership for QI & Systems Thinking	<ul style="list-style-type: none">• Consulted with healthcare team for input and feedback• Organized nursing staff for education and implementation purposes
III	Clinical Scholarship and Analytical Methods for EBP	<ul style="list-style-type: none">• Analyzed prior research to serve as a foundation for project goals and aims

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		<ul style="list-style-type: none">• Synthesized literature search and analysis to optimize progressive mobility goals
IV	Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care	<ul style="list-style-type: none">• Utilized the facility's newly adopted EMR to capture daily activity records and to supplement project oversight
V	Health Care Policy for Advocacy in Health Care	<ul style="list-style-type: none">• Integrated facility's current policies with mobility activities of EBP project
VI	Interprofessional Collaboration for Improving Patient and Population Health Outcomes	<ul style="list-style-type: none">• Organized and communicated with multi-disciplinary healthcare team to improve project outcomes
VII	Clinical Prevention and Population Health for Improving the Nation's Health	<ul style="list-style-type: none">• Analyzed and synthesized monthly data to evaluate success of project
VIII	Advanced Nursing Practice	<ul style="list-style-type: none">• Implemented and evaluated EBP interventions by utilizing advanced leadership techniques including scientific methods of analysis, interprofessional collaboration, and patient-focused care

Limitations

A limitation of this project was that there was a small sample size prior to implementation and the post-implementation sample size could not be regulated due to the nature of convenience sampling mentioned in the Sampling Plan section of this paper. Small sample sizes result in data percentages that swing heavily in favor of the intervention or away from the intervention with just a few outliers. Another limitation of this project was the short implementation period. A longer post-implementation period may have resulted in greater sample sizes with reduced margins of error and the ability to capture data for a wider set of patient types and diagnoses at admission which affect final data results.

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Recommendations for Clinical Practice

Given the positive results of this DNP student-led project PCH as well as other skilled-nursing facilities may consider adopting a version of a progressive mobility program for all newly admitted patients. Nurses and management at other skilled nursing facilities must recognize the pertinent differences between their facility and PCH and make adjustments to the program to accommodate staffing ratios, time spent with patients, and availabilities of ancillary staff to coordinate and assist with mobility goals. Facilities must also evaluate the need for such interventions and whether hospital readmission and outpatient emergency department visits are a pressing issue in their current situation. Adaptation and implementation of patient-directed therapies such as progressive mobility programs offer much needed change to meet the needs of this patient population.

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Appendix A

Mosby's Level of Evidence Grading Tool

Level of Evidence	Description	Articles
I	Meta-analysis or systematic reviews	4
II	Experimental design/Randomized Control Trials (RCT)	0
III	Quasi-experimental design	4
IV	Case controlled, cohort/longitudinal studies	0
V	Correlation studies	1
VI	Descriptive including surveys, cross sectional design, developmental design and qualitative studies	0
VII	Authority opinion, expert committee report	0
Other	Review of literature, performance improvement (PI)	1

Mosby (2014).

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Appendix B

Literature Review, Design, and Level of Evidence

Authors	Purpose	Findings	Conclusion	Level of Evidence
Al-Omary, M.	To determine mortality and readmission rates following hospitalization for heart failure	Increased mortality and hospital readmission rates are correlated with poor medical management and inadequate physical activity upon discharge	Implementation of physical mobility protocols and proper management of medications would decrease hospital readmission rates in patients with heart failure	Level 1 (Meta-analysis)
Chung, J. E., Noh, E., & Gwak, H. S.	To evaluate the predictors of hospital readmission for patients discharged after initial heart failure hospitalization	Predictors for hospital readmission after index admission for heart failure include: improper physical activity, improper diet, and non-adherence to medication schedule	Care must be taken in the outpatient setting to maximize physical activity, maintain proper weight and nutritional goals, and to promote patient compliance	Level 3 (Quasi-experimental)
Drolet, A.; DeJuilio, P.; Harkless, S.; Henricks, S.; Kamin, E.; Leddy, E.; Lloyd, J.; Waters, C.; Williams, S.	To determine the feasibility of a progressive mobility protocol to increase ambulation in the intensive care and intermediate care settings	Implementation of a progressive mobility protocol lead to greater increases in ambulation and overall patient well-being in the ICU and IMCU settings	Early implementation of progressive mobility protocols is vital to patient well-being and physical activity tolerance during admission	Level 3 (Quasi-experimental)
Fisher, S.; Goodwin, J.; Protas, E; Kuo,	To determine the effects of mobility on	Early mobilization of older adults	Early implementation of progressive	Level 5 (Correlation Study)

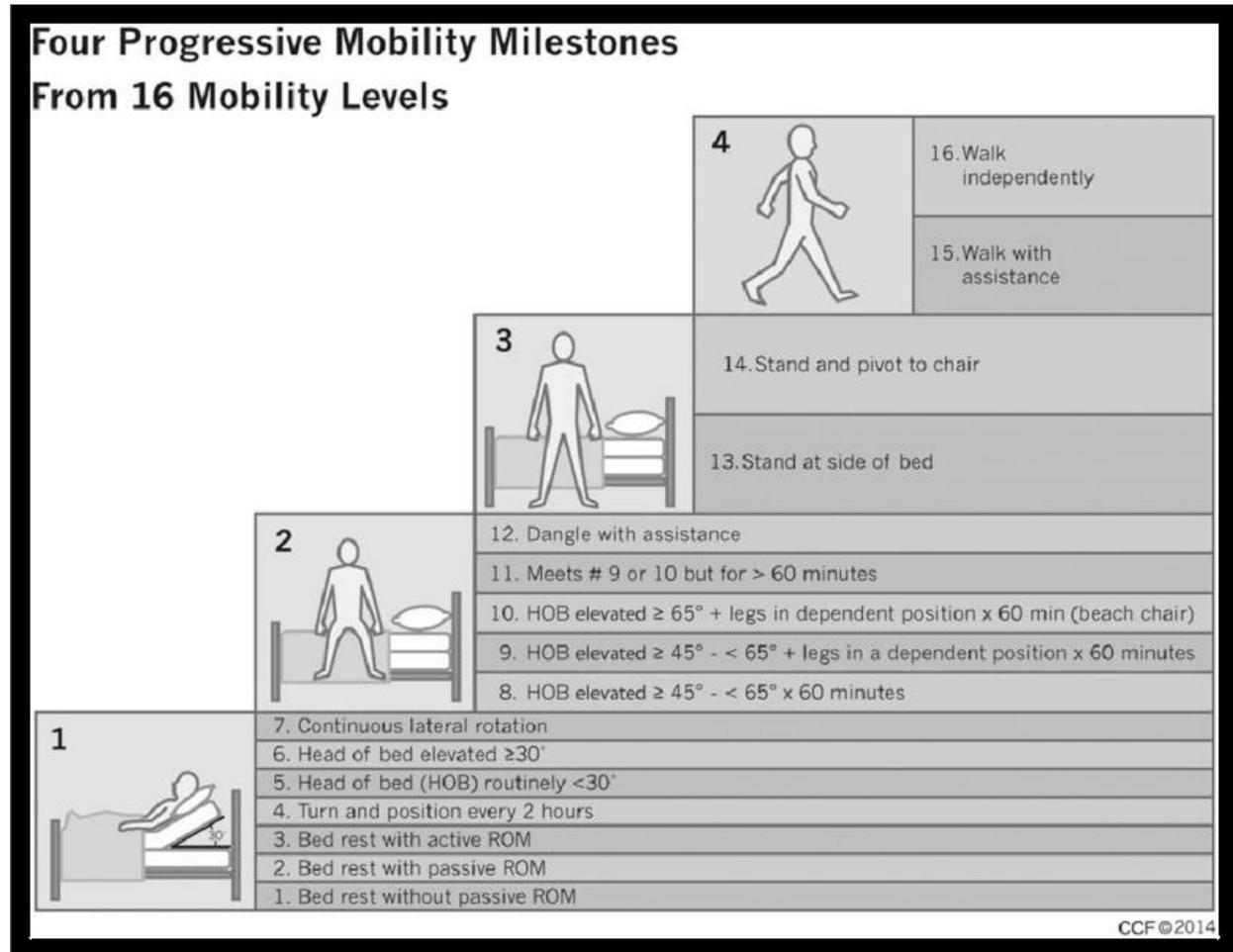
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Y.; Graham, J.; Ottenbacher, K.; Ostir, G.	older adults hospitalized with an acute medical illness	hospitalized with an acute medical illness increased activity tolerance and improved time-to-discharge	mobility protocols increases patient well-being during admission and may be useful in reducing length of stay	
Hester, J.; Guin, P.; Danek, G.; Thomas, J.; Titsworth, W.; Reed, R.; Vasilopoulos, T.; Beattie, E.	To determine the economic impact of sustained use of progressive mobility protocols	Use of mobility protocols decreased adverse events such as falls and atelectasis and saved facilities tens of thousands of dollars per year	Implementation of mobility protocols is essential in reducing adverse events, decreasing length of stay, and improving fiscal responsibility	Level 3 (Quasi-experimental)
Hobbs, J. K.	To determine the effects of mobilization in patients admitted to long-term facilities after discharge from initial hospitalization for heart failure	Patients utilizing a progressive mobility protocol saw improvements in physical activity toleration and respiratory compromise	Use of a progressive mobility protocol is effective in reducing adverse events and overall hospital readmission rates for patients in the nursing home setting after index admission to the hospital for heart failure	Level 1 (Meta-analysis)
Messer, A.; Comer, L.; Forst, S.	To determine the overall effects of a progressive mobility program in the ICU	Patients utilizing a progressive mobility protocol saw decreased lengths of stay	Early mobilization and progressive mobility care planning may reduce length of stay for patients in the ICU and thus saves time	Level 3 (Quasi-experimental)

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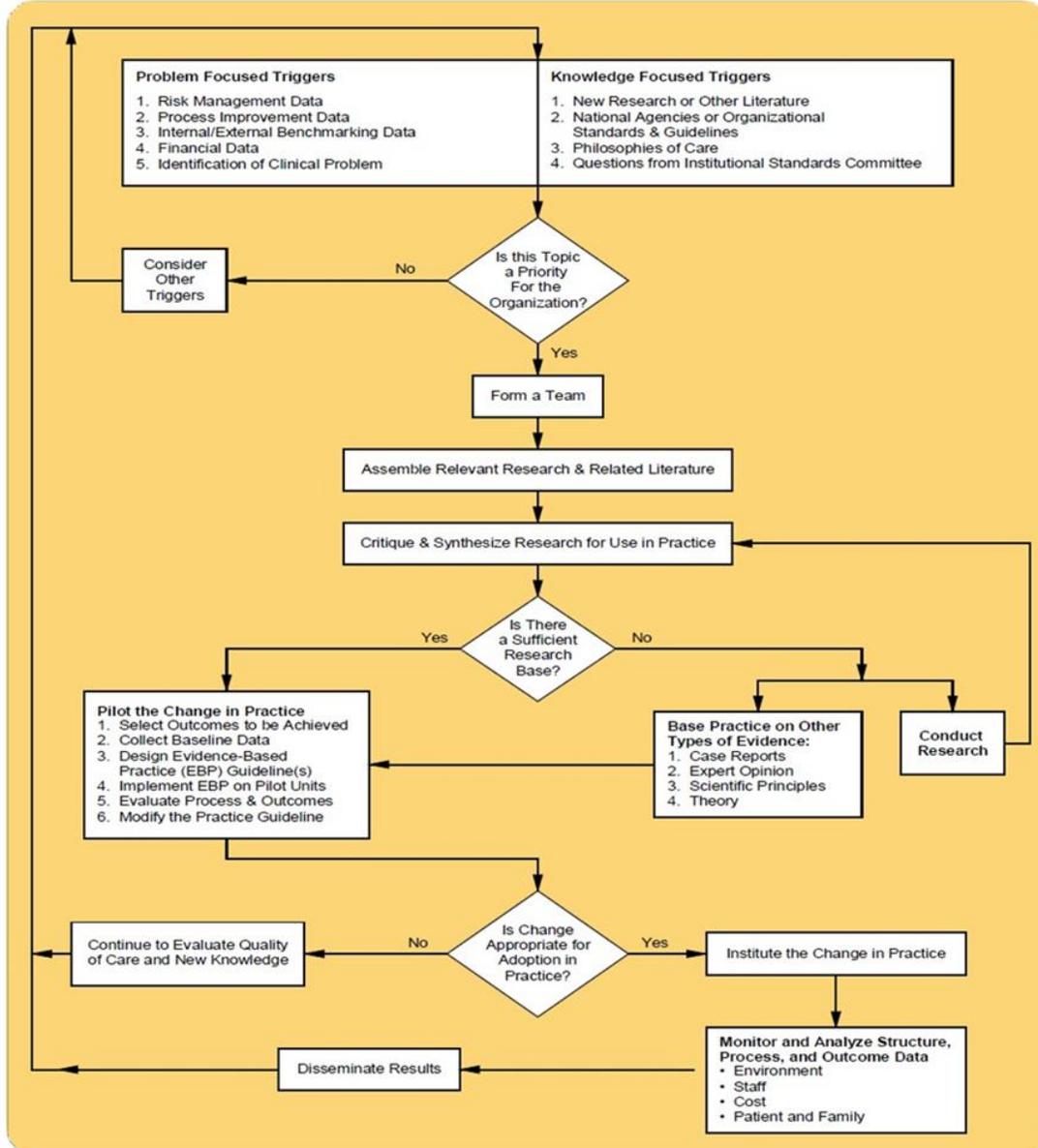
			and money for the facility	
Low, L.; Fletcher, J.; Goodenough, B.; Jeon, Y.; Etherton-Beer, C.; MacAndrew, M.; Beattie, E.	To determine the effects of interventions to change staff care practices to improve outcomes for patients admitted to nursing homes	Changing staff practices to include proper training on mobilization of patients had positive impacts on overall patient well-being	Proper staff training on mobilization increases staff compliance to protocols and improves patients physical activity tolerance and rates of hospital readmission in the nursing home setting	Level 1 (Meta-analysis)
Pashikanti, L.; Von Ah, D.	To determine the impact of early mobilization on the medical-surgical inpatient population	Implementation of early mobilization protocols decreases adverse event rates and decreases average length of stay	Utilizing early mobilization protocols in the medical-surgical population improves patient outcomes and eases transition to long-term care or to home discharge	Level 1 (Meta-analysis)
Wood, W.; Tschannen, D.; Trotsky, A.; Grunawalt, J.; Adams, D.; Chang, R.; Kendziora, S.; Diccion-MacDonald, S.	To determine the effects of mobilization on patients in an inpatient medical unit	Patients who started on mobilization protocols in the hospital saw decreases in hospital readmission rates after discharge	Implementing progressive mobility protocols within the hospital setting is a key factor in reducing readmission rates for patients being discharge to home or to long-term facility	Other (Quality Improvement)

Appendix C



Appendix D

The Iowa Model of Evidence-Based Practice to Promote Quality Care



◇ = a decision point

Titler, M.G., Kleiber, C., Steelman, V.J., Rakel, B. A., Budreau, G., Everett, L.Q., Buckwalter, K.C., Tripp-Reimer, T., & Goode C. (2001). The Iowa Model Of Evidence-Based Practice to Promote Quality Care. *Critical Care Nursing Clinics of North America*, 13(4), 497-509.

REQUESTS TO:
 Department of Nursing
 University of Iowa Hospitals and Clinics
 Iowa City, IA 52242-1009

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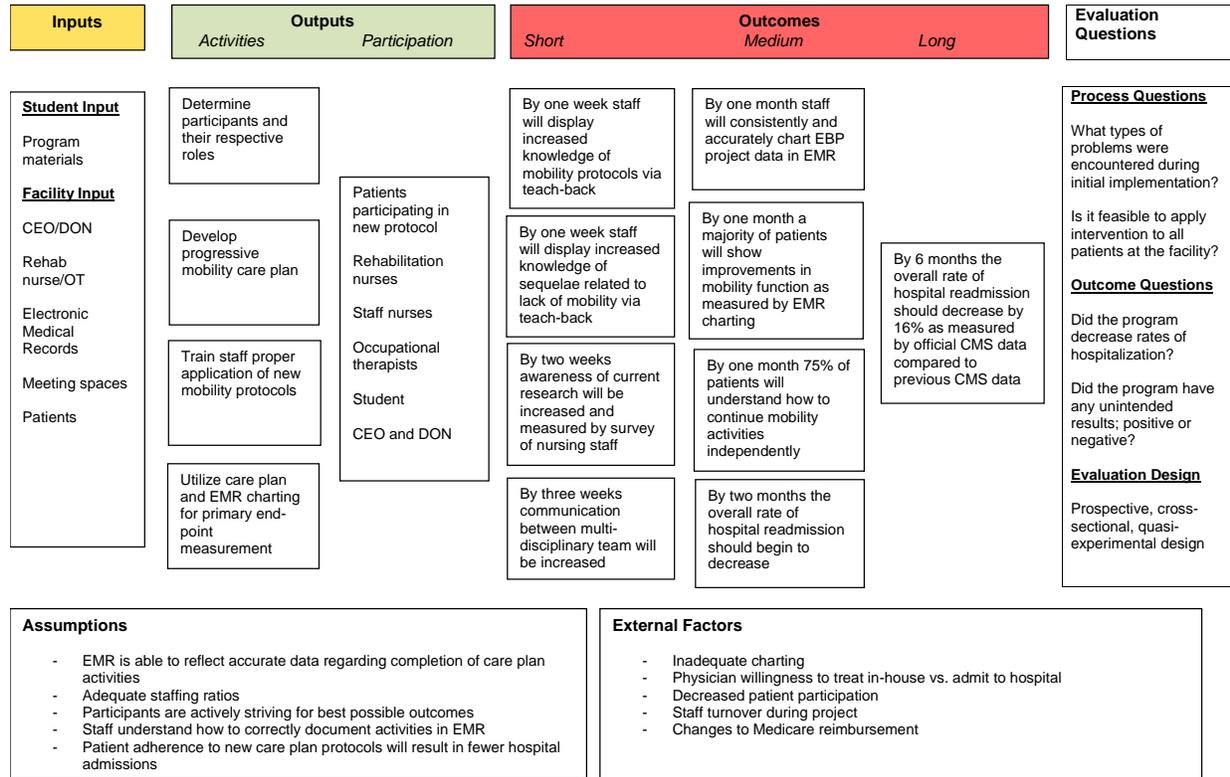
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Appendix E

Logic Model

Program: Mobility Protocol to Reduce Hospital Readmission Logic Model
Situation: Residents from SNF are being transferred to hospital for readmission



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Appendix F

Gantt Chart, Project Timeline

Objective/Aim	Sub-Tasks	Responsible Person	Due Date	Comments
Major Task #1: Collect Baseline Hospital Readmission Data				
Collect data from charts of monthly audits	Meet with CEO to gather baseline data from monthly chart audits	DNP Student, Project Content Expert	1/1/19 – 3/31/19	
Analyze baseline data	Meet with CEO to analyze primary facility deficiencies	DNP Student, Project Content Expert	1/1/19 – 3/31/19	
Summarize data collection and assess specific needs of the facility	Meet with CEO to analyze secondary deficiencies	DNP student, Project Content Expert, Multi-disciplinary team	1/1/19 – 3/31/19	
Major Task #2: Develop Progressive Mobility Care Plan				
Finalize evidence-based progressive mobility protocols	Present research findings and synthesized protocols based on research data	DNP Student, Project Content Expert, Multi-disciplinary Team	4/1/19 – 4/30/19	
Gain approval of new mobility care plan	Meeting with content expert and multidisciplinary team	DNP Student, Project Content Expert	4/1/19 – 4/30/19	
Discuss parameters of mobility care plan implementation	Meeting with content expert to determine financial impacts and time needed to implement protocols	DNP Student, Project Content Expert, Multi-disciplinary Team	4/1/19 – 4/30/19	
Major Task #3: Provide Healthcare Staff Training on Mobility Protocols and Charting				
Dissemination of information to healthcare team involved in project	Present finalized mobility care plan and EBP project goals	DNP Student, Multi-disciplinary team	5/1/19 – 6/30/19	
Initial training on progressive mobility care plan implementation	Provide in-house training for all relevant staff members	DNP Student, Project Content Expert, Multi-disciplinary team	7/1/19 – 8/30/19	
Initial training on proper charting related to project implementation	Provide in-house training on proper EMR charting to collect valid data	DNP Student, Multi-disciplinary team	7/1/19 – 8/30/19	
Staff teach-back to ensure readiness for implementation	Meeting with healthcare team to ensure understanding of project implementation and goals	DNP Student, Multi-disciplinary team	9/1/19 – 9/30/19	
Major Task #4: Implement Progressive Mobility Protocols				
Initial trial implementation on newly admitted patients	Contact healthcare team via email/phone to discuss results of early implementation	DNP Student, Multi-disciplinary team	10/1/19 – 10/7/20	The trial will last no longer than one week. If no deficiencies are detected in the first week the project will continue as planned.

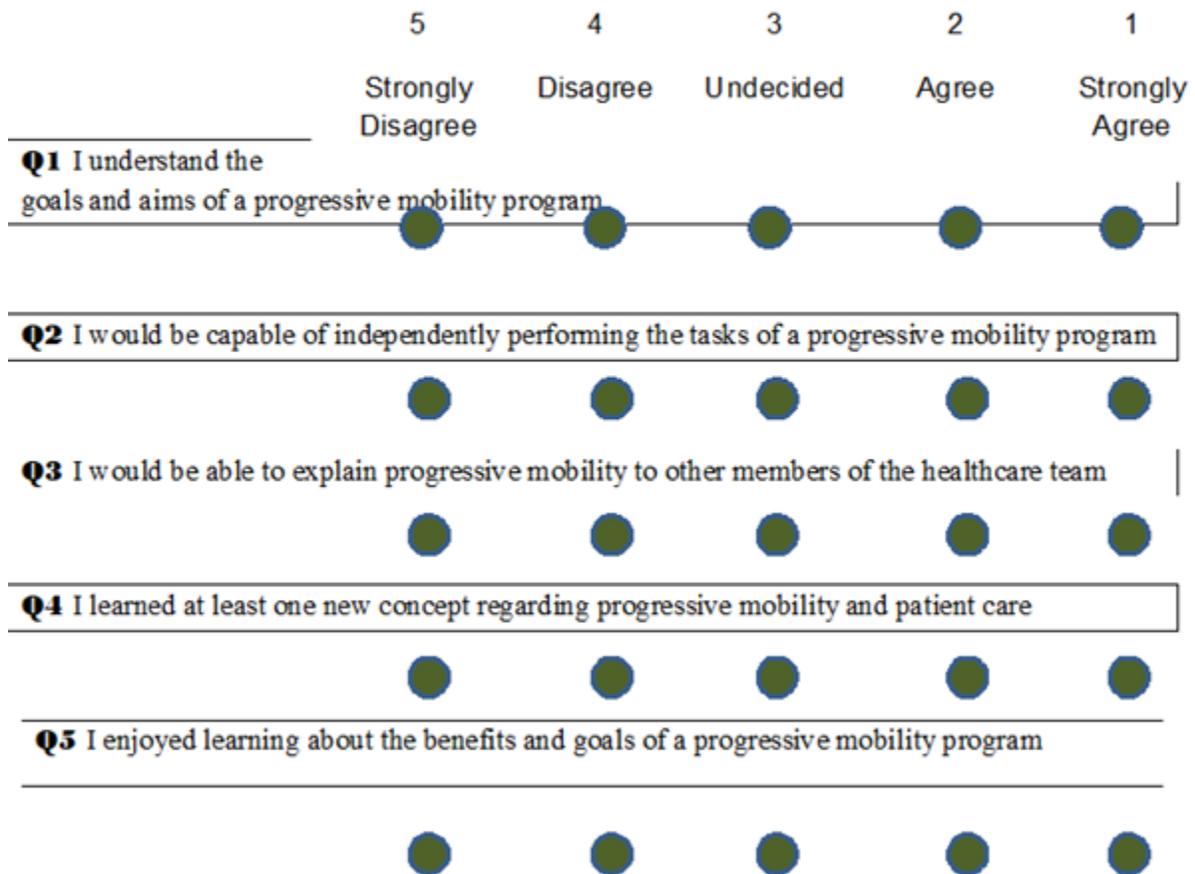
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Revision on trial to ensure proper project implementation	Meeting with healthcare team to discuss revisions and updated project implementation guidelines	DNP Student, Multi-disciplinary team	10/8/19 – 10/15/19	If flaws are detected in the trial period revisions will be made immediately and the project will continue within one week
Final implementation	Frequent contact with healthcare team via email/phone to ensure proper implementation of project and charting procedures	DNP Student, Multi-disciplinary Team	10/1/19 – 3/1/20	
Major Task #5: Collection and Analysis of EBP Project Implementation Data				
Collection of hospital readmission data from project implementation	Review monthly chart audits provided by PCH and synthesize all data related to hospital readmission (length of stay in hospital prior to admission, comorbidities, severity of illness upon admission)	DNP Student, Content Expert, Multi-disciplinary Team	3/1/20 – 3/31/20	
Analysis of quantitative hospital readmission data	Analyze quantitative data with healthcare team (rate of hospital readmission for any reason)	DNP Student, Content Expert, Multi-disciplinary Team	3/1/20 – 3/31/20	Breaking down the data into quantitative and qualitative measures allows for more accurate analysis and ensures valid data collection
Analysis of qualitative hospital readmission data	Analyze qualitative data with healthcare team (comorbidities, length of stay in hospital prior to admission, severity of illness upon admission, patient compliance, staff competency)	DNP Student, Content Expert, Multi-disciplinary Team	3/1/20 – 3/31/20	

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Appendix G

Participant Number



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