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Nurse Practitioner-Led Care Pods: A Team Communication Enhancement Model

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Section I. Abstract

Background: Communication has become a key performance measure in the shift to value-based healthcare. Given the impact of communication failures on patient harm, length of stay, and dissatisfaction with care, new models of care with better communication through structured teamwork and interdisciplinary collaboration are needed.

Problem: In a 16-bed geriatric medical/surgical unit of a New York City multispecialty community hospital, the workflow structure unintentionally created inconsistent handoff communication, gaps in continuity of care, missed care events, and inattention to the patient's priorities in the care plan. A gap analysis identified communication deficiencies that impacted team effectiveness and patient care outcomes.

Methods: Patient perceptions of care and staff perceptions of teamwork were assessed pre-and post-intervention for the effects of implementing structured team communication in a nurse practitioner (NP) medical management model. Responses were collected with the NRC Health Patient Experience Survey and the AHRQ TeamSTEPPS® Teamwork Perceptions Questionnaire (T-TPQ). Patient experience scores for the NP-led unit, a resident-led unit, and a physician-assistant led unit were compared.

Interventions: Implementation of an NP-Led Care Pod model was evaluated over three months. An education session on structured communication tools prepared NP-Led Care Pod teams in role-based purposeful rounds, bedside shift reports, structured bedside interdisciplinary team rounds, and TeamSTEPPS communication strategies.

Results: Teamwork perception scores post-education and post-implementation fell short of the aim for a 10% increase from baseline. Patient experience survey scores increased 71.6% from baseline at two months for care team explanations, 128% for listening carefully, and 71.6% for

perceived staff communication. Although not sustained, all scores were 14% higher than baseline. Team members reported increased team support, inclusion, and role satisfaction. Patients asked fewer questions about their care plans.

Conclusion: The NP-Led Care Pods contributed to evidence on the effectiveness of NP-led, team-based care, with implications for nursing leadership and team communication. The NP-Led Care Pod environment improved workflow, team dynamics, and staff communication. Further studies may benefit from using measures to capture improvement in patient safety and patient experience domains that were not addressed in this project.

Keywords: acute care nursing, bedside handoff, collaboration, communication, interprofessional, patient-centered care, purposeful rounding, team perceptions, TeamSTEPPS.

Section II: Introduction

Background

Two-thirds of hospital sentinel events are attributed to miscommunication, with insufficient handoff communication as the leading cause (Taylor, 2015). The Joint Commission has ascribed 60-70% of severe healthcare errors to communication breakdown (Murphy & Dunn, 2010). In acute care settings, communication failures can lead to increased patient harm, length of stay, and patient dissatisfaction with care. On the provider side, communication failures contribute to caregiver frustration and more rapid staff turnover (Dingley et al., 2008). The pay-for-performance (also known as value-based payment) initiative of healthcare motivated healthcare systems to improve quality and efficiency and eliminate high costs. With an immense impact on the quality of care, communication is highlighted as an area for improvement across the spectrum of performance measures from medication errors to patient perceptions of care.

Problem Description

Setting

The setting for this evidence-based quality improvement project was an inpatient 16-bed acute care geriatric medicine unit (GMU) in a 711-bed New York City teaching hospital. The geriatric patients in the unit have complex healthcare conditions that are difficult to treat. The GMU unit was led by a nurse practitioner/nurse manager, with a staff of 12 nurse practitioners (NPs), 11 registered nurses (RNs), 14 patient care technicians (PCTs), and four information specialists/unit clerks (IS) at the outset of project implementation. Due to staff attrition, near the end of the project, when final data was collected, the staff consisted of nine NPs, 10 RNs, 12 PCTs, and two ISs. See Appendix A for the Unit Organizational Structure.

The usual care model for patients in the academic medical center is a hospitalist supervising a team of residents or physician assistants. That model created a conflict when a private attending physician had admitting privileges, was not a hospital employee, and needed to collaborate with the hospital care team, which is supervised by a hospitalist, a medical center employee. A nurse practitioner-led unit model (NP-led unit) was introduced to GMU in 2017, eliminating the need for a hospitalist on the care team. The NP-led unit model relieved some of the conflicts between the hospital attending physicians; however, communication with the private attending physicians remained a problem.

Private attending physicians were often not in the hospital and unavailable to give direction on patient care. Prior to the DNP project implementation, each care discipline in the NP-led unit (NP, RN, patient care technician, information specialist) in the GMU followed a workflow disconnected from the other disciplines. Lack of coordination unintentionally created silos with inconsistent handoff communication, lack of continuity of care, poor care plans, subpar collaboration, and missed care events. Patient assignments were made for each discipline independent of the others. An RN in a section of six patients may have worked with three different NPs, just as one NP may have worked with three RNs in caring for the patients assigned to them on a shift. The separate workflows decreased the number of opportunities for the NP's to mentor the nurses and for the NPs and RN to collaborate for care. The information specialist (IS) assigned to the unit was unable to prioritize requests from the different disciplines.

The patient care technician (PCT) often spent the most time with patients yet did not feel empowered to provide input. Responsibility for purposeful rounding fell to the PCTs and RNs. Although each team member had a role in purposeful rounding, the roles were not clearly

defined by discipline. Interdisciplinary rounds occurred in the conference room via an unstructured conversation involving an NP, RN, the unit nurse leader, social worker, case manager, and physician advisors. The NP would present the patient's needs, with other members of the team rarely providing input. The patient's active participation in the plan of care was not a priority. The patient or a member of the patient's family often requested information on the care plan and daily goals as this information was not proactively shared with them.

The GMU lacked a clear team communication structure in its existing state, leaving the delineation of communication responsibilities and procedures unclear. A team workflow gap analysis conducted by the unit nurse leader uncovered specific communication gaps that jeopardized team effectiveness and diminished patient care outcomes. Internal staff communication was typically spontaneous, unstructured, inefficient, and ineffective. Staff efficiency and patient care quality were compromised by the time it took for staff to "find" the person assigned to make care decisions for each patient. Frequent internal discussions arose among the team about who should perform a delegated task. For example, when an NP ordered a patient to receive suctioning, a nurse may have asked the NP why they could not perform the task themselves. In another example, care was delayed due to the RN forgetting to ask the PCTs to perform an order placed in the computer by the NP. Repeated occurrences of similar situations eroded the team's internal coherence, further reduced coordination, decreased productivity, and lessened the focus on quality patient care.

There had been frequent changes in leadership following the change to the NP-led model in the GMU, leaving the care team without a clear delineation of responsibilities or a straightforward communications structure. Previous attempts to address communication gaps consisted of meetings to discuss team roles and allow team members of each discipline to

express their expectations. These were primarily ineffective as no structural changes were implemented. The addition of shift huddles enabled the team to meet as a group after their individual shift assessments to discuss priorities and expectations. While helpful in sharing perspectives and concerns, the huddles did not add structure to team communications and did not eliminate the problems.

Specific Aim

The NP- Led Care Pods project had two specific aims: (1) increase three team communication domain scores on the NRC Health Patient Experience Survey by 10% from baseline to post-implementation, and (2) increase by 25% from baseline the post-implementation results of the TeamSTEPPS Teamwork Perception Questionnaire (T-TPQ) by 25% from baseline.

Available Knowledge

PICOT Question

The NP-Led Care Pod project objective was to improve quality of care, patient safety, and patients' experiences of hospital care by reducing miscommunication among the care team of NPs, RNs, PCTs, and ISs. The PICOT question is framed by the evidence-based problem of communication deficits and the desire for sustainable improvement. The PICOT question is: In an acute care geriatric medicine unit in the inpatient setting (P), how do NP-Led Care Pods (I), compared to resident-led and physician assistant-led care units, (C) affect the patient care experience and teamwork perception (O) three months from implementation (T)?

Search Methodology

A literature search guided by the PICOT question was performed, seeking the best possible evidence to promote team communication and patient experience. An initial search on Google Scholar and CINAHL, using the terms *NP-led, care teams*, and *care pods,* did not return any relevant studies. A subsequent search on CINAHL, using the terms *interprofessional, nurse practitioner multidisciplinary, teamwork, team, communication, acute care setting, TeamSTEPPS, and collaboration,* returned 115 articles. Inclusion criteria of peer-reviewed articles published in the English language between 2010 and 2020 were added to narrow the return. This search returned 80 studies. Abstracts and sections of the studies were read to identify critical information to narrow down the selection, excluding studies conducted in outpatient or rehab settings, studies that emphasized the role of the physician or resident on the care team, studies that emphasized the benefits of NP practice but lacked an interprofessional team context, or those that emphasized interprofessional teams without mention of the NP role. Reverse searches were conducted on an ongoing basis as studies from the search were reviewed for relevance, with five studies selected. Three studies suggested by the university research librarian and an academic colleague were selected for further review. Ten studies met the final inclusion criteria and were included in the literature review. Only one study specifically addressed NP practice and its direct effect on team communication and performance. All but one of the studies used double-intervention models. Of the ten studies one was quantitative, three were qualitative, one was quasi-experimental, four were quality improvement, and one was a systematic review. The studies were rated for the level and quality of evidence using the Johns Hopkins Nursing Based Research and Non-Research Evidence Appraisal Tool (Dang & Dearholt, 2017). The studies were rated Levels II, III, and V and included Quality ratings of B,

A/B, and C. See Appendix B for the Evidence Table. Four themes emerged from the review: (a) bedside handoff; (b) rounding; (c) team-based assignments; and (d) NP-led care.

Integrated Review of the Literature

Bedside Handoff

A quality improvement project conducted by Taylor (2015) discussed the benefits of handoff communication at the patient's bedside. A standardized approach to bedside handoff and walking rounds was implemented on a 43-bed inpatient surgical oncology unit to eliminate existing and potential communication gaps in a quality improvement project. The approach was designed from information gleaned from the research literature and practices recommended by The Joint Commission and leading public health organizations. The management information systems (MIS) department developed standardized handoff tools for the nurses to use during handoff before starting walking rounds. From a convenience sample of 17 nurses surveyed, 14 were moderately or highly satisfied with implementing bedside handoff. This study demonstrated that structured bedside handoff improves accountability, teamwork, handoff efficiency, and mentorships opportunities. Handoffs at the bedside decrease miscommunication as the patient's presence contextualizes the information from one shift nurse to the next. In studies cited by the author, implementing structured bedside handoff reduced handoff-related patient safety events and medication errors. The author recommended using a standardized, nurse-driven, electronic report to guide the transfer of information during bedside handoff. Although the study was rated Level V-C, the detailed implementation methodology informed bedside handoff project implementation.

In a qualitative study by Natafgi et al. (2017), the authors examined bedside shift-change handoff implementation as part of a TeamSTEPPS initiative. Team Strategies and Tools to

Enhance Performance and Patient Safety (TeamSTEPPS) training was provided to eight Iowa-based critical access hospitals focusing on bedside shift handoff. The intervention was measured using semi-structured interviews, observations using a modified version of the TeamSTEPPS teamwork behavior matrix, and the Teamwork Evaluation of Non-Technical Skills (TENT) tool. After one year of implementation, key informants identified as the chief nursing officers, quality directors, medical-surgical directors, and nurse managers were interviewed. The interviews were recorded, transcribed, made anonymous, and coders read the transcripts to identify themes. The scores from the structured observation of the handoff at each hospital were split into high-performing and low-performing groups and were then compared. The researchers found six of the eight hospitals reported more accurate shift handoffs with the implementation of bedside shift reports. Five of the eight hospitals reported improved teamwork and communication, and four of the eight hospitals reported increased patient and family engagement.

The study, rated Level III-A/B, served as a guiding framework for implementing bedside shift handoff in community hospital settings. The study's strengths were identifying themes of high and low-performing hospitals and successful teamwork strategies in many hospital settings. The authors recommended continued implementation in other small and rural hospitals that can benefit from improved handoff

Rounding

Purposeful Rounding. In a qualitative study, Blakley et al. (2011) examined purposeful rounding as a tool to improve the patient's care experience. The effects of implementing every two-hour purposeful nurse rounding in a medical-surgical setting were evaluated in a study of six months duration. The staff would assess the patient's need for the Potty, Pain, Positioning, and Personal Items (4Ps). Data was collected via weekly patient experience surveys, patient

interviews, staff questionnaires, observations, unstructured patient interviews, and a patient

focus group. Two types of patient experience scores were collected: one from a Gallup hospital-

specific survey and the other from the nationally recognized Hospital Consumer Assessment of

Healthcare Providers and Systems (HCAHPS) survey. Patient experience scores were reviewed

quarterly. Patient experience scores (n=200 for the second quarter sample and n=101 for the

third quarter sample) measured on a 4-point Likert scale increased from 3.5 at baseline to 3.6

post-intervention. The authors did not state if the change was significant. Another finding was

decreased call bell use and a shift to patients using the call bells for more significant care needs,

which increased staff responsiveness. Patient complaints regarding staff rudeness decreased by

43 percent post-intervention.

The study, rated Level III-A/B, provided evidence that purposeful rounding positively

affects patient satisfaction. A strength of the study for the DNP project is the similarity of the

medical-surgical unit to that of the GMU setting. Weaknesses of the study for the DNP project

were inconsistent use of the "4Ps of rounding and omitting mention of any change in HCAHPS

scores. Staff turnover and fluctuations in the number of admitted patients throughout the study

limited the data's reliability and generalizability.

Patterson (2014) conducted a quality improvement project on the implementation of

role-based purposeful rounding. The study participants were Patient Care Assistants (PCAs),

LPNs, and RNs in a gynecologic surgical unit. The total number of participants or the number of

participants in each role was not stated. The staff was given a slide presentation and

question/answer session on purposeful rounding and its rationale and was provided access to an

online purposeful rounding toolkit. One month after implementation, the HCAHPS scores had

improved. No detail was provided on individual scores or the amount and significance of

improvement. A survey was administered randomly to nurses in the unit. The number of surveys or percentage of nurses receiving them was not stated. The responses indicated the nurses felt they had received sufficient education on intentional rounding, understood the benefits of rounding, and had made it part of their daily routines. Despite a lack of detail in the results reported, this Level V-C study illustrated a successful implementation of role-based purposeful rounding in the inpatient setting.

       Bedside Interdisciplinary Rounds. In a comparative quasi-experimental study, Adams and Feudale (2018) implemented structured interdisciplinary rounds in an eight-bed pediatric unit of a community hospital. The unit team consisted of medical residents, nurses, social workers, case managers, and pastors. The outcomes measured were staff satisfaction with the use of a structured rounding tool and team collaboration. The investigators created the rounding tool and used the interdisciplinary teams to ensure adequate and consistent information sharing. As a de novo instrument, the rounding tool was not validated before use in the study. To evaluate satisfaction with using the rounding tool, the investigators had participants complete a demographic sheet, a Collaboration, and Satisfaction About Care Decisions (CSACD) questionnaire, and a Documentation Process Assessment. The CSACD questionnaire is a validated tool (Cronbach's alpha 0.93) that uses a 7-point Likert scale to measure the quality of interaction amongst healthcare providers. The principal investigator created the documentation process assessment. As a *de novo* tool, the Documentation Process Assessment's validity and reliability had not been established. A 7-point Likert scale was used to rank team member planning, decision making, cooperation, coordination, and satisfaction with the decision-making process. Both surveys were administered pre-and post-intervention. The authors reported improvement of the total score for collaboration and team members' satisfaction and a p-value

of 0.081. The questionnaire responses revealed a statistically significant increase (p<0.001) in staff satisfaction with interprofessional documentation with the rounding tool. The team satisfaction mean score increased from 3.56 to 5.88 (p<0.001), and collaboration mean scores increased from a neutral value to 6.19 (p<0.001).

The strength of this Level II-B study was the implementation of a structured rounding tool that closed communication gaps in the interprofessional team. Limitations were the unit's small, non-diverse patient population, implementation in one practice setting, and use of a convenience sample that limited generalization of the findings. Inconsistency in filling out the pre-and post-intervention survey by the pediatric medical residents limits the reliability of the findings' data and generalizability. Adams and Feudale (2018) recommended evaluating the tool's efficacy in diverse environments and in larger or multiple units. This study provided evidence to support structured rounding using a rounding tool to improve interprofessional team collaboration in the GMU setting for the DNP project.

Team-Based Assignments

Real et al. (2020) performed a quantitative study to evaluate the impact of implementing a new interprofessional teamwork innovation model (ITIM) on the relationships among teamwork structure, communication processes, and clinical outcomes from patients' perceptions. The study was developed using the Systems Theory and Structure-Process-Outcome (SPO) framework. Team assignments were by geographic locations, with the team structure and roles the same at each site. The study evaluated the patients' perceptions of teamwork with the implementation of the ITIMs. Data on patient perceptions of care under the ITIM model were collected from one 302-bed community-based hospital and one 569-bed academic medical center in one health system. The patient surveys and observations were

collected over four months at the community hospital and five months at the academic medical center. The ITIM team at the community hospital consisted of 20 hospitalists, 25 nurses, five pharmacists, and 2 case managers. The data was collected at the community hospital from a total of 438 patient visits from 238 different patients. The ITIM teams at the academic medical center (n=26) consisted of 41 hospitalists, 40 nurses, 12 pharmacists, and 6 case managers. The data collected at the academic medical center was from a total of 247 patient visits from 199 different patients.

A de novo 17-item survey was used to collect information on the patient perceptions of the team's communication, review of the care plan, concern shown by the team, and overall satisfaction with the care provided. Both site survey results showed that goals and care plans were reviewed over 80% of the time. The survey score for the patient perception of effective team communication was 82% at the community hospital and 85.7% at the academic medical center. The team participation at the community hospital (where the geographical assignments were more consistent) was 97.6% compared to 70% at the academic medical center. Patient satisfaction with care was expressed as the ITIM model's contribution to a supportive and collaborative care experience and a greater opportunity to ask questions and establish rapport with caregivers. Scores of patient perceptions and team satisfaction were aggregated across both hospitals. Patients perceived that they were encouraged to ask questions at a higher rate (87%) than the rate perceived by the observers (58%). Patient satisfaction with the ITIM team was highly correlated with observed rapport with patients ($r = 0.52$, $p = 0.001$) and polite exit from the room ($r = 0.62$, $p = 0.001$).

This Level III-B study offered insight into relationships among the elements of teamwork, communication, and clinical outcomes perceived by patients. Strengths of the study

were the large sample size, the correlations established among observations, perceived patient experience, and implementation of interprofessional rounding. Weaknesses were low patient survey response rates, inconsistent ITIM participation, the unreliability of observers, and inconsistent timing of data collection. The study provided evidence to support consideration of geography in making role-based assignments and using patient perception to measure success.

In the review of an internal initiative, Hastings et al. (2016) used a mixed-methods approach to evaluate the impact of structured "hub-based" care on collaborative practice, patient care experience, and staff satisfaction. Staff from a general medical unit of an urban hospital in the Alberta (Canada) Hospital System were interviewed pre-and post-intervention to evaluate the effectiveness of a team-promoting model one year from implementation. The study was developed using concepts from the conceptual framework of the Canadian Interprofessional Health Collaboration (CIHC) competency framework. The model consisted of a six-item care process with comfort rounds, bedside shift reports, rapid rounds, patient whiteboards, care hub huddles, and hub-based assignments of care. Methods to measure the intervention were (1) semi-structured interviews with staff, and (2) a validated staff survey using the CIHC competency framework (Cronbach's alpha 0.94), and the Canadian Patient experience surveys. The model was evaluated using staff interviews (n=21) with RNs and LPNs (n=15), Health Care Assistants (n=4), one physician, and one unit manager. Staff surveys (n=25) were administered pre-and post-intervention, with a T-test and Chi-square test performed on the results. The Chi-square test was performed to measure intent to leave within 12 months. Participants in the hub-based care model were significantly less likely to plan to leave after the model was introduced, a 47.5% decrease from baseline. A two-tail T-Test was performed in lieu of a pre/post comparison as surveys were not completed by the same staff members at each point. Patient surveys were

administered pre-intervention (n=26) and post-intervention (n=37). Interview notes were evaluated using realist thematic analysis.

The new collaborative care model was well-received by the staff. The study findings indicated a positive relationship between the collaborative practice model and patient outcomes. Implementation of the model contributed to improved patient-centered care and greater patient satisfaction. All disciplines were able to practice to the full scope of their professional expertise. Post-implementation interview results (72% response rate) indicated improvements in unit culture and collaboration resulting from hub-based care, better role clarity, manager support, and improved communication. Comfort rounds, rapid rounds, whiteboards, and scripting using the name, occupation, and duty (NOD), was helpful. Results from organizational data showed decreased staff absenteeism and reduced staff turnover.

As indicated by survey responses (n = 26 baseline; n = 37 final evaluation), patient satisfaction increased with hub-based care implementation. Results for quality of care increased from 3.5 pre-intervention to 4.5 post-intervention ($p<0.001$), role clarity from 3.6 to 4.1 ($p<0.05$), and collaboration and communication from 3.4 to 4.4 ($p<0.001$). Patient call bell use decreased. Patient surveys revealed an increase in friend and family involvement from 50% pre-intervention to 58% post-intervention. Patient satisfaction with education on their medications increased to 95% post-intervention compared to 56% to 95% of patients reporting that providers educated them on their medications. The strengths of this Level V-B study are using a validated tool to assess staff perception and a detailed description of the study for ease of replication. The study's weakness was the inclusion of float staff who were not accustomed to the new model. The generalizability of results to other facilities is limited due to the small sample size and use of a non-validated patient experience survey. Patient satisfaction survey scores were high for the

unit, indicating a possible ceiling effect. The study provided evidence of increased collaboration in the hub-based care model, contributing to a better-quality workplace with higher patient and staff satisfaction.

Mørk et al. (2018) conducted a pre/post process improvement study of bedside handoff and bedside and interdisciplinary team (IDT) rounds in a 24-bed intensive care unit (ICU). Kotter's Eight-Step Framework for Leading Change guided the implementation. The outcome was measured using an internal, leadership-developed pre/post survey administered to staff. Participants (n = 33 pre; n = 26 post) completed a survey designed to elicit data on observations, leadership rounds, and quality indicators. No descriptive statistics were provided for the study results. The results demonstrated significant improvement in staff perception of the handoff's length, the accuracy of the handoff, and the number of interruptions six months after implementation. Improvements were observed in staff engagement, patient and family satisfaction, and effective and consistent staff workflow. Nurses reported their participation in rounds increased from 45% at baseline to 90% post-implementation, and their contribution to rounds increased from 65% at baseline to 80% post-implementation. This Level V-B quality improvement study illustrated how Kotter's framework was used to implement the beside team communication. Staff engagement, communication, and collaboration all increased post-intervention. These results aligned with the objectives of the DNP project. Two limitations of the Mørk et al. (2018) study as an exemplar are implementation in a single practice setting and the use of unvalidated pre/post implementation staff surveys. The implementation successfully demonstrated the benefit of having bedside handoff and interdisciplinary teams in the rounding model.

A systematic review by Körner et al. (2015) identified key features of teamwork and interventions to enhance interprofessional teamwork in chronic care. A literature search yielded 3217 articles using the terms *multi-, intra-,* and *inter-professional* for studies published between 2002 and 2014. The inclusion criteria included studies that included teamwork in a rehab setting, interventions related to teamwork/team performance, and publication in English or German. Studies with single-profession teams, interventions or outcomes that did not involve teams, and dissertations were excluded. The studies selected were randomized controlled trials, two-group non-randomized trials, single-group non-randomized trials, descriptive studies, qualitative exploratory studies, case reports, or expert opinions.

Of the 23 studies included in the review, eight were quantitative, eight were qualitative, and seven were mixed methods. Five studies were performed in Canada, five in the United Kingdom, three in the United States, three in Australia, two in the Netherlands, one in Sweden, and one in Lebanon offering a diverse sample of healthcare systems and care delivery models. Fifteen of the 23 studies were conducted in inpatient settings and 8 in outpatient units. Data analysis was done on an Excel spreadsheet, with articles categorized for comparison by basic information, study design, population, study setting, objectives and sample characteristics, description of the intervention, outcome variables, primary results, comments, decision-making style, and level of evidence according to the Oxford Centre for Evidence-Based Medicine. The review identified positive evaluation results for 22 of the 23 interventions in outcomes of patient satisfaction, team performance, and team effectiveness. A strength of the study is the authors' methodology to inclusively examine an extensive body of relevant literature and minimize retrieval bias. The weaknesses are the high heterogeneity of outcome criteria, the inclusion of only studies published in English or German, variability of concepts related to teamwork, and

limitation of the findings to acute care settings or collaborative models of care. The study is rated Level III-B. The study collected and examined many interventions to improve teamwork and increase patient and staff satisfaction that had not been identified through the DNP project literature search. A variety of interventions and their outcomes were described in the study, several of which aligned with the structures and processes under consideration for the DNP project intervention.

Nurse Practitioner-Led Care

Kilpatrick (2013) conducted a qualitative study of employees in two Canadian University hospitals to evaluate staff views of the NP role in teamwork. A conceptual framework of acute care NP role enactment, boundary work, and perceptions of team effectiveness (Kilpatrick et al., 2012) guided the study design. The study's purpose was to determine if the addition of NPs to the team improved staff perception of team effectiveness. Participants at one site were 32 out of 59 nurses, and at the second site, 27 out of 75 nurses participated. In addition, 535 document reviews were performed. Data were collected over three months using time and motion methodology, case study reviews, and interviews. Semi-structured interviews were conducted individually and in groups. The investigator also made unstructured field notes on observations made at both study sites. The study participants described the NPs as the "missing link" to make team communications useful. The results revealed that NP-led practice implementation positively impacted communication, decision-making, cohesion, care coordination, problem-solving, and emphasis on patients and their families. The most significant improvements were in measures of communication and family engagement.

The staff identified that the NPs filled a gap in patient follow-up with medical issues addressed earlier when an NP was involved. The team participants felt that they had a greater voice in problem-solving in the team and patient care issues. Nurse Practitioners set aside time to meet with the family members and answer questions. At one location, where the NPs were less independent in making care decisions, staff perception of effectiveness, although viewed positively, was lower than at the location where NPs practiced more independently and utilized the full scope of their expertise. This Level III-A/B qualitative study underscores the potential contribution of NPs to the team in the NP- Led Care Pod Model. Adding NPs to patient care increased team effectiveness, especially when the NPs exercised their full scope of practice. The author recommended future studies to evaluate perceptions of team effectiveness by patients and their families.

Synthesis of the Evidence

The studies reviewed informed planning, implementation, and evaluation of the NP-Led Care Pods quality improvement project. Adams and Feudale (2018) provided evidence to recommend practice changes to bedside interdisciplinary IDT rounds. Descriptions of methods used to implement bedside IDT were found in the Mørk et al. (2018) study. Both the Mørk et al. (2018) study and the DNP project used Kotter's Eight-Step Process for Leading Change; thus, the study helped design the DNP project. The Mørk et al. (2018) study also modeled the bedside handoff and bedside interdisciplinary team (IDT) rounds intervention, informing the DNP project's design.

Practice changes to bedside handoff were supported by the Natafgi et al. (2017) and Hastings et al. (2016) studies, which provided evidence for improved patient experience and greater staff satisfaction through the implementation of bedside handoff. Taylor (2015)

described a method to successfully implement bedside handoff, although evidence of quality improvement was not provided. A purposeful rounding practice change was supported by Blakley et al. (2011) in a study that demonstrated a positive correlation between purposeful rounding and patient experience and purposeful rounding.

The systematic review by Körner et al. (2015) examined interventions with multidisciplinary teams intended to improve patient and staff outcomes and discussed the interprofessional structures and practices that led to more effective teams. A hub-based team care model implemented by Hastings et al. (2016) contributed to better collaboration, which improved work quality, staff satisfaction, and patient satisfaction. Kilpatrick (2013) demonstrated a contribution of NP clinical care leadership to team process improvement and patient and family integration into the healthcare teams. Real et al. (2020) provided evidence to support geographical assignments in team-based care, demonstrating a relationship between team-based care and patient perception of better teamwork.

An identified gap was the absence of studies specifically addressing NP-led care teams. No studies were found to corroborate or contradict the findings of the Kilpatrick (2013) study on the contribution of NP clinical care leadership to process improvement and patient and family integration into healthcare teams. The second gap in evidence was the absence of role-based purposeful rounds, bedside shift reports, structured bedside interdisciplinary team rounds, and TeamSTEPPS communication strategies used together in a single study. Only one study, Hastings et al. (2016), examined the impact of a hub-based care model on collaborative practice, patient experience, and staff satisfaction, leaving a gap for comparison to this type of team-based care. No studies were found that used both T-TPQ and NRC Health Surveys as outcome

measures for quality improvement. The evidence from the literature was sufficiently strong to answer the PICOT questions and support the practice change.

Rationale

Kotter's eight-step process for leading change (Kotter, 2009) supplied the conceptual framework for the NP-Led Care Pods intervention. The conceptual framework considers the emotional component of change management. When employees feel emotions of resentment, pessimism, distrust, exasperation, anxiety when faced with change or are content with the current state, these emotions, singularly or in combination, can impede logical, well-designed efforts to implement organizational change (Campbell, 2020). Change efforts may fail when the sense of urgency is insufficient, the intended change lacks a clear vision, the vision is not clearly communicated, the change team is not effective, or success is declared too soon (Kotter, 2007). The Kotter framework supports accomplishing a desired change by incorporating the emotional component of change management, especially where a culture change is needed. Kotter's framework uses a "see, feel, change" protocol instead of viewing change analytically through classic motivations (e.g., financial incentives, promotions, recognition).

The Kotter framework consists of three phases with eight steps: (a) creating a sense of urgency; (b) building teams; (c) creating the correct vision; (d) communicating to get team buy-in; (e) facilitating action; (f) attaining short-term wins; (g) remaining persistent, and (h) assuring lasting change (Kotter, 2009; Kotter, 2014). See Appendix C for the Kotter Change Framework.

Kotter's Framework Applied to NP-Led Care Pods

Phase One: Creating a Climate for Change

Creating a Climate for Change comprises the first three steps: creating a sense of urgency, building teams, and creating accurate visions. In this phase, the need for change is instilled internally through motivating staff to support the desired change. Leaders can engage and motivate their staff by having candid conversations with an open dialogue about the current and expected states. Building the team to guide the NP-Led Care Pods implementation was accomplished by identifying champions who were passionate about the NP-Led Care Pods and could help others understand the vision. The vision was shared by communicating the desired future state and the benefit to individuals and the team of creating a work environment that makes things "easier"—easier to work together, easier to communicate, and easier to deliver better patient-centered care. The staff was encouraged to ask questions and make suggestions about the NP-Led Care Pods, the support that would be provided for implementation and sustainment, the effect of the change on the staff and patients, the improvement in the quality of patient care, and improving HCAHPS scores where NP-Led Care Pod teams were implemented.

Phase Two: Engaging and Enabling the Whole Organization

Engaging and Enabling the Whole Organization consists of three steps: team buy-in, removing obstacles, and sharing short-term wins. Team buy-in is accomplished by communicating the vision. For the NP-Led Care Pods implementation, the vision was communicated verbally through meetings and huddles, by example with the unit leader's demonstration of the proper use of each tool from the model, and email messages with pointers to achieve success. The implementation of the NP-Led Care Pods was intended to create an atmosphere where team communication is enhanced to improve patient safety through

collaborative care. Establishing buy-in builds on the motivation established in Phase One and is heightened through informal communications (e.g., regular staff huddles) and more formal experiential education sessions. Obstacles that may prevent successful implementation, such as a behavioral inclination to resist change, are removed in step five, enabling the staff to promote change and recognizing the contributions of those who do. The NP-Led Care Pods participants who were most engaged in the project were recognized in huddles, meetings, and other forms of team communication. In step six, where short-term wins are shared, patient satisfaction scores were communicated to NP-Led Care Pod members in real-time, with contributions to the short-term wins (e.g., HCAHPS scores) posted bi-weekly on each unit's performance improvement boards. In addition, positive patient experiences gleaned during daily leadership rounds were shared with the team during leadership huddles.

Phase Three: Sustaining the Change

Sustaining the Change has two steps: persisting with the change, and finally, sustaining it. In this phrase, Kotter warns against proclaiming success prematurely since change is ongoing until it is cemented in the culture (Kotter, 2007). Continued leadership is needed to support sustaining the new culture (Campbell, 2020). For the NP-Led Care Pods, the staff was encouraged to bring up any barriers that were not anticipated in the implementation. Revisions were made to ensure that the implementation was helpful to the team. Modifications made from staff recommendations added confidence that the implementation's success was a function of the staff's desire to achieve the vision. Sustaining the change depended on staff and patients seeing the benefits of the NP-Led Care Pod implementation. Success stories were shared with the team and the wider hospital community, newly hired staff, or staff transferring in from other

units, received the unit leader's NP-Led Care Pod education module or were assigned a Care

Pod delegate as part of their unit orientation.

Section III: Methods

Context

The GMU typically treated only geriatric patients, most of whom had complex

healthcare conditions. In early 2020, prior to implementing the DNP project, the GMU was

designated a COVID-19 unit and became one of the first hospitals in New York City to accept

COVID-19 patients. The COVID-19 designation increased the variability of the patients to

include a population with an average age of 45 years and pregnant women of many different

ages. With the new patient demographic, the fast-paced, 16-bed unit discharged 30% of the

patients daily. Temporary traveler registered nurses and patient care technicians made up 20-30

% of the staff. Additional stakeholder support for the project was needed to overcome the

COVID-19 imposed constraints and hardships. These changes made the situation unique and

would impose constraints on the generalizability of project findings to other settings or even the

GMU in non-COVID-19 times.

Successful implementation of the NP-Led Care Pods model depended on buy-in from

key stakeholders. The key stakeholders for NP-Led Care Pod implementation were the Chief

Nursing Officer (CNO) and the Vice President of Nursing (VPN). Both stakeholders were aware

of the need for better communication to improve patient experience and staff teamwork. The

model was presented to the CNO and VPN as a solution to both. Adequate allocation of

financial and operational resources would require support from the CNO and VPN. The Chief

Learning Officer (CLO), who has the dual role of VPN, was a key stakeholder whose support

helped guide the education curriculum and whose ongoing observations of the implementation

informed curriculum modifications. The NP team leader, a stakeholder who reported to the project lead, assisted in implementing the NP-Led Care Pods, observed and provided feedback on implementation, and served as a member of the project's guiding team. Other stakeholders for the NP-Led Care Pods implementation were the unit staff providing care and the patients, whose responses on HCAHPS surveys were used to assess the project's success.

Interventions

The NP-Led Care Pods model was introduced to the geriatric medical unit to address an identified need for specific quality improvements in team communication for patient care. Each Care Pod consisted of a three-person team with one NP, one RN, and one patient care technician (PCT) assigned to the same group of patients. Implementation of the NP-Led Care Pods model introduced structured team communication for interdisciplinary bedside rounds, bedside handoff, and purposeful rounding. The specific interventions were chosen to improve communication, promote a positive patient experience, and improve the team's perception of structured teamwork. Team rounds increased opportunities for the team to communicate with patients and each other. Bedside handoff was completed two times a day and included day and night shift NPs, RNs, and PCTs. Interdisciplinary bedside rounds occurred mid-morning and provided a chance for the team to discuss changes to the patient's care plan. Purposeful rounding occurred throughout the day, performed by the RN on even hours and the PCT on odd hours. The NP performed purposeful rounding every four hours on the odd hour. To enhance communication while rounding, the NPs, RNs, and PCTs were given examples of applying their specific roles to each element of rounds.

Due to constraints imposed by the COVID-19 pandemic as the implementation began, the educational sessions were shortened to two hours. The unit team was divided into four

groups for educational sessions on the NP-Led Care Pods model and the team communication strategies it contained. The sessions covered scripting to improve team-to-patient communication, bedside handoff using the situation-background-assessment--recommendation (SBAR) technique, and how to conduct structured interdisciplinary team (IDT) rounds. The NPs, RNs, patient care technicians, and information specialists/unit clerks received education on communication, role responsibilities, purposeful rounding, care coordination, and teamwork. Concepts from the TeamSTEPPS Module 3: Communications (SBAR, call-out, check-back, handoff) were introduced in the educational curriculum along with experiential education activities on purposeful rounding, role responsibilities, team communication processes, structured interdisciplinary rounding for care coordination, bedside shift reporting, and communication tools and strategies (Agency For Healthcare Research and Quality [AHRQ], 2019a).

TeamSTEPPS was originally developed by the U.S. Department of Defense Safety Program and the Agency for Health Research and Quality (AHRQ). TeamSTEPPS is a teamwork system designed to improve patient safety through improved communication and teamwork skills. TeamSTEPPS is widely used to create a culture of safety. The Team STEPPS program has three phases: assess the readiness of the team, train the trainer and staff, and implement and sustain (AHRQ, 2019b)

Content from the Agency for Health Research and Quality (AHRQ) curricular modules of Communicating to Improve Quality and Shift Bedside Handoff and the Bedside Handoff Checklist were included in the educational sessions. The skills acquired from the AHRQ Communicating to Improve Quality module were intended to help the NP-Led Care Pod members function through the three elements of the module: identify communication

challenges, define effective communication, and define how communication affects team processes and outcomes. Content on communicating to promote quality care was intended to foster the ability of NPs to mentor the nurses and nurses to mentor PCT's. Organizational policy related to purposeful rounding, bedside shift handoff, patient education, and discharge planning policy was covered.

Participants received instruction on scripting tools for bedside handoff (SBAR) and purposeful rounding (CONNECT and LAST). The acronyms CONNECT and LAST guide the elements of every communication encounter with patients and their families. The letters CONNECT represent Contact, Opening greeting, Name/Title, Needs, Explanation, Closing, and Thank. The letters of LAST represent Listen, Apologize, Solve, and Thank. The education methods of delivery included slide presentations, videos, role play, and games. Learning was assessed through polling, quizzes, recall, and return demonstration. Badge buddies with the scripting acronyms (CONNECT and LAST) were given to staff at the end of the education session. See Appendix D for the Badge Buddies with acronyms. The team also learned how to optimize the use of the whiteboard to communicate the care plan to patients and their families.

Gap Analysis

Team and communication gaps were identified through first-hand observations, informal conversations with staff, chart audits, and leadership rounding. Poor communication and lack of collaboration of team members at hand-off contributed to unorganized, fragmented, and inconsistent communication among team members. Ineffective communication contributed to inconsistency in care and delays in executing the plan of care. In the current state, inconsistent handoff communication contributes to gaps in continuity of care evidenced by missed items in the care plan and delays in completing tasks. Hand-off at the bedside was

minimal and inconsistent. This practice denied patients opportunities to express their care goals and participate in care decisions. Low nurse communication HCAHPS scores confirmed the observed gaps.

Team members worked independently without sharing information. The same information from the patient or their family was requested multiple times and was inconsistently interpreted, communicated, and recorded by different unit staff members. Team members all had different sets of patients to care for and different priorities. Often, the care plans from the NPs and RNs did not align, resulting in the inconsistent interpretation of the plan of care, administration, and follow-up. This resulted in missed care events and low accountability for individuals on the team. The existing care model did not encourage teamwork and collaboration or support structured communication. Team members lacked effective communication protocols and skills and often communicated quickly and minimally while engaged in or en route to other tasks. Many team members had expressed concern about failed efforts to communicate using phone calls and pagers.

The gap analysis showed members of the care team would benefit from a team-based understanding of their roles. In the existing state, roles were understood in isolation. Role definition and identification as team members with a shared vision and common patient care goals would mitigate the gaps in care emanating from the current individualized workflow. NPs did not mentor other staff members, leaving a gap in team relationships and care coordination.

In the existing model, the staff focused on completing tasks with minimal attention to communication with patients. The patients had little access to health information that would help them make informed decisions about their care. Care was not planned at the bedside, which

denied patients and their families an opportunity to participate in care decisions. A patient's individual care goals were inconsistently considered or incorporated into the care plans.

In the desired state, gaps would be mitigated by creating an environment where care is organized and structured. The care provided by the NP-Led Care Pod focuses on one group of patients and is guided by common patient care goals. The teams participate in consistent bedside hand-off communication where the Care Pod (an NP, RN, and PCT) coming on shift receives information on the patient's care needs from the Care Pod going off shift. In the NP-Led Care Pod implementation, the team members of a Pod round purposefully on patients every two hours to provide information and education and allow patients to express their needs and care goals. Patients have the ability to participate in the bedside rounds and can assist in formulating their care goals. Staff can provide daily education on medications to patients. In the desired state, the team is able to share information, increasing their ability to express their concerns. NPs, as leaders of the care pods, are the communication leads for the team and mentor others to facilitate the implementation of the newly adopted care practices. Members of the NP-Led Care Pods see themselves as a care team with shared goals for excellent patient care. See Appendix E for the Gap Analysis.

Gantt Chart

The NP-Led Care Pods implementation commenced in March 2021. The project was divided into four phases: planning, preparation, implementation, and evaluation. Preparation and planning were completed in the fourth quarter of 2020. The proposal was created, necessary resources were acquired, the educational module and curriculum were prepared, implementation details were attended to, and attempts were made to foresee and mitigate barriers to implementation. The staff schedule for the education sessions was established in December

2020, subject to change with the emergence of the COVID-19 pandemic. The implementation

proceeded for three months, ending in early June 2021 with post-implementation administration

of the TeamSTEPPS Teamwork Perceptions Questionnaire and an analysis of the NRC Health

Patient Experience Survey scores. The original plan of dissemination and reporting was a

PowerPoint presentation to the stakeholders. However, as the project neared completion,

competing priorities for key stakeholders made it necessary to meet with them individually to

report the project findings and discuss its implications for practice. See Appendix F for the

Gantt Chart.

Work Breakdown Structure

The work breakdown structure (WBS) illustrates the steps to execute the NP-Led Care

Pods. The four work phases (planning, preparation, implementation, and evaluation) aligned

with the project timeline of the Gantt chart. During planning, evidence-based best practices to

achieve the project aim were researched. Resources and key stakeholders were identified, and

the project timeline was established. During preparation, staff vacancies were posted, and

candidates were hired to fill open positions. Formation of the NP-Led Care Pod teams required

optimal staffing to include four disciplines in each team. The tools to measure outcomes were

selected, and education modules were designed. See Appendix G for the Education Modules.

The budget was reviewed in the preparation phase to confirm that all expenses had been

addressed.

The project implementation "kick-off" planned for March 2021was preceded by

announcing the new care model, the education session, and the implementation plans to the

staff. Implementation occurred in two phases. Phase One began with distributing the pre-

intervention TeamSTEPPS Teamwork Perception Survey (T-TPQ) to obtain a baseline for the

staff perception of teamwork. The 33 staff members were divided into four groups for the

education sessions. All staff from the NP-Led unit were invited and expected to participate as

part of their workplace responsibilities. At the end of the education session, responses to the T-

TPQ were collected. Phase Two marked the end of the planning phase and the initiation of

deployment of the NP-Led Care Pods. The T-TPQ was administered again at the three-month

mark. Surveying the NP-led unit's entire staff via the T-TPQ before the education session,

immediately after the education session, and at the end of the project, implementation enabled

observation of changed perceptions as the project developed and the sustained teamwork

perception by the end.

In the evaluation stage, the post-intervention T-TPQ was administered, and the results

were analyzed. Project review meetings were held with individual stakeholders to report key

findings and discuss the project's implications for practice. Planned revisions to the project after

completion and review were not undertaken as the DNP project lead left the organization after

final data collection. Plans for sustainability and spread were at the discretion of the

organizational leadership. See Appendix H for Work Breakdown Structure.

Responsibility/Communication Plan

In-person communication for the NP-Led care Pod was prioritized and occurred to the

degree possible with the emergence of the COVID-19 pandemic during project implementation.

Communication delivery modes were substituted where necessary, including virtual delivery of

the education sessions and some of the scheduled staff and leader meetings to share quality

metrics throughout the project. Project status reports were emailed monthly to key stakeholders.

A whiteboard/ bulletin board, updated every two weeks, provided an on-premises dashboard for

the unit staff that displayed quality metrics and compliance information on bedside handoff,

role-based purposeful rounding, and bedside rounding. The staff on the NP-Led Care Pods floor, the Care Pod Team Leader, patients and their families, the Chief Learning Officer, and the VP of Nursing were all able to find up-to-date project-related quality metrics on the dashboard. Weekly safety huddles were held to provide real-time feedback on observations and compliance for staff on the GMU. See Appendix I for the Responsibility/Communication Plan.

SWOT Analysis

A SWOT analysis was conducted to guide project design and inform specific aspects of implementation. Strengths are the qualities in the organization that support the implementation of the NP-Led Care Pods. Unit staffing structures (NP, RN, patient care technician, and information specialist) were in place. An internal strength of the implementation unit is enhanced teamwork. Staff was experienced and skilled in communicating with patients and the patients' families, despite communication barriers imposed by the organizational structure. The projected cost of the quality project was low.

A weakness was the organizational culture and the silos that impaired collaboration and transparent sharing of information. An additional weakness was the fatigue of an overworked staff (exacerbated by the COVID-19 pandemic), which became the "status quo" in the GMU. This prolonged fatigue added to risks of miscommunication or inadequate communication of patient care needs and may have contributed to the observed increase in sick calls and lost workdays.

An opportunity gained from the implementation is for the NP-Led Care Pod structure to serve as a model for units beyond the GMU and other provider settings. One benefit of the NP-Led Care Pod is the opportunity it provides for mentorship. In the medical-surgical unit, many newly graduated nurses need additional support after orientation. If the NP-Led Care Pods

model proves successful, new graduate nurses may find the NP mentorship helpful as they aspire to become advanced practice nurses. The NP-Led Care Pod's emphasis on patient/family involvement in the patient plan of care is an opportunity for the patient as a healthcare "consumer" to partner with care providers to co-design their care. Communicating a focus on patient-centered care raises the hospital image in the community's eyes, physicians and may influence their decisions to send their patients to the hospital. Improved communication with local skilled nursing facilities on discharge will allow the organization to increase its competitive stance in the community. Improved NRC Health patient experience scores presented an opportunity to stop financial loss related to CMS value-based purchasing.

The COVID-19 pandemic presented a threat from several directions. The pandemic put financial stress on the entire organization and induced an "emergency response" position where immediate needs were understandably prioritized over process improvement. Staff exhaustion throughout the hospital-imposed resistance to changes that would likely be welcomed under normal circumstances. A possible but unlikely threat to the project was an objection by the professional unions of perceived changes to job roles and duties imposed by the NP-Led Care Pod model. Care to ensure that duties and responsibilities aligned with current job descriptions and union contracts were the best strategies to mitigate this threat. Unstable and inadequate staffing in the hospital could affect fully staffing the NP-Led Care Pods with the four disciplines due to workforce hardships and illness. See Appendix J for the SWOT Analysis.

Financial Analysis

Budget

The proposed cost of the NP- Led Care Pods implementation included the costs of staff

attendance at the education sessions, catering the breakfast, producing printed materials, and

creating the badge buddies. The total attendance for education sessions was projected for 51

staff members: 12 NPs, 11 RNs, 14 PCTs, and four information specialists. The budgeted cost of

attendance was $260 per NP, $220 per RN, $100 per PCT, and $88 per information specialist,

for a total of $7,292. The total cost for printed educational materials was budgeted at $250

(collated, printed, and placed in packets). Materials were made available electronically (at no

additional instructional design or IT cost). The badge buddies with the CONNECT and LAST

acronyms and SBART were estimated at $2.23 each, for a total of $223. The cost of catering for

four education sessions was budgeted at $600. The projected total cost for the quality

improvement project was approximately $8,365.

The actual cost of project implementation was under budget. Fewer staff were able to participate

due to turnover, transfers, and staff constraints imposed by the COVID-19 pandemic. The

education session was cut from four hours to two, cutting compensation for attendance to half of

the initial budgeted amount. Overall costs for the implementation were $3,841, approximately

54% under budget. See Appendix K for the Proposed Budget vs. Actual Budget.

Return on Investment

The benefit of improving communication through this cost-effective implementation is

found in loss avoidance. Currently, the hospital is not maximizing its Value-Based Care (VBC)

reimbursement, "leaving money on the table" because the HCAHPS scores do not meet the

criteria for full reimbursement. This simply translates into a loss of revenue. Baseline CMS

reimbursement is only70% of potential full reimbursement. Improving the patient experience

scores with better care team communication can increase CMS reimbursement from 70% to

100%. For the GMU, the average gross reimbursement per patient would be $6,987 at 100%

reimbursement, based on internal hospital data for 2020. By improving the patient experience-

specific metrics, the GMU can increase the percentage of VBC reimbursement, as the nurse

communication domain is one of the eight domains that determine the VBC reimbursement

percentage. Improving the score will influence the potential of receiving 100% reimbursement.

The NRC Health survey scores have a direct relationship with HCAHPS scores, which in turn

influence the VBC reimbursement percentage. While the VBC reimbursement is calculated

from many quality metrics, based on available evidence from the literature ((Press Ganey

Associates, 2013), the 14% average increase in nurse communication domain scores was

estimated to reflect reimbursement increases of 5% to 10%. The GMU has an average discharge

patient of 160 patients per month. Increasing the reimbursement rate by 5% avoids a monthly

loss of $55,840 ($335,560-$279,520). Comparatively, increasing the HCAHPS scores more will

improve the reimbursement rate by 10% avoids a monthly loss of $111,840 ($335,360-

$223,520). Total cost avoidance for one year at 5% is $670,080 and at 10% is $1,342,080. The

cost of project implementation was $3,841, for a net projected one-year return on investment

(ROI) of $666,239 at a 75% reimbursement rate and $1,338,239 at an 80%. See Appendix L for

the Return on Investment.

Study of the Intervention(s)

The intervention was monitored three times a week to ensure compliance with the NP-Led Care Pod model, assess contextual elements that could influence project outcomes, and make any necessary adjustments. The DNP project lead, NP team leader, and charge nurse observed the staff and monitored patient engagement. The DNP project lead provided feedback to the staff in real-time on aspects of the model that were going well and areas that could be improved. Observations by unit leaders and staff and suggestions for improvements were encouraged. Unit leaders modeled the processes and coached team members who were having difficulty. Daily the unit leaders (unit manager, team leader, and charge nurse) would share their observations with the DNP project lead on compliance with bedside handoff, interdisciplinary bedside rounding, and role-based purposeful rounding, noting where the teams were doing well and where adjustments were needed. Leaders observed compliance to the use of CONNECT and LAST and shared their observations with the DNP lead. Necessary adjustments were made incrementally to provide the least disruption to the teams and patients as they adjusted to the NP-Led Care Pod model.

Outcome Measures

The first desired outcome of the NP-Led Care Pod was a 10% increase in the NRC Health Survey scores from baseline values for the three items in the team communication domain, to be measured at three months from the start of the intervention. The team communication domain of the survey was chosen as the most direct available measure for patient perceptions of improved communication. The three target survey items were:

- Target 1: "Care team explains things" to improve from a net promoter score of 25% at baseline to 27.5% net promoter score.

- Target 2: "Care team listens carefully" to improve from 25% net promoter score at baseline to 27.5% net promoter score.

- Target 3: "Good communication between staff" to improve from 25% net promoter score at baseline to 27.5% net promoter score.

The NRC Health Real-Time Survey scores of the NP-Led Care pods were compared to the resident-led and PA-led units filtered by discharge date.

A second desired outcome was a 25% increase in teamwork perception measured by four of the five TeamSTEPPS Teamwork Perceptions Questionnaire (T-TPQ) constructs (team function, mutual support, situation monitoring, and communication) three months after the start of implementation. The T-TPQ is a validated and reliable measure of individual perception of teamwork (Cronbach's alpha 0.88-0.95). Thirty percent of the hospital's value-based payment (VBP) is influenced by patient experience scores, as calculated from CMS reimbursement data (Press Ganey Associates, 2013). The NP-Led Care Pod survey focused on scores in the nurse communication domain, which drives a substantial portion of VBP. The T-TPQ was administered pre-intervention, immediately post-education sessions, and three months post-implementation to measure sustained improvement.

Data Collection Instruments

Changes in the teamwork and patient perception of teamwork outcomes were measured throughout the NP-Led Care Pods project implementation. The AHRQ Teamwork Perceptions Questionnaire (T-TPQ) was used to assess teamwork (AHRQ, 2017; Battles & King, 2010). See Appendix M for the TeamSTEPPS Teamwork Perception Questionnaire. The NRC Health Patient Experience Survey (NRC Health, 2020) was used to assess patients' perceptions of communication. Several methods were employed for assessing the completeness and accuracy

of the data. Both the T-TPQ and NRC Health Patient Experience Survey are widely used, validated, reliable tools. Data collection was anonymous to ensure authentic responses and maintain confidentiality. The staff was advised of the confidentiality of their responses. Each participant created a 5-digit code to match their survey responses pre- and post-education session and post-implementation. The T-TPQ surveys were created in Qualtrics to allow for accurate analysis of results and distributed through an email link that ensured the anonymity of responses. Data for both tools were collected on Excel spreadsheets and analyzed using Excel. Unstructured discussions with the unit leader, NP-Led Care Pod team members, and patients provided data for informal evaluations of the project.

The AHRQ T-TPQ is a widely used survey tool that has undergone extensive revision and validation since 2008 when it was first piloted. The T-TPQ has been administered in more than a thousand healthcare organizations (AHRQ, 2017). The tool has five constructs (team structure, leadership, situation monitoring, mutual support, and communications). Internal consistency of the constructs ranges from 0.89 to 0.95 (AHRQ, 2017). The convergent validity was assessed against the AHRQ Survey Hospital Survey on Patient Safety (HSOPS), a widely used and validated tool to measure teamwork and patient safety culture. The correlation coefficient between T-TPQ and HSOPS is 0.81, indicating a close positive association between the two variables and increasing confidence in the results generated with the T-TPQ's tool (AHRQ, 2017).

The NRC Health Patient Experience Survey is distributed to patients at discharge to provide fast feedback on the patient's healthcare encounter (NRC Health). See Appendix N for an example of an NRC Health Survey. Patients receive surveys through email, SMS, or interactive voice response and respond in kind to Likert scale and open-ended questions. NRC

Health (2020) set survey readability at 70.7 using the Flesch-Kincaid Grade Level scale, corresponding to the reading ease of a sixth-grader or 12–15-year-old. The internal consistency measure was high, with a Cronbach's alpha score of 0.9373. The NRC Health determined the importance to survey participants by correlations between the survey questions and the likelihood to recommend the survey. The correlations ranged between 0.336 and 0.565, which is considered good (NRC Health, 2020).

Contextual elements of the project that directly impacted team perceptions of communication and patient experience with the care teams, measured by T-TPQ and NRC Patient Experience scores, were assessed on an ongoing basis. Key contextual elements monitored were (a) quality of team member engagement with each other and with patients, including more direct communication and fewer conflicts; (b) use of the TeamSTEPPS structured communication tools and strategies; (c) efficiency of the NPs responding to Care Pod team members' medical management questions, and (d) adherence to the purposeful rounding schedule and plan. Contextual elements with the potential to interfere with the intended outcomes, such as the impact of the COVID-19 patient surge, and the addition of traveler nurses to the Care Pod teams, were also monitored by direct observation. However, no adjustments were possible given the context of hospital operations during COVID-19.

Analysis

Quantitative Data

Data collected with the T- TPQ tool and the NRC Health Patient Experience tool were analyzed with Excel. The T-TPQ data was collected and recorded in Excel pre-education, directly post-education, and post-intervention. Numeric values for the T-TPQ survey responses were on a scale of 5 (strongly agree) to 1 (strongly disagree), with 0 for no response. See Appendix O for T-TPQ Composite Scores.

Numeric scores were obtained for three domains of the NRC Health Patient Experience Survey, patients' perceptions of how well Care Pod team members listened to them, communicated with them, and their perceptions of Care Pod team members' communication with each other. Survey data was collected for the NP-Led Care Pod and comparison units pre-intervention and at one, two, and three-months post-intervention. Data were extracted and recorded in an Excel spreadsheet for analysis of percent change from baseline.

The NRC Health survey data is scored as a net promoter score (NPS). The NPS is on a scale of 1-10, with "promoters" rating their experience at 9 or 10, "passives" giving a 7-8 rating, and "detractors" rating their experience 0-6. The "detractor" scores are subtracted from the "promoter" scores promoter" scores for each category to provide the monthly score. For example, if 10% of respondents were "detractors," 10% were "passives," and 80% were "promoters," the NPS would be 70% (80%-10% =70%). See Appendix P for NRC for NRC Health Real-Time Reporting Matrix.

A power analysis was performed to determine if the sample size was adequate to draw any statistical inferences. The power analysis used an alpha of 0.05 and a power of 0.95. This power analysis showed that there would need to be a total of 27 out of 35 participants for the T-

TPQ and 67 out of a possible 160 per month for the NRC Health Real-Time survey to meet the level of significance. The monthly average sample size of responses to the size of responses to T-TPQ was 24 and 4.5 for the NRC Health Survey, both lower than the threshold for a statistically significant result. See Appendix Q for the Power Analysis.

Qualitative Data

Qualitative data were obtained through informal leadership discussions with staff and patients during leadership rounds. The nurse practitioner/nurse manager rounded on patients' mornings and afternoons and with the staff on evening rounds. The NP-Led Care Pod teams shared verbal feedback that was collected and annotated in a Microsoft Word document. The comments from patients and staff were examined for the emergence of intervention highlights to share with staff and uncover opportunities to improve the NP-Led Care Pod implementation. No qualitative data was collected from the NRC Health surveys as none of the open-ended questions referred to the change in the NP-led team model.

Ethical Considerations

The NP-Led Care Pod implementation, undertaken as partial fulfillment of the Doctor of Nursing Practice degree, was approved by the organization in which it was conducted. See Appendix R for Letter of Support. The DNP project lead completed IRB training on Human Subjects Research (HSR) through the Collaboration Institutional Training Initiative (CITI) program to ascertain IRB guidelines and determined the project to be non-research, quality improvement. See Appendix S for CITI Certificate of Completion.

In October 2020, the University of San Francisco, Doctor of Nursing Practice department of the School of Nursing and Health Professions (SONHP) determined that this project met the guidelines for an evidence-based change in practice project as outlined in the

DNP project checklist and was approved as non-research. The statement of non-research determination was approved by the DNP department of USF SONHP. See Appendix T for USF SONHP Statement of Non-Research Determination. As the project was deemed an activity of Healthcare Operation by the sponsoring organization and did not include human subjects, IRB review was not required. See Appendix U for Statement of Non-Research IRB Exemption from the organization's IRB/Research Committee.

Anonymity and confidentiality of patient participants were protected in reporting NRC Health Real-Time Survey response scores as a third-party vendor administers the survey to a random sample of adult patients discharged from the GMU to home and short-term rehabilitation with anonymized, aggregated survey responses reported in real-time. The GMU staff were advised prior to project implementation that their participation in the project was part of their compensated professional role in the organization. All data from the T-TPQ surveys were collected anonymously to protect confidentiality. Participants used a 5-digit identifier known only to themselves. To protect participants' physical and psychological well-being, all were reassured of the measures taken to preserve their anonymity and that all data collected and reported had been de-identified. At the conclusion of each data collection event, scores were recorded in a codebook to track responses to the three T-TPQ surveys. All data collected in hardcopy form was deposited in a locked bin located in a low traffic area of the unit.

Project development was guided by the ethical principles of autonomy, beneficence, non-malfeasance, and justice described in the American Nurses Association Code of Ethics (ANA, 2015). This project respected the autonomy of each member of the NP-Led Care Pods by defining the individual and collective roles of all those involved in patient care. The concept of the NP-Led Care Pods is informed by the Jesuit values of the University of San Francisco's

pedagogy. A key Jesuit value is "service rooted in justice and love"— humanizing everyone through respect and dignity (University of San Francisco, 2019). In the NP-Led Care Pods project, these values are emphasized among the team members and with patients. The project applied a culture of service rooted in justice and love through enhancing patient-centered care. The core of patient-centered care is conferring dignity and respect to the patient by giving them agency in decisions about their care. The Jesuit value of recognizing the diversity of perspectives and experiences (University of San Francisco, 2019) is reflected in the DNP project's team-based approach to care.

Section IV: Results

Teamwork Perception Scores

A specific aim of the DNP project was to increase teamwork perception (T-TPQ) scores by 10% from baseline. The aim was not met with post-implementation results. Due to staff attrition throughout the project, the T-TPQ surveys were administered to 35 members of NP-Led Care Pods pre-education, post-education, and post-intervention. The criteria for inclusion in the final survey evaluation phase were completing all three surveys (pre-education, post-education, and post-intervention), the inclusion of the 5-digit code on each returned survey, and participation in the educational sessions. The criteria were met by 24 of 35 (68.5%) surveys administered. The survey response rates were 91.4% (n=32) pre-education, 88.6% (n=31) post-education, and 80.0% (n=28) post- intervention. The total scores were calculated for each survey for the three data collection points. Total T-TPQ scores were 2739 (85%) at baseline, 2990 (92%) immediately post-education, and 2954 (91%) post-intervention, out of a possible survey score of 3240. The total T-TPQ scores for surveys administered post-education increased 9.2% from baseline (from 2739 to 2990) and decreased 1.2% from post-education to post-

intervention (from 2990 to 2954). The average survey response rate of 86% suggested an accurate representation of the majority of staff perceptions. Contextual elements that may have contributed to the observed results were the increased workload and heightened stress imposed by the COVID-19 pandemic, shifting policies and protocols for staff and patient safety, team changes requiring integration of traveler nurses, and survey fatigue. The complete TeamSTEPPS training program was not implemented. Instead, only the communication module concepts were taught, possibly impacting the sustainability of the scores. The time allotted for the education sessions was reduced by 50%, introducing another contextual element that may have impacted the outcomes, as less time was available to practice using the communication tools. The quantitative data from the questionnaires did not capture the positive comments on team communication, workflow, and continuity of care the staff shared informally throughout the implementation.

Patient Perceptions Scores

The original measure of patient experience planned for the project implementation was the HCAHPS scores. A hospital decision was made shortly before implementation to change patient experience data providers from an HCAHPS vendor to NRC Health, substituting the NRC Health Patient Experience Survey, with similar questions but different scoring. Survey response rates in the GMU (NP-Led Care Pods) varied throughout the project from n=4 to n=8 per month.

The baseline (pre-intervention) scores for the NP-led unit were 25 for "the care team explained things," "the care team listened carefully," and "communication between staff." At one-month post-implementation, the scores for all three items dropped to 10, the lowest scores obtained over the course of the NP-Led Care Pods implementation. The reason for the decrease

was not identified. However, it may have been attributable to the staff learning new skills and attempting to apply them in the clinical still setting while managing the challenges of the first COVID-19 surge. Scores increased two months post-implementation to 42.9 (71.6 % from baseline) for "the care team explained things," 57.1(128% from baseline) for "the care team listened carefully," and 42.9 (71.6% from baseline) for "communication between staff." The post-implementation scores at three months decreased to 28.6 for "the care team explained things," 15.2 for "the care team listened carefully," and 28.6 for communication between staff. These scores were still a 14.4% increase from baseline for "the care team explained things" and "communication between staff." The drop in the scores from two to three months post-implementation may be attributable to an increase in temporary staff and new graduate nurses who began working in the GMU in the third-month post-implementation and had not participated in the NP-Led Care Pod training. Although the travelers and the graduate nurses did not participate in the survey, their presence on the team may have affected the responses of NP-Led Care Pod team members who participated in the survey.

For the comparison units (PA-led and resident-led), survey responses ranged from n=5 to n=18. The PA-led and resident-led unit scores throughout the project shared with the NP-led unit the same patterns of increases and decreases. The observed pattern may be attributable to external influences, such as the COVID-19 pandemic waves with its associated stressors and the employment of travel nurses to fill immediate staffing needs.

The PA-led and resident-led units had a higher response rate than the NP-Led Unit, which led to differences in response weighting. Throughout the three-month intervention, the resident-led unit had higher scores on "care team listened carefully." The NRC Health NPS for this domain, averaged over three months, was 38.9 for the resident-led unit compared to 26.15

for the NP-Led unit and 32.2 for the PA-led unit. The NPS for "communication between staff" was also higher on the resident-led unit, with an average NPS of 35.5 compared to 26.6 for both the NP-led and PA-led units. The difference may be attributable to the lower patient-to-staff ratios in the resident-led units (6:1) than in the NP-led (11:1) and PA-led units (8:1).

Observations of Staff and Patient Behavior

Within the first month of the implementation, the staff integrated role-based purposeful rounding, bedside shift reporting, and structured bedside interdisciplinary team rounds into their routine and became more adept and regular in applying their newly acquired skills. The need for coaching from the unit leader lessened from the initial month of Care Pod implementation through the subsequent two months. Ease of communication increased as nurses adopted their designated team roles and became accustomed to the NP-Led Care Pod model and adopted it as "standard work."

Nurses reported feeling supported and that their concerns were being addressed in real-time. The patient care technician and the unit information specialist felt greater inclusion in the patient care team and greater satisfaction with their roles. Patients were noticeably more comfortable with the bedside care they were receiving and asked fewer questions about their care plans as the implementation progressed.

The NP-Led Care Pod team members commented on their greater efficiency in providing care, while the nurse practitioners shared that the nurses appeared to be more competent in their roles. Both the nurse practitioners and the nurses expressed that the patient care technicians appeared more engaged in direct inpatient care.

Section V. Discussion

Summary

Although the specific aims of the DNP project were not met, the key findings from the project on team communication and workflow align with the literature to suggest a structured process for team communication can improve staff perceptions of teamwork and patient perceptions of staff engagement in their care. The findings from the NP-Led Care Pod quality improvement project can serve to inform future team-based care interventions for inpatient care. With teams organized in Care Pods, each team member was able to work more collaboratively within a systematic, structured workflow. With enhanced collaboration, each discipline within the unit could more effectively contribute to the patient care plan through the lens of their professional expertise and scope of practice. More meaningful interactions were observed among Care Pod team members and with patients and their families.

Kotter's eight-step process for leading change (Kotter, 2009) supplied the conceptual framework for the NP-Led Care Pods intervention. Kotter's framework considers the emotional component of change management, which made it a good fit for the project's emphasis on staff perceptions of teamwork and patient perceptions of staff engagement. A strength of the project was forming teams (pods) to work together to care for the same patients. As a result, relationships grew stronger between disciplines, and fewer staff conflicts were observed. Another strength of the project was having a single leader for all disciplines on the team. This structure reduced the number of steps to approve workflow changes, created clear channels of communication, and provided a direct line for two-way feedback between the nurse practitioner/nurse manager and all members of the Care Pod teams.

A lesson learned from the changes to the GMU imposed by the Covid-19 pandemic was that the traveler nurses who worked in the GMU during the project implementation appreciated the culture and communication they encountered with the NP-Led Care Pods and reported fewer communication problems than with less-structured provider teams. Many of the travelers also worked in the PA-led and resident-led floors. They commented to the NP-led unit members on the effectiveness of communication, workflow, and PCT engagement in patient care. The DNP project lead observed less need for coaching Care Pod team members on the structured communications strategies during informal observations at rounds and handoffs. While not measurable, less attention to coaching in the intervention may have contributed to the observed outcomes.

The results of the NP-led implementation of team-based care led to the consideration of new possibilities. Improvement to the intervention and the outcome measure may possibly assist in receiving sustainable improvement. Fluctuations in the T-TPQ survey results suggest offering the entire TeamSTEPPS curriculum may improve consistency for team roles, function, and communication. Studies that investigate safety metrics, length of stay, and missed care opportunities with NP-Led Care Pod teams relative to other team approaches to care would strengthen the existing body of evidence on team-based care. Anecdotal evidence from this project indicated more efficient patient discharges and fewer "missed care" events, such as unperformed laboratory tests or medications prescribed but not administered. Future studies are needed to investigate the effect of NP-Led Care Pods on these and related quality aspects of patient care.

The evolution of the project indicated that collecting feedback from Care Pod team members and patients using a formal tool would have helped gather qualitative data not elicited

from survey questions. The project was implemented during a time of unanticipated hardship with the emergence of the COVID-19 pandemic, making it difficult to separate outcomes from confounding variables. The lesson learned was to not forge ahead with such a complex project at a time of organizational distress and to adjust the project to a more realistic scope and aim.

The project implication for advancing nursing practice is illustrating the benefit of NPs as leaders of teams. The project findings were consistent with Kilpatrick's (2013), which demonstrated that adding NPs to patient care could increase team effectiveness and patient engagement, especially when the NPs exercised their full scope of practice. The nurse practitioners served as mentors to the NP-Led Care Pod teams and set professional excellence and growth expectations. The nursing profession would benefit from additional studies on NP-led structured team communication in clinical settings, as evidence from the literature is scarce.

Interpretation

Role-based purposeful rounding, bedside shift reporting, structured bedside interdisciplinary team rounds, and TeamSTEPPS communication strategies were implemented within the NP-Led Care Pods model. The effectiveness of using these strategies within the model was assessed with the AHRQ T-TPQ and the NRC Health Patient Experience survey tools. The quantitative results from the T-TPQ survey fell short of the specific aim to improve the Care Pod teams' perceptions of teamwork by 10% from baseline.

However, the implementation of role-based purposeful rounding increased the overall staff presence on the unit. Although not measured directly, unexpected positive effects included an increase in the staff presence that may have influenced outcomes such as fewer falls and fewer patients and families expressing dissatisfaction with care. The patient care techs and nurses alternated hourly rounding, and the nurse practitioners rounded every two to three hours.

Fewer patient complaints were received during rounds conducted via the NP-Led Care Pod model. The NP responded quickly to nurses' and nurses' assistants' questions on medical management and the 4Ps, enabling them to be more responsive to patients and provide better bedside care.

Patient care experience results improved from baseline for the three survey items measured but were inconsistent and not sustained: "the care team explained things," "the care team listened carefully," and "communication between staff." Patient and staff feedback on bedside shift reports and structured bedside interdisciplinary rounds during NP-Led Care Pod implementation was positive. Although the project faced confounding variables of the COVID-19 pandemic, traveler nurses and new graduate nurses who had not been trained in the project intervention communication strategies, and associated competition for time and resources imposed by the pandemic, positive outcomes were achieved. Team workflow was better organized, with fewer delays in providing care and fewer chances to overlook and miss care. Throughout the implementation, the NP-Led Care Pod team members offered ideas on improving the model, demonstrating their engagement and "buy-in" for a better way to work as a team to care for patients. To sustain the project gains, integration of education on team communication and collaboration in new hire orientation should be an organizational priority. A limitation to the study is that feedback was captured extemporaneously and anecdotally. Future studies would benefit from systematic collection and analysis of feedback from Care Pod team members on their experiences and recommendations for improving the model.

The results for the NP-led unit showed a similarity to the resident-led and PA-led units with patterns of increases and decreases in scores and survey response sample sizes. Unit comparisons were not instructive since patient demographics and comorbidities differed for the

NP-Led unit as compared to the resident-led and PA-led units. Many of the patients from the NP-led unit returned to nursing homes or were dispositioned to rehab, while patients of the resident-led and PA-led units were discharged to home.

Published studies of NP-Led Care Pods implementation combined with the contribution of NP-Led units to team communication were not found in the published literature, precluding a comparison of the findings of this project with those of similar studies. Many studies have shown that TeamSTEPPS improves communication and the perception of teamwork (Health Research & Educational Trust, 2015), although no studies were identified in the literature by the project lead that addressed the relationship between multi-disciplined team communication fostered by TeamSTEPPS and patient perceptions of teamwork. No studies were found that investigated the implementation of combined role-based purposeful rounding, bedside shift reporting, structured bedside interdisciplinary team rounds, and TeamSTEPPS communication strategies in team-based care to the patient and team perceptions of care. While the NP-Led Care Pods implementation was only of three-month duration and the results did not show a consistent increase in team perception scores, positive influences of role-based purposeful rounding were observed in outcomes such as fewer patient complaints and fewer families expressing dissatisfaction with care. The NP was able to respond quickly to questions Care Pod members asked on medical management and pain and potty of the 4Ps, enabling staff to be more responsive to patients and provide better bedside care. These findings suggest that even when implemented for a short time and under the duress of a concurrent COVID-19 pandemic, the NP-Led Care Pods model can have a direct positive effect on the quality of patient care.

Limitations

The project had several limitations, some introduced by the COVID-19 pandemic at the outset of the project implementation in early 2021. Traveler nurses working in the GMU with the NP-Led Care Pod teams had not received the tools provided in the educational sessions and had a minimal introduction to the NP-Led Care Pod philosophy and structure. Staff constraints imposed by the COVID-19 pandemic made it necessary to cut the educational sessions from four hours to two, reducing time for content delivery and question/answer sessions. This change from the plan may have affected how comfortable the team members were with implementing the Care Pod model.

Integration of the traveler nurses into the NP-Led Care Pod teams without the adequate orientation to the model may have influenced the original Care Pod team members' responses to the T-TPQ survey and patients' responses on the NRC Health Patient Care Experience discharge survey. The traveler nurses rotated in and out of the unit every 8-13 weeks, which may have affected staff perception of who was on their team and how well they could work together. Bedside shift reporting was abbreviated due to COVID-19-imposed staff constraints, while COVID-19 patient isolation imposed new constraints on interdisciplinary team rounds.

The patient experience score vendor was changed two months prior to project implementation. The new vendor distributed NRC-Health Real-Time Surveys via email and phone and HCAHPS surveys via U.S. mail, while the previous vendor had only used HCAHPS surveys via U.S. mail. With the change, only Real-Time survey data could be used as HCAHPS scores have a month-long lag time from collection to reporting. There was a transition period for the organization to learn how to collect patient contact information for the vendor best to distribute the surveys. One example of this was the need for the organization to obtain email

addresses and cell phone numbers for all patients, which had not been done previously. This contact information was needed to increase the survey sample size. Patient Experience Survey scores may have been affected by increased anxiety about COVID-19 and discomfort with changes in care practices, skewing patient responses independent of the changes introduced by the implementation.

A limitation may have been introduced by the change in the HCAHPS survey vendor from Press Ganey® to NRC Health two months prior to project implementation. The two vendors' processes differed, which may have affected patient scores as staff adjusted to NRC Health's process. The low response rate on the NRC Health Patient Experience Survey introduced the possibility of skewed results from a sample that was too small to provide an accurate depiction of the overall unit patient experience. Implementation of the quality improvement project during the first 2020 COVID-19 pandemic surge limits the generalizability of the results to less fraught patient care settings.

The GMU experienced many changes in leadership throughout the implementation of the NP-Led Care Pod. The key stakeholders changed after the initial planning phases of the project. At the end of the implementation, four of the key stakeholders transitioned out of the organization. At the end of the implementation, the DNP project lead transitioned out of the organization, and proprietary information collected and used during the project was no longer accessible. This prevented subsequent collection of information seen retrospectively as valuable for the project, including the qualitative data gathered in patient rounds. There was also a wave of staff transfers to the ICU and the Emergency Department who had been trained in the processes of the NP-Led Care Pod communication strategies and were replaced by staff yet to be trained. A recommendation was made to nursing leadership to incorporate education to

promote team communication, as modeled by the NP-Led Care Pod intervention, into the new hire process. Changes in leadership and staff decreased the ability to sustain the project.

Conclusion

The NP-Led Care Pods implementation contributed to an understanding of the contribution of NP leadership and team structure on communication and performance. While quality improvement results were inconsistent over the three-month project implementation, future projects may still be informed by the study design, findings and limitations. The NP-Led Care Pods created an environment where staff communication became more effective and efficient through the influence of structured processes and workflow improvements. Team dynamics improved with the use of the TeamSTEPPS tools, which enabled the staff to share concerns and communicate productively when faced with frustration or difficult situations. The team remained engaged throughout the project due to frequent feedback and encouragement of the staff to share their input. The NP-led Care Pod model encouraged NPs to mentor their team members in the acquisition of communication competencies for team-based patient care, providing opportunities for professional growth as mentors and mentees. Taken together, the findings suggest the efficacy of a team-focused structural change to improve team communication and engagement. Nurse practitioners are well-suited to lead such change as advocates for quality improvement and better patient care.

The project faced many challenges, including those imposed physically and psychologically by the COVID-19 pandemic. However, the design and implementation of the project offer guidance for future projects concerning improvement in team-based care. Concepts from this project that may be transferable to other teams and settings include multidisciplinary team care at the bedside and inclusion of all team members in accountability for role-based

purposeful rounding. Sustainability in the project microsystem and spread to the larger

organization are contingent on hospital leadership as the DNP project lead is no longer part of

the organization.

Further studies may benefit from using measures to capture improvement in patient

safety and patient experience domains that were not addressed in this project. The use of formal

tools and protocols would ensure consistent observations on improvements in communication

and workflow in the NP-Led Care Pods.

Section VI: Funding

The DNP project was funded solely through the healthcare system's 2020-2021 GMU budget.

Section V: References

Adams, H. A. & Feudale, R.M. (2018). Implementation of a structured rounding tool for

    interprofessional care team rounds to improve communication and collaboration in

    patient care [PDF File]. *Pediatric Nursing*, 44(5), 229–246.

    https://www.thefreelibrary.com/Implementation+of+a+Structured+Rounding+Tool+for+

    Interprofessional...-a0561237923Agency for Healthcare Research and Quality. (2017,

    April). *TeamSTEPPS® teamwork perceptions questionnaire manual*.

    https://www.ahrq.gov/teamstepps/instructor/reference/teamperceptionsmanual.html.

Agency for Healthcare Research and Quality. (2019a). *TeamSTEPPS® 2.0*.

    https://www.ahrq.gov/teamstepps/instructor/index.html

Agency For Healthcare Research and Quality. (2019b). *About TeamSTEPPS*.

    https://www.ahrq.gov/teamstepps/about-teamstepps/index.html

American Nurses Association. (2015). *Code of ethics.*

    https://www.nursingworld.org/practice-policy/nursing-excellence/ethics/code-of-ethics-

    for-nurses/coe-view-only/

Battles, J., & King, H. (2010). *TeamSTEPPS® Teamwork perceptions questionnaire manual*.

    https://www.ahrq.gov/sites/default/files/wysiwyg/teamstepps/instructor/reference/teamp

    erceptionsmanual.pdf

Blakley, D., Kroth, M., & Gregson, J. (2011). The impact of nurse rounding on patient

    satisfaction in a medical-surgical hospital unit. *MEDSURG Nursing*, *20*(6), 327–332.

    https://pubmed.ncbi.nlm.nih.gov/22409118/

Campbell, R. J. (2020). Change management in health care. *The Health Care Manager*, *39*(2), 50–65. https://doi.org/10.1097/hcm.0000000000000290

Dang, D., & Dearholt, S. L. (2017). *Johns Hopkins nursing evidence-based practice: Model and guidelines* (3rd ed.). Sigma Theta Tau International.

Dingley, C., Daugherty, K., Derieg, M. K., & Persing, R. (2008). Improving patient safety through provider communication strategy enhancements. In K. Henriksen, J. B. Battles, M. A. Keyes, & M. L. Grady (Eds.). *Advances in patient safety: New directions and alternative approaches (Vol. 3: Performance and tools).* Agency for Healthcare Research and Quality. https://www.ncbi.nlm.nih.gov/books/NBK43663/#advances-dingley_14.s1

Hastings, S. E., Suter, E., Bloom, J., & Sharma, K. (2016). Introduction of a team-based care model in a general medical unit. *BMC Health Services Research*, *16*(1). https://doi.org/10.1186/s12913-016-1507-2

Health Research & Educational Trust. (2015). *Improving patient safety culture through teamwork and communication: TeamSTEPPS®.* https://www.aha.org/system/files/2018-01/2015_teamstepps_FINAL.pdf

Keyes, M. A. & Grady, M. L. (Eds.). *Advances in patient safety: New directions and alternative approaches (Vol. 3: Performance and tools).* Agency for Healthcare Research and Quality. https://www.ncbi.nlm.nih.gov/books/NBK43663/#advances-dingley_14.s1

Kilpatrick, K. (2013). How do nurse practitioners in acute care affect perceptions of team effectiveness? *Journal of Clinical Nursing*, *22*(17–18), 2636-2647. https://doi.org/10.1111/jocn.12198

Kilpatrick, K., Lavoie-Tremblay, M., Lamothe, L., Ritchie, J. A., & Doran, D. (2012).

    Conceptual framework of acute care nurse practitioner role enactment, boundary work,

    and perceptions of team effectiveness. *Journal of Advanced Nursing*, *69*(1), 205–217.

    https://doi.org/10.1111/j.1365-2648.2012.06046.x

Kotter, J. P. (2007, January). Leading change: Why transformation efforts fail. *Harvard*

    Business Review. https://hbr.org/2007/01/leading-change-why-transformation-efforts-fail

Kotter, J. P. (2009). Leading change: Why transformation efforts fail. *IEEE Engineering*

    Management Review, 37(3), 42–48. https://doi.org/10.1109/EMR.2009.5235501

Kotter, J. P. (2014). *The 8-Step Process for Leading Change - Kotter*.

    https://www.kotterinc.com/8-steps-process-for-leading-change/

Körner, M., Bütof, S., Müller, C., Zimmermann, L., Becker, S., & Bengel, J. (2015).

    Interprofessional teamwork and team interventions in chronic care: A systematic review.

    Journal of Interprofessional Care, 30(1), 15–28.

    https://doi.org/10.3109/13561820.2015.1051616

Mørk, A., Krupp, A., Hankwitz, J., & Malec, A. (2018). Using Kotter's change framework to

    implement and sustain multiple complementary ICU initiatives. *Journal of Nursing Care*

    Quality, *33*(1), 38-45. https://doi.org/10.1097/ncq.0000000000000263

Murphy, J. G., & Dunn, W. F. (2010). Medical errors and poor communication. *Chest*, *138*(6),

    1292–1293. https://doi.org/10.1378/chest.10-2263

Natafgi, N., Zhu, X., Baloh, J., Vellinga, K., Vaughn, T., & Ward, M. M. (2017). Critical access

    hospital use of TeamSTEPPS® to implement shift-change handoff

    communication. *Journal of Nursing Care Quality*, *32*(1), 77–86.

    https://pubmed.ncbi.nlm.nih.gov/27270844/

National Research Council Health. (2020). *Performance of the real-time inpatient feedback starter kit*. Retrieved December 3, 2020 from https://nrchealth.com/solutions/real-time-feedback/

Patterson, L. M. (2014). Preparing staff for intentional rounding. *Journal for Nurses in Professional Development, 30*(1), 16-20. https://doi.org/10.1097/nnd.0000000000000026

Press Ganey Associates. (2013). *The rising tide measure: Communication with nurses.* http://images.healthcare.pressganey.com/Web/PressGaneyAssociatesInc/Communication_With_Nurses_May2013.pdf

Real, K., Bell, S., Williams, M. V., Latham, B., Talari, P., & Li, J. (2020). Patient perceptions and real-time observations of bedside rounding team communication: The interprofessional teamwork innovation model (ITIM). *The Joint Commission Journal on Quality and Patient Safety, 46*(7), 400–409. https://doi.org/10.1016/j.jcjq.2020.04.005

Taylor, J. (2015). Improving patient safety and satisfaction with standardized bedside handoff and walking rounds. *Clinical Journal of Oncology Nursing, 19*(4), 414–416. https://doi.org/10.1188/15.cjon.414-416

University of San Francisco. (2019, May 15). *Vision, mission, and values statement*. https://www.usfca.edu/about-usf/who-we-are/vision-mission.

Appendix A

Unit Organizational Structure
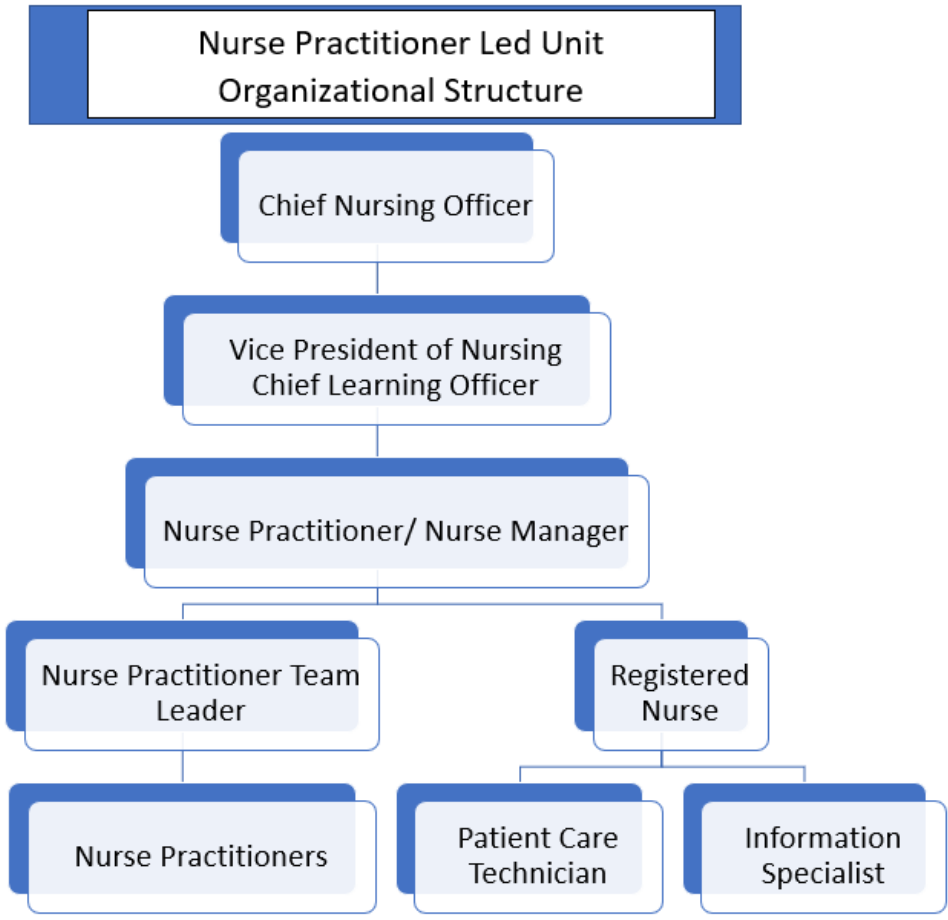
Appendix B

Table of Evidence

Adams, H. A. & Feudale, R.M. (2018). Implementation of a structured rounding tool for interprofessional care team rounds to improve communication and collaboration in patient care [PDF File]. Pediatric Nursing, *44*(5), 229–246. https://dl.uswr.ac.ir/bitstream/Hannan/88811/1/PediatricNursing%202018%20Volume%2044%20Issue%205%20September-October%20%283%29.pdf						
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their definitions) Measurement of Measure Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness** **Feasibility Conclusion Recommendation**
Evaluate the impact of the implementation of interprofessional structured care team rounding on team communication, collaboration, and team satisfaction.	No framework identified	**Design**: Quasi-experimental **Methodology**: Comparative method using a convenience sample. Data was collected over six months using pre-and post-intervention surveys measuring staff satisfaction with the structured rounding tool.	**Sample**:24 participants, 8 completed the survey both pre-and post-intervention, 16 responded to pre-survey and 16 post-surveys. **Setting**: eight-bed inpatient pediatric unit; community-based teaching hospital in the Northeastern United States	**Independent variable:** Structured care team rounding **Dependent variable(s):** Team Collaboration and Team member satisfaction **Measurement of Major Variables:** Each staff received a Collaboration and Satisfaction about Care Decisions (CSACD) survey pre-and post-implementation. The survey. The Cronbach's alpha value was reported as 0.93 for	Analysis performed comparing pre- and post-survey data using pooled variance T-test, post hoc power analysis using G* Power 3.1, and descriptive statistic.	The interprofessional care team was highly satisfied with the structured rounding tool. Staff reported the use of standardized communication improved care coordination. Team communication was enhanced, timely, and accurate. The team found the tool easy to use. Data analysis showed a statistically significant improvement in the total score for collaboration and	Level II-B **Worth to Practice:** The use of structured rounding using a rounding tool improves team interprofessional collaboration and will help fill the care teams' gap. **Strength:** Implementation of a structured rounding tool that was successful at improving communication gaps**.** **Weaknesses:** • Small patient population • Non-diverse population • One practice setting • Convenience sample limiting generalization of findings

| | | | | the internal consistency. The staff took a documentation process assessment to measure the team satisfaction with the documentation process and whether they perceive the documentation helped team communication. | | team members. satisfaction (p=0.081). There was a significant increase (p<0.001) in staff satisfaction. The team satisfaction mean score increased from 3.56 to 5.88. Collaboration mean scores increased from a neutral value to 6.19. | ● Inconsistencies occurred during the completion of the pre- and post-intervention survey by the pediatric medical residents.

Feasibility: The described intervention is achievable. The rounding tool will guide the participant in the IDT rounds.

Conclusion: The impact of the implementation of the interprofessional structured care team rounding on communication was measured by the pre-and post-intervention survey measuring staff satisfaction with the structured rounding tool. The staff survey revealed that the rounding tool increase collaboration.

Recommendation: Structured rounds are recommended in all inpatient settings to improve communication and team collaboration. Further research to support the use of structured rounding. Future studies to evaluate the impact of structured rounding on patient satisfaction. Studies with larger sample sizes and diverse populations. |

Blakley, D., Kroth, M., & Gregson, J. (2011). The impact of nurse rounding on patient satisfaction in a medical-surgical hospital unit. *Medsurg Nursing, 20*(6), 327–332. https://pubmed.ncbi.nlm.nih.gov/22409118/

Purpose of Study or Review	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied Measurement of Measure Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Feasibility Conclusion Recommendation
To analyze the impact of purposeful nurse rounding using the 4 Ps on patient satisfaction and nurse satisfaction.	Stringer's Action Research Framework: Look, Think, Act	**Design:** Qualitative **Methodology:** Data was collected over six months through the case study method, observations, unstructured patient interviews, patient focus groups, questionnaires, and survey reports	**Sample**: Seven nurses interviewed, One director interview, Gallup survey n=200 (2nd quarter) and n=101 (third quarter) **Setting**: A medical-surgical unit of West Valley Medical Center, located in the Midwest in a large community hospital	**Independent variable:** Nurse purposeful rounding using the 4 P's **Dependent variable(s):** patient satisfaction, HCAHPS scores, nurse satisfaction, use of call bells **Measurement of Major Variables:** case study method, observations, unstructured patient interviews, patient focus groups, questionnaires, and survey Research questions: What is the impact of intentional, regular, and consistent nurse	Content analyses were performed of interviews focus group, observations, patient interviews, and staff questionnaire. Scores from the Gallup group were collected weekly and analyzed for overall improvement quarterly.	Patients' baseline satisfaction scores increased from 3.5 to 3.6 on a scale of 1-4 post-intervention. Patient perception of the staff is kind and compassionate. Staff reported a decrease in the use of the call bells. Rudeness complaints from patients about staff decreased by 43% post-intervention. Communication improved found amongst the care team. The staff reported an environment of trust and rapport.	Level III A/B **Worth to Practice**: Evidence that purposeful rounding positively affects patient satisfaction in the medical-surgical setting. **Strength:** ● Sample size ● The setting of the study ● **Weakness:** ● Staff Turnover ● Fluctuation of census ● Inconsistent use of the 4 P's **Feasibility:** The described

				rounding on a patient's satisfaction with his/her hospital experience? 2. What is the impact of rounding on the delivery of patient care from the nursing s			implementation of purposeful rounding will be feasible to apply to practice. **Conclusion:** The analysis of the impact of purposeful rounding using the four Ps on patient and nurse satisfaction. The surveys revealed a positive relationship between using the 4P's to meet patients' needs and the patient experience scores. The staff teamwork and communication also improved. **Recommendation:** Further studies to evaluate the use of nurse rounding and its effect on call bell usage.

Hastings, S. E., Suter, E., Bloom, J., & Sharma, K. (2016). Introduction of a team-based care model in a general medical unit. *BMC Health Services Research*, *16*(1). https://doi.org/10.1186/s12913-016-1507-2							
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their Definition) Measurement of Measure Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Worth to Practice Strength /Weakness Feasibility Conclusion Recommendation**
Evaluate the impact of the "hub" based care model on collaborative practice, patient experience, and staff satisfaction.	Canadian Interprofessional Health Collaborative National Interprofessional Competency Framework	**Design:** Review of an internal initiative with a mixed-method approach. **Methodology**: Semi-structured interview with staff. The Canadian Interprofessional Health Collaborative national interprofessional competency framework was used to develop the staff survey.	**Sample:** Staff Interview n=21 (15 RNs & LPNs, Four Healthcare Associates (HCA's), one Physician, and one-unit manager) Staff Survey n=25 Patient survey pre-intervention n=26 post-intervention n=37 **Setting:** General Medical Unit of one of Alberta Hospital Systems large urban center	**Independent variable**: Hub based care Model (collaborative practice model) **Dependent variable(s):** Patient satisfaction, staff satisfaction, turnover, and vacancies. **Measurement of Major Variables:** Patient Perception Measured by Canadian Patient experience surveys (quantitative) Semi- Structured-Interview with staff (qualitative).	Realist thematic analysis of the interview notes. Cronbach's alpha for the total staff survey 0.94. T-test and Chi-square test were performed on the results of the staff survey.	Staff interviews revealed interviewees felt comfort rounds, rapid rounds, whiteboards, and scripting using Name Occupation Duty (NOD), was beneficial. Hub-based care improved the unit culture, and care was provided in an organized, efficient manner. The nursing staff answered 72% of the survey answered staff showing the team was satisfied with patient care quality, role clarity, manager support, time and autonomy, engagement collaboration, and communication. Results for the survey question measuring the quality of care increased from 3.5 to 4.5 post-intervention (p<.001), role clarity from 3.6 to 4.1 (p<.05), and collaboration and communication from 3.4 to 4.4 (p<.001).	Level V-B **Worth to Practice:** The Hub-based care model contributes to increased collaboration leading to improved work quality and staff satisfaction. **Strength:** ●Survey results reflected interview results ● A detailed description of the implementation **Weakness:** ● Float staff not accustomed to the new model ● The small sample size for the survey ● Patient survey scores are generally high, causing possible

						Patient surveys revealed an increase from 50% to 58% in the survey question measuring the family and friends' involvement in the care. There was also an increase from 56% to 95% of the patients reporting that providers educated them on their medications. Administrative data showed a decrease in vacancies and turnover.

It contributed to improved patient-centered care and patient satisfaction. All disciplines were able to practice to their full scope. The team reported anecdotally that patients seemed more satisfied with care. There was also less patient call bell use. | ceiling effect

Feasibility: The application of hub-based care will have moderate feasibility due to potential staffing constraints but is achievable.

Conclusion: The "hub" based care model had a positive effect on patient satisfaction and approved team satisfaction.

Recommendation: Additional studies to validate the survey in other practice settings and using a larger sample size to increase generalization. |

Kilpatrick, K. (2013). How do nurse practitioners in acute care affect perceptions of team effectiveness? *Journal of Clinical Nursing, 22*(17–18), 2636–2647. https://doi.org/10.1111/jocn.12198

Purpose of Study or Review	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied (and their Definitions) Measurement of Major Variables:	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Feasibility Conclusion Recommendation
To evaluate staff perception of the addition of the NP role on teamwork.	Conceptual framework attributed to citation (Kilpatrick, 2012b), although not named in the article	**Design:** Qualitative study **Methodology:** Time and motion, semi-structured interviews (both individual and group), field notes, and case study Reviews	**Setting:** Employees from two Canadian university hospital's cardiology units. **Sample**: Case1 N= 59 nurses n= 32 Case 2 N=75 nurses, n=27, n= 535 documents reviewed	**Independent variable:** NP addition to care team **Dependent variable(s):** Perception of team effectiveness, decision-making, communication, cohesion, care coordination, and problem-solving **Measurement of Major Variables:** Time and motion, semi-structured interviews (both individual and group), field notes, and case study Reviews	Data collected over three months using observations and staff interviews. A content analysis was used to identify themes and similarities and differences in data analysis in data matrices.	Implementation of NP's practice positively impacted communication, decision-making, cohesion, care coordination, problem-solving, and emphasis on patients and their families. The staff identified that the NP's filled a gap in patient follow up. There was prompt attention to medical issues. Participants of the team felt that they had a greater voice in problem-solving on the unit. NP's set aside time to meet with patients and their families to answer questions. In case 1, the NPs were less independent in care decision-making. Although viewed positively, the staff perception of effectiveness was not as productive as case 2, where the NP's practice independently and within their full scope.	Level III A/B quality **Worth to Practice:** Exemplar to the NP Led Care Pod **Strength:** ● Structured interviews. ● Interviews performed until there was data saturation **Weakness** ● Unable to generalize findings ● One practice setting ● Did not include the perspective of patient and families **Feasibility:** The authors provided an excellent description of the measurement that can easily be duplicated **Conclusion:** There was an increase in the perception of team effectiveness with the addition of nurse practitioner.

							Recommendation: The NP can help improve patient and family integration into healthcare teams and improve team processes. Future research to evaluate patient and patient's family perception of team effectiveness.

Körner, M., Bütof, S., Müller, C., Zimmermann, L., Becker, S., & Bengel, J. (2015). Interprofessional teamwork and team interventions in chronic care: A systematic review. *Journal of Interprofessional Care, 30*(1), 15–28. https://doi.org/10.3109/13561820.2015.1051616

Purpose of Study or Review	Conceptual framework	Design/ Method	Sample/ Setting	Major Variables Studied (and their definitions) Measurement of Measure Variables	Data Analysis/ Data Synthesis	Study Findings	Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Feasibility Conclusion Recommendation
To review and identify key features of teamwork and interventions for enhancing interprofessional teamwork (IPT) in chronic care and to develop a framework for further research,	Input-Output-Process Model	**Design**: Systematic Review **Methodology**: An article search using the terms multi-, intra-, interprofessional published between 2002 and 2014 yielded 3217 articles. Inclusion criteria were examining teamwork in a rehab setting, intervention related to teamwork/ team performance, and published in English or German. In addition, the study is either a randomized controlled trial (RCT), two-group nonrandomized trial, single-group nonrandomized trial, descriptive study, qualitative explorative study, case the report or expert opinion includes consensus. Exclusion criteria unprofessional teams,	**Sample**: 23 studies included Eight studies had a quantitative methodology, eight were qualitative studies, and seven studies had a mixed-methods design **Setting**: Five performed in Canada, Five from the United Kingdom, three from the United States, three from Australia, two from the Netherlands, one from Sweden, one from Lebanon. Fifteen of the 23 studies were conducted in inpatient settings and 8 in outpatient units.	**Independent variable:** Interprofessional Teamwork **Dependent variable(s):** Team culture Team structure Team process Team output **Measurement of Major Variables:** Two-stage evaluation strategy of a data extraction and selection process. First, titles and abstracts were used to exclude articles. Second, a standardized form was used	In an Excel sheet, the articles were categorized for comparison by basic information (title, authors, year, and journal), study design, population, study setting, objectives and sample characteristics, description of the intervention, outcome variables, primary results, comments, decision (inclusion, exclusion, or uncertain), and level of evidence was classified according to the Oxford Centre for Evidence-Based Medicine	The review identified positive evaluation results for all interventions except for one that showed no significant improvement. Satisfaction is a primary outcome criterion for staff and patients; staff-related outcome criteria were team performance and team effectiveness. The organizational outcomes were a reduced length of stay and increasing.	Level III-B **Worth to Practice:** Establishing team interventions to enhance teamwork and staff and patient outcomes. **Strength:** The use of a search manual to identify all essential literature to minimize retrieval bias. **Weakness:** • the high heterogeneity of outcome criteria • restricts to studies published in English or German. • Search did not use similar concepts related to "teamwork. • The reviews found on team interventions are all for acute care or, in general, on collaborative health care. **Feasibility:** The described intervention is achievable. The elements of improved patient and staff

		Formal writing (ex. dissertations), intervention, and or outcome not team related.		to extract relevant characteristics.			outcomes apply to the project. **Conclusion:** The review identified key features of teamwork and interventions for enhancing interprofessional teamwork. The interventions showed that there was a positive relationship between interventions that increased teamwork and team culture and team process. **Recommendation**: Further studies on teamwork using input–process–output to better compare interventions.

Mørk, A., Krupp, A., Hankwitz, J., & Malec, A. (2018). Using Kotter's change framework to implement and sustain multiple complementary ICU initiatives. *Journal of Nursing Care Quality, 33*(1), 38–45. https://doi.org/10.1097/ncq.0000000000000263							
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their Definitions) Measurement of Measure Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Feasibility Conclusion Recommendation**
Evaluate the impact of bedside handoff and bedside Interdisciplinary Team (IDT) rounds on patient and staff perception.	Kotter's Change Framework	**Design**: Quality improvement initiative **Methodology**: Pre- post-implementation staff surveys, quality indicators, leadership rounding with families, and direct observation	**Sample** : RN and physician Pre-implémentation n=33, Post intervention n=26 Setting: 24 beds Medical-surgical Level 1 trauma center intensive care unit (ICU) in a 592-bed academic medical center	**Independent variable:** Bedside handoff and IDT rounds **Dependent variable(s):** Patient and staff perception Semi-structured interviews and observations Semi-structured interviews and observations **Measurement of Major Variables:** Pre-post-implementation staff surveys, quality indicators, leadership rounding with families, and direct observation The survey created by nursing	Data Analysis tools were not shared. Data was shared comparing the pre-implementation and post-implementation quality of bedside handoff.	The post-implementation survey showed significant improvement in 2 of 4 measured categories of reports, always accurate, the length is appropriate, and interruptions minimized.	Level V-B **Strength:** ● A detailed explanation of how Kotter's Framework guided each step of implementation. ● Displayed staff engagement and an increase in communication and collaboration post-intervention **Weakness:** ● One practice setting ● Use of unvalidated survey **Worth to Practice:** ● NP served as mentors and champions for the QI project ● An exemplar of a QI project implemented using Kotter's change framework **Feasibility:** The

| | | | | leadership and the unit council—post-implementation survey distributed six months post-implementation | | | implementation has increased feasibility with the use of Kotter's Change Framework

Conclusion: The implementation of **bedside** handoff and bedside Interdisciplinary Team (IDT) rounds on patient and staff perception improved the amount of interruption during handoff and length of handoff.

Recommendation: The use of Kotter's Framework for successful implementation. The use of bedside IDT and handoff for the benefits to patients and family and staff engagement. |

Natafgi, N., Zhu, X., Baloh, J., Vellinga, K., Vaughn, T., & Ward, M. M. (2017). Critical access hospital use of TeamSTEPPS® to implement shift-change handoff communication. *Journal of Nursing Care Quality, 32*(1), 77–86. https://doi.org/10.1097/NCQ.0000000000000203							
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their Definitions) Measurement of Major Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Conclusion Recommendation**
Examine bedside shift-change handoff implementation as part of the TeamSTEPPS® initiative	TeamSTEPPS®	**Design:** Qualitative **Methodology**: Semi-structured interviews and observations using a modified version of the TeamSTEPPS® teamwork behavior matrix and the Teamwork Evaluation of No-Technical Skills (TENT)	**Sample**: N= Eight Critical access hospitals **Setting**: Eight Iowa based hospitals	Independent variable: Bedside Shift Hand-off communication Dependent variable(s): Perception of key informants, the success of the implementation **Measurement of Major Variables**: Semi-structured interviews and observations	Interviews were performed with the key informants, chief nursing officers, quality directors, medical-surgical directors, and nurse managers after one year of implementation. Interviews were recorded, transcribed, and made anonymous. Coders read the transcripts to identify themes. The evaluation scores of the structured observation completed on a handoff at each hospital. Hospitals split into two groups, high performing and low performing, and	Six of the eight-hospitals reported more accurate handoff. Five of the eight hospitals reported improvement in teamwork and communication Four of the eight hospitals reported increase patient and family engagement The themes were: (1) purpose; (2) facilitators; (3) barriers; and (4) trajectory of handoff implementation.	Level III A/B **Worth to Practice:** Serves as a guiding framework for implementation in a community hospital setting **Strengths:** ● Implementation in eight community hospitals ● Identified themes from a high performing and low performing hospitals **Weakness:** Finding may not be generalizable to another handoff implementation setting **Feasibility:** Although the article provides evidence of the intervention's benefits, there isn't a clear description of the implementation, decreasing the feasibility **Conclusion:** The

					compared.		implementation of the shift handoff as part of a TeamSTEPPS® initiative improves the handoff process. **Recommendation**: To use the guiding framework for small or rural hospitals interested in implementing bedside shift handoffs.

Patterson, L. M. (2014*). P*reparing staff for intentional rounding. *Journal for Nurses in Professional Development, 30(*1), 16–20. https://doi.org/10.1097/nnd.0000000000000026							
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their Definitions) Measurement of Major Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Strength and Weakness Worth to Practice Feasibility Recommendation**
Review the implementation of role-based intentional rounding on patient and staff perception	No framework	**Design**: Quality Improvement **Methodology:** Patient Survey and Nurse Survey	**Sample**: Not disclosed **Setting**: General Medical unit Large Healthcare Institution in the Midwest	**Independent variable:** Intentional Rounding **Dependent variable(s):** Staff and Patient perception and falls and HAI **Measurement of Major Variables:** Patient Survey and Nurse Survey	Interviews of staff evaluated for themes, and survey scores and data comparison pre implementation and post implementation for falls and pressure ulcers.	Patient survey results revealed that patients were satisfied with the care they were receiving and the timing of nursing rounds Staff survey results consist of reports of the nurses feeling they received enough education on intentional rounding. The staff were in favor of the rounding and found it beneficial. The team expressed a reservation; the group felt that they could not implement intentional rounding on all patients because they would not meet the expectation of rounding every hour.	Level V-C **Worth to Practice:** Helpful in guiding the implementation of role-based purposeful rounding **Strength:** Detail on implementation of role-based purposeful rounding **Weakness:** Lacks details on sample size, survey validity, data analysis and ethical considerations **Feasibility:** The description of the intervention permits implementation in another setting feasible. **Conclusion:** Intentional rounding had a positive outcome on patient and outcomes and staff perception surveys

							Recommendation: Intentional rounding is recommended to add as the standard of care.

Real, K., Bell, S., Williams, M. V., Latham, B., Talari, P., & Li, J. (2020). Patient Perceptions and Real-Time Observations of Bedside Rounding Team Communication: The Interprofessional Teamwork Innovation Model (ITIM). *The Joint Commission Journal on Quality and Patient Safety*, *46*(7), 400–409. https://doi.org/10.1016/j.jcjq.2020.04.005

Purpose of Study or Review	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied (and their definitions) Measurement of Measure Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Recommendation Feasibility
Evaluate the impact of implementing Interprofessional teamwork Innovation model (ITIM) on the relationships among teamwork structure, communication processes, and clinical outcomes and to evaluate patient experience with the ITIMs	Systems Theory and Structure-Process-Outcome (SPO)	**Design**: Quantitative observational study **Methodology**: Data was collected from patient surveys and observations for 4 months at the community hospital and 5 months at the academic medical center.	**Sample**: 42 ITIM teams 438 patient visits and the community hospital. 28 ITIM teams and 247 patient visits at the academic medical center. **Setting**: 302- bed Community -based community hospital and 569- bad academic medical center from one academic health care system	**Independent variable:** Interprofessional teamwork Innovation model **Dependent variable(s):** Observations using observation tool (connection with patient, team communication, patient engagement) Patient ITIM experience survey scores **Measurement of Major Variables:** De Novo Observation tool and 17	Data analysis performed using SPSS 21.0 to calculate frequency on percentage of descriptive data. the patients' satisfaction and ITIM team was highly correlated with observed rapport with patients (r = 0.52, p = 0.001) and polite exit from the room (r = 0.62, p = 0.001). LOS was positively correlated with RN speaking percentage.	Geographic cohorting was a system level factor that affected patient care and quality. Patients were satisfied with their experience with the ITIM finding the model to contribute to a supportive and collaborative care experience. Patients perceived that they were encouraged to ask questions at a higher rate (87%) than it was observed (58%), showing that patients perceived the opportunity to ask questions as valuable.	Level III-B **Worth to Practice:** Provides an understanding of the relationship between communication, teamwork, and patient experience- **Strength:** • Observation sample size. • Correlation between observations and the patient experience. • Successful implementation of interprofessional rounding. **Weaknesses:** • Sample Size • Inconsistent participants • Reliability of observers • Staffing issues causing inconsistent timing of data collection. **Feasibility:** The described intervention is achievable. The elements of cohorting patients, rounding, and interprofessional interaction/communication will guide the implementation. **Conclusion:** The impact of

			item Patient surveys			implementing the Interprofessional teamwork Innovation model (ITIM) had a positive relationship on the relationships among teamwork structure, communication processes, and clinical outcomes and to evaluate patient experience **Recommendation**: Further studies on factors to sustain the model.

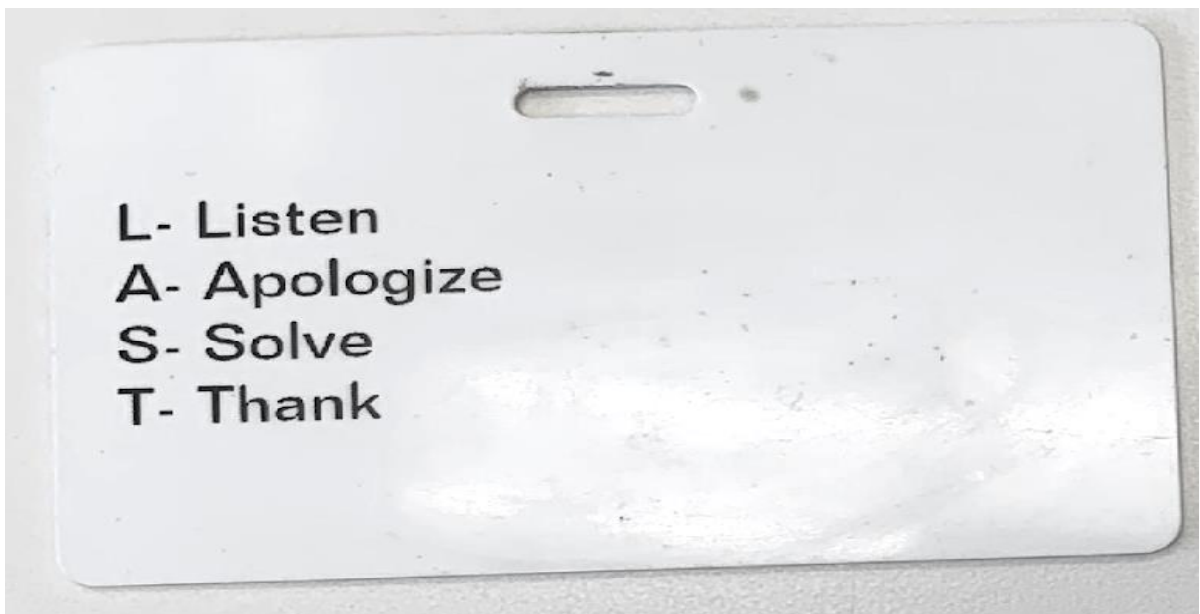|	Taylor, J. (2015). Improving patient safety and satisfaction with standardized bedside handoff and walking rounds. *Clinical Journal of Oncology Nursing, 19*(4), 414–416. https://doi.org/10.1188/15.cjon.414-416						
Purpose of Study or Review	**Conceptual Framework**	**Design/ Method**	**Sample/ Setting**	**Major Variables Studied (and their Definitions) Measurement of Major Variables**	**Data Analysis**	**Study Findings**	**Level of Evidence (Critical Appraisal Score) Worth to Practice Strength and Weakness Recommendation**
To evaluate the implementation of standardized bedside handoff on patient safety and experience	No framework	**Design**: Quality improvement **Methodology**: Convenience sample survey of staff and patients four years post implementation in 2010	**Sample:** 17 nurses **Setting:** 43 bed colorectal gastric, sarcoma, melanoma unit in Memorial Sloan Kettering Hospital in New York City	**Independent variable:** Standardized beside handoff and walking rounds **Dependent variable(s):** staff perceptions **Measurement of Major Variables:** Surveys	The data collected from the surveys was analyzed for barriers to implementation and nurses' satisfaction with the round and comparison of falls and medication error pre- and post-implementation. Specific data analysis tools were not shared.	12 of 17 nurses reported they were moderately satisfied, and two nurses were highly satisfied. Three nurses whose responses were not satisfied or highly satisfied were not described. Nurses reported benefit include improved nurse- nurse communication, improved nurse-to-patient communication, improved patient satisfaction, and adherence and task prioritization. There was no significant decrease in falls.	Level V-C **Worth to Practice** Methods for implementation for standardizing handoff **Strength:** Both the responses to the nurse survey and the patient reflected the same results **Weakness:** lack of detail regarding the data collection and analysis process **Feasibility:** Careful consideration will be taken in using the detailed description of this intervention to guide implementation in another setting. **Conclusion:** The implementation of standardized bed handoff

							increased patient safety metrics and experience. It also increased the staff satisfaction. **Recommendation**: Further studies should continue to examine the relationship between handoff and patient harm, error detection, and general patient satisfaction

Appendix C

Kotter Change Framework

Phase 1 **Creating a Climate for Change**	**Step 1**	Create a Sense of Urgency
	Step 2	Build a Guiding Coalition
	Step 3	Form A Strategic Vision
Phase 2 **Engaging and Enabling the Whole Organization**	**Step 4**	Enlist a Volunteer Army
	Step 5	Enable Action By Removing Barriers
	Step 6	Generate Short Term Wins
Phase 3 **Implementing and Sustaining Change**	**Step 7**	Sustain Acceleration
	Step 8	Institute Change

Note: Diagrammatic visualization of the eight sequential steps in Kotter's process. Created from *The 8-Step Process for Leading Change* by J. Kotter. 2014. https://www.kotterinc.com/8-steps-process-for-leading-change/.

Appendix D

Badge Buddies

C- Contact
O- Opening Greeting
N- Name / Title
N- Needs
E- Explanation
C- Closing
T- Thank

L- Listen
A- Apologize
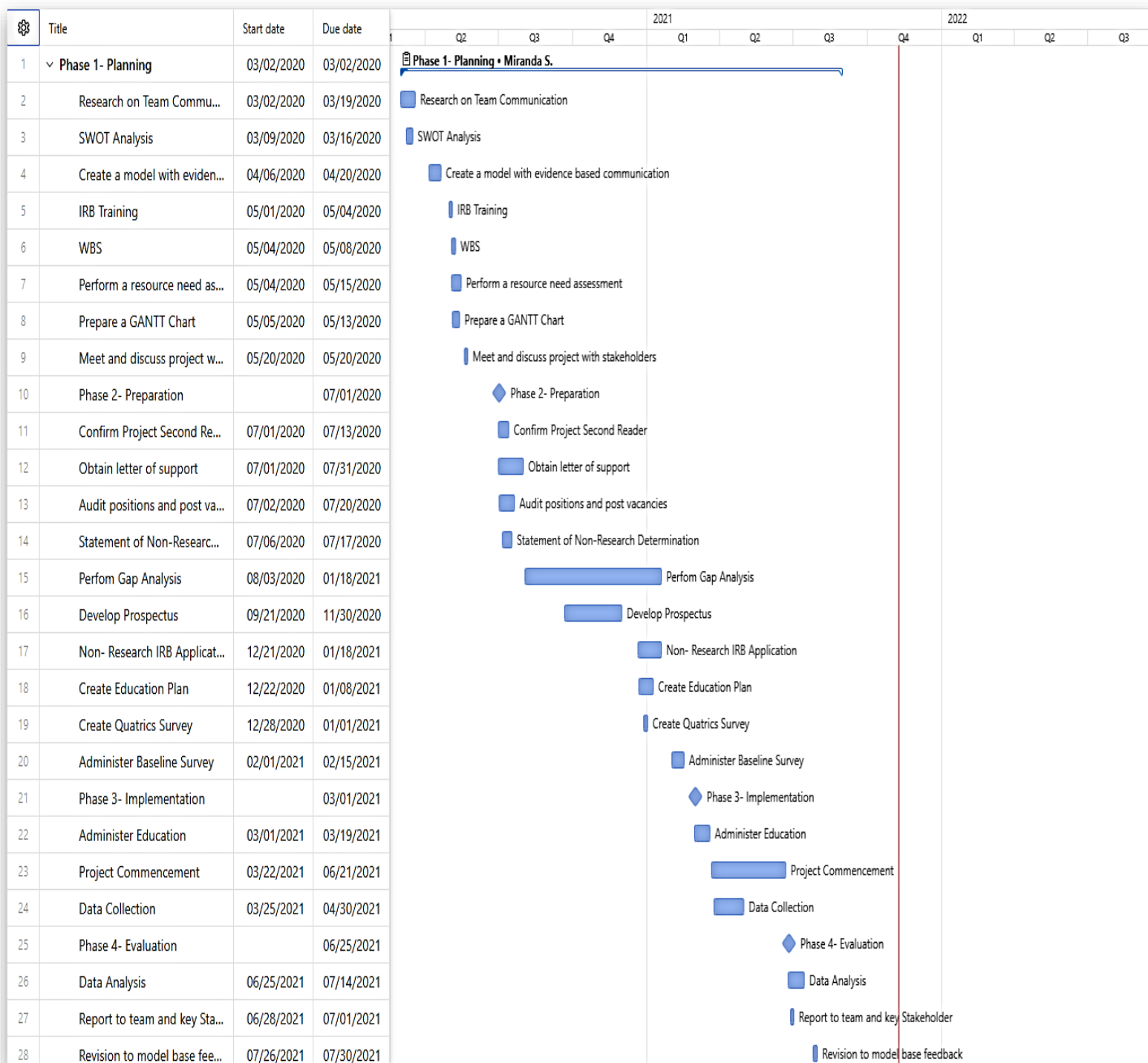S- Solve
T- Thank
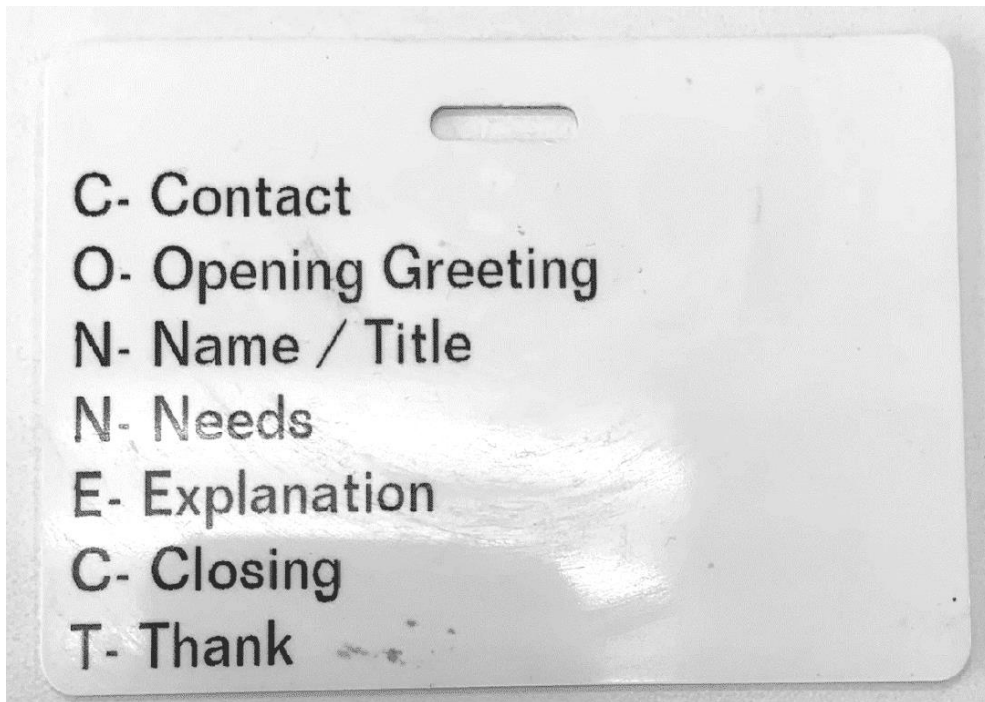
Appendix E

Gap Analysis

Maimonides Medical Center- Inpatient Medicine Geriatric Unit				Gap Analysis
	Current State	**Future Desired State**	**Gap**	**Remedy**
1.	Unorganized and fragmented communication between members of the team leading to inconsistency in care and delays in the plan of care.	Organized and structured care provided by a team focused on and prioritizing the same group of patients, guided by common patient care goals.	Lack of a workflow that allows for the maximum amount of teamwork and collaboration. Team members all have different sets of patients to care for and different priorities.	Implement team-based care/care pods in the geriatric unit.
2.	Inconsistent handoff communication and lack of continuity of care.	Consistent hand-off communication where all team members receive the same information. Preventing the loss of information regarding the patient's care needs.	Poor communication and collaboration of team members at hand-off. The hand-off is currently performed inconsistently and minimally at the bedside.	Bedside hand-off for all team members.
3.	Patients have few opportunities to express their care goals and participate in care decisions. Evidenced by low nurse communication HCAHPS scores. Inconsistent information is shared by patients with different members of the team.	Team members will round purposefully on patients several times a day to provide opportunities for patients to express their goals of care and needs. Patients will participate in team rounds.	Limited access to health information to make an informed decision. Lack of opportunities to participate in care decisions. The patient's wishes and goals for care are not incorporated optimally.	Implement structured bedside interdisciplinary rounds with a timeout to allow patients and families to ask questions and provide information. Empowering the use of bedside hand-off communication will become a habit.
4.	Limited patient education on medication. Evidence by low scores of HCAHPs communication on medication scores.	Staff will provide daily education on medications to staff, using tools in the patient's welcome kit.	Staff is currently focused on completing tasks, causing decreased opportunities for communication with patients.	Team bedside rounding that provides a forum for patient education along with resources from the welcome kit.
5.	Team members work in individual silos. Inconsistent follow up on implementation, administration, and interpretation of the plan of care. This leads to low accountability amongst team members.	Team members are accountable to each other and the patients. Through improved information, sharing skills, team members will be able to express their concerns with effective communication adequately.	Ineffective communication skills. Many team members feel exasperated in efforts to communicate concerns to teammates or seek clarification—subpar collaboration leading to missed care events.	Education provided to staff utilizing CONNECT and LAST and concepts from TeamSTEPPS. Implementation of team/pod huddles.
6.	Members of the care team, nurse practitioners, registered nurses, patient care technicians, and information specialists lack a team-based understanding of their roles.	Members of the care team: nurse practitioners, registered nurses, patient care technicians, and information specialists will understand their roles as it applies to the care team/care pod and the goals of the unit for excellent patient care.	Need for role identification and definition as members of a team with a shared vision and common patient care goals.	Education on team communication, role-based-purposeful rounding, bedside handoff, care coordination through bedside rounding, and teamwork. Education will be developed using concepts from TeamSTEPPS and evidence-based leadership methods
7.	Lack of mentorship from NPs to the other members of the nursing staff for better coordination of care.	NP's lead the Care Pods, providing mentorship, and sharing education with other members of the team (RN and PCTs).	Gap the current workflow does not allow for the maximum amount of communications.	Care Pods increase opportunities for team members to collaborate and share information.

Appendix F

Gantt Chart

	Title	Start date	Due date
1	⌄ Phase 1- Planning	03/02/2020	03/02/2020
2	Research on Team Commu...	03/02/2020	03/19/2020
3	SWOT Analysis	03/09/2020	03/16/2020
4	Create a model with eviden...	04/06/2020	04/20/2020
5	IRB Training	05/01/2020	05/04/2020
6	WBS	05/04/2020	05/08/2020
7	Perform a resource need as...	05/04/2020	05/15/2020
8	Prepare a GANTT Chart	05/05/2020	05/13/2020
9	Meet and discuss project w...	05/20/2020	05/20/2020
10	Phase 2- Preparation		07/01/2020
11	Confirm Project Second Re...	07/01/2020	07/13/2020
12	Obtain letter of support	07/01/2020	07/31/2020
13	Audit positions and post va...	07/02/2020	07/20/2020
14	Statement of Non-Researc...	07/06/2020	07/17/2020
15	Perfom Gap Analysis	08/03/2020	01/18/2021
16	Develop Prospectus	09/21/2020	11/30/2020
17	Non- Research IRB Applicat...	12/21/2020	01/18/2021
18	Create Education Plan	12/22/2020	01/08/2021
19	Create Quatrics Survey	12/28/2020	01/01/2021
20	Administer Baseline Survey	02/01/2021	02/15/2021
21	Phase 3- Implementation		03/01/2021
22	Administer Education	03/01/2021	03/19/2021
23	Project Commencement	03/22/2021	06/21/2021
24	Data Collection	03/25/2021	04/30/2021
25	Phase 4- Evaluation		06/25/2021
26	Data Analysis	06/25/2021	07/14/2021
27	Report to team and key Sta...	06/28/2021	07/01/2021
28	Revision to model base fee...	07/26/2021	07/30/2021

Appendix G

Education Modules

Topic: NP-LED Care Pods A Team Communication Enhancement				
Topic	**Teamwork Communication (TeamSTEPPS®)**	**Role-Based Purposeful Rounding**	**Bedside Handoff**	**Bedside IDT**
Objectives	At the end of this lesson, the participants will be able to: ○ Describe how communication affects team processes and outcomes ○ Define Effective Communication ○ Identify Communication Challenges ○ Identify TeamSTEPPS Tools and Strategies to improve team communication	At the end of this lesson, the participants will be able to: ○ Define individual job description ○ Verbalize application of their role as it relates to the team ○ Define Purposeful rounding ○ Demonstrate understanding of the hospital policy for purposeful rounding	At the end of this lesson, the participants will be able to: ○ Define patient and family engagement ○ Identify the components of the bedside shift report ○ Discuss the benefits and challenges of bedside shift handoff ○ Describe HIPAA as it relates to bedside handoff	At the end of this lesson, the participants will be able to: ○ Describe the team-based method of bedside rounding. ○ Describe how to involve patients and families in the rounding process

Content	• AHRQ Communicating to Improve Quality Module • TeamSTEPPS Communication Module	• Discuss Evidence surrounding purposeful rounding • Review of Purposeful Rounding Policy • Scripting using CONNECT and LAST	• Lesson on AHRQ Nurse Shift Bedside Handoff • Review of the organization policy of Effective communication Handoff Bedside handoff checklist (AHRQ)	• Review of patient education and discharge planning Policy • Review of education and discharge planning • Discuss Rounding tool • Discuss the roles of each discipline
Tools	PowerPoint of TeamSTEPPS Communication Education Modules/ Videos/ Roleplay using tools learn in module	PowerPoint, Game, "Whose role is that?"	Role Play, Video	PowerPoint
Assessment	Quiz on communication terms	Ability to identify the roles through role definitions	Demonstration of Handoff and return demonstration	Quiz on family engagement
Time	60 Minutes + 15 minutes (Role play)	45 minutes+ 15 (Game)	45 minutes	45 minutes

Appendix H

Work Breakdown Structure

Nurse Practitioner-Led Care Pods					
1. Planning		**2. Preparation**		**3. Implementation**	**4. Evaluation**
1.1.1 Research and Data Collection on existing team communication	1.2.1 Complete IRB Training	2.1.1 Post and fill vacant positions	2.2.1 Prepare education on team communication and patient	3.1.1 Project Commencement	4.1.1 Data analysis of results
1.1.2 Design communication model	1.2.2 Identify key stakeholder CNO, Chief Learning Officer/V.P. of Nursing, N.P Team Leader	2.1.2 Prepare statement of non-research determination	2.2.2 Create T-TPQ on Qualtrics		4.1.2 Evaluate post-intervention NRC Survey results and T-TPQ survey results
1.1.3 Perform resource needs assessment	1.2.3 Prepare GANTT Chart	2.1.3 Obtain organizational letter of support	2.2.3 Administer Pre-Intervention T-TPQ		4.1.3 Report to team and key Stakeholders
	1.2.4 Meet with Stakeholders and discuss the NP Care Pods	2.1.4 Perform gap analysis education		3.1.2 Data Collection	
		2.1.5 Develop Prospectus			4.1.4 Three-month review and revision of implementation using staff feedback
		2.16 IRB QI Process			

Appendix I

Responsibility/Communications Plan

Communication	Purpose	Medium	Responsible Party	Frequency	Audience
Meetings	Discussion of implementation and effect on quality metrics	In Person/Zoom Meeting Meeting Minutes	DNP Project Lead	Monthly	Employees of NP-Led Floor, Team Leader
Project Status	Keep all Stakeholders updated on project Status	Email	DNP Project Lead	Monthly	N.P Team Leader, Chief learning Officer/V.P. of Nursing
Safety Huddles	Feedback to staff on observations and compliance.	Huddles	DNP Project Lead/ Project Champion	Weekly	Employees of NP-Led Floor, Team Leader
Dashboards	Display of quality metrics and compliance with bedside handoff, role-based purposeful rounding, and bedside rounding	Whiteboard/ Bulletin board	DNP Project Lead/ Project Champion	Updated Bi-Weekly	Employees of NP-Led Floor, Team Leader, patient/ patient families, Chief learning Officer/V.P. of Nursing, Team Leader

Appendix J

SWOT Analysis

Strength	Weakness
● The unit staffing structure is pre-existing (NP, RN, PCT, and IS). ● Frequent communication between patient & family. ● Minimal cost to train and implement the project. ● Enhance teamwork and team communication.	● Current culture may be difficult to change. ● Staffing constraints. ● Potential of staff to float. ● Staff current exasperated state. ● Staff resistance to change. ● Availability of HCAHPS results.

Nurse Practitioner-Led Care Pod

Opportunities	Threat
● Patient and family involvement in the patient plan of care ● Patient and family are informed of the plan of care ● Increase in patient safety ● Increase in value-based care reimbursements with improved HCAHPS scores	● Pandemic ● Post-pandemic financial state ● Post-pandemic staff exhaustion ● Unfamiliarity with new HCAHPS vendor ● Union ● Ongoing staff vacancies and need for travel RNs

Appendix K

Proposed vs. Actual Budget

NP-Led Care Pod Implementation Budget				
Items	**Itemization**	**Projected Cost**	**Itemization**	**Actual Cost**
Cost of Attendance	41 staff members: 12 NPs, 11 RNs, 14 PCTs, and 4 ISs	$7,292	33 staff members: 9 NPs, 10 RNs, 12 PCTs, and 2 ISs	$2,968
Printed Materials	41 packets	$250	41 packets	$250
Badge Buddies	51 badge buddies (SBAR, and CONNECT, and LAST)	$223	41 badge buddies (SBAR, and CONNECT, and LAST)	$223
Catering	Catering for six education sessions	$600	Catering for four education sessions	$400
Approximate Total Cost		**$8,365**		**$3,841**

Appendix L

Return on Investment

	Cost Avoidance Measure
Patient Satisfaction	Reimbursement rate (5% and 10% change from baseline)

Budget/Cost of investment

Items	Description	Actual Cost
Cost of Attendance	33 staff members: 9 NPs, 10 RNs, 12 PCTs, and 2 ISs	$2,968
Printed Materials	41 packets	$250
Badge Buddies	41 badge buddies (SBAR, and CONNECT, and LAST)	$223
Catering	Catering for four education sessions	$400
Total Cost		$3,841

Improved Reimbursement/Loss Avoidance

% Reimbursement	70	75	80
Reimbursed/patient	$4891	$5240	$5590
Non-reimbursed/ patient	$2096	$1747	$1397
Patients discharged/mo	160	160	160
Non-reimbursed cost/Mo	$335,360	$279,520	$223,520
Loss Avoidance/mo	0	$55,840	$111,840
Loss Avoidance/yr	0	$670,080	$1,342,080

Assumptions:
- Total reimbursement per patient would be $6987 at 100% reimbursement (70% from CMS + 30% from VBC) based on internal hospital data.
- The hospital reimbursement rate was 70% at project implementation, with 0% VBC reimbursement.
- A 5% to 10% increase in the reimbursement rate can be projected from the increase in the NRC Health net promoter score. This will prevent the loss currently occurring because the hospital is not maximizing VBP reimbursement

Return on Investment (1 Year)

	75% Reimbursement	80% Reimbursement
Loss Avoidance/ Improved Reimbursement	$670,080	$1,342,080
Cost of Investment	$3841	$3841
Net ROI	$666,239	$1,338,239

Appendix M

TeamSTEPPS® Teamwork Perceptions Questionnaire

Team Function	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
1. The skills of staff overlap sufficiently so that work can be shared when necessary.					
2. Staff are held accountable for their actions.					
3. Staff within my unit share information that enables timely decision making by the direct patient care team.					
4. My unit makes efficient use of resources (e.g., staff supplies, equipment, information).					
5. Staff understand their roles and responsibilities.					
6. My unit has clearly articulated goals.					

7. My unit operates at a high level of efficiency.					
Situation Monitoring	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
8. Staff effectively anticipate each other's needs.					
9. Staff monitor each other's performance.					
10. Staff exchange relevant information as it becomes available.					
11. Staff continuously scan the environment for important information.					
12. Staff share information regarding potential complications (e.g., patient changes, bed availability).					
13. Staff meets to reevaluate patient care goals when aspects of the situation have changed.					

14. Staff correct each other's mistakes to ensure that procedures are followed properly.					
Mutual Support	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
15. Staff assist fellow staff during high workload.					
16. Staff request assistance from fellow staff when they feel overwhelmed.					
17. Staff caution each other about potentially dangerous situations.					
18. Feedback between staff is delivered in a way that promotes positive interactions and future change.					
19. Staff advocate for patients even when their opinion conflicts with that of a senior member of the unit.					
20. When staff have a concern about patient safety, they challenge others until they are sure the concern has been heard.					

21. Staff resolve their conflicts, even when the conflicts have become personal.					
Communication	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
22. Information regarding patient care is explained to patients and their families in lay terms.					
23. Staff relay relevant information in a timely manner.					
24. When communicating with patients, staff allow enough time for questions.					
25. Staff use common terminology when communicating with each other.					
26. Staff verbally verify information that they receive from one another.					
27. Staff follow a standardized method of sharing information when handing off patients.					

28. Staff seek information from all available sources.					

Note: Reprinted from *TeamSTEPPS® Teamwork Perceptions Questionnaire Manual by* Agency for Healthcare Research and Quality. Published April 2017. https://www.ahrq.gov/teamstepps/instructor/reference/teamattitudesmanual.html (Permission granted by the website.)

Appendix N

Sample NRC Survey

Aron 5

Question	YTD	Last 3 Months	Last Month	n-size	Score	Goal	Gap	
Barrier to filling new Rx	82.5	80.8	77.8	11	100.0	79.9	20.1	
Was able to fill Rx	82.9	80.8	77.8	11	81.8	83.9	-2.1	
Questions about instruction	69.7	72.7	73.3	15	80.0	72.4	7.6	
Questions about any of meds	80.3	81.0	78.6	14	78.6	80.8	-2.2	
Needs nurse to contact	76.8	73.7	83.3	11	72.7	73.2	-0.5	
Questions on follow up appts	82.1	76.3	83.3	11	72.7	75.8	-3.1	
Feeling worse than discharge	70.6	70.5	66.7	15	66.7	76.1	-9.4	
Care quality satisfaction y/n	60.7	57.9	58.3	11	63.6	91.5	-27.9	
NPS: Facility would recommend	46.2	31.6	40.0	8	62.5	77.2	-14.7	
Will be at follow up appt	78.1	70.0	83.3	5	60.0	87.6	-27.6	
Scheduled follow up appt	55.0	50.0	42.9	14	42.9	67.7	-24.8	
Comfort talking with nurses	33.3	36.4	42.9	10	20.0	77.7	-57.7	
Environment clean/comfortable	14.3	14.3	0.0	9	11.1	79.7	-68.6	
Care Team Explain Things	22.6	22.7	14.3	10	10.0	76.3	-66.3	
Care team listened carefully	29.0	31.8	28.6	10	10.0	80.8	-70.8	
Good communication b/w staff	22.6	27.3	14.3	10	10.0	72.7	-62.7	

Source: NRC Health. This table contains information provided to the institution under contract with the NRC Health, and is to be used only as an exemplar for this DNP project.

Appendix O

T-TPQ Composite Scores

T-TPQ Survey Response Scores			
Survey ID	Pre-Education	Post- Education	Post Implementation
29238	113	115	129
33989	104	108	119
32803	119	123	113
23978	99	116	110
24462	140	117	122
22381	115	102	109
44654	128	140	125
44076	111	106	118
46753	112	102	103
47463	85	140	107
42717	111	134	103
42729	68	115	140
47468	100	125	100
32772	100	116	134
37118	109	117	115
44550	116	118	97
44437	125	125	111
44393	116	116	126
36666	80	140	102
45412	98	96	118
22730	118	134	110
44697	124	115	113
44474	117	118	118
44463	118	119	113
Totals	**2739**	**2990**	**2954**

Appendix P

NRC Health Real-Time Survey Reporting Matrix

Pre-Intervention					
Unit	**Care Team Explain Things**	**Care Team Listen Carefully**	**Good Communication b/w staff**	**Would Recommend Facility**	**N**
NP-Led Unit	25	25	25	-50	4
Resident Led	25	37.5	25	33.3	6
PA Led	23.5	22.2	12.5	-35.7	14
1 month Post					
Unit	**Care Team Explain Things**	**Care Team Listen Carefully**	**Good Communication b/w staff**	**Would Recommend Facility**	**N**
NP-Led Unit	10	10	10	62.5	8
Resident Led Unit	31.6	31.6	26.3	11.1	18
PA Led Unit	20	0	20	-20	10
2 Months Post					
Unit	**Care Team Explain Things**	**Care Team Listen Carefully**	**Good Communication b/w staff**	**Would Recommend Facility**	**N**
NP-Led Unit	42.9	57.1	42.9	80	5
Resident Led Unit	44.4	50	71.4	40.5	5
PA Led Unit	35.3	38.9	29.4	31.3	16
3 Months Post					
Unit	**Care Team Explain Things**	**Care Team Listen Carefully**	**Good Communication b/w staff**	**Would Recommend Facility**	**N**
NP-Led Unit	28.6	12.5	28.6	-33.6	6
Resident Led Unit	31.6	36.8	21.1	5.9	17
PA Led Unit	50	30	45	38.9	18

Appendix Q

Power Analysis

T-TPQ		NRC Health	
Confidence Level	95%	Confidence Level	95%
p	0.05	p	0.05
Confidence interval	0.04	Confidence interval	0.04
Population Size	35	Population Size	160
Alpha Divided by	0.025	Alpha Divided by	0.025
Z-Score	1.959963985	Z-Score	1.959963985
Estimated Sample Size for Statistical Significance	26.78091247	Estimated Sample Size for Statistical Significance	66.58410848

Appendix R

Letter of Organizational Support

Maimonides Medical Center
4802 Tenth Avenue
Brooklyn, New York 11219   Tel: 718.283.6000   www.maimonidesmed.org

DNP PROJECT LETTER OF SUPPORT

This is a letter of support for Miranda Saint-Louis to implement her DNP Comprehensive Project NP-Led Care Pods at Maimonides Medical Center. We give her permission to use the name of our agency in her DNP Comprehensive Project Paper and in future presentations and publications.

Thank you,

Thomas Smith, DNP, RN, NEA-BC

Senior Vice President

Chief Nursing Officer

Appendix S

CITI Research, Ethics, and Compliance Training Certificate of Completion

Completion Date 04-May-2020
Expiration Date 04-May-2023
Record ID 36331736

This is to certify that:

Miranda Saint-Louis

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Human Subjects Research (HSR)
(Curriculum Group)
Human Subjects Research (HSR)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

University of San Francisco

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w0b5ec6be-f81b-4c61-8556-e2ee9f7f7577-36331736

CITI PROGRAM

Completion Date 03-May-2020
Expiration Date 02-May-2024
Record ID 36331739

This is to certify that:

Miranda Saint-Louis

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

CITI Conflicts of Interest (COI)
(Curriculum Group)
Conflicts of Interest (COI)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

University of San Francisco

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wb29e2476-7c94-4ee8-800c-6345c6ca0818-36331739

Appendix T

USF SONHP Statement of Non-Research Determination

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Doctor of Nursing Practice
Statement of Non-Research Determination (SOD) Form
The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

General Information

Last Name:	Saint-Louis	**First Name:**	Miranda
CWID Number:	20597893	**Semester/Year:**	Summer 2020
Course Name & Number:	N 749		

Chairperson Name: Dr. Mary Lynne Knighten   **Advisor Name:** Dr. Mary Lynne Knighten

Project Description

1. *Title of Project*

> Implementation of NP- Led Care Pods to Improve the Patient Experience and Teamwork Perception

2. *Brief Description of Project*

Clearly state the purpose of the project and the problem statement in 250 words or less.

> The Joint Commission reports that 60-70% of healthcare errors are related to communication (Murphy & Dunn, 2010). The current workflow of each discipline on the acute care geriatric medicine unit in the inpatient setting has created unintended silos. Nurse leaders must improve patient safety, quality of care, and experience of hospital care by removing and reducing miscommunication between nurse practitioners, registered nurses, patient care technicians, and information specialists (unit clerks). Silos between these disciplines include inconsistent handoff communication, lack of continuity of care, poor care plans, subpar collaboration, and missed care events. The implementation of the NP-Led Care Pods is intended to create a workflow that encourages interdisciplinary, team-focused, collaborative patient-centered care and accountability. The intervention of the NP-Led Care Pods is a structured workflow that provides a format for bedside handoff, patient rounding, and role-based purposeful rounding with the use of scripting using the CONNECT and LAST tools to improve team-to-patient communication. The increase in collaboration will provide each discipline with the ability to contribute to the patient care plan from their professional expertise. The nurse practitioners, registered nurses, patient care technicians, and information specialist will receive education on communication, role-based purposeful rounding, and bedside patient rounding. Based on the deficits of communication, the PICOT question is: In an acute care geriatric medicine unit in the inpatient setting, how do NP-Led Care Pods, compared to the Resident-led care models, affect the length of stay and the patient care experience within three months?

3. **AIM Statement: What are you trying to accomplish?**

- What do you hope to accomplish with this project? Aims should be SMART, specific, clear, well-defined, and at a minimum describe the target population, the desired improvement, and the targeted timeframe.
- To improve (your process) from (baseline)% to (target)%, by (timeframe), among (your specific population) *Complete this statement:*

The NP-Led Care Pods aim to improve:

1. The HCAHPS nurse communication domain survey item "**During this hospital stay, how often did nurses treat you with <u>courtesy and respect</u>?**" from 66.7% Top Box as of April 2020 by 10% to 72% Top Box in 3 months.
2. The HCAHPS nurse communication domain survey item "**During this hospital stay, how often did nurses <u>listen carefully to you</u>?**" from 44.4% Top Box as of April 2020 by 10% to 44.8% Top Box in 3 months.
3. The HCAHPS nurse communication domain survey item "**During your hospital visit, the nurse explained things in a way you can understand**" from 33% Top Box as of April 2020 by 10% to 36% Top Box in 3 months.
4. In 3 months, the post-implementation TeamSTEPPS Teamwork Perception Questionnaire results will increase by 25% from the baseline pre-implementation TeamSTEPPS Teamwork Perception Questionnaire (See Appendix C).

Please see appendix A for baseline HCAHPS results.

---

4. Brief Description of Intervention (150 words).

4a. How will this intervention be implemented?

- ☐ Where will you implement the project?
- ☐ Attach a letter from the agency with the approval of your project.
- ☐ Who is the focus of the intervention?
- ☐ How will you inform stakeholders/participants about the project and the intervention?

The quality improvement project will be implemented on an inpatient geriatric unit at Maimonides Medical Center. The focus of the evidence-based quality improvement project is to improve the quality, safety, and patient perception of the hospital care/experience, and staff perception of teamwork. The nurse practitioners, registered nurses, patient care technicians, and information specialists will receive education on role-based purposeful rounding, structured interdisciplinary rounding for care coordination, and bedside shift reporting. The principles will include a commitment to excellence, employee engagement, accountability, building a culture of service, and improved communication (Studer, 2009), and the escalation and shared mental model from TeamSTEPPS by facilitating good teamwork, articulating clear goals, promoting decision-making through collective input, and empowering team members to speak up (Agency for Healthcare Research and Quality, 2018). At the completion of the training, the staff will be expected to have the tools to engage patients using scripting and a team-based workflow. The CONNECT and LAST scripting and use of keywords will be included in the team training to enhance interaction with the patients. A post-education TeamSTEPPS Teamwork Perception Questionnaire will be administered to test the effectiveness of the delivery of the education. The letter of support from the chief nursing officer is attached (see Appendix B)

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5. Outcome measurements: How will you know that a change is an improvement?
- ☐ Measurement over time is essential to QI. Measures can be the outcome, process, or balancing measures. Baseline or benchmark data are needed to show improvement.
- ☐ Align your measure with your problem statement and aim.
- ☐ Try to define your measure as a numerator/denominator.
    What is the reliability and validity of the measure? Provide any tools that you will use as appendices.
    Describe how you will protect participant confidentiality.

The outcome measurement for the NP-Led Care Pods is an increase in the HCAHPS scores that pertain to nurse communication and an increase in the perception of teamwork. The HCAHPS survey is designed to produce data about the patient's perception of care received during their admission time spent in the hospital. The current state according to the HCAHPS scores reflects the need for improvement in communication between patients and nurses and between licensed independent providers and nurses. The improved communication through the implementation of structured multi-disciplinary patient rounds will provide more opportunities for the staff to communicate collaboratively and include the patient in the planning of daily care. The involvement of the patients in the plan of care will also assist in increasing the transitions of care evidenced by an increase in HCAHPS scores. The education on role responsibilities and role-based purposeful rounding will provide improve the perception of team-based care and will aid in maximizing each role to work at their full capacity for coordination of care which will result in increase quality of care. This workflow will also increase accountability for all members of the team to perform routine care tasks, tests, and duties timely. The desired outcome is a 10% increase of 'Top Box' from all baseline values related to nurse communication, items "During this hospital stay, how often did nurses listen carefully to you?", "During this hospital stay, how often did nurses treat you with courtesy and respect?", "During your hospital visit, the nurse explained things in a way you can understand", and a 25% increase teamwork perception as measured by the TEAMSTEPPS Teamwork Perceptions Questionnaire. The TEAMSTEPPS Teamwork Perceptions Questionnaire will be administered pre-, immediately post- and 3 months post- implementation to measure the sustained improvement. The participants' confidentiality is protected using the HCAHPS survey since it is administered by a third-party vendor to a random sample of adult patients discharged to home and short-term rehabilitation. The HCAHPS scores of the NP-Led Care pods will be compared to the resident-led units filtered by the discharge date rather than the received date.

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Evidence-Based Change of Practice Project Checklist*

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

Project Title:

Implementation of NP- Led Care Pods to Improve the Patient Experience and Teamwork Perception

Mark an "X" under "Yes" or "No" for each of the following statements:	Yes	No
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	X	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. <u>All</u> participants will receive standard of care.	X	
The project is **not** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **not** follow a protocol that overrides clinical decision-making.	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **not** develop paradigms or untested methods or new untested standards.	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **not** seek to test an intervention that is beyond current science and experience.	X	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	X	
The project has **no** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	X	

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SAN FRANCISCO | Health Professions

Evidence-Based Change of Practice Project Checklist Outcome
The SOD should be completed in NURS 7005 and NURS 791E/P or NURS
749/A/E

Project Title:

Implementation of NP- Led Care Pods to Improve the Patient Experience and Teamwork Perception

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist
(attached). **Student may proceed with implementation.**

☐ This project involves research with human subjects and **must be submitted for IRB approval before project activity can commence.**

Comments:

This document has been discussed by the student's second reader, Dr. Elena Capella.

Student
Last Name: Saint-Louis

Student
First Name: Miranda

CWID Number: 20597893

Semester/ Year : Summer 2020

Student Signature: *Miranda Saint-Louis*   **Date:** 8/2/20 (revised 10/13/2020)

Chairperson
Name: Dr. Mary Lynne Knighten

Chairperson
Signature: *Dr. Marylynne Knighten*   **Date:** 10/14/2020

DNP SOD Review
Committee
Member Name: Elena Capella

DNP SOD Review
Committee
Member Signature: *Elena Capella*   **Date:** 11/04/21

Appendix U

Organizational Letter of Exemption from IRB Review

Maimonides Medical Center	**MEMORANDUM**
IRB/Research Committee	

DATE: February 23, 2021

TO: Saint-Louis, Miranda, AGACNP, FNP-c

CC: Reilly, Kelly, PhD, RN-BC

RE: IRB Determination for 2021-02-13 - Nurse Practitioner-Led Care Pods: A Team Communication Enhancement Model

On February 23, 2021, the Designee of the Maimonides Medical Center IRB reviewed and acknowledged the receipt of the following materials:
Data Acquisition xForm

The following determinations were made: The above activity is a Healthcare Operations Activity and does not include human research; IRB approval is not required.

If the circumstances of this project change, please contact the IRB Office for additional instructions.

If you have any questions, please direct questions to the IRB at IRB@maimonidesmed.org.