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Improving Communication and Collaboration Between Disciplines: Utilization of aDaily Goals Sheet During Daily Multidisciplinary Rounds in the Critical Care Setting

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Executive Summary
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Problem

Communication problems have been cited as the "top safety incident" causing patient harm in intensive care units (Halm, 2008). A rounding tool during multidisciplinary rounds can improve communication (Centofanti et al., 2014). The PICO question for this project was the following: Do daily multidisciplinary rounds in the critical care setting, utilizing the Daily Goals Sheet by Johns Hopkins University Quality and Safety Research Group (2009), increase communication and collaboration between advanced care providers and bedside nurses, as well as improve advanced care providers' and nurses' understanding of the daily goals of patient care, over traditional daily rounds without a specific rounding tool?

Purpose

The purpose of this evidence-based project was to examine the effects of a rounding tool, the Daily Goals Sheet, in advanced care providers and nurses working in a small critical care unit.

Goals

The goals of this project were to evaluate if the institution of a Daily Goals Sheet during daily multidisciplinary rounds in a small critical care unit would enhance multidisciplinary communication and collaboration, improve advanced care providers' and nurses' understanding of the daily goals of patient care, and improve unit reports for infection rates and length of stay.

Objectives

The major objective for this project was to improve interdisciplinary communication and collaboration, as well as the understanding of the daily goals of patient care after institution of a new rounding tool, which was the Daily Goals Sheet.

Plan

After receiving Institutional Review Board approval from Regis University and St. Luke's University Health Network, as well as permission to modify the Daily Goals Sheet and the Collaborative Practice Assessment Tool, the researcher recruited a convenience sample of 40 critical care nurses and advanced care providers. A mixed methods design was employed, which consisted of a quasi-experimental pre-survey/post-survey that included both quantitative and qualitative questions. Descriptive statistics were used to analyze closed-ended question responses on a Likert scale and thematic analysis was performed on responses to open-ended questions.

Outcomes and Results

Twenty-four participants responded to the Collaborative Practice Assessment Tool Pre-Survey, whereas 12 answered the Collaborative Practice Assessment Tool Post-Survey. Results were mixed with both positive and negative attributes to interdisciplinary communication and collaboration in the critical care setting, as well as advanced care providers' and nurses' understanding of the daily goals of patient care. Overall, the study supported the use of a rounding tool during daily multidisciplinary rounds. Future research is recommended with a larger sample.

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Improving Communication and Collaboration Between Disciplines: Utilization of a Daily Goals Sheet During Daily Multidisciplinary Rounds in the Critical Care Setting

Communication and collaboration between disciplines in the critical care setting is crucial to providing optimal patient care and ensuring positive outcomes. There are many methods of communication and collaboration utilized in the critical care setting, with multidisciplinary rounds as a main method. A study conducted by Vazirani, Hays, Shapiro, and Cowan (2005) evaluated the effect of multidisciplinary rounds on communication and collaboration between physicians and nursing staff, and found improvement in both related to the use of rounds. According to a study conducted by Centofanti et al. (2014), the use of a rounding tool during multidisciplinary rounds greatly improves communication. Any gap in communication or collaboration in the critical care setting may have significant negative effects on patient care and the environment.

This evidence-based project (EBP) was conducted to answer the following questions: Do multidisciplinary rounds and a rounding tool help improve interprofessional communication and collaboration, and does the rounding tool enhance understanding of the daily goals of patient care in the critical care setting? This study discusses the problem statement and PICO question, the related foundational theory, the systematic review of the literature related to the identified practice issue, the market and risk analysis, and the overall research objectives. It also delineates the specific plans for research, including the methodology and the evaluation plan, as well as the research findings, analysis of findings, recommendations, limitations, and implications for change in practice.

Problem Recognition and Definition

The practice issue was chosen because, in the researcher's current workplace, St. Luke's University Health Network (SLUHN), there are many concerns related to communicating information appropriately, as well as collaborating, between advanced care providers and nursing staff. These issues include missed labs and diagnostic tests, consultations, and medications, in addition to incident reports for patient care errors, increased length of stay (LOS), and a lack of understanding of the care plan and the rationale behind it. Factors that compound the issue are newly graduated nurses and other novice critical care nurses that make up the majority of the nursing staff on the unit. As observed in practice, and through subjective statements from providers and nursing staff, miscommunication and poor collaboration causes missed patient care goals, missed opportunities for improved patient outcomes, and increased LOS.

Multidisciplinary rounds were originally in place and done once daily; however, there was still a gap in communication between different shifts and disciplines, and information was being missed in regard to patient care and collaboration. According to Halm (2008), through utilization of a daily goals sheet or checklist in the critical care setting, teamwork and effective communication are enhanced, thereby improving outcomes. In theory, by adding a rounding tool to daily multidisciplinary rounds, communication and collaboration between advanced care providers and nursing staff in the critical care setting would improve, as well as the understanding of the daily goals of patient care and certain patient outcomes.

Statement of Purpose

The purpose of the evidence-based project, which was a quality improvement initiative, was to explore ways to improve interprofessional communication and collaboration in the critical care setting. Specifically, it assessed whether multidisciplinary rounds, supplemented with the

use of a rounding tool, will improve communication and collaboration between advanced care providers and nursing staff, as well as improve the understanding of the daily goals of patient care, in the critical care setting. It was not the intention of the study to develop or create new knowledge or to generalize study findings outside of the current organization.

Problem Statement and PICO Question

The problem statement for the research study was as follows: Do daily multidisciplinary rounds in the critical care setting, utilizing the Daily Goals Sheet by Johns Hopkins University Quality and Safety Research Group (2009), increase communication and collaboration between advanced care providers and bedside nurses, as well as improve the understanding of the daily goals of patient care by advanced care providers and bedside nurses, over traditional daily rounds without a specific rounding tool? The PICO practice issue statement is outlined below.

P – nurses and advanced care providers in the critical care setting

I – use of the Daily Goals Sheet by Johns Hopkins University Quality and Safety Research Group (2009) during daily multidisciplinary rounds (see Appendix A)

C – daily multidisciplinary rounds in the critical care setting without a specific rounding tool

O – improved advanced care providers' and nurses' understanding of the daily goals of patient care, as well as improved communication and collaboration between advanced care providers and bedside nurses in the critical care setting

Project Significance, Scope, and Rationale

This study was significant for many reasons. According to Halm (2008), communication problems were cited as the "top safety incident" causing patient harm in both medical and surgical intensive care units (p. 577). Superior communication and collaboration are absolutely necessary in any healthcare arena; however, the critical care setting has many levels of

communication and collaboration necessary to provide excellent patient care as a multidisciplinary team. Aside from communication and collaboration, understanding of the daily goals of patient care is very important. Without these, there is risk for issues in the critical care unit related to team processes, patient outcomes, and financial resources. Team processes include poor collaboration and adherence with EBP bundles of care, decreased quality of work, lack of understanding and knowledge of the plan of care among care providers, and decreased staff satisfaction and retention. Patient outcomes include increased length of stay and risks for ventilator-associated pneumonia (VAP), central line-associated blood stream infection (CLABSI), and catheter-associated urinary tract infection (CAUTI). Financial resources include loss of revenue due to the hospital assuming costs of hospital-acquired infections (HAIs) and patients staying in the intensive care unit (ICU) longer due to HAIs. Staff satisfaction and retention are also important factors that stem from improved communication and collaboration in the workplace. The scope of this study was a convenience sample of nurses and advanced care providers in a small satellite critical care unit and involved an educational intervention on the use of a rounding tool for this specific unit.

Theoretical Foundations

There are many models, frameworks, and theories that can be utilized in nursing research, ranging from learning theories to nursing theories to theories from sciences other than nursing; however, only certain theories and frameworks are applicable to the PICO practice issue statement and project goals. A nursing theory is critical to a project surrounding an intervention on nursing practice; therefore, the Modeling and Role-Modeling Theory (MRM) was chosen for the project, as it surrounds aspects of leadership and collaboration too.

According to The Society for the Advancement of Modeling and Role-Modeling (2011), the MRM Theory includes ideas from many mid-range theories, as it is a grand nursing theory that can be utilized in many different practice settings and educational programs, and in the area of research. The authors of the theory, in the original publication by Erickson, Tomlin, and Swain (1983), detail the MRM Theory as a grand nursing theory and a paradigm, which is based on an interactive process. McEwen and Wills (2014) state that the philosophical basis requires an interpersonal and interactive relationship, such as that with a nurse and a client.

This nursing theory is foundational to current practice and to this project for many reasons. The MRM Theory, in its original construct, is applicable to the researcher's practice in the critical care setting, as the aims of the theory are directly applicable to the researcher's practice and interactions with patients. This theory can also be utilized similarly with advanced care providers and bedside nurses, which is a context being currently integrated into the researcher's practice, and also the context in which it was used for this project.

The overall success of this theory is based upon five aims of nursing interventions toward the client, or in other cases, the advanced care provider, or mentor, to the nurse, or mentee, which include the following: building trust, promoting positive orientation, promoting control, affirming and promoting strength, and setting mutual goals while meeting needs (McEwen & Wills, 2014). These five aims are depicted below, and were applied to the relationship of the advanced care providers toward the bedside nursing staff of the study (see Figure 1 and Appendix B). The advanced care providers act as role models to assist the bedside nursing staff in achieving goals related to patient care, communication, and collaboration.

Figure 1. The Modeling and Role-Modeling Theory: Five Aims for Success

Literature Selection

A comprehensive and systematic review of the literature at the empirical level has been helpful to the project development and provides evidence of the many positive outcomes related to communication and collaboration, in addition to the practice of multidisciplinary rounds and the use of a rounding tool. Numerous search terms, in various combinations, were utilized during the review of literature, and include the following: multidisciplinary rounds, interdisciplinary rounds, ICU rounds, rounds, rounding, interdisciplinary communication, interdisciplinary collaboration, teamwork, communication, collaboration, nurse practitioner collaboration, rounding tool, intensive care unit, intensive care, critical care, nurses, and multidisciplinary rounds in critical care.

In addition to the use of search terms, search time limits for the years 2005 through 2015 were initially set; however, in finding paramount articles outside of that timeframe, exceptions

were made to ensure a comprehensive review of the literature. Exclusion criteria for the systematic review of literature included articles outside the predetermined publishing timeframe, aside from that described above, articles with limited information or those lacking proper research techniques, and articles that replicated information already gleaned from superior articles. After the initial search for articles, continued searching occurred based upon changes in the project plan, or for further clarification of the problem or intervention.

Many databases were systematically searched in the following order to ensure comprehensiveness during the review of literature: The Cochrane Library, the Database of Abstracts (DARE), the Agency for Healthcare Research and Quality (AHRQ), the National Guidelines Clearinghouse, EBSCOhost Online Research Databases, and finally, individual online searches for specific research articles. Over 75 relevant articles were found in CINAHL with Full Text, Academic Search Premier, MEDLINE, Journals @ OVID LWW Total Access Collection, SAGE Premier 2014, The Cochrane Library, AHRQ, ScienceDirect Freedom Collection 2012, and via an individual online search for a specific article. These were then narrowed down to 34 articles, and again 20 articles, most relevant to the practice issue and PICO question. Levels of evidence of the research gleaned, according to Melnyk in Houser and Oman (2011), range from level I to level VII, with level I as the strongest tier of evidence. The articles were then reviewed and summarized following the Systematic Review Evidence Table Format (see Appendix C) (Houser & Oman, 2011).

Scope of Evidence

The scope of evidence encompassed four main themes derived from the comprehensive and systematic review of the literature. These themes delineated the essential needs related to the PICO project problem and purpose. Communication and collaboration in the critical care setting,

multidisciplinary rounds, and rounding tools were main search terms and encompass the widespread themes founded in the literature review. This evidence supported the need for the project, as well as the plan for intervention.

The first theme identified was the necessity of communication and collaboration between disciplines in the critical care setting. Many resources cited the importance of communication in critical situations to provide excellent patient care. This theme included evidence that communication techniques, teamwork, and transparency are important in the multidisciplinary setting. The second theme was improvement of communication and collaboration through daily multidisciplinary rounds in the critical care setting. There were many resources that discuss varied ways of rounding in the critical care setting, as well as various disciplines to include in the process. Improvement was undeniably established in the supporting documents for this theme.

Utilization of a rounding tool during multidisciplinary rounds to improve communication between disciplines was the third theme generated in the review of literature. Different types of tools provide different benefits depending on application and setting. This theme was most central to the research intervention and provided the most evidence for support of the project. The fourth theme surrounded utilization of evaluation instruments to assess the intervention of using a rounding tool during multidisciplinary rounds. This was also important for the research project, as it provided the fundamental support for the use of the specific rounding tool in the intervention, which was the Johns Hopkins University Quality and Safety Research Group (2009) Daily Goals Sheet, in addition to the Collaborative Practice Assessment Tool (CPAT) surveys.

Review of Evidence

Background of the Problem

Interdisciplinary communication and collaboration is central to the consummate functioning of any critical care unit. This study was completed to investigate ways to improve communication and collaboration in this setting. Particularly, it assessed whether multidisciplinary rounds supplemented with a rounding tool would improve communication and collaboration between advanced care providers and nursing staff, as well as improve the understanding of the daily goals of patient care, in the critical care setting. The literature has provided supporting evidence that communication is paramount, and that multidisciplinary rounds and the use of a rounding tool provide many benefits in the critical care setting.

Systematic Review of the Literature

Prior to further discussion of the systematic review of literature, definition of certain keywords, including *multidisciplinary*, *interdisciplinary*, and *interprofessional* is necessary. According to Dictionary.com (2015), *multidisciplinary* is defined as being "composed of or combining several usually separate branches of learning or fields of expertise." *Interdisciplinary* is defined as "combining or involving two or more academic disciplines or fields of study" (Dictionary.com, 2015). According to Texas Tech University Health Sciences Center (2012), *interprofessional* is defined as "a group of individuals from different disciplines working and communicating with each other." The literature is presented in a topical order, organized by main issues with an explanation of the relationship to that of the central problem. The four major themes that emerged guide the review of literature.

Necessity of communication and collaboration. The first theme identified in the systematic review of the literature was the necessity of communication and collaboration

between disciplines in the critical care setting. This theme is evidenced in five relevant articles in the review of literature. Understanding communication, teamwork skills, and dynamics between care providers is paramount to conducting research related to communication and collaboration.

Reader, Flin, and Cuthbertson (2007) reviewed prior research related to identification of communication skills that are a factor in, or prevent against, avoidable medical errors. Many areas of communication were reviewed and include the following: communication skills and error in the ICU, improving communication in the ICU, communication skills and team performance in simulator studies, and communication research in acute environments. It was found that physician-nurse communication contributes to more than 33% of all errors in the ICU setting and high levels of collaboration between disciplines improve mortality rates and decrease length of stay. Also, due to the high volume of team-related events in the ICU, team-based activities should be implemented, such as multidisciplinary rounds, to facilitate communication between disciplines. Better communication was also found to be central to improved teaching and coordination of care related to multidisciplinary rounds. Overall, the conclusion of this study was that improved communication interventions in the ICU ensure patient safety by decreasing adverse events and increasing technical performance of staff (Reader, Flin, & Cuthbertson, 2007).

According to Flicek (2012), identifying dynamics between nurses and physicians related to communication in the critical care setting is necessary to determine evidence-based practice solutions to problems. This study is based upon a review of the literature and expert opinion on the subject. The author conducted a literature review, held unit council meetings, and instituted bedside rounds on a particular nursing unit. Opinions of nurses encompassed the need to improve communication between physicians and nurses and that overall, there are many challenges

related to optimum communication. Overall, the conclusions of the literature review suggest that there are many challenges in communication between healthcare disciplines and patient care outcomes are affected by physician-nurse communication (Flicek, 2012).

Baggs et al. (1999) examined associations between physician-nurse collaboration and patient outcomes in the critical care setting. The study conducted was a prospective, descriptive, correlational study using self-report instruments that served to further generalize information related to patient outcomes and physician-nurse collaboration in the ICU. The author previously conducted a similar study in only a medical ICU, and this study assessed other types of ICUs, in addition to teaching and non-teaching facilities. The *Collaboration (at the Patient-Decision Level): Collaboration and Satisfaction about Care Decisions (CSACD)* questionnaire was utilized as ICU patients were ready for transfer out of the unit to assess collaboration in the decision-making process related to transfer. Severity of illness was controlled using the APACHE III. Outcome measures included the following: reported levels of collaboration from healthcare providers, unit-level collaboration, patient severity of illness and individual risk, readmission and death rates in the ICU, and risk of negative patient outcomes based upon a specific ICU. Findings showed that collaboration had a positive effect on patient outcomes, specifically such that with an increase in one point in collaboration on the measurement tool, negative patient outcomes were decreased by 4%. Implications for practice surround the absolute need for collaboration to optimize patient outcomes (Baggs et al., 1999).

Manojlovich et al. (2011) developed procedures and tools to evaluate and qualify physician-nurse communication for the use in future studies. The study also detailed communication between nurses and physicians, specifically through rounds, as this was the primary identified venue for exchange in the review of literature. Observation of rounds,

interviews, and anonymous surveys, with the use of the Safety Organizing Scale (SOS), occurred to measure nurses' perception of safety related to communication in the ICU. It was found that the biggest gap of communication occurred between nurses and physicians. Through the use of protocols and tools made in this study, future strategies can be tested and developed for use in the promotion of effective physician-nurse communication (Manojlovich et al., 2011).

According to Thomas, Sexton, and Helmreich (2003), attitudes of physicians and nurses toward teamwork are also important to consider when assessing interdisciplinary communication and collaboration. Cross-sectional surveys were completed on 320 subjects, including 90 physicians and 230 nurses working throughout eight non-surgical ICUs in two teaching, and four non-teaching, hospitals. Forty percent of physicians and 71% of nurses responded to the Intensive Care Unit Management Attitudes Questionnaire (ICUMAQ), which queried about teamwork and collaboration. It was found that nurses and physicians view teamwork very differently, which results in suboptimal interpersonal communication skills and conflict resolution. It was also found that physicians were much more satisfied with collaboration between themselves and the nurses than were the nurses with physicians. The major implication of the study is that teamwork and communication skills need to be improved in order to improve patient care in the ICU (Thomas, Sexton, & Helmreich, 2003).

Improvement of communication and collaboration. The next theme is improvement of communication and collaboration through daily multidisciplinary rounds in the critical care setting, and is evidenced in 8 articles in the review of literature. This theme is crucial to the research project, as it provides support related to the necessity of multidisciplinary rounds. Various types of multidisciplinary rounds are assessed in these studies; however, the main theme

surrounds any type of structured, multidisciplinary team approach as a way of improving communication, collaboration, and patient safety and outcomes.

According to Mudge, Laracy, Richter, and Denaro (2006), a multidisciplinary approach to the care of acutely ill medical inpatients enhances patient care, communication, and overall efficiency. This was ascertained via a prospective controlled trial in which 1538 consecutive medical inpatients admitted to an acute care facility were subjected to the intervention of additional allied health staff and consistent multidisciplinary teams with implementation of improved communication processes for early information collection and collaboration between disciplines. Medical record and primary nurse report were the principle sources of data. Overall, enhanced care was established through the use of a consistent multidisciplinary approach, which provided sustainable efficiency gains for the hospital and improved outcomes for the patient (Mudge, Laracy, Richter, & Denaro, 2006).

A review of literature, according to Ababat, Asis, Bonus, DePonte, and Pham (2014), supports multidisciplinary rounds in the critical care setting as a more effective mode of communication than conventional report. Primary topics reviewed were benefits of the institution of multidisciplinary rounds, barriers to multidisciplinary rounds, and gaps in current findings. Benefits include the following: increased communication and teamwork, utility in virtually all clinical settings, increased patient safety, decreased adverse events, decreased LOS, and improved staff satisfaction. Barriers include time constraints and nurses' perception of the need to contribute to decision-making. A gap in current findings is that there are a large amount of literature reviews on this topic; however, there is a lack of long-term studies assessing the institution of rounds (Ababat et al., 2014).

Zwarenstein, Goldman, and Reeves (2009) conducted a review of randomized controlled trials evaluating the impact of practice-based interventions on healthcare efficacy and patient satisfaction. Five randomized controlled trials meet the inclusion criteria for the study, with two studies examining interprofessional rounds, two examining interprofessional meetings, and one examining externally facilitated interprofessional audits. Overall, it was found that interprofessional collaboration interventions should be instituted in the practice setting; however, it was recommended that more research be completed in this area (Zwarenstein, Goldman, & Reeves, 2009).

Counihan et al. (2014) analyzed the surgical multidisciplinary rounding process in order to evaluate its impact on patient outcomes. A comprehensive review of surgical inpatient care practices, via surveys and analyses of core competencies and quality indicators, was completed over a four-year period in regard to twice-weekly surgical multidisciplinary rounds. It was found that surgical multidisciplinary rounds on a twice-weekly basis improved coordination of patient care in the surgical population, facilitated rapid and sustained process improvement related to safety indicators and core measures, and changed the culture of patient care (Counihan et al., 2014).

Sharma and Klocke (2014) support the positive outcomes of patient-centered interprofessional rounds on patient care, but also related to communication between professions. A pre- and post-survey quantitative and qualitative study was conducted to assess for a perceived improvement in interprofessional communication and patient care provided by physicians and nurses through the institution of a patient-centered interprofessional rounding process. A five question baseline survey and a four-month follow-up survey were completed with primary outcomes measures including the following: satisfaction with inpatient rounding, perceived value

as a healthcare team member, interaction and communication, positive effect on workflow, and job satisfaction. Conclusions of the study support the institution of interprofessional patient-centered rounds to increase job and staff satisfaction, improve nursing workflow, and increase perception of being a team member as a nurse (Sharma & Klocke, 2014).

Vazirani, Hays, Shapiro, and Cowan (2005) conducted a randomized controlled trial evaluating the effect of multidisciplinary rounds on communication and collaboration between physicians and nurses. The study was conducted in a tertiary care hospital over a two-year period with the intervention unit initiating daily multidisciplinary rounds. It was found that communication, collaboration, and satisfaction of physicians and nurses related to communication and collaboration improved among the intervention group (Vazirani et al., 2005).

Lane, Ferri, Lemaire, McLaughlin, and Stelfox (2013) systematically reviewed evidence-based practices in place related to patient care rounds in the critical care setting, including components that aid or hinder the rounding process. Database searches of MEDLINE, Embase, CINAHL, PubMed, and Cochrane were conducted with 136 full text articles gleaned to 43 articles that were reviewed for this study. Selection was based on original, peer-reviewed research studies that detailed facilitators, barriers, and current practices related to rounding in the ICU. The main conclusion of the implementation of standardized multidisciplinary rounds using a rounding checklist with explicit roles for those involved has positive, evidence-based support (Lane et al., 2013).

Additional assessment of the dynamics of rounds, specifically communication styles and needs between physicians and nurses, was conducted via case study methodology by Vogwill and Reeves (2008). The goal was to examine the nature of multidisciplinary team meetings in order to assess interprofessional communication styles and needs between nurses and physicians.

A content analysis approach was taken to analyze and interpret field data obtained through observation of 20 meetings over six months. It was found that team meetings with structure and compliance, such as multidisciplinary rounds, were necessary to improve communication, as physicians and nurses have different information needs and communication styles (Vogwill & Reeves, 2008).

Utilization of a rounding tool. The third theme relates to the utilization of a rounding tool during multidisciplinary rounds to improve communication between disciplines. It is evidenced in five articles in the review of literature. This theme is crucial to the research study, as it is the intervention that was conducted in the critical care setting.

Halm (2008) conducted a review of clinical evidence with the purpose of evaluating the use of daily goals worksheets in the critical care setting, and the associated increased safety and reliability in care delivery. A search of MEDLINE, CINAHL, and Cochrane databases with the use of *ICUs*, *checklists*, *structured communication*, and *daily goals* as keywords yielded 14 articles related to the topic. Any article that was considered primary research or a quality improvement report on the topic was included if it related to the critical care setting. Improvements were noted related to the use of a goals worksheet in the following areas: clinician knowledge of the patient's plan of care, culture of teamwork and safety, bundle adherence, and clinical, financial, and service outcomes, including certain infection rates, pain assessment and treatment, mortality, LOS, and patient and employee satisfaction. The major conclusion of the literature review was that daily goals worksheets and checklists improve aspects of and standardize patient care (Halm, 2008).

Narasimhan, Eisen, Mahoney, Acerra, and Rosen (2006) evaluated the effects of a standard worksheet on the understanding of the daily goals of patient care in the intensive care

unit via a quantitative pre- and post-test designed study. In a 16-bed medical ICU, a daily worksheet was completed and placed at the bedside during multidisciplinary rounds. A survey was completed prior to the institution of the intervention, and the intervention was then assessed using a survey at the one-week, six-week, and nine-month marks. Results of the surveys supported the use of the daily goals worksheet to improve physician-nurse communication, implying that communication between other disciplines, patients, and family members, would also improve. A link between improved communication and improved patient outcomes was also found related to decreased length of stay (Narasimhan et al., 2006).

Centofanti et al. (2014) conducted a mixed-methods study combining field observations of patient rounds, document analysis, and focus and group interviews to determine the effects of a daily goals checklist on multidisciplinary rounds in the ICU. The daily goals checklist was instituted to supplement daily multidisciplinary rounds and three main themes were identified surrounded a positive impact on communication, patient care, and education. The perception was that the checklist improved the management of the critically ill due to the systematic and comprehensive approach to patient care that it provided, which subsequently improved interprofessional communication and practice, in addition to education, patient safety, daily progress, and the encouraging momentum for patients' recovery from illness (Centofanti et al., 2014).

Henneman, Kleppel, and Hinchey (2013) conducted a study with the primary outcome measure of developing develop a valid and reliable checklist in order to document collaboration and teamwork during multidisciplinary rounds. The development of a checklist occurred and was tested on three general medical units. Over a six-month period, the checklist had five versions that were revised and tested, and the final version was found to be both valid, reliable, and easy-

to-use. Use of the checklist is encouraged for all healthcare providers to assess collaboration and teamwork, and to improve quality outcomes and patient safety; however, further identification, testing, and formulation of additional tools is necessary in the practice setting (Henneman, Kleppel, & Hinchey, 2013).

Dingley, Daugherty, Derieg, and Persing (2014) developed, implemented, and evaluated a communication toolkit with the goal of improving patient safety via enhancement of care provider communication techniques. Four hundred ninety-five communication events in the medical ICU, acute care unit, and inpatient behavioral health unit settings were assessed using a pre- and post-test design, as well as observation, and occurrence report evaluations, surrounding the implementation of team communication interventions over a two-year period. The toolkit developed by the study was shown to implement teamwork and communication strategies that yield improved outcomes and satisfaction. It is applicable to many practice areas and is beneficial to utilize related to communication and collaboration efforts in the healthcare setting. This study provides evidence that utilization of communication and rounding tools improves communication and collaboration (Dingley, Daugherty, Derieg, & Persing, 2014).

Utilization of evaluation instruments. The final theme that emerged from the review of literature is the utilization of evaluation instruments to assess the intervention of using a rounding tool during multidisciplinary rounds. Specifically, this is referenced in two articles detailing the use and pilot testing of the daily goals sheet, and detailing the compilation and pilot testing of the CPAT. Both of these tools were utilized in the research study.

Pronovost et al. (2003) detail the use of a daily goals sheet to improve communication during daily multidisciplinary rounds. In a 16-bed surgical oncology ICU, on all ICU patients that were admitted, a daily goals sheet was utilized to supplement multidisciplinary rounds in an

effort to evaluate and potentially improve communication. Primary outcome measures of the study were an understanding of the daily goals of patient care, admission rates, and LOS, which were measured using a five-point Likert scale survey and personal interviews. It was found that in the first two weeks of the study, less than 10% of resident physicians and nurses understood the daily goals of patient care; however, after implementation, more than 95% understood the goals. LOS decreased from 2.2 days to 1.1 days, and admission rates increased for a total of an additional 670 patient admissions per year. Overall, the study showed that the use of the daily goals sheet during ICU patient care rounds was effective in improving communication and decreasing LOS (Pronovost et al., 2003).

Specifically related to use of the daily goals sheet, Pronovost et al. (2003) established that benefits were founded on theories of crew resources management, and that the goals sheet should be utilized for interpersonal communication, leadership, and decision-making, and in places where human error can have devastating effects. The use of the tool overall is necessary to promote structure in communication; therefore, use of the tool is more important than the specific statements on it. Also, the tool should be modified frequently to meet the needs of the setting (Pronovost et al., 2003).

Schroder et al. (2011) conducted a study with the purpose of developing the CPAT as a survey to evaluate collaborative practice within teams or units providing healthcare services. The original CPAT was developed by the Queen's University Inter-Professional Patient-Centred Education Direction research project and was utilized in pilot testing. Eight exploratory factor analyses were completed over two pilot tests with revisions to the CPAT made between the first and second pilot testing. The eight domains in the CPAT had Cronbach's alphas between 0.70 and 0.90, and an eigenvalue around 3.0, which accounted for 50% of answer variation between

respondents. The two pilot tests therefore demonstrated that the CPAT is valid and reliable for assessing levels of collaborative practice within teams; however, the survey is not valid unless used in its original form and for the purpose of exploring self-perceptions of a team or unit providing healthcare services (Schroder et al., 2011).

Overall, review of the literature has provided a wealth of support and evidence for the project development. It has also revealed the numerous positive outcomes related to communication, collaboration, and the practice of multidisciplinary rounds and the use of a rounding tool, in the critical care setting. Finally, these practices also support improved understanding of the daily goals of patient care in the critical care setting.

Project Plan and Evaluation

Market and Risk Analysis

A SWOT analysis, which stands for strengths, weaknesses, opportunities, and threats, is a tool utilized to perform a simple, yet strong, needs assessment for a potential project. A SWOT analysis was completed for this project (see Table 1). The strengths already in place in the critical care unit included the ability to function as a multidisciplinary team and the daily participation in rounds. Significant communication already occurred between disciplines, which was a strength too. The project occurred in the current work environment and had significant support from the advanced care providers in the unit, which helped with buy-in of the other participants.

The main weakness identified was communication between different shifts and disciplines in the critical care unit, which was the basis for project. The other weakness is the limited number of staff members that were available to participate in the study. Opportunities for this study surround healthcare standards for rounding in the critical care setting and increased

opportunities to mentor and educate staff on evidence-based practice. Threats to the study include other institutions completing similar work, as this may affect the findings of this study or the practice instituted related to it findings, and changes in the health record. As the institution has changed its documentation system since the intervention period, changes to daily rounding and the way a rounding tool is completed have occurred.

Table 1. SWOT Analysis

Strengths	Weaknesses
• Function as a multidisciplinary team • Participation in daily multidisciplinary rounds • Significant communication already occurs between advanced care providers and nursing staff • Project will occur in current work environment • Support of the advanced care providers	• Communication between different shifts and disciplines • Limited number of staff members
Opportunities	**Threats**
• Healthcare standards for multidisciplinary rounds in the critical care setting • Increased opportunities to mentor/educate all nurses on evidence-based practice	• Other institutions completing similar multidisciplinary rounds with the use of a rounding tool • Changes in the electronic health record

Driving and Restraining Forces

Driving forces, restraining forces, and strategies to overcome the restraining forces are important to consider for the project, and are shown below (see Figure 2). Driving forces included a need to improve communication and collaboration, to improve knowledge and understanding of daily goals of patient care, and a need to improve practice standards and expectations for nurses who practice in the critical care setting. Restraining forces included a lack of time, workload, census, and staff resistance. Strategies to overcome these restraining

forces were dividing workload between different shifts and staff members, streamlining processes, and discussion with staff related to benefits of using a daily goals sheet during daily multidisciplinary rounds.

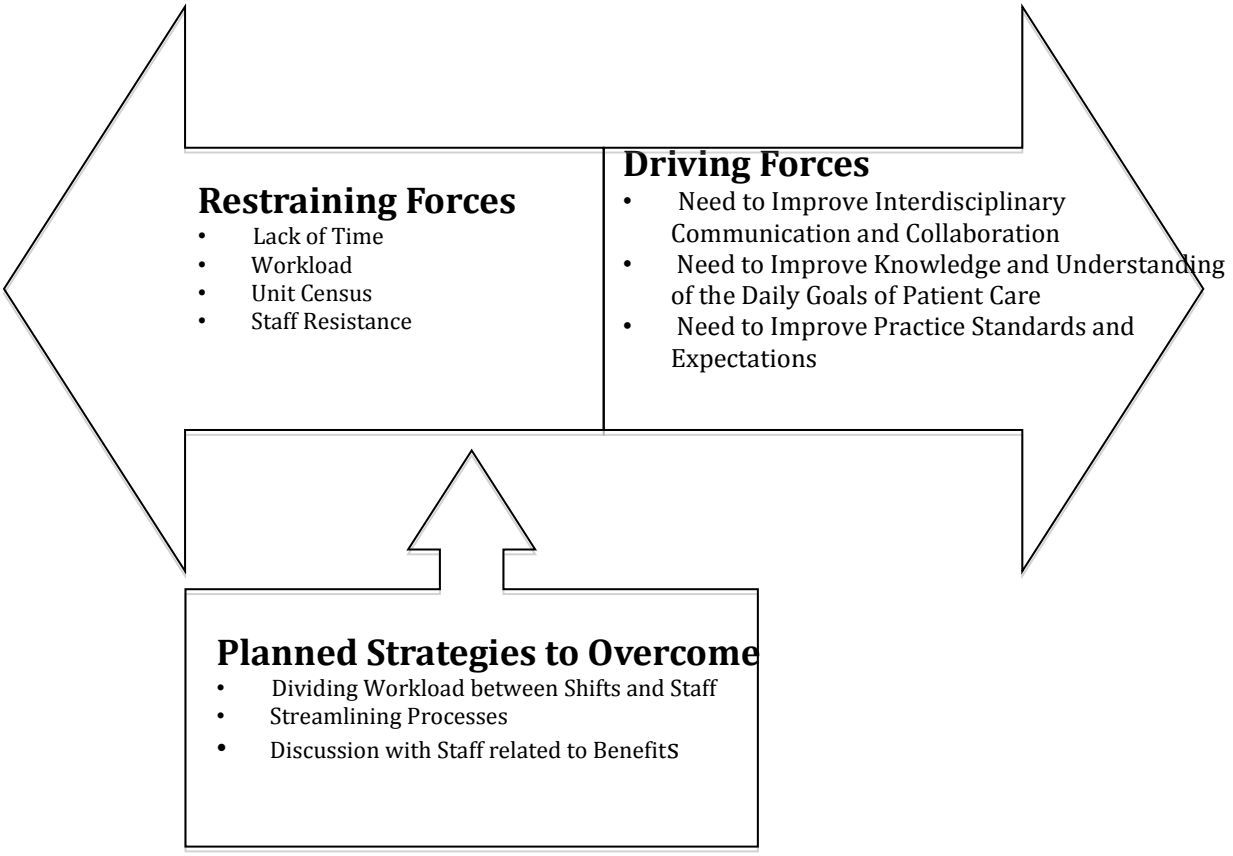

Figure 2. Diagram of Driving Forces, Restraining Forces, and Strategies to Overcome

Needs, Budget, Resources, and Sustainability

Resources needed for this project included printing supplies, such as paper and ink, project team man hours, and staff man hours, to complete tasks such as review of the education and information sheets prior to the intervention, the intervention itself, and the survey process before and after the intervention. Budget for this project related to cost of the resources discussed above. An outline of the budget and resources is shown below (see Table 2).

Table 2. Budget and Resources Outline

Budget and Resources Outline
Printing Costs – $21.68 (donated by St. Luke's University Health Network)
SurveyMonkey® Costs – $300.00 (incurred by the researcher)
Staffing Resource Costs – $22,250.00 (normal daily work time for all participants)
Total Costs – $22,571.68
Overall Budget & Resources – $300.00 (incurred by the researcher)

Printing costs were minimal in this project. One ream of paper costs approximately $7.99 and contains 500 sheets of paper. One black ink cartridge for printing is $13.69. With this in mind, and the potential to print 294 daily goals sheets over six weeks, an approximate price for printing was $21.68. None of the other documents for this study needed to be printed, as the documents were disseminated via the confidential SLUHN email system. The Vice President of Nursing at the satellite SLUHN campus also granted permission for the use of, and therefore giving as a donation, printing supplies for this research project (see Appendix D). SurveyMonkey® was utilized for the surveys, as it was an established method for surveying at SLUHN. The cost for SurveyMonkey® is $300.00 per year for use, which was incurred by the researcher.

Work time to complete the intervention was also a cost; however, it was difficult to quantify because it was part of the participant's normal workday. This figure is based upon the average salary for each participating staff member multiplied by the number of work hours utilized, per patient, per day, for the duration of the intervention. An advanced care provider makes an average of $50 per hour. Multidisciplinary rounds took a maximum of four hours per workday for the advanced care provider, including completion of the Daily Goals Sheet Tracking Tool. Total cost for these hours is $200 per day, multiplied by the six-week intervention period at

seven days per week, and is $8,400. Time to read the information and education sheets for the advanced care provider was approximately one hour, multiplied by approximately eight advanced care providers, which is about $400. Completion of the pre- and post-surveys took about half an hour each, totaling one hour, multiplied by eight advanced care providers, which again, is about $400. The total cost for utilizing advanced care providers is roughly $9,200.

In following the same theory, bedside nurses make an average of $25 per hour, and by utilizing the same numbers above, with the thought of having approximately 30 bedside nurses as part of the project, the total cost for utilizing bedside nurses is roughly $5,700, with $4,200 toward the rounding process, $750 toward the information and education sheet review (30 nurses multiplied by one hour), and $750 toward the pre- and post-survey completion. Additional time needed to be considered in regard to completing the daily goals sheet, which in total took approximately one hour between all shifts. This cost $7,350 for the duration of the intervention, broken down as one nursing hour multiplied by seven patients, seven days per week, for six weeks in total.

The total of all costs for the project is approximately $22,571.68, and as stated above, printing costs were not applicable, as those resources were donated by SLUHN. The cost related to staff man hours was also not directly applicable, as those hours were all part of a normal work day for the participants. The final budget, as a result, only includes the costs for SurveyMonkey®, as this was the only cost directly incurred by the researcher, and was $300.

Overall cost to replicate this study at another site would be very similar. The only exception would relate to changes in pay scale in that particular location and changes in patient census and amount of staffing in that particular critical care unit. For example, change in hourly rate would occur, in addition to the patient census and numbers of advanced care providers and

bedside nurses participating in the study. Costs for printing and use of SurveyMonkey® would remain approximately the same.

Sustaining forces for a successful project intervention relate to the continued use of the Daily Goals Sheet during multidisciplinary rounds. Forces include the following: continued daily multidisciplinary rounds using the Daily Goals Sheet, continued participation of advanced care provider and nursing staff, continued printing supply resources, and continued staff man hours. These forces are likely to be easily continued for a longer period of time depending on the needs of the critical care unit.

Feasibility, Risks, and Unintended Consequences

This project was highly feasible. In the beginning, the primary researcher met with the project mentor, the ICU medical director, the ICU nurse manager, the manager of the critical care advanced care providers, and the university's statistician. All were supportive of the project. Prior to the intervention, the ICU nurse manager and the manager of the advanced care providers announced the new rounding process and the researcher's study at department staff meetings. The primary researcher worked on this unit, was familiar with the nursing and advanced care provider staff, and already had a rapport with the staff. Permission to use both modified versions of the Daily Goals Sheet and the CPAT was easily obtained as well.

There were minimal risks if any. Possible mild psychological distress of the study participants could potentially occur from completing the study instruments, including review of the education sheet and completion of the pre- and post-surveys, which took approximately 60 minutes and 30 minutes each, respectively, to complete. There were two unintended consequences, which included increased workload and increased time to complete multidisciplinary rounds.

Stakeholders and Project Team

Stakeholders in this project are numerous. The major stakeholders were the advanced care providers and the bedside nursing staff in the critical care unit. Other members of the multidisciplinary team, including physicians, respiratory therapists, patient care assistants, and secretaries, were also stakeholders. Finally, the critical care patients and their family members were also major stakeholders in this project, as they directly reaped the benefits.

According to Zaccagnini and White (2014), there are no strict guidelines for selection and formation of the project team. As long as the final team possesses, as a whole, the skills necessary to conduct and accomplish the project, the project team is appropriate (Zaccagnini & White, 2014). This project team included the following members: the researcher, as the leader and primary investigator, the project mentor, the medical director of the intensive care unit, the manager of the critical care advanced care providers, the nurse manager of the intensive care unit, the statistician for SLUHN, and the Capstone Committee Chair at Regis University.

Cost-Benefit Analysis

A cost-benefit analysis, as shown below in Table 3, is another essential component in the process of the Doctor of Nursing Practice (DNP) scholarly project, which when completed, should support that the benefits of the project outweigh the overall costs of the project (Zaccagnini & White, 2014). For this project, it is difficult to determine overall cost, as some components of the project were already being completed on a daily basis in the critical care setting, and others remain difficult to quantify. Daily multidisciplinary rounds were already occurring, so there was no additional cost to that part of the intervention aside from the disruption of normal unit operations, which was again difficult to quantify. Additional costs occur with the paper and ink needed to print the Daily Goals Sheet and the use of

SurveyMonkey®, as other documents were sent electronically. The costs were previously discussed under the Budget and Resources section of this paper.

The benefits of the project, as previously discussed, were consequent of improved communication, collaboration, and understanding of the daily goals of patient care. They included, but were not limited to, the following: improved patient outcomes, decreased length of stay, decreased hospital acquired infections, improved workflow, and decreased missed tasks and patient care goals. Overall, the many benefits outweighed the costs of the minimal extra time it took to complete the Daily Goals Sheet and round, and the minimal costs of printing and SurveyMonkey®.

Table 3. Cost-Benefit Analysis

Costs	Benefits
Printing Costs (Paper/Ink)	Improved Communication, Collaboration, and Teamwork
SurveyMonkey® Fees	Improved Understanding of the Daily Goals of Patient Care
Education Time	Improved Patient Outcomes and Workflow
Intervention Work Time	Decreased Length of Stay and Hospital-Acquired Infections
Disruption of Normal Unit Operations	Decreased Missed Tasks and Patient Care Goals

Mission, Vision, and Goals

The overall mission and the vision statement are critical components of any research project. The mission was to improve communication and collaboration between disciplines in the critical care setting through the institution of daily multidisciplinary rounds with the addition of a Daily Goals Sheet. The vision statement for the project was to foster evidence-based research in the critical care setting at SLUHN with the goal of creating a standardized approach to daily multidisciplinary rounding for the improvement of communication and collaborative practice.

Goals of the project are the tasks that ideally will be completed over the course of the research project. They included providing an education sheet regarding the new rounding process and Daily Goals Sheet usage and instituting the intervention of the Daily Goals Sheet on daily multidisciplinary rounds. The final main goal of the project was to answer the PICO and research question.

Process and Outcome Objectives

The outcome for this project was improved communication and collaboration between advanced care providers and nursing staff in the critical care unit, as well as improved understanding of the daily goals of patient care by advanced care providers and nursing staff. There were six project objectives for this project, which are listed below.

- Provide an education sheet to all participants regarding the new rounding process and Daily Goals Sheet usage at the beginning of the study by September 2015 (see Appendix E for the education sheet)
- Institute the intervention of the Daily Goals Sheet on daily multidisciplinary rounds by October 2015
- Administer pre-survey, demographics sheet, and post-survey, before and after the intervention respectively, to assess multidisciplinary communication and collaboration, and to evaluate nurses' and advanced care providers' understanding of the daily goals of patient care, by November 2015
- Track use of the Daily Goals Sheet on a daily basis by November 2015
- Obtain pre- and post-intervention unit reports to assess for improvement in LOS, high alert medication events, ventilator days, and infection rates, including CLABSI, CAUTI, and VAP by November 2015

- Share results of the study with unit administration where the research took place after the Capstone Project defense

Refer to the projected timeline for the research study in Appendix F.

Logic Model

The Logic Model summarizes all of the necessary workings to be considered when developing the research project and the projected short and long-term goals (see Appendix G). The W.K. Kellogg Foundation Logic Model Development Guide (2004) was utilized to complete the conceptual logic model for program implementation. It outlines the resources, activities, outputs, short-term and long-term outcomes, and the impact of the proposed PICO project.

Population and Sampling Parameters

According to Terry (2015), convenience sampling, although prone to bias and lack of generalizability, provides a major advantage of close proximity and availability of participants for a research study. The participants are also typically voluntary, which requires consideration by the researcher related to motivation to take part in the study (Terry, 2015). Motivation, however, if found to be high in participants, may provide the strength needed for the population to actively participate in the research process in order to assist in the cultivation of evidence-based findings that can be incorporated into better practice.

The population was used as a whole, which was 12 advanced care providers and 28 bedside nurses, as sampling was not feasible due to the small population size. The focus of the study is only on multidisciplinary rounds, including advanced care providers and ICU nurses, with ICU patients, or patients on the critical care service. Inclusion criteria was any person that was an advanced care provider, including nurse practitioners and physician assistants, or a bedside nurse in the satellite SLUHN ICU; therefore, anyone without these credentials was

excluded from the project. Other exclusion criteria included nurses caring for step-down patients, or those patients not on the critical care service, on any given day, physicians, other ancillary members of the healthcare team, and those of the minor or elderly populations. This also meant that there were no vulnerable subjects in this project, as the researcher was not the direct manager of any participants and none of the participants were minors or part of the elderly population.

Setting

The setting in which the intervention took place was one of the critical care units of SLUHN, which is a six-hospital system with a major teaching facility and five smaller sites with limited resources and staff. The selected satellite hospital is one of the smaller sites, and the intensive care unit at this campus is a 12-bed combined ICU and step-down unit, and on any given day, has a registered nursing staff of approximately 25 to 35 nurses, and an advanced care provider staff of approximately eight to 15 nurse practitioners and physician assistants combined. Advanced care providers staff the ICU 24 hours a day, seven days a week, along with the nursing staff.

Design Methodology and Measurement

This project is an EBP project in which a quality improvement plan, program evaluation, educational, or standard of care intervention was completed. In most cases, a pre-test/post-test evaluation will assess the effect of the intervention. The project was internal to an agency and informs the agency of issues regarding health care quality, cost, and patient satisfaction. The results of this project are not meant to generate new knowledge or be generalizable across settings but rather seek to address a specific population, at a specific time, in a specific agency. These projects translate and apply the science of nursing to the greater health care field.

Projects utilize the acronym "PICO," rather than stating a formal research hypothesis. The acronym stands for: Population or Disease (P), Intervention or Issue of Interest (I), Comparison Group or Current Practice (C), and Outcome (O) and is usually framed as a question (Melnyk & Fineout-Overholt, 2011, p. 31). The question this study sought to address was: Do daily multidisciplinary rounds in the critical care setting, utilizing the Daily Goals Sheet by Johns Hopkins University Quality and Safety Research Group (2009) (I), increase communication and collaboration between advanced care providers and bedside nurses (P), as well as improve advanced care providers' and nurses' understanding of the daily goals of patient care (O), over traditional daily rounds without a specific rounding tool (C)?

The research study design for the PICO project was a quality improvement project that used a convenience sample and employed a mixed methods design consisting of a quasi-experimental pre-survey/post-survey that included both quantitative and qualitative questions. The study was conducted after Regis University and SLUHN Institutional Review Board (IRB) approvals were received and subsequent recruitment via email and unit flyers occurred (see Appendices H through K for Regis University and SLUHN IRB approvals and addendums). The methodology is shown below.

- Completion of a pre-survey and demographic data sheet by all advanced care providers and nursing staff, disseminated via SurveyMonkey® 14 days prior to the intervention, with access ended four days prior to the intervention, giving 10 days to complete the survey (Step One)
- Presentation of an education sheet on the study and the Daily Goals Sheet to all advanced care providers and nursing staff, given four days prior to the intervention to review and

ask questions as necessary, and collection of unit reports from the preceding six weeks (Step Two)

- Participation in daily multidisciplinary rounds with the addition of the Daily Goals Sheet, which occurred over a six-week time period, by all advanced care providers and nursing staff, in addition to tracking the use of the Daily Goals Sheet through utilization of a tracking tool by the researcher and project team (Step Three)
- Completion of a post-survey by all advanced care provider and nursing staff, disseminated via SurveyMonkey® one day after the intervention ended with access ended 11 days after the intervention ended, giving 10 days to complete the survey, and collection of unit reports from the six weeks during the intervention, as well as the six weeks after the intervention (Step Four)

The ICU nurse manager approved the addition of the Daily Goals Sheet to the current rounding process in the ICU. Participation in daily multidisciplinary rounds with the utilization of the Daily Goals Sheet by the advanced care provider and nursing staff was mandatory, as this was a new procedure for rounding; however, participation in the survey process was optional for advanced care providers and nursing staff. The primary investigator was responsible for collecting de-identified unit reports, including reports on improvement in LOS, high alert medication events, ventilator days, and infection rates, including CLABSI, CAUTI, and VAP, in the form of aggregate data from the ICU nurse manager.

The independent variable is use of the Daily Goals Sheet by Johns Hopkins University Quality and Safety Research Group (2009) during daily multidisciplinary rounds. The dependent variables are improved advanced care providers' and nurses' understanding of the daily goals of patient care and improved communication and collaboration between advanced care providers

and bedside nurses in the critical care setting, which were measured using various unit data reports and the modified CPAT pre-survey and post-survey (see Appendix L and Appendix M, respectively). In addition, the actual use of the Daily Goals Sheet was tracked during the implementation phase of this study.

Protection of Human Rights and Ethical Responsibilities

According to Terry (2015), the list of vulnerable populations in research includes the following groups of people: infants, children, prisoners, the mentally handicapped, and the elderly. It also stipulates that a group of employees can be vulnerable if the research investigator is the direct supervisor or manager of the group (Terry, 2015). With this in mind, the study did not involve the protected data of vulnerable populations, as the researcher was studying the effects of an intervention on nursing staff and advanced care providers in the critical care setting, neither of which was the researcher the supervising manager.

Terry (2015) states that there are certain ethical responsibilities of an investigator in regard to the population of a research study. The researcher's responsibilities to the population in the study include the following: beneficence, autonomy, justice, privacy, and confidentiality. Risks to study participants were minimal if any, and benefits to study participants were the additional education and mentoring they received during the entire process.

Subject recruitment and enrollment occurred via a disseminated information sheet, as written informed consent was thus not required (see Appendix N). In addition, recruitment occurred via staff meetings conducted by the advanced care provider and ICU nurse managers, flyers posted throughout the unit, and four emails (see Appendices O through S for the flyer and four emails). The first email introduced the new rounding process and the research study, the second reintroduced the research study and presented the information sheet and the pre-survey

and demographics sheet, the third presented the Daily Goals Sheet and corresponding education sheet, and the fourth email presented the post-survey. Correspondingly, enrollment in the survey process was optional; however, participation in the use of the Daily Goals Sheet was mandatory, as this was a new rounding process for the unit.

Confidentiality was maintained for all study participants, and all surveys, unit data reports, and any other documents, were de-identified and reported as aggregate data. Unit data reports had no patient identifiers, originated from the ICU nurse manager, were reported as aggregate data, and included critical care LOS and infection rates for VAP, CLABSI, and CAUTI. De-identified aggregate data is stored electronically on the primary investigator's computer that is secure and password protected, as well as the primary investigator's secure and password protected SurveyMonkey® account.

The Daily Goals Sheet Tracking Tool, to track the use of the Daily Goals Sheet, was stored on the SLUHN shared network drive for the satellite campus advanced care providers, which has access limited to only those advanced care providers (see Appendix T for the tracking tool). In addition, information, including the information sheet and recruitment, was disseminated via the SLUHN secure email system to continue the assurance of confidentiality. The information sheet was emailed to the advanced care providers and nursing staff, and by submitting the pre- and post-surveys via SurveyMonkey®, the participants were providing consent for the researcher to collect the data that was provided in the surveys. Email addresses were not linked to any survey results or any other study documents and participants were blind copied on all emails. Permission to use the SLUHN secure email system was obtained from the Vice President of Nursing at the satellite SLUHN campus (see Appendix D).

IRB approval was obtained from Regis University; however, per the Regis University IRB Exempt Research Qualifications, this research project utilizes category II and category IV when qualifying for exemption. Category II is

> "research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless confidentiality is not protected and any exposure of the subjects' responses outside the research could place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation"

and category IV is

> "research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects" (Regis University, 2015).

Also, outside site approval was obtained from SLUHN, and SLUHN IRB approval was obtained (see Appendix U for site approval). In addition to the aforementioned approvals, the primary investigator completed the Collaborative Institution Training Initiative, or CITI Program (see Appendix V for certificates).

Instrumentation, Reliability, and Validity

Instruments for this study include the revised Daily Goals Sheet and the Daily Goals Sheet Tracking Tool. The revised Daily Goals Sheet is the instrument that was utilized during the intervention, which was adapted from the Daily Goals Sheet from Johns Hopkins University Quality and Safety Research Group (2009). Permission to utilize and modify the Daily Goals

Sheet was received via email from Johns Hopkins University Quality and Safety Research Group representative Jamie Manfuso (see Appendix W).

Validity and reliability data for the Daily Goals Sheet was not available. Pronovost et al. (2003) detailed the composition and use of their daily goals sheet, and conclusions for its use were made after development and pilot testing. The conclusions were the following: use of the tool is more important than the actual content on the tool, the tool is a necessary structure for communication, and the tool should be modified frequently to fit the needs of the users and the environment where it will be used. Content validity of the revised Daily Goals Sheet was evaluated with the ICU medical director, the ICU nurse manager, and the Vice President of Nursing of the satellite SLUHN campus to ensure the modified tool was appropriate for this particular setting.

The Daily Goals Sheet Tracking Tool is a form that was utilized to track the use of the revised Daily Goals Sheet. Each day during the intervention the advanced care provider was to access the secure location of the form on the SLUHN computer and fill in the appropriate information. This information included the number of ICU patients that day and the number of daily goals sheets used that day. Ideally, those numbers were equal to substantiate use of the Daily Goals Sheet.

Research tools to measure the outcomes of this project included the following: the modified CPAT pre-survey and demographics sheet, the modified CPAT post-survey, and various unit reports on specific data points. Permission for the use of The CPAT and its additional tools and resources, and permission to modify the tool as necessary, was given via email from Queen's University and The Office of Interprofessional Education and Practice

(QIPEP) by Anne O'Riordan (see Appendix X). The two surveys and demographics sheet were disseminated via SurveyMonkey® to protect confidentiality of the respondents.

The CPAT pre-and post-surveys were modified to best fit the project. The original pre- and post-surveys included eight domains with 56 closed-ended questions and the modified pre- and post- surveys included seven domains with 51 closed-ended questions. The domain related to patient involvement was removed and the domain measuring community linkages and coordination of care was modified, as the research study does not assess collaboration related to patients or the community. The modified pre-survey contained three open-ended questions and a six-question demographic section, and the modified post-survey contained five open-ended questions. The additional three questions in the post-survey related to the new rounding process. Content validity of the modified CPAT pre- and post-surveys was evaluated with the ICU medical director, the ICU nurse manager, and the Vice President of Nursing of the satellite SLUHN campus to ensure the modified tool, specifically the change in closed-ended questions and the addition of the open-ended questions, was appropriate for this particular setting.

As discussed previously in the systematic review of the literature, validity and reliability of the CPAT were tested over the course of two pilot tests. Both pilots included eight exploratory factor analyses of the eight domains within the CPAT. In pilot one, the eigenvalue was 3.0, which would account for approximately 50% of answer variation between respondents, and the Cronbach's alphas were between 0.7 and 0.9. Modifications were made to wording, addition and deletion of questions, and pilot two was completed (Schroder et al., 2011). It was found that, if used in its original form, the CPAT is both valid and reliable for the purpose of "exploring self-perceptions of a team or unit providing health care services" (Queen's University, 2015). It was planned that a Cronbach's alpha would be performed as part of the data analysis post-

intervention to evaluate the modified CPAT, which is further discussed in the data analysis portion of this paper, along with other intended statistics.

Data Collection and Treatment Protocol

Data was collected related to the research question and the six project objectives. The majority of data, including the closed-ended responses, open-ended responses, and demographic data, was collected via the pre-survey, the intervention, and the post-survey objectives. Data was also collected from the Daily Goals Sheet Tracking Tool during the intervention and specific unit reports that assessed critical care length of stay and certain hospital-acquired infection rates were collected throughout as an ongoing process throughout the pre-intervention, intervention, and post-intervention time periods. The total time period for data collection included the six weeks prior to the intervention, the six weeks during the intervention, and the six weeks after the intervention.

The treatment protocol was the implementation of the Daily Goals Sheet. The modified Daily Goals Sheet was primarily utilized by the bedside nursing staff throughout daily practice, rounds, and handoff report. All of the advanced care providers and the nurses were given an education sheet on the use of the Daily Goals Sheet in conjunction with daily practice and daily multidisciplinary rounds. A very clear process was outlined for its use in practice.

Starting at midnight, a new tool would be initiated for each patient on the critical care service. The tool would be completed to the best ability of the nightshift nurse, signed out in handoff report to the dayshift nurse, and its use continued throughout the day. The dayshift nurse would be present on rounds with the tool to provide information from the sheet, as well as to take notes on what was discussed during rounds. The Daily Goals Sheet would again be signed out in evening report and used by the nightshift nurse in practice until midnight, where the process

would start over again. All members of the multidisciplinary care team could reference the tool throughout the day to obtain or convey necessary patient care information. The Daily Goals Sheet contained only the patient's room number and the date. There was no other identifying information for the patient, the nurse, or the unit, and all sheets were disposed of per hospital protocol when the patient left the ICU.

Project Findings and Results

The project findings and results are numerous and include quantitative and qualitative data. Quantitative data was collected from closed-ended survey questions, demographic questions, Daily Goals Sheet Tracking Tool, and specific unit data reports. Qualitative data was collected from open-ended survey questions. Data was analyzed using descriptive statistics for the quantitative data and general thematic analysis for the qualitative data. Inferential and additional other statistics, including level of significance, effect size, power analysis, and Cronbach's alpha, were used to analyze the population and study tools. Descriptive and inferential analysis was done using PASS and SPSS® Statistics 23 software, and general thematic analysis was done without software assistance. Overall, the data was reported in aggregate.

Descriptive statistics, including frequencies and percentages, were analyzed using the demographics of the study participants, the closed-ended survey data, the Daily Goals Sheet Tracking Tool, and the specific unit report data, such as critical care LOS and infection rates including VAP, CLABSI, and CAUTI. High alert medication events were originally included in the specific unit report data to be evaluated by this method; however, this data was no longer available for interpretation, as it was decided by the ICU manager to cease its collection prior to the institution of the intervention.

An analysis of general themes occurred related to the open-ended survey data. This qualitative analysis, according to Braun and Clarke (2006), is known as thematic analysis. Braun and Clarke's method was utilized as a method of constant comparison to analyze the open-ended survey data. Themes and subthemes materialized from the data using this method and specific quotes supported these themes and subthemes.

Inferential statistics, including level of significance, with a set alpha of 0.05, Cronbach's alpha, power analysis, and effect size, were analyzed related to the original CPAT surveys and study population. A Cronbach's alpha was used to evaluate the modified pre-survey. It was initially part of the plan to evaluate both the modified pre-survey and the modified post-survey, but because response rates for the modified surveys were low, especially the post-survey, the Cronbach's alpha was only calculated for the modified pre-survey. The result was 0.95. Though this suggests a high degree of internal consistency, it should be interpreted in light of strong limitations related to the ratio of survey items to sample size. There is no guarantee that this outcome would be replicated.

As referenced in Polit (2010), the level of measurement for the data obtained was ordinal; therefore certain tests were not appropriate for analysis. In the original plan, inferential statistics were to be used to evaluate the data. The first plan was to utilize the *t* test; however, it was subsequently excluded as a possibility, as the *t* test is used to test the difference between two population means and can only be used on interval or ratio level data. The signed rankings test was then chosen and considered, as it is appropriate for measurement of ordinal data; however, because the overall sample size was small and there was a skewed distribution of survey respondents from pre- to post-survey, it would not yield reasonable results. The original CPAT surveys did have an associated scoring system; however, due to the rationale above regarding

sample size and the fact that the CPAT surveys were modified for the study, the scoring system was not appropriate for use as deemed through verbal communications with Queen's University.

According to Polit (2010), effect size, which is the way relationship strength between study variables is measured in a population, must be measured to analyze a research project. Power, which detects the probability that there will be an effect by the study, is also necessary. As the effect size increases, the power of the test increases, which means that sample data in a project should reveal that the relationship between its two variables is strong. In completing a generic power analysis for the proposed project using the Power Table for *d*, depicted in Polit, it was found that in order to have a desired power of 0.80 with an alpha of 0.05, the sample size must be 99 (Polit, 2010). For the proposed project, the total sample size was approximately 38, including approximately eight advanced care providers and approximately 30 registered nurses. This means that the sample size is inadequate to achieve a power of 0.80. As the sample size is unable to be changed due to the population at the research site, this is a limitation of the proposed research project.

Jill Stoltzfus, Ph.D., statistician at SLUHN, assisted in the completion of a more specific power analysis based upon an assumed 10% positive change from pre-intervention group responses to post-intervention group responses on the seven-point Likert Scale survey (personal communication, February 16, 2015). Using PASS software (2011) and basing calculations on different starting points, an alpha of 0.05, and a beta of 0.20, or 80% power, the results are explained in the following statement. An increase from 20% pre-intervention to 30% post-intervention requires a sample size of 144, an increase from 30% pre-intervention to 40% post-intervention requires a sample size of 183, an increase from 40% pre-intervention to 50% post-intervention requires a sample size of 195, and an increase from 50% pre-intervention to 60%

post-intervention requires a sample size of 199 (Jill Stoltzfus, Ph.D., personal communication, February 16, 2015). Therefore, this again means that the sample size is inadequate to achieve a power of 0.80, and as the sample size is unable to be changed, this continues to be a limitation of the proposed research project.

The projected sample of participants and actual sample of participants was not very different. Originally, the sample was approximated at eight advanced care providers and 30 registered nurses, totaling 38 possible participants. The final sample totaled 40, with 12 advanced care providers and 28 registered nurses. The pre-survey response rate was 24 of 40 (60%). The post-survey response rate was 12 of 40 (30%).

Analysis by Objective

There were six objectives for the project. Analysis of data was done related to the process in place and for each objective. The tools and processes that were part of each of those steps are outlined, as well as the data collected, the analyses completed, and the results obtained.

Objective one. Objective one was to provide an education sheet to all participants regarding the new rounding process and Daily Goals Sheet usage at the beginning of the study by September 2015. This was accomplished as intended and supported the overall plan for obtaining data. No direct data collection occurred by completing this objective.

Objective two. Objective two was to institute the intervention of the Daily Goals Sheet on daily multidisciplinary rounds by October 2015. This was accomplished as intended and supported the overall plan for obtaining data. No direct data collection occurred by completing this objective.

Objective three. Objective three was to administer pre- and post-surveys, before and after the intervention respectively, to assess interdisciplinary communication and collaboration,

as well as to evaluate advanced care providers' and nurses' understanding of the daily goals of patient care by November 2015. This objective yielded raw data from the demographics sheet, the closed-ended questions from both surveys, and the open-ended questions from both surveys. This raw data was analyzed via frequencies and percentages for the quantitative data and general thematic analysis for the qualitative data.

Demographic Data. The demographic data obtained from the pre-survey respondents shows valuable information, which is available in the table below (see Table 4). All of the 24 respondents answered the demographic questions except for one. The majority of 23 documented respondents were women at 19 (82.6%). Eleven respondents (47.8%) were ages 31 to 35, four (17.4%) were ages 36 to 40, and 3 (13.0%) were ages 26 to 30. The bulk of respondents were full-time workers at 18 (78.3%), with 10 (43.5%) being advanced care providers and 13 (56.5%) being registered nurses. In regard to respondents, this shows that although the higher percentage was registered nurses, the bigger proportion was advanced care providers, as 10 of the 12 answered the pre-survey, whereas only 13 of 28 registered nurses answered the pre-survey.

Table 4. Pre-Survey Demographic Data

Pre-Survey Demographic Data		n = 23
Characteristic	Frequency	Percentage
Gender		
Male	4	17.39%
Female	19	82.61%
Age		
< 25	1	4.35%
26 – 30	3	13.04%
31 – 35	11	47.83%
36 – 40	4	17.39%
41 – 45	2	8.7%
46 – 50	1	4.35%
51 – 55	1	4.35%
Employment Status		
Full-Time	18	78.26%
Part-Time	2	8.7%
Per Diem	3	13.04%
Professional Role		
Registered Nurse	13	56.52%
Advanced Care Provider	10	43.48%
Professional Longevity		
1 – 5 years	6	26.09%
6 – 10 years	12	52.17%
11 – 15 years	3	13.04%
16 – 20 years	2	8.7%
Critical Care Longevity		
1 – 5 years	11	47.83%
6 – 10 years	8	34.78%
11 – 15 years	4	17.39%

In the post-survey, there was one demographic question to determine profession of the respondents, which is shown below (see Table 5). All respondents answered this question and the sample consisted of nine (75%) registered nurses and three (25%) advanced care providers. The overall response rate for the post-survey was very small, with the majority being registered nurses.

Table 5. Post-Survey Demographic Data

Post-Survey Demographic Data	n = 12	
Characteristic	Frequency	Percentage
Professional Role		
Registered Nurse	9	75%
Advanced Care Provider	3	25%

The demographic sheet also addressed the length of time respondents had worked in healthcare in general, and more specifically, the length of time the respondents had worked in critical care. None of the respondents worked in healthcare more than 20 years, and the majority, 12 or 52.5%, worked for in healthcare for only six to 10 years, with six (26.1%) working one to five years. In regard to specific critical care practice, none of the respondents worked in the ICU setting for more than 15 years. Eleven (47.8%) worked in the ICU for only one to five years, eight (34.8%) worked in the ICU for six to 10 years, and four (17.4%) worked in the ICU for 11 to 15 years. Overall, these percentages show that most of the cohort combines young professionals that are relatively new to critical care practice, and even the healthcare setting in general.

Closed-Ended Survey Data. In regard to analysis of the closed-ended survey responses, the researcher was primarily interested in seeing if there was a change in the percentage of respondents who strongly agreed, as well as a change in the percentage of respondents who answered a "non-agree response," to a question post-intervention as compared to pre-

intervention; therefore, the n does not equal 24 for the pre-survey responses or 12 for the post-survey responses, as not all of the response categories are included in the evaluation. Reverse scored questions were not included in this summary, as those questions did not yield a large change from pre- to post-survey.

The questions chosen are presented in the following tables and are divided by domain. Shown below (see Table 6), four questions from domain one showed the biggest change in response. For question one, which asks about an interprofessional collaborative approach to patient care, there was a 33.3% increase in strongly agree responses from pre- to post-survey and a decrease in non-agree responses of 8.3%. Question four, which asks about support of mission and goals with sufficient resources, shows a change in strongly agree responses. Question six looks for an understanding of the goals of patient care, and the pre- to post-response rate shows only an 8.3% increase in strongly agree responses; however, when looking at the overall responses for the question, 25% of the respondents thought there was improvement and only 8.3% did not. The last question for domain one, which is question nine, shows a 29.2% rate of change in strongly agree responses related to constant communication between advanced care providers and registered nurses.

Table 6. Domain One: Mission, Meaningful Purpose, Goals

Closed-Ended Questions Domain One: Mission, Meaningful Purpose, Goals				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question One: Our team mission embodies an interprofessional collaborative approach to patient care.	Strongly Agree	41.7% (10)	75% (9)	33.3%
	Non-Agree Response	8.3% (2)	0	-8.3%
Question Four: Our team's mission and goals are supported by sufficient resources (skills, funding, time, space).	Strongly Agree	8.3% (2)	33.3% (4)	25%
	Non-Agree Response	29.2% (7)	8.3% (1)	-20.9%
Question Six: Members of our team have a good understanding of patient care plans and treatment goals.	Strongly Agree	16.7% (4)	25% (3)	8.3%
	Non-Agree Response	16.7% (4)	8.3% (1)	-8.4%
Question Nine: Communication is constant between advanced care providers and registered nurses.	Strongly Agree	12.5% (3)	41.7% (5)	29.2%
	Non-Agree Response	12.5% (3)	8.3% (1)	-4.2%

Domain two and three are shown here (see Tables 7 and 8, respectively), with three and one questions, respectively, that yielded a difference in pre- to post-responses. Question one under domain two yielded the biggest change in strongly agree responses at 29.1% and question five in domain three yielded the biggest change in non-agree responses, with a decrease by 16.7%. Of note, question five under domain two did not have a decrease in non-agree responses, but rather an increase. This question was still considered important given the change in strongly agree responses. These questions discussed improvement in respect among team members and their roles and expertise, trust in work, and support of interprofessional development opportunities. These results show a positive change.

Table 7. Domain Two: General Relationships

Closed-Ended Questions **Domain Two: General Relationships**				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question One: Respect among team members improves with our ability to work together.	Strongly Agree	54.2% (13)	83.3% (10)	29.1%
	Non-Agree Response	8.3% (2)	0	-8.3%
Question Five: Team members respect each other's roles and expertise.	Strongly Agree	12.5% (3)	33.3% (4)	20.8%
	Non-Agree Response	8.3% (2)	16.7% (2)	8.4%
Question Seven: Team members trust each other's work and contributions related to patient care.	Strongly Agree	12.5% (3)	25% (3)	12.5%
	Non-Agree Response	16.7% (4)	8.3% (1)	-8.4%

Table 8. Domain Three: Team Leadership

Closed-Ended Questions **Domain Three: Team Leadership**				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question Five: Team leadership supports interprofessional development opportunities.	Strongly Agree	16.7% (4)	41.7% (5)	25%
	Non-Agree Response	16.7% (4)	0	-16.7%

In domain four and domain five seen below (see Tables 9 and 10), four total questions showed changes in response rates. Again, similar to the previous, question seven in domain five did not have a decrease in non-agree response rate; however, the question provided useful results

in the data analysis. In looking at question four from domain four, there was a large change in non-agree responses with a 29.2% decrease. These questions looked at accountability, responsibility, and effective communication related to treatment goals, outcomes of care, and rounds. All changes in responses from pre- to post-survey are positive except related to question seven in domain five. There was an 8.3% increase in non-agree responses related to multidisciplinary rounds providing an open, comfortable, and safe place to discuss concerns, and the increase in strongly agree responses was only 4.2%.

Table 9. Domain Four: General Role Responsibilities and Autonomy

Closed-Ended Questions Domain Four: General Role Responsibilities and Autonomy				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question Four: Team members are held accountable for their work.	Strongly Agree	12.5% (3)	41.7% (5)	29.2
	Non-Agree Response	29.2% (7)	0	-29.2
Question Nine: Team members have the responsibility to communicate and provide their expertise in an assertive manner.	Strongly Agree	25% (6)	33.3% (4)	8.3
	Non-Agree Response	29.2% (7)	25% (3)	-4.2

Table 10. Domain Five: Communication and Information Exchange

Closed-Ended Questions Domain Five: Communication and Information Exchange				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question Two: Our team has developed effective communication strategies to share patient treatment goals and outcomes of care.	Strongly Agree	8.3% (2)	25% (3)	16.7%
	Non-Agree Response	20.8% (5)	8.3% (1)	-12.5%
Question Seven: Multidisciplinary rounds provide an open, comfortable, safe place to discuss concerns.	Strongly Agree	37.5% (9)	41.7% (5)	4.2%
	Non-Agree Response	0	8.3% (1)	8.3%

In the final two domains as below (see Tables 11 and 12), there were three questions that showed a relevant change. Results for question four in domain six show that coordination of rounds for all to participate did not have a decrease in non-agree response rate; however, those that strongly agreed increased by 20.8%. Domain seven asked questions related to quickly

identifying and responding to a problem, as well as methods for conflict management. Strongly agree responses increased for both of these questions, and non-agree responses decreased.

Table 11. Domain Six: Coordination of Care

Closed-Ended Questions Domain Six: Coordination of Care				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question Four: Multidisciplinary rounds are coordinated so that all disciplines can participate.	Strongly Agree	12.5% (3)	33.3% (4)	20.8%
	Non-Agree Response	16.7% (4)	25% (3)	8.3%

Table 12. Domain Seven: Decision-Making and Conflict Management

Closed-Ended Questions Domain Seven: Decision-Making and Conflict Management				
Survey Question	Survey Response	Pre-Survey (n = 24)	Post-Survey (n = 12)	Percentage Difference
Question One: Processes are in place to quickly identify and respond to a problem.	Strongly Agree	8.3% (2)	33.3% (4)	25%
	Non-Agree Response	20.8% (5)	16.7% (2)	-4.1%
Question Six: Our team has an established process for conflict management.	Strongly Agree	8.3% (2)	16.7% (2)	8.4%
	Non-Agree Response	58.3% (14)	41.7% (5)	-16.6%

Open-Ended Survey Data. A general thematic analysis was completed using the raw data obtained from the open-ended survey questions, which was evaluated using Thematic Analysis, as described by Braun and Clarke (2006). There were three questions in the pre-survey and five questions in post-survey. The first three questions of each survey were the same. For the pre-survey, there were 24 respondents; however, only 23 answered the open-ended questions. For the post-survey, there were 12 respondents and only 10 answered all of the open-ended questions. Themes and subthemes that emerged from the data are shown and discussed below, as well as supporting quotes from the questions responses, and presented as associated with each of the questions (see Table 13).

Question one asked what the multidisciplinary team does well with regard to communication and collaborative practice. In describing positive aspects of communication and

collaborative practice when answering the pre-survey, the responses fell into three main themes: information sharing, teamwork, and timing/responsiveness. The theme of information sharing was supported by subthemes related to positive use of rounds, answering questions and providing rationale, and general communication and hand-off. Direct quotes from the responses to support this include "issues get addressed," "great rounding process…really helps in improving patient care," "standardized report sheet to handoff," "provides reasoning," and "asks questions and share information freely." Teamwork was evidenced by respect, acceptance, and inclusion of team members: "suggestions are accepted from all areas," "looks at different angles… clinicians may not look at," "include the nurses," and "MD, PA, NPs work well together…in regard to teamwork, communication." Timing/responsiveness subthemes included communication of changes and updates and availability. "Effective communication regarding new orders," "respond quickly," "our team responds in good timing," and "most up to date information."

When evaluating the post-survey, the main themes were identified as information sharing and respect/responsiveness. Information sharing subthemes were rounds and discussion of changes related to patient care. Many respondents stated "rounds" or "daily rounding" as what was done well. "During rounds changes are discussed" was another positive response. Respect/responsiveness ties in active listening and advocating. "Prompt responsiveness, respectful conversations," "taking into consideration all points of view…all team members are involved in rounds…have a chance to express concerns," and "listens to the RN" were important responses. Advocating was referenced in stating "advocate for patients and families" and "identify concerns…in a timely manner."

Question two addressed the most difficult challenges to communication and collaboration in practice. The main themes for the pre-survey responses include the following: experience,

workload/availability, participation, and personality. One respondent conveyed thoughts on experience by writing “lack of experience in some staff members” and another reported “inexperienced nurses taking on complex patients.” The theme of workload/availability has subthemes of timeliness and antiquated systems. A respondent stated “follow up in a timely manner” and another stated “access to other healthcare care members due to time constraints and high patient populations.” Participation is a challenge, as responses included “nursing…almost never present for rounds,” “don’t really include the nurses,” and “inability to be part of care rounds…attention needed for other patients.” Personality subthemes include communication methods, trust, and responsibility. “[APs] are very difficult to communicate with,” “little to no trust among RN staff,” and “ownership and…taking responsibility” were responses on the survey.

The post-survey responses showed the following themes: information sharing, personality, workload/availability, and experience. Information sharing, which is a very common theme throughout all of the open-ended questions, has the subthemes of communicating updates. “ When referring to patient information or goals, one respondent stated “not always conveyed.” Personality, including the subthemes of conflicts, respect, and morale, were also listed concerns. “Conflicts appear to often interfere” and “information is not usually given in a respectful manner” speak to the theme of personality. Workload/availability is an important theme containing the subthemes of timing and participation. Quotes from relevant responses include the following: “there is no ‘time’ that everyone can be involved,” “rounds performed without informing nurse,” “being available,” and “often busy with patient care.” The response of “nursing engagement, morale, and experience level” addresses many of these themes and subthemes.

Question three asked about areas for improvement in communication and collaborative practice. Main themes gleaned from the pre-survey answers were staffing/workload, information sharing, experience, and collegiality. A subtheme of staffing/workload is availability. One respondent stated "availability of staff" and another said "enough staff." Information sharing surrounds the subthemes of hand-off communication, collaborative education, and rounds. "Communication of orders" was a common quote and was also referenced as "notifying appropriate staff when…orders are placed" and "uniform information/updates…communicated between all members of a care team." Experience was cited as a concern and stated as needing "more skilled RNs" and "needs experience." Collegiality subthemes include teamwork, trust, and nurse inclusion. This was a large component of the responses to this question. Respondents stated the following remarks: "include everyone in rounds," "ownership and communication," "accountability," "trust," "individuals need to be held accountable," and "help each other…make the team stronger."

Post-survey responses yielded the following themes: experience, collegiality, staffing/workload, and information sharing. Experience is a common theme in regard to limitations. One respondent spoke of a need of "better understanding" by the nurses to "give a clearer report." Collegiality is again cited as a concern, and is evidence by the following excerpts: "respect," "more supportive staff," and "ensure collaboration…remain approachable and 'open minded'." Staffing/workload also remained a concern in regard to rounds, with statements of "be sure the nurses is able to attend." "Discussing patient plan including changes" and "communicate new orders" remain concerns related to information sharing.

Question four addressed how the addition of the Daily Goals Sheet affected communication and collaborative practice between disciplines. Positive themes from this

question included organization/workflow and information sharing. Supporting excerpts from the open-ended questions maintain these positive aspects of the Daily Goals Sheet. Organization and workflow was evidenced by the statements of "help get nurses organized," "improved flow of rounding," and "improved the sharing…dayshift nurse to the night shift nurse." One said the "tool would be extremely valuable," it "initiated communication and issues," and it "initiated need for physician to nurse communication." It was a "helpful tool when use correctly…between shifts"

Negative themes from this question included participation and negativity. Participation was a concern, as the Daily Goals Sheet was "not mentioned as part of the handoff process." One respondent stated "more complaining…than actual use," which supports both themes of participation and negativity toward the new process.

Question five addressed how the addition of the Daily Goals Sheet affected communication between bedside nurses. Positive themes from this question included organization/workflow and information sharing. In regard to organization/workflow, the Daily Goals Sheet "gave an outline" and "gave nurses a guide…what information had to be communicated." The Daily Goals Sheet was cited as "helped ensure all concerns were covered and communicated in report," which is important for information sharing. Also, "night shift nurses benefit from being able to see what was discussed in rounds in more detail."

Negative themes from this question included participation and negativity. Participation, including the subtheme of teamwork, was a crucial negative theme. "Not mentioned too much in handoff report" and "not addressed as much during night shift" were major issues with utilization of the form. One respondent was "not sure how many actually use them as a communication tool." Negativity was again referenced, stating "more complaints."

Table 13. Open-Ended Question Thematic Analysis

Open-Ended Question Thematic Analysis		
Question	Pre-Survey (n = 23)	Post-Survey (n = 10)
What does the multidisciplinary team do well with regards to communication and collaborative practice?	Information Sharing Teamwork Timing/Responsiveness	Information Sharing Respect/Responsiveness
In your practice, what are the most difficult challenges to communication and collaboration?	Participation Workload/Availability Personality Experience	Information Sharing Workload/Availability Personality Experience
What does your team need help with to improve communication and collaborative practice?	Information Sharing Staffing/Workload Collegiality Experience	Information Sharing Staffing/Workload Collegiality Experience
How did the addition of the Daily Goals Sheet affect communication and collaborative practice between disciplines?		Positive Themes Organization/Workflow Information Sharing Negative Themes Participation Negativity
How did the addition of the Daily Goals Sheet affect communication between bedside nurses?		Positive Themes Organization/Workflow Information Sharing Negative Themes Participation Negativity

Objective four. Objective four was to track the use of the Daily Goals Sheet on a daily basis by November 2015. This objective yielded the usage statistics for the Daily Goals Sheet, which was helpful in looking at the intervention itself. This raw data was obtained via the Daily Goals Sheet Tracking Tool and analyzed via frequencies and percentages.

The Daily Goals Sheet Tracking tool, though incomplete, provided useful information about the employment of the Daily Goals Sheet and is shown below (see Table 14). The intervention period lasted a total of 42 days, 20 of which the tool was completed entirely and 4 of which the tool was partially completed; otherwise, the tool was not used at all, which totaled 18 days. 28.6% or twelve of the days with full completion of the tool in the intervention period showed 100% use of the tool. This means that the number of ICU patients equaled the number of tools used that day. It can be inferred from this data that although the tracking tool was not always completed, the Daily Goals Sheets were utilized, and more than a quarter of the time, were used on all patients.

Table 14. Daily Goals Sheet Tracking Tool Usage

Daily Goals Sheet Tracking Tool Usage		
	Frequency	Percentage
Completed	20	47.6%
Partially Completed	4	9.5%
Blank	18	42.9%
Total Days	**42**	**100%**
Days with 100% Usage of DGS – 12 (28.6%)		

Objective five. Objective five was to obtain pre- and post-intervention unit reports to assess for improvement in LOS, high alert medication events, ventilator days, and infection rates, including CLABSI, CAUTI, and VAP by November 2015. This objective yielded the HAI and LOS data, which was used to further evaluate the effectiveness of the intervention. The raw data was obtained from the specific unit reports and was analyzed via frequencies and percentages.

Specific unit reports, including critical care LOS and HAIs, were evaluated for effect of the intervention and are displayed in the table below (see Table 15). There was not a notable change to show neither improvement nor worsening of these rates associated with the intervention. For the six weeks preceding the intervention, including the months of August and September of 2015, critical care LOS was at an average of 2.59 days. During the intervention, including the months of October and November of 2015, critical care LOS was at an average of 4.35 and 3.07 days, respectively. Part of the six-week period post-intervention was in November of 2015, but also in December of 2015 the critical care LOS was at an average of 3.43 days. This shows that although there was a slight decrease in LOS nearing the end of the intervention, there was not a significant change in the immediate post-intervention period.

HAI rates, including CAUTI, CLABSI, and VAP, also did not show significant change; however, this is due to the fact that these rates are, for the most part, long-standing at zero

occurrences per month. Aside from one HAI of undisclosed source in October of 2015, from August through December of 2015, all HAI rates were zero. This information neither supports nor refutes any inferences related to effect from the intervention.

Table 15. Critical Care Length of Stay (LOS) & Hospital-Acquired Infection Rates

Critical Care Length of Stay (LOS) & Hospital-Acquired Infection Rates					
	August	September	October	November	December
LOS (days)	2.59	2.59	4.35	3.07	3.43
CAUTI	0	0	0	0	0
CLABSI	0	0	0	0	0
VAP	0	0	0	0	0
Undisclosed Source	0	0	1	0	0

Objective six. Objective six was to share the results of the study with unit administration where the research took place after the Capstone Project defense. This objective will be accomplished, but only after the Capstone Project defense is completed and the final project write-up is accepted for submission. No direct data collection will occur by completing this objective.

Summary of Interpretations

When analyzing all of the quantitative and qualitative data gleaned from the study, there were many positive attributes to responses and statistical analysis. There were also some negative attributes to responses and statistical analysis. Overall, the study supports the use of daily multidisciplinary rounds in the critical care setting utilizing the Daily Goals Sheet to increase communication and collaboration between advanced care providers and nurses, as well as to improve advanced care providers' and nurses' understanding of the daily goals of patient care, when compared with rounds not using the Daily Goals Sheet.

Limitations, Recommendations, and Implications for Practice

Limitations

Limitations of the study include not only the small sample size for the pre-survey and the post-survey, but also the ratio of pre- to post-survey responses and the different attributes of the pre- and post-survey respondents. Workload is also a limitation related to completion of the Daily Goals Sheet, which was evidenced by the qualitative data. Workload was also a limitation related to completion of the CPAT, and is evidenced in Schroder et al. (2011), as it has been a limitation in the past with this evaluation tool; however, given the vast amount of evidence suggesting it was an excellent evaluation tool, the CPAT was utilized for the study. Resistance in general was a big limitation, which was confounded by poor morale and high turnover rates in the satellite SLUHN ICU.

Recommendations

Recommendations based on this project are made related to contributions to the profession of nursing. Theory suggests continued interdisciplinary communication and collaboration to promote exemplary practice in the healthcare setting. Research suggests the importance of this as well, and continued research surrounding the ideals of this project is also necessary for continued improvement. Advanced practice nurses will continue to guide these processes and foster education and mentoring for newer professional nurses, which includes the importance of leadership and education in nursing. Health policy is also critical in the profession of nursing, and as this project has yielded a policy in the ICU, recommendations are to continue the process and to tailor it to the needs of the ICU and its multidisciplinary team to promote excellent care of the patient population.

Implications for Practice

Communication and collaboration are vital in the critical care setting and are crucial for positive change in practice. Daily multidisciplinary rounds are beneficial and need to be consistently continued in the critical care setting. Use of a rounding tool also has benefits and should be continued to foster change and improvement in the critical care setting. Finally, continued research is absolutely necessary to improve processes related to communication, collaboration, and daily multidisciplinary rounds with the use of a rounding tool.

Future actions by the researcher include continuing to foster communication and collaboration in the practice setting by supporting daily multidisciplinary rounds with the use of a rounding tool. Also, the researcher will be continuing to modify the process to integrate the Daily Goals Sheet into the new computer system that was recently instituted. The researcher is also considering publication of this study, as well as future research in this quality improvement area.

Conclusion

Communication and collaboration between advanced care providers and nursing staff in the critical care setting is vital in order to provide the best patient care and ensure positive outcomes globally. Research shows that the use of multidisciplinary rounds complemented by a rounding tool improves communication and collaboration between such disciplines in this setting. Any break in communication or collaboration in the critical care setting can have considerable negative effects on patient care, the environment, and patient outcomes.

The PICO project goal was to evaluate if multidisciplinary rounds enhanced with the use of a rounding tool vastly improved communication and collaboration between advanced care provider and nursing staff in the critical care setting. The problem statement and PICO question,

the related foundational theory, the systematic review of the literature related to the identified practice issue, the market and risk analysis, and the overall research objectives discussed above outline the details of the project. The specific research plans included a detailed logic model of the outcome measures and goals, a methodology and study design, and data results and analysis.

After data analysis, certain recommendations, limitations, and implications for change in practice were discovered related to the results of the study. Overall, the study yielded results that support the use of daily multidisciplinary rounds in the critical care setting utilizing the Daily Goals Sheet. This interdisciplinary practice was found to increase communication and collaboration between advanced care providers and nurses, as well as to improve advanced care providers' and nurses' understanding of the daily goals of patient care, when compared to the previous interdisciplinary practice of rounds not using the Daily Goals Sheet. The plan of conducting this research study was to demonstrate the discussed outcome measures and improve practice and quality of care in the critical care setting, which is one of the main roles of a DNP. Future actions planned by the researcher surround continued fostering of communication and collaboration in the practice setting and continued integration of the Daily Goals Sheet into practice.

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Appendix A

Daily Goals Sheet

Daily Goals Sheet

Room Number _____ Date ___/___/___

		AM Shift	PM Shift
Safety	List any overnight events or changes.		
	Does the patient have a code status?		
	Is the patient in restraints? Is there a current order?		
Patient Care	Pain Management Sedation Break		
	Cardiac/ECGs		
	Volume Status/24-Hour Net Goal	+ or – _____ mL	
	Ventilator Bundle (Check if initiated) Ventilator Weaning	☐ ☐ Pass ☐ Fail – Why?	
	Infection/Sepsis Evaluation Known Infection: New/Pending Culture Results		
	Is there adequate IV access? Can any lines/tubes be removed? Was the line sheet completed?		
	Nutrition: TPN, TF, PO Diet, or NPO Bowel Regime/Last BM:		
	Is the patient receiving DVT and PUD prophylaxis?	☐ SCDs ☐ Parenteral: _____ ☐ PPI or H2 Blocker	
	Lab Derangements Electrolyte Replacements		
	Can any medications be converted to PO, adjusted (renal/liver), or discontinued?		
To Do:	Tests/Procedures Today		
	Scheduled/Serial Labs Medication Troughs/Levels		
	AM Labs/Tests		
	Consultations (List):	☐ In Computer ☐ Called to Service	
	3 Daily Goals (Check off if Completed)	☐ 1. ☐ 2. ☐ 3.	
Disposition	Have the consultants been updated?		
	Has the family been updated?		
	Has case management been updated?		
	Can the patient's status be changed?		

If any section is not applicable, please mark N/A in the column.

Adapted from Johns Hopkins University Quality and Safety Research Group Daily Goals Sheet. (2009). Retrieved from http://www.hopkinsmedicine.org/innovation_quality_patient_care/_downloads/daily_goals.pdf

Appendix B

Conceptual Diagram

Appendix C

Systematic Review of the Literature

Article/Journal	Multidisciplinary rounds in various hospital settings	RN Journal (Online) http://rnjournal.com/journal-of-nursing/multidiscplinary-rounds-in-various-hospital-settings
Author/Year	Ababat, V., Asis, J., Bonus, M., DePonte, C., & Pham, D.	2014
Database/Keywords	Online Search/Journal	Multidisciplinary rounds
Research Design	Literature Review	
Level of Evidence	Level VII – Melnyk	
Study Aim/Purpose	To review the literature in regard to the use of multidisciplinary rounds in various hospital settings, with a focus on the ICU setting	
Population/Sample Size Criteria/Power	Not applicable	Not applicable
Methods/Study Appraisal Synthesis Methods	Not applicable	Not applicable
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Benefits of the institution of multidisciplinary rounds Barriers to multidisciplinary rounds Gaps in current findings	Benefits: increased communication and teamwork, utility in almost any clinical setting, increased patient safety, decreased adverse events, decreased length of stay, improved staff satisfaction Barriers: time constraints, nurses' perception of the need to contribute to decision-making Gaps: a large amount of literature reviews but a lack of long-term studies assessing the institution of rounds
Conclusions/Implications	Multidisciplinary rounds are more effective than conventional report and should be adopted in all ICU settings to provide holistic care to patients by increasing communication and teamwork. Implementation of bundles and/or checklists to supplement rounds was also found to be helpful.	This provides evidence that use of checklists and tools in concurrence with multidisciplinary rounds in the ICU setting has many benefits.
Strengths/Limitations	Review of 16 articles/studies	Difficult to narrow terminology down to one specific term and definition of multidisciplinary rounds, as there are too many variances in the literature and in practice Lack of tightly controlled and/or randomized studies in this arena, as there are mostly quasi-experimental designs
Funding Source	Not applicable	
Comments	This review of the literature provides evidence that is extremely helpful to my project, in that it supports the use of not only multidisciplinary rounds, but a checklist during these rounds in order to improve communication and teamwork.	
Article/Journal	Association between nurse-physician collaboration and patient outcomes in three intensive care units	Critical Care Medicine, 27(9), 1991-1998

Author/Year	Baggs, J. G., Schmitt, M. H., Mushlin, A. I., Mitchell, P. H., Eldredge, D. H., Oakes, D., & Hutson, A. D.	1999
Database/Keywords	Journals @ OVID LWW Total Access Collection	Collaboration AND intensive care
Research Design	Prospective, descriptive, correlational study using self-report instruments	
Level of Evidence	Level VL – Melnyk	
Study Aim/Purpose	To examine associations between patients outcomes and collaboration between physicians and nurses in the ICU setting	This study was similar to a previous Baggs MICU study, but added other types of ICUs to assess generalizability of the data. Medical versus surgical versus mixed ICU, as well as teaching versus non-teaching ICU, was assessed.
Population/Sample Size Criteria/Power	97 attending physicians, 63 resident physicians, and 162 staff nurses from a community teaching hospital medical ICU, a university teaching hospital surgical ICU, and a community non-teaching hospital mixed ICU in upstate NY	The sample included resident physicians, fellow physicians, attending physicians, and staff nurses.
Methods/Study Appraisal Synthesis Methods	When patients were ready for transfer from the ICU, questionnaires were given to care providers to assess collaboration in the decision-making process related to transfer.	
Study Tool/Instrument Validity/Reliability	APACHE III was utilized for risk assessment of patient outcomes. *Collaboration (at the Patient-Decision Level): Collaboration and Satisfaction about Care Decisions (CSACD),* which is a questionnaire, was utilized to measure collaboration perceptions on a Likert scale of 1 to 7 with no collaboration to complete collaboration on the full scale. There was then a two-point measure for overall satisfaction of the process. Unit-level data was also measured, including unit-level collaboration, available technology, and diagnostic diversity. This was done after a literature review revealed common variables, which were then measured during interviews with members of the study.	The study controlled for severity of illness before assessing the association between interprofessional collaboration and patient outcomes. Unit-level organizational collaboration and patient outcomes were also ranked. Content and construct validity and reliability for the scale are demonstrated. Alpha reliabilities for the provider groups in all ICUs ranged from 0.90 to 0.96.
Primary Outcome Measures/Results	Outcome measures reported include the following: reported levels of collaboration from healthcare providers, unit-level collaboration, patient severity of illness and individual risk, death and readmission rates to the ICU, and patient risk of negative outcome based upon specific ICU.	The medical ICU nurses found collaboration to have a positive effect on patient outcomes, but there were no other associations related to individual reports of patient outcomes or collaboration. Perfect rank order correlation between unit-level organization collaboration and patient outcomes was found across the three ICUs. It was found that with each increase in one point in collaboration, the odds of negative patient outcomes were reduced by 4%. With the report of no collaboration, the risk of negative outcome was 13.9%, and with complete collaboration, the risk was 3%.

Conclusions/Implications	The statistics show that collaboration has a statistically significant positive effect on patient outcomes in the ICU setting.	Implications for practice are that collaboration must occur to optimize patient outcomes.
Strengths/Limitations	The measure of collaboration at the unit and individual levels to complement each other to further prove the need for collaboration.	The study was conducted in only one city, which could cause generalizability. The power of individual analyses may not be sufficient to demonstrate relationships between information. There is also not enough data to infer the level of importance of unit data.
Funding Source	Not applicable	
Comments	This study, although of a lower level of evidence, is helpful to my project because it provides evidence to support that physician-nurse collaboration in the ICU related to care delivery is important and should be intervened on. This provides support that my project is necessary as my project seeks to prove that the intervention of rounding effects collaboration.	
Article/Journal	Use of a daily goals checklist for morning ICU rounds: A mixed-methods study	Critical Care Medicine, 42(8), 1797-1803
Author/Year	Centofanti, J. E., Duan, E. H., Hoad, N. C., Swinton, M. E., Perri, D., Waugh, L., & Cook, D. J.	2014
Database/Keywords	Journals @ OVID LWW Total Access Collection	ICU rounds AND rounding tool
Research Design	Mixed-methods study with three data collection methods: field observations, document analysis, and interviews	
Level of Evidence	Level IV – Melnyk	
Study Aim/Purpose	To understand the viewpoints and opinions of clinicians in the ICU in regard to daily use of a goals checklist during rounds	
Population/Sample Size Criteria/Power	80 medical-surgical ICU patient rounds in a fifteen bed closed ICU in a tertiary care, university-affiliated hospital	Patient rounds include the following people: the patient, the bedside nurse, a pharmacist, a dietician, a respiratory therapist, an ICU fellow, an intensivist, residents, and student of varying disciplines
Methods/Study Appraisal Synthesis Methods	Field observation of ICU patient rounds on 80 patients over 6 days to evaluate who used the checklist and how Analysis of 72 completed rounds checklists from observed rounds Interviews of 56 clinicians, individually and focus-group with a semi-structured basis, with qualitative, descriptive approaches and analysis of content	Two research methods and three data sources: qualitative data via field observations, focus and group interviews, and document analysis; quantitative data with field observations and document analysis
Study Tool/Instrument Validity/Reliability	The Daily Goals Checklist; The nightshift nurse completes the "preround" section that includes current interventions, clinical updates, and nursing concerns, and the dayshift nurse reviews and finalizes the form. The "round" section is completed during rounds by the physician-led team to	

	document a care plan. The tool is then kept at the bedside.	
Primary Outcome Measures/Results	Three main themes were identified related to results: positive impact on communication, positive impact on patient care, and positive impact on education.	Field observations: checklist was completed for 93% of observed rounds, most in part by resident physicians at 86% Document analysis: domains most completed included ventilation sedation, central venous access, nutrition, and prophylactic interventions Interviews: reports of increased communication, patient care, and education with use of a daily checklist from nurses, physicians, and pharmacists; supported a structured, thorough, and individualized approach to patient care
Conclusions/Implications	The perception was that the checklist improved the management of the critically ill due to the systematic and comprehensive approach to patient care that it provided. This subsequently improved interprofessional communication and practice, patient safety, daily progress, and encouraging momentum for recovery of patients from illness. The checklist was also found to encourage education.	
Strengths/Limitations	Three data sources and two research methods to complete the objective	Non-experimental and based out of a single location
Funding Source	Not applicable	
Comments	This study helped to identify positive outcomes due to utilization of a rounding tool during ICU multidisciplinary rounds. This helped me to decide to add a rounding tool to my project and PICO practice issue statement. The information in this study is very useful to my project.	
Article/Journal	Surgical multidisciplinary rounds: An effective tool for comprehensive surgical quality improvement	American Journal of Medical Quality DOI: 10.1177/1062860614549761
Author/Year	Counihan, T., Gary, M., Lopez, E., Tutela, S., Ellrodt, G., & Glasener, R.	2014
Database/Keywords	SAGE Premier 2014	Multidisciplinary rounds
Research Design	Analysis of outcomes, quality, and survey data through systematic evaluation of the EHR in a case presentation form	
Level of Evidence	Level VII – Melnyk	
Study Aim/Purpose	To characterize the process of surgical multidisciplinary rounds (SMDR) and evaluate the impact of them at a community teaching hospital	Specific improvements related to patient care, job satisfaction, and core competencies were evaluated.
Population/Sample Size Criteria/Power	Surgical inpatients were reviewed over a period of four years related to twice weekly SMDR.	A comprehensive review of inpatient care practices by a multidisciplinary committee including an attending physician, the charge nurse from the surgical ward, hospital quality improvement representatives, EHR and coding specialists, surgical residents, advanced practitioners, peri-op nursing leadership, a pharmacist, and a case manager; The full

		patient case was reviewed with attention to data related to the results/findings below.
Methods/Study Appraisal Synthesis Methods	Case presentation and discussion, as well as survey data	
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Survey and analysis of core competencies and quality indicators	SMDR resulted in reduced length of stay (6.1 to 5.1 days), decreased post-op respiratory failure (15.5% to 6.8%), fewer VTE/PE events (2.8% to 2.3%), fewer cardiac complications (7.0% to 1.6%), and fewer CAUTIs (5.2% to 1.5%). SMDR also resulted in increased compliance in the Surgical Care Improvement Program All-or-None compliance from 95.6% to 98.7%, as well as increased awareness of core competencies and job satisfaction related to surgical residents and the Accreditation Council for Graduate Medical Education.
Conclusions/Implications	SMDR on a twice weekly basis improved coordination of patient care in the surgical population, facilitated rapid and sustained process improvement related to safety indicators and core measures, and changed the culture of patient care.	This was thought to be an effective technique to directly improve patient care and other important factors associated with patient care.
Strengths/Limitations	Lengthy time period to evaluate the effectiveness and benefits of SMDR	Variability, bias, and error in coding; SMDR does not account for pre-op risk factors and modification on a case-by-case patient basis
Funding Source	Not applicable	
Comments	This study presents evidence that interdisciplinary rounds, as opposed to rounds within one discipline provides many benefits related to patient care, job satisfaction, and education and learning.	This study provides good information related to my project to assist in proving that many differing disciplines collaborating in patient care will provide numerous benefits in the hospital setting.
Article/Journal	A firm trial of interdisciplinary rounds on the inpatient medical wards: An intervention designed using continuous quality improvement	Medical Care, 36(8), AS4-AS12
Article/Journal	Improving patient safety through provider communication strategy enhancements	AHRQ, 3, 1-18 http://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/advances-in-patient-safety-2/vol3/advances-dingley_14.pdf
Author/Year	Dingley, C., Daugherty, K., Derieg, M. K., & Persing, R.	2014
Database/Keywords	AHRQ	Multidisciplinary rounds
Research Design	Qualitative Pre- and Post-test design	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To develop, implement, and evaluate a complete and structured team communication strategy, producing a generalizable toolkit for all care settings that includes a structured communication tool, a standard escalation process, daily multidisciplinary rounding process with a goal sheet, and team huddles	

Population/Sample Size Criteria/Power	495 communication events in the MICU, acute care unit (ACU), and inpatient behavioral health units in a 477-bed medical center (2 year period)	Healthcare team members included in the intervention: nurses, unlicensed assistive personnel, respiratory/occupational/speech therapists, physicians, dieticians, social workers, pharmacists, chaplains, radiology/laboratory staff, and other support staff
Methods/Study Appraisal Synthesis Methods	Pre- and post-test design for baseline and post-intervention data after the implementation of team communication interventions Analysis of the process of communication events via observation Evaluation of occurrence reports Hospital AHRQ patient safety culture survey Staff evaluation of patient daily goals Focus group interviews with hospital staff	Implementation included individual, department, and organization education via presentations, discussions, and practice scenarios. There was initial education and then a follow-up education completed.
Study Tool/Instrument Validity/Reliability	Interventions: Situational briefing guide (SBAR), team huddles, multidisciplinary rounds using a daily goals sheet	Validity and reliability was not assessed in the study.
Primary Outcome Measures/Results	Time it took healthcare providers to communicate and resolve patient issues "Problematic time:" time nurse spent attempting to communicate with provider and failing	Post-intervention: decreased time to initiation of treatment, increased nursing staff satisfaction related to communication, and increased rate of problem resolution with patients The post-intervention toolkit resulted in a communication strategy toolkit applicable to patient care settings.
Conclusions/Implications	The toolkit developed by the study, including multiple types of communication tools as stated above, was shown to implement teamwork and communication strategies that yielded improve outcomes and satisfaction.	This toolkit is applicable to many areas of practice and would be beneficial to utilize related to communication and collaboration efforts in the hospital setting.
Strengths/Limitations	Large sample to provide data	Physician engagement was difficult in this study. Support administratively was difficult.
Funding Source	Agency for Healthcare Research and Quality, Partnerships in Implementing Patient Safety Grants, 1 U18 HS015846	
Comments	The study provides evidence related to the use of multidisciplinary rounds with a rounding tool. There is a lot of information provided related to specific tools that could be utilized in my project.	The study also provided good insight related to completing similar initiatives in the clinical setting, such as secure administrative and clinical support, as well as the means for staff to attend and participate in educational activities.
Article/Journal	Communication: A dynamic between nurses and physicians	MEDSURG Nursing, 21 (6), 385-387
Author/Year	Flicek, C. L.	2012
Database/Keywords	CINAHL with Full Text	Multidisciplinary rounds AND communication
Research Design	Literature Review; Expert Opinion	
Level of Evidence	Level VII – Melnyk	
Study Aim/Purpose	To identify and discuss the dynamics between nurses and physicians related to communication in the healthcare setting	
Population/Sample Size	Not applicable	Not applicable

Criteria/Power		
Methods/Study Appraisal Synthesis Methods	Not applicable	Not applicable
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Nurses expressed a desire to improve communication with physicians in a unit council meeting. The facility had previously instituted an SBAR; however, the nurses felt communication needed to be improved above and beyond this tool.	Bedside rounds were implemented on the nursing unit, which worked initially, but then became inconsistent, making them less helpful. The solution to this communication concern, on this particular unit, was mandatory multidisciplinary rounds.
Conclusions/Implications	Patient care outcomes are affected by nurse-physician communication and there are many challenges related to communication.	
Strengths/Limitations	Good literature review	Only a literature review; Not a study
Funding Source	Not applicable	
Comments	Literature review of barriers related to nurse-physician communication as well as evidence-based practice solutions to the problem	The articles effects my project in that it again provides evidence to what communication barriers are present related to nurse-physician communication, though it does not provide a lot of evidence related to effectiveness of rounds. The author does account instituting rounds in her unit; however, it is of low level of evidence.
Article/Journal	Daily goals worksheets and other checklists: Are our critical care units safer?	American Journal of Critical Care, 17(6), 577-580
Author/Year	Halm, M. A.	2008
Database/Keywords	CINAHL with Full Text	ICU AND communication
Research Design	Clinical Evidence Review	
Level of Evidence	Level V – Melnyk	
Study Aim/Purpose	To review clinical evidence related to the use of daily goals worksheets and other checklists in the critical care setting and the associated increased reliability in care delivery	
Population/Sample Size Criteria/Power	Not applicable	14 articles included
Methods/Study Appraisal Synthesis Methods	Search of MEDLINE, CINAHL, and Cochrane with keywords of ICUs, checklists, structured communication, and daily goals	Primary research and quality improvement reports included if related to critical care
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Improvements in certain criteria occurred	Improvements – clinician knowledge of plan of care, teamwork and safety culture, bundle adherence, and clinical (CLABSI, VAP, weaning, delirium screening, pain assessment and treatment, mortality, and end-of-life care), financial (decreased LOS), and service (patient and employee satisfaction) outcomes
Conclusions/Implications	Daily goals worksheets and checklists improve aspects of patient care and services, as well as standardized delivery of care.	
Strengths/Limitations	Not applicable	Not applicable
Funding Source	Not applicable	

Comments	This is an excellent article that I used to gain significance for my study, as well as to use articles reviewed within this article for my SROL.	
Article/Journal	Development of a checklist for documenting team and collaborative behaviors during multidisciplinary bedside rounds	The Journal of Nursing Administration, 43(5), 280-285
Author/Year	Henneman, E. A., Kleppel, R., & Hinchey, K. T.	2013
Database/Keywords	Journals @ OVID LWW Total Access Collection	Multidisciplinary rounds AND rounding tool
Research Design	Observation, Opinion/Critique, Qualitative Study	This was difficult to determine from the limited data of the study. This is either a qualitative study or expert opinion from committees.
Level of Evidence	Level VI or Level VII – Melnyk (depending upon data unavailable)	
Study Aim/Purpose	To develop a reliable and valid checklist for documentation of team and collaborative behaviors during multidisciplinary bedside rounds	Of note, this was part of a larger study that adapted teaching rounds of medical residents to include nurses in a multidisciplinary round form.
Population/Sample Size Criteria/Power	Not specifically stated in the article – see below	
Methods/Study Appraisal Synthesis Methods	The development of a checklist occurred and was tested on three general medical units of a 600-bed academic teaching hospital in the northeast United States. The checklist served to be an objective means of evaluating the occurrence of collaboration on multidisciplinary rounds.	The checklist had 5 versions that were revised and tested over a six-month period to finalize the instrument to use. Validity, reliability, and usability were tested over this time period.
Study Tool/Instrument Validity/Reliability	Checklist as stated above	
Primary Outcome Measures/Results	A valid, usable, and reliable checklist	The checklist's final version was determined valid, reliable, and easy to use in the clinical setting.
Conclusions/Implications	The final checklist was found to be valid, usable, and reliable through observation of its use and revision by the authors of the paper.	Use of the checklist is encouraged for all healthcare providers in order to assess collaboration and teamwork. Further identification and formulation of additional tools is still needed in the practice setting.
Strengths/Limitations	Good qualitative review of a checklist/tool	Very limited information in the article to completely critique the study
Funding Source	Not applicable	
Comments	This study provides evidence that collaboration and teamwork in the hospital setting provide a medium for improved quality outcomes and patient safety. It also further infers that the utilization of a checklist on multidisciplinary rounds to assess teamwork and collaboration further meets the goal of improve safety and outcomes.	This is very applicable to my project because it supports my decision to utilize a tool during multidisciplinary rounds. Though my plan for a tool will use different items and information, the study still remains appropriate.
Article/Journal	A systematic review of evidence-informed practices for patient care rounds in the ICU	Critical Care Medicine, 41(8), 2015-2029
Author/Year	Lane, D., Ferri, M., Lemaire, J.,	2013

	McLaughlin, K., & Stelfox, H. T.	
Database/Keywords	CINAHL with Full Text	Rounds AND critical care
Research Design	Systematic Review of Literature	
Level of Evidence	Level V – Melnyk	
Study Aim/Purpose	To systematically review evidence for facilitation and barriers to patient care rounds in the ICU	
Population/Sample Size Criteria/Power	7,373 total citations in search and after review of abstracts 136 full text articles, then 43 selected to review	
Methods/Study Appraisal Synthesis Methods	Data search of Medline, Embase, CINAHL, PubMed, and the Cochrane Library Key outcomes and themes were identified and grouped into certain categories	Study selection of original, peer-reviewed research studies that detailed facilitators and barriers, as well as current practices, related to rounding in the ICU
Study Tool/Instrument Validity/Reliability	Data extracted with a prespecified abstraction tool GRADE (Grades of Recommendation Assessment, Development, and Evaluation) system for evidence recommendation: A (very strong), B (strong), C (moderate), D (weak)	
Primary Outcome Measures/Results	Themes from Quantitative Studies: rounding environment, documentation and health record use, communication strategies, tool use, goals and planning, team composition Themes from Qualitative Studies: effective information exchange, collaborative decision making and patient management, power relationships	Opportunities for Rounds Improvement with Levels of Evidence via the GRADE system: multidisciplinary approach including physician, nurse, and pharmacist at a minimum (A), standard location/time/team composition (B), explicit roles (B), structured tool/checklist (B), reduce time-wasting (B), minimize interruptions (C), focus on and document daily goals (C), conduct at bedside to be patient-centered (C), conduct in conference room for efficiency (C), collaborate (C), ensure clear visibility (D), empower the team (D), use visual presentation (D)
Conclusions/Implications	Implementing standardized multidisciplinary rounds using a rounding checklist with explicit roles for those involved has positive, evidence-based support. 13 facilitators and 9 barriers to rounds were identified in the literature review. Evidence base for best practice related to rounds in the ICU is low; however, some low-risk and practical options can be contemplated for use.	The highest level of evidence supports the institution of multidisciplinary rounds that are structured, with the use of a rounding checklist to be effective. There is other evidence to support other interventions, but it is of a low level.
Strengths/Limitations	Very comprehensive and detailed review of the literature with a data abstraction study tool	Limited ability to draw causal inference due to limitations in methodology of some studies included in the review Limited identification of unintended consequences of instituting the recommendations Studies with better designs and longer follow-up may have strengthened the review
Funding Source	Not applicable	
Comments	This study provides a good review of the literature and evidence to support	

	structured rounds in a multidisciplinary fashion with the use of a rounding tool. This is very useful related to my project, as this is the intervention in my PICO.	
Article/Journal	Developing and testing a tool to measure nurse/physician communication in the intensive care unit	Journal of Patient Safety, 7(2), 80-84
Author/Year	Manojlovich, M., Saint, S., Forman, J., Fletcher, C. E., Keith, R., & Krein, S.	2011
Database/Keywords	MEDLINE	Interdisciplinary communication AND intensive care unit
Research Design	Mixed Methods of Interview and Observation – Qualitative	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To develop tools and procedures to measure communication between nurses and physicians in future studies	
Population/Sample Size Criteria/Power	4 patient care round observations and 8 interviews with nurses (4) and physicians (4) in 3 ICUs at a Department of Veterans Affairs Medical Center, as well as 66 nurses who participated in anonymous surveys	Not applicable
Methods/Study Appraisal Synthesis Methods	Observation of rounds Interviews Anonymous Surveys	Main statistical test was Analysis of Variance
Study Tool/Instrument Validity/Reliability	Safety Organizing Scale (SOS) for measurement of nurses' self-reported behaviors related to safety: 9 items on a 7-point Likert Scale	Reliability of the SOS was previously reported at 0.88, as it was tested by a large sample of nurses in hospitals and inpatient units. Convergent, discriminant, and criterion validity were also assessed.
Primary Outcome Measures/Results	Qualitative data used to create an observation data collection tool and working protocol for future use	Phase I: Observation Logistics: Unit Configuration, Observer Positioning, Rounding Team Size, Ability to Overhear Conversation, Response of Nurse/Physician to Researcher Presence, Unforeseen Comments/Events, Unit Practices Phase II: Data Collection Protocol: Permission received before observation, Consent before observation, introductions, observation of rounds, post-observation interviews of one physician and one nurse, record data, schedule subsequent process and repeat above Analysis of variance showed significant differences between the 3 ICUs and on 4 of 9 items on the Safety Organizing Scale. Quantitatively, nurses' perceptions of safety across the 3 units were different, with those reporting the least safety culture being the least satisfied related to communication with physicians. This was confirmed with qualitative data.
Conclusions/Implications	Through the use of protocols and tools made in this study, future strategies to promote effective communication between nurses and physicians can be tested and developed.	Not applicable

Strengths/Limitations	The study seemed to follow and strict pattern.	Nurses and physicians may have acted differently with an observer/research present.
Funding Source	Not applicable	
Comments	This study focused on communication between nurses and physicians, specifically through interdisciplinary rounds, as this is the primary identified venue for exchange in the review of literature. It also focused on developing a tool to assess such communication. This is extremely important to my study, as this is part of the main goal and its evaluation, and the findings have the potential to guide my research and project.	
Article/Journal	Controlled trial of multidisciplinary care teams for acutely ill medical inpatients: Enhanced multidisciplinary care	Internal Medicine Journal, 36(2006), 558-563
Author/Year	Mudge, A., Laracy, S., Richter, K., & Denaro, C.	2006
Database/Keywords	Academic Search Premier	Multidisciplinary rounds
Research Design	Prospective Controlled Trial	
Level of Evidence	Level III – Melnyk	
Study Aim/Purpose	To augment assessment, care, discharge planning, and communication through the restructuring of patient-centered and consistent multidisciplinary teams	
Population/Sample Size Criteria/Power	1538 consecutive medical inpatients admitted by a certain medical team at The Royal Brisbane and Women's Hospital (RBWH) (940-bed, metropolitan public teaching hospital); conducted using 8 general medical teams grouped onto 4 clinical units (2 intervention units and 2 control units); each team has 1-2 general medicine physicians, a registrar, and an intern	Not applicable
Methods/Study Appraisal Synthesis Methods	Intervention units had additional allied health staff and consistent multidisciplinary teams with implementation of improved communication processes for early information collection and collaboration between disciplines. Control units continued traditional, referral-based multidisciplinary models with existing staffing levels.	Patients: all admitted to the general medicine units from January 6, 2003 through June 23, 2003 were identified by a research nurse, with exclusions for those admitted directly to the ICU, those that were same-day admits, or those that were transferred within 24 hours of admission Interventions: increased allied health professionals (physiotherapy, occupational therapy, social work, nutrition, and speech therapy) to have someone present at all times, a multidisciplinary team (medical staff, allied health staff, and nursing), the unit clinical nurse consultant was more independent and used a standardized form during the admission process, a structured communication system with daily team meetings and mandatory attendance, and an explicit discharge plan within 24 hours of admission
Study Tool/Instrument Validity/Reliability	Medical record and primary nurse report were principal sources of data.	Not applicable

	Information was also obtained from the hospital administrative database and patient interviews via telephone 4 weeks after discharge with utilization of a 5-point Likert Scale questionnaire	
Primary Outcome Measures/Results	Primary Outcome Measures: index length of stay, death, in-hospital mortality, 6-month mortality, in-hospital functional decline Secondary Outcome Measures: 6-month readmission, inpatient bed occupancy, discharge to residential care, self-related health change 1 month after discharge, restoration to previous functional level 1 month after discharge, and allied health utilization	In the intervention units, access to allied health services was noticeably enhanced, length of stay was decreased (7.8 days in control units and 7.3 days in intervention units), 6-month readmission rates had no change, in-hospital mortality was decreased from 6.4% to 3.9%, less functional decline was noticed in patients, and patients' perceptions of their health was improved. Additional cost of staffing was balanced by potential savings related to decreased length of stay.
Conclusions/Implications	Enhanced care through use of a consistent multidisciplinary approach provided sustainable efficiency gains for the hospital and improved outcomes for the patient.	The study reports that indirectly it found that multidisciplinary care and collaboration between all of these disciplines has significant positive outcomes related to patient care, resource utilization, and communication.
Strengths/Limitations	Highly generalizable to the general medical population due to the large population utilized Detailed universal assessment was not used, therefore using information gathered on an individual basis by all disciplines The use of geriatricians in this older population as opposed to primarily internal medicine physicians	Patients were not randomized, but group were well matched. Pre-existing differences between staff cannot be accounted. The study was underpowered to determine differences in length of stay less than a day. Staff was not blinded to the intervention.
Funding Source	Not applicable	
Comments	Overall, this study proves that multidisciplinary and collaborative patient care in the hospital setting improves patient outcomes and improves communication and efficiency. This relates to my project and proves that collaboration throughout disciplines is critical in the ICU setting.	
Article/Journal	Improving Nurse-physician communication and satisfaction in the intensive care unit with a daily goals worksheet	American Journal of Critical Care, 15(2), 217-222
Author/Year	Narasimhan, M., Eisen, L. A., Mahoney, C. D., Acerra, F. L., & Rosen, M. J.	2006
Database/Keywords	CINAHL with Full Text	Communication AND critical care
Research Design	Quantitative pre- and post-test design	
Level of Evidence	Level III – Melnyk	
Study Aim/Purpose	To evaluate the effects of a standardized worksheet on the perspectives of physicians and nurses of their understanding of goals of patient care, as well as on length of stay in the ICU	
Population/Sample Size Criteria/Power	16-bed medical ICU at a 697-bed teaching hospital (Beth Israel Medical Center, serving Lower East Side	Not applicable

	Manhattan and Brooklyn	
Methods/Study Appraisal Synthesis Methods	A daily worksheet was completed and placed at bedside during multidisciplinary rounds; Intervention was assess at the 1-week, 6-week, and 9 month marks	5-point Likert scale survey done pre-implementation and 3 times post-implementation; continuous variable analysis with *t*-test and categorical variables with Chi squared test
Study Tool/Instrument Validity/Reliability	Daily worksheet including information related to tests/procedures, consents, consultations, nutrition, medications, sedation, analgesia, family discussions, catheters, mobilization, and disposition	Not applicable
Primary Outcome Measures/Results	Length of stay, perception of understanding of patient goals, and communication	Pre-intervention scores: understanding goals 3.9 for nurses and 4.6 for physicians, 6.4 day LOS Post-intervention scores: understanding goals 4.8 for nurses and 4.9 for physicians at 6 weeks and through 9 months, 4.3 day LOS
Conclusions/Implications	Perceptions of physicians and nurses related to the understanding of goals of patient care and communication improved, as well as length of stay, after the institution of the daily goals worksheet.	Results support the use of the daily goals worksheet to improve communication between physicians and nurses, which implies that communication between other disciplines, as well as the patients and their family members, would improve. Also, this implies a link between improved communication and improved patient outcomes, as evidenced by shortened length of stay.
Strengths/Limitations	Great explanation and study of a daily goals sheet during multidisciplinary rounds	The study was conducted in only one ICU over a short period of time, so this limits generalizability. Also, most of the nurses were female, who typically rate teamwork with physicians lower than male nurses do.
Funding Source	Not applicable	
Comments	This study is very helpful to my study to provide evidence for the benefits of using a daily goals sheet during multidisciplinary rounds.	
Article/Journal	Improving communication in the ICU using daily goals	Journal of Critical Care, 18(2), 71-75
Author/Year	Pronovost, P., Berenholtz, S., Dorman, T., Lipsett, P. A., Simmonds, T., & Haraden, C.	2003
Database/Keywords	ScienceDirect	Communication AND intensive care unit
Research Design	Prospective Cohort Study	
Level of Evidence	Level IV – Melnyk	
Study Aim/Purpose	To describe efforts to evaluate communication effectiveness during ICU daily rounds and to improve communication by using a daily goals form	To evaluate and improve communication during intensive care unit patient care rounds using a daily goals form
Population/Sample Size Criteria/Power	16-bed surgical oncology ICU	Any ICU patient admitted was eligible
Methods/Study Appraisal Synthesis Methods	5-point Likert Scale Survey of ICU residents and ICU nurses daily after rounds and semistructured interviews	Descriptive analysis
Study Tool/Instrument Validity/Reliability	Survey and interviews	Developed and pilot tested in May and June of 2001 and then implemented in July 2001; no validity and reliability (see strengths)
Primary Outcome	Understanding of the daily goals of	First 2 weeks – < 10% residents and

Measures/Results	patient care Admission rates LOS	nurses understood goals of care After implementation - > 95% understanding of goals LOS decreased from 2.2 to 1.1 days Admission rates increased for 670 additional admissions per year
Conclusions/Implications	Implementation of a daily goals sheet decreases LOS, increases ability to admit ICU patients, and increases understanding of the daily goals of patient care.	This study shows that the use of a daily goals sheet during ICU patient care rounds is effective in improving communication and decreasing LOS.
Strengths/Limitations	It was found that the tool use is more important than the specific statements on the form. It is just a necessary structure for communication, and the form should be modified frequently to meet the needs of the setting.	Not applicable
Funding Source	Not applicable	
Comments	This study is very helpful to my study in that it details the use and efficacy of the daily goals sheet that will be used in my study.	Benefits of the goals sheet were founded on theories of crew resources management (CRM). The goals sheet should be used for interpersonal communication, leadership, and decision-making, and in places where human error may have devastating effects.
Article/Journal	Communication skills and error in the intensive care unit	Current Opinion in Critical Care, 13, 732-736
Author/Year	Reader, T. W., Flin, R., & Cuthbertson, B. H.	2007
Database/Keywords	Journals @ OVID LWW Total Access Collection	Communication AND intensive care
Research Design	Literature Review; Expert Opinion	
Level of Evidence	Level VII – Melnyk	
Study Aim/Purpose	To review communication research recently conducted in the ICU setting and other acute domains in order to identify communication skills that contribute to, or protect against, preventable medical errors	
Population/Sample Size Criteria/Power	Not applicable	Not applicable
Methods/Study Appraisal Synthesis Methods	Not applicable	Not applicable
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Areas of communication that were reviewed: communication skills and error in the ICU, communication skills and team performance in simulator studies, communication research in other acute medical environments, and improving communication in the ICU	Nurse to doctor communication was found to contribute to over 1/3 of errors in the ICU setting. High levels of collaboration between nurses and doctors have shown to improve patient mortality rates and decrease length of stay. A study found that due to the high frequency of team factors during critical situations, the critical care setting must implement team-based activities, such as multidisciplinary rounds, to increase communication between disciplines. It was also found that with the institution of multidisciplinary rounds, better communication during those rounds was central to improvements in teaching and

		coordination of care.
Conclusions/Implications	Improved communication interventions in the ICU have shown to ensure patient safety by decreasing adverse events and increasing technical performance of staff. Other medical domains initiate a high detailed teamwork assessment tools to obtain these results as well.	Improved communication and teamwork in the ICU is crucial for patient safety and decreased error. Development of specific communication skills to complete this is necessary.
Strengths/Limitations	Not applicable	Not applicable
Funding Source	Not applicable	
Comments	This review found that developing tools for communication and teamwork in the ICU setting is difficult, and although research has proved that utilizing such tools, including multidisciplinary rounds and rounding checklists/tools, is critical to improve communication, safety, and patient outcomes, much work needs to be done to continue to develop such tools.	This review is very directly related to my project and proves that my project is necessary to continue to refine multidisciplinary rounds and the use of a rounding tool to improve communication and collaboration in the ICU setting.
Article/Journal	Development and pilot testing of the collaborative practice assessment tool	Journal of Interprofessional Care, 25, 189-195
Author/Year	Schroder, C., Medves, J., Paterson, M., Byrnes, V., Chapman, C., O'Riordan, A., Pichora, D., & Kelly, C.	2011
Database/Keywords	CINAHL with Full Text	Specific article found based on use of CPAT for study
Research Design	Development and Pilot Testing of a Research Tool	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To develop and conduct two pilot tests on the Collaborative Practice Assessment Tool (CPAT)	
Population/Sample Size Criteria/Power	Not applicable	Not applicable
Methods/Study Appraisal Synthesis Methods	8 exploratory factor analyses completed over two pilot tests with revisions between the first and second test	Not applicable
Study Tool/Instrument Validity/Reliability	CPAT	See below
Primary Outcome Measures/Results	8 domains in CPAT have Cronbach's alphas between 0.70 and 0.90 and an eigenvalue around 3.0, which accounts for 50% of answer variation between respondents.	Not applicable
Conclusions/Implications	Two pilot tests demonstrated that the CPAT is valid and reliable for assessing levels of collaborative practice within teams.	It is not valid unless used in its original form and for the purpose of exploring self-perceptions of a team or unit providing healthcare services.
Strengths/Limitations	Not applicable	Not applicable
Funding Source	Not applicable	
Comments	This is a specific article that was purposefully found to supplement the use of the CPAT as the measurement instrument for my research study.	Developed by Queen's University Inter-Professional Patient-Centred Education Direction (QUIPPED) research project
Article/Journal	Attitudes of nursing staff toward interprofessional in-patient-centered rounding	Journal of Interprofessional Care, 28(5), 475-477
Author/Year	Sharma, U. & Klocke, D.	2014
Database/Keywords	CINAHL with Full Text	Collaboration AND rounds
Research Design	Pre and post-survey	

	quantitative/qualitative study	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To study and improve perceived interprofessional communication and patient care provided by hospitalist physicians with medical-surgical nursing staff through the institution of a patient-centered interprofessional rounding process	
Population/Sample Size Criteria/Power	90 medical floor nurses throughout 3 inpatient medical units	Not applicable
Methods/Study Appraisal Synthesis Methods	Pre- and post-survey after the institution of rounds	Analysis with online statistical software for chi-square test Qualitative data and opinions were noted
Study Tool/Instrument Validity/Reliability	5 question baseline and 4-month follow-up study	Not applicable
Primary Outcome Measures/Results	Satisfaction with inpatient rounding Perceived value as a healthcare team member Interaction/Communication Positive effect on workflow Job satisfaction	7% to 54% improvement in staff satisfaction related to increased communication 3% to 49% increase staff satisfaction related to rounding 5% to 56% improvement in nursing workflow 26% to 56% increase in nursing perception as a team member 43% to 59% increase in nursing job satisfaction
Conclusions/Implications	The institution of interprofessional patient-centered rounds increased job and staff satisfaction, improved nursing workflow, and increased perception of being a team member as a nurse.	There are many positive benefits for nursing perceptions and workflow related to the institution of interprofessional rounds.
Strengths/Limitations	Mixed methods of qualitative and quantitative data measurement and analysis	None noted in the study Small sample to limit generalizability
Funding Source	Not applicable	
Comments	This study provides evidence to support my project in regard to positive benefits of rounding with the goal of interdisciplinary communication and collaboration. It provides specific evidence that communication is improved, as well as satisfaction and workflow, related to this intervention.	
Article/Journal	Discrepant attitudes about teamwork among critical care nurses and physicians	Critical Care Medicine, 31(3), 956-959
Author/Year	Thomas, E. J., Sexton, J. B., & Helmreich, R. L.	2003
Database/Keywords	Journals @ OVID LWW Total Access Collection	Teamwork
Research Design	Cross-sectional surveys	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To determine and evaluate critical care physicians' and nurses' attitudes toward teamwork	
Population/Sample Size Criteria/Power	320 subjects, including 90 physicians and 230 nurses, who work in 8 nonsurgical ICUs in two teaching and four nonteaching hospitals in the Houston, TX, metropolitan area	Not applicable

Methods/Study Appraisal Synthesis Methods	Surveys sent to the physicians and nurses with 58% response rate (40% physicians and 71% nurses)	Teamwork and collaboration were terms used interchangeably in this study.
Study Tool/Instrument Validity/Reliability	The survey, the Intensive Care Unit Management Attitudes Questionnaire (ICUMAQ)	Factor analysis was used to develop this tool, as well as a review of the literature to adapt it from the Flight Management Attitudes Questionnaire to increase validity of the tool. Review of the survey by physicians and nurses, as well as focus groups was also completed to increase validity.
Primary Outcome Measures/Results	A 7 item teamwork scale was developed and utilized to review the surveys in order to glean data and results in a reliable manner.	33% of nurses versus 73% of physicians reported quality of collaboration and communication between the disciplines as high or very high. Nurses reported that it is difficult to voice an opinion to physicians, disagreements do not have appropriate resolution, nurse input is not well received, and input into decision-making is lacking.
Conclusions/Implications	Nurses and physicians view teamwork very differently, which results in suboptimal interpersonal communication skills and conflict resolution. Physicians are much more satisfied with collaboration between themselves and nurses than nurses.	Teamwork and communication skills need to be improved in order to improve patient care in the ICU.
Strengths/Limitations	Large population studied over more than one hospital and more than one ICU setting	Data from only one metropolitan area in the United States Poor response rate of physicians and nurses Differences in thought processes deemed related to profession could also be related to gender
Funding Source	Not applicable	
Comments	This study provides insight into barriers in multidisciplinary rounds and communication between medical staff and nursing staff. I think that it is applicable to my study because it identifies some limitations that may be encountered related to communication between disciplines.	
Article/Journal	Effect of a multidisciplinary intervention on communication and collaboration among physicians and nurses	The American Journal of Critical Care, 14 (1), 71-76
Author/Year	Vazirani, S., Hays, R. D., Shapiro, M. F., & Cowan, M.	2005
Database/Keywords	CINAHL with Full Text	Multidisciplinary rounds AND critical care AND nurse practitioner collaboration
Research Design	Randomized Controlled Trial	
Level of Evidence	Level II – Melnyk	
Study Aim/Purpose	To ascertain the impact of a multidisciplinary intervention on collaboration and communication between doctors and nurses in an acute inpatient medical unit	
Population/Sample Size Criteria/Power	Medical inpatient unit in a tertiary care hospital at the University of California,	45 attending physicians, 111 residents and interns, 123 nurses

	LA over a two-year period	
Methods/Study Appraisal Synthesis Methods	Two-year period; Intervention and control unit; Intervention had addition of nurse practitioner, hospitalist medical director, and institution of daily multidisciplinary rounds	Surveys related to communication and collaboration were given to both units; Physicians after each rotation and nurses biannually
Study Tool/Instrument Validity/Reliability	The survey tool is the instrument, which utilized a Likert Scale and focused on communication and the perception of staff members related to how well communication occurred.	Not applicable
Primary Outcome Measures/Results	Physicians in the intervention group reported greater collaboration with nurses than the control group and greater collaboration with nurse practitioners than staff nurses, as well as greater collaboration with fellow physicians than the control group. Nurses had no change in communication with each other, but had better communication with nurse practitioners than physicians.	Not applicable
Conclusions/Implications	There was better communication and collaboration among participants when a multidisciplinary intervention was initiated.	This article reinforces that communication between the bedside nurse and the advanced practitioner is very important.
Strengths/Limitations	Randomized Controlled Trial	Not all surveys were completed
Funding Source	Not applicable	
Comments	This study is applicable to my project because it provides evidence that structured rounds improve satisfaction related to communication between physicians and nurses.	
Article/Journal	Challenges of information exchange between nurses and physicians in multidisciplinary team meetings	Journal of Interprofessional Care, 22 (6), 664-667
Author/Year	Vogwill, V. & Reeves, S.	2008
Database/Keywords	Academic Search Premier	Multidisciplinary rounds AND nurses AND communication
Research Design	Case Study Methodology – Qualitative	
Level of Evidence	Level VI – Melnyk	
Study Aim/Purpose	To examine the nature of multidisciplinary team meetings ("bullet rounds"), specifically to assess interprofessional communication styles and needs between nurses and physicians.	The goal of daily rounds was interprofessional planning and management of each patient's treatment and discharge plans.
Population/Sample Size Criteria/Power	General internal medicine unit at a large teaching hospital in Canada; "Bullet rounds" with a team comprised of representatives from medicine, nursing, occupational therapy, physical therapy, social work, and pharmacy	Observation of 20 meetings over a six-month period
Methods/Study Appraisal Synthesis Methods	Took notes on discussion content during the observation of 20 meetings over six months and utilized this content to analyze and interpret those notes.	Content Analysis Approach to analyze and interpret field data
Study Tool/Instrument Validity/Reliability	Researchers utilized notes on observations of 20 meetings with a goal to complete interprofessional planning	Not applicable

	and management of the patient's treatment and discharge plans.	
Primary Outcome Measures/Results	63% of the information presented were statements, while 26% were questions; 58% of physicians participated, while 27% of nurses participated	Information discussed during rounds was most frequently used by physicians outside of bullet rounds, while information was most frequently used by nurses related to patient status.
Conclusions/Implications	Physicians and nurses were highest with participation. Rounds were not usually structured or consistent related to information sharing.	Management of synchronous information sharing is difficult and hinders interprofessional collaboration.
Strengths/Limitations	Time frame	Different information needs and different communication styles; human factors
Funding Source	Not applicable	
Comments	The focus of the study is to analyze interprofessional communication techniques and collaboration to address errors in patient care. It was found that team meetings with structure and compliance were necessary to have improved communication.	This study is helpful because it provides insight into information exchange in rounds and outlines certain barriers to communication. Although it is helpful to my project, it is a lower level of evidence and only provides information related to barriers.
Article/Journal	Interprofessional collaboration: Effects of practice-based interventions on professional practice and healthcare outcomes (Review)	The Cochrane Collaboration, Issue 3
Author/Year	Zwarenstein, M., Goldman, J., & Reeves, S.	2009
Database/Keywords	The Cochrane Library	Multidisciplinary rounds
Research Design	Review of Randomized Controlled Trials	
Level of Evidence	Level I – Melnyk	
Study Aim/Purpose	To evaluate the impact of practice-based interventions related to change of interprofessional collaboration (IPC) on patient satisfaction and/or healthcare efficiency when compared to no intervention and an alternate intervention	
Population/Sample Size Criteria/Power	5 RCTs met the inclusion criteria for the study: two examining interprofessional rounds, two examining interprofessional meetings, and one examining externally facilitated interprofessional audit	Not applicable
Methods/Study Appraisal Synthesis Methods	Search methods: Cochrane Effective Practice and Organisation of Care Group Specialised Register (2000-2007), MEDLINE (1950-2007), and CINAHL (1982-2007); handsearch of the Journal of Interprofessional Care (1999-2007) and reference lists of the five included studies	Selection criteria: RCTs of practice-based IPC interventions that reported objective of self-reported changes using a validated instrument
Study Tool/Instrument Validity/Reliability	Not applicable	Not applicable
Primary Outcome Measures/Results	Review of RCTs	One study showed positive outcomes on length of stay and total charges; however, another study found no impact on length of stay. Prescribing of psychotropic drugs in nursing homes was decreased with monthly multidisciplinary meetings.

		Videoconferencing versus audioconferencing showed mixed results, with a decreased number of conference needs and length of treatment, but no difference in length of stay. The use of external facilitator in IDRs showed increased audit activity and reports in improvement of care.
Conclusions/Implications	Practice-based IPC interventions improve healthcare processes and outcomes	IPC interventions should be instituted in the practice setting; however, it is recommended that more research be completed in this area.
Strengths/Limitations		Limited number of RCTs in this area Limited sample sizes of studies
Funding Source	Not applicable	
Comments	This review is relevant to my project because it provides specific data related to rounds and ties many of my articles together with the evidence that external audit has benefit. It also provides evidence that most types of IPC interventions, including IDRs, provide benefit in the healthcare setting.	

Adapted from Houser, J. & Oman, K. S. (Eds.). (2011) Evidence table format for a systematic review.

Appendix D

St. Luke's University Health Network Permission to Use Email and Supplies

St Luke's

Hospital
1872 St. Luke's Boulevard
Easton, PA 18045

Medical Office Building
1700 St. Luke's Boulevard
Easton, PA 18045

Cancer Center
1600 St. Luke's Boulevard
Easton, PA 18045

484-503-3000

7/2/2015

Darla Frack, RN, MSN, NE-BC, CMSRN
Vice President, Patient Care Services
St. Luke's University Health Network,
1872 St. Luke's Boulevard
Bethlehem, PA 18045

Kelly E. Diehl, MSN, ACNP-BC, CCRN
Regis University

To Whom It May Concern:

I approve the use of the following resources for Kelly Diehl's research project to be conducted at St. Luke's University Health Network, the intensive care unit.

- Use of the secure email system for all communication necessary with St. Luke's staff members for the duration of the research project
- Use of any printing resources, including printer, ink, and paper, necessary for printing any project materials for the duration of the research project

Sincerely,

Darla Frack RN, MSN

Darla Frack, RN, MSN, NE-BC, CMSRN
Vice President, Patient Care Services

My Health. My Hospital.℠

Appendix E

Education Sheet

Education Sheet

How to Complete the Daily Goals Sheet (DGS):

1. The information on the DGS is de-identified information and contains no personal identifiers for the patient.
2. Fill in all blanks on the form to complete it for daily multidisciplinary rounds.
3. Continue to fill in new information throughout the day that can be communicated to night shift or other disciplines.
4. Items can be checked off or crossed out as completed with a single line so that information is still legible for future readers.

How to Use the DGS:

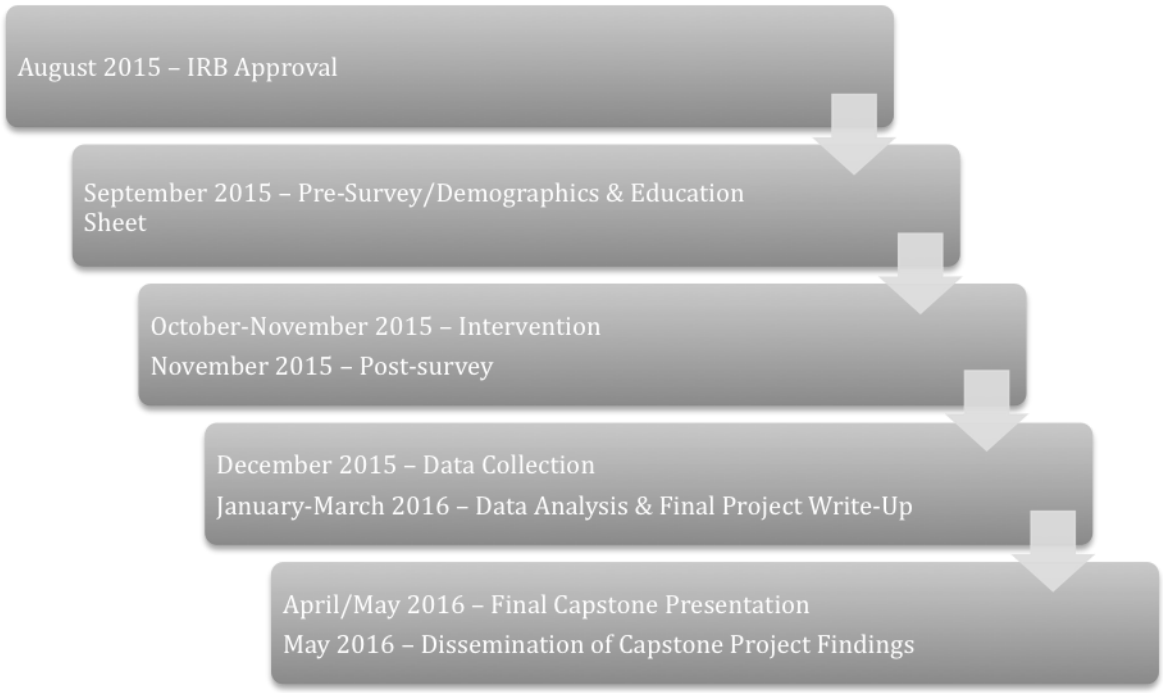
1. Each intensive care unit (ICU) patient, or any patient on the Medical Critical Care Service, will have a DGS everyday for the six-week intervention period, which will be stored on the bedside book for the patient.
2. The night shift nurse will initiate a new DGS for each ICU patient between 0000 and 0600.
3. The night shift nurse will complete as much of the DGS as he/she is able to do during that time period.
4. The night shift nurse will sign out all relevant information from the DGS to the day shift nurse during report.
5. The day shift nurse will complete the DGS prior to daily multidisciplinary rounds.
6. The day shift nurse will utilize the DGS and note all relevant information on it during daily multidisciplinary rounds.
7. Throughout his/her shift, the dayshift nurse will continue to note all relevant information on the DGS.
8. The day shift nurse will sign out all relevant information from the DGS to the night shift nurse during report.
9. The night shift nurse will utilize the DGS as needed throughout the remainder of the day until 0000.
10. The night shift nurse will discard the DGS at 0000, as it is not a permanent part of the patient's medical record.
11. The process starts again from the beginning at 0000.

Tracking of the DGS:

1. On a daily basis, the day shift advanced care provider will count the number of ICU patients rounded on during daily multidisciplinary rounds.
2. On a daily basis, the day shift advanced care provider will count the number of DGSs utilized during daily multidisciplinary rounds.
3. On a daily basis, the day shift advanced care provider will note these numbers on the Daily Goals Sheet Tracking Tool, which is located on the I-drive under the Anderson Campus, Advanced Practitioners folder.

Appendix F

Project Timeline



Appendix G

Logic Model

Logic Model Development
Program Implementation

RESOURCES	ACTIVITIES	OUTPUTS	SHORT & LONG-TERM OUTCOMES	IMPACT
In order to accomplish our set of activities we will need the following:	*In order to address our problem or asset we will accomplish the following activities:*	*We expect that once accomplished these activities will produce the following evidence of service delivery:*	*We expect that if accomplished these activities will lead to the following changes in 1-3 then 4-6 years:*	*We expect that if accomplished these activities will lead to the following changes in 7-10 years:*
Obtain IRB approval from Regis University Obtain IRB approval from St. Luke's University Health Network Willingness of approximately 30 nursing staff to participate Willingness of approximately 8 advanced care provider staff to participate Administration will provide the necessary support for the planned interventions Support from hospital administrative staff related to time allowance/workflow changes Appropriate time allowance to complete new tasks SLUHN email system to disseminate information and education sheets, recruitment, and survey information Paper and ink to print Daily Goals Sheet SurveyMonkey® to disseminate pre- and post-surveys Tracking tool to assess number of times the Daily Goals Sheet was used Healthcare Business Informatics (HBI) software to assess critical care length of stay (CC LOS) PASS and SPSS 23 software to perform statistical analysis	Meet with administrative staff to outline plans and obtain support Meet with nursing staff and advanced care provider staff to outline plans and obtain support Print Daily Goals Sheet Dispense education tool to advanced care provider and nursing staff for independent review Obtain CC LOS reports from the 6 weeks prior to the intervention Administer pre-survey and demographic sheet to advanced care provider and nursing staff, while maintaining anonymity, two weeks prior to intervention, and collect four days prior to the start of the intervention (10-day period to complete) Begin daily multidisciplinary rounding utilizing the Daily Goals Sheet for a 6-week period; All advanced care providers and nurses will use as part of routine ICU rounding procedure Complete tracking tool daily Administer post-survey to advanced care provider and nursing staff, while maintaining anonymity, one day after the intervention period is complete and collect 10 days later (10-day period to complete) Obtain CC LOS reports from the 6 weeks during the intervention and the 6 weeks after the intervention	Advanced care providers and nursing staff will participate in the planned intervention Pre-intervention survey with quantitative and qualitative data on assessment of communication and collaboration between members of the multidisciplinary team and understanding of the daily goals of patient care Demographic data on the participants of the study Tracking tool with number of times the Daily Goals Sheet was used Post-intervention survey with quantitative and qualitative data on assessment of communication and collaboration between members of the multidisciplinary team and understanding of the daily goals of patient care Data reports from HBI related to CC LOS the 6 weeks prior to the intervention, during the intervention, and the 6 weeks after the intervention	**Short-term Outcomes:** Improved communication and collaboration between advanced care provider and nursing staff, as well as improved understanding of the daily goals of patient care Adoption and consistent participation in daily multidisciplinary rounds utilizing the Daily Goals Sheet **Long-term Outcomes:** Improved patient outcomes Increased critical care administrative support related to additional EBP projects focusing on improvement in patient care	Improved communication and collaboration between advanced care provider and nursing staff, as well as improved understanding of the daily goals of patient care Adoption and consistent participation in daily multidisciplinary rounds utilizing the Daily Goals Sheet Improved patient outcomes Increased job satisfaction and retention among advanced care provider and nursing staff Improvement in the learning environment, fostering the Modeling and Role-Modeling Theory, between advanced care provider and nursing staff

Evaluation Logic Model Guide, W.K. Kellogg Foundation, Page 57

Appendix H

Regis University IRB Approval

REGIS UNIVERSITY

OFFICE OF ACADEMIC GRANTS

IRB – REGIS UNIVERSITY

August 21, 2015

Kelly Diehl
531 Woodmont Circle
Easton, PA 18045

RE: IRB # 15-214

Dear Ms. Diehl:

Your application to the Regis IRB for your project, "Improving Communication and Collaboration Between Disciplines: Utilization of a Daily Goals Sheet During Daily Multidisciplinary Rounds in the Critical Care Setting", was approved as an exempt study on August 20, 2015. This study was approved per exempt study category of research 45CFR46.101.b(#2).

The designation of "exempt" means no further IRB review of this project, as it is currently designed, is needed.

If changes are made in the research plan that significantly alter the involvement of human subjects from that which was approved in the named application, the new research plan must be resubmitted to the Regis IRB for approval.

Sincerely,

Patsy Cullen

Patsy McGuire Cullen, PhD, CPNP-PC
Chair, Institutional Review Board
Professor & Director
Doctor of Nursing Practice & Nurse Practitioner Programs
Loretto Heights School of Nursing
Regis University

3333 Regis Boulevard, H-4, Denver, CO 80221-1099
REGIS.EDU | O 303-458-4206 | F 303-964-5528 | E oag@regis.edu

Appendix I

Regis University IRB Addendum Approval

Approval of minor modification to Protocol 15-214
Institutional Review Board
Sent: Tuesday, February 09, 2016 2:06 PM
To: Diehl, Kelly E; Whalen, Kathleen S. (Faculty)
Cc: Institutional Review Board
Importance: High

Dear Ms. Diehl…

The Institutional Review Board has thoroughly reviewed your proposed minor modification to Protocol # 15-214 (Improving Communication and Collaboration Between Disciplines: Utilization of a Daily Goals Sheet During Daily Multidisciplinary Rounds in the Critical Care Setting). The Board approves this minor modification because, as a student, Drs. Whalen and Kruschke should have access to assist with data analysis. You may proceed on with the analysis at this point. We continue to send you our encouragement about your project!

Patsy McGuire Cullen, PhD, CPNP-PC
Chair, Institutional Review Board
irb@regis.edu

Appendix J

St. Luke's University Health Network IRB Approval

From: do_not_reply@ddots.com [mailto:do_not_reply@ddots.com]
Sent: Thursday, August 20, 2015 12:10 AM
To: Murtaugh, Holly
Subject: Documents have been IRB reviewed: SLHN 2015-75 IRB No.: SLHN 2015-75

//

This email has been auto-generated by the DDOTS system.
Please do not reply to this email.

//

An event for Protocol **SLHN 2015-75** has been marked as having completed review.

Local ID: SLHN 2015-75
Protocol: SLHN 2015-75
Type of Submission: New Studies
IRB Meeting Date: 09/08/2015
Action: Approved
Reviewed By: Exempt
Action Date: 08/20/2015
Agenda: IRB Application, Protocol, and Exempt request form

List Documents and Comments for each Document:
Download File: slhn 2015-75 - irb application & exempt form.pdf
Download File: slhn 2015-75 - protocol.pdf
Download File: slhn 2015-75 - revised application.pdf
Download File: slhn 2015-75 - revised application1.pdf

Review Completed By: Stawicki, Stanislaw P.
Completed Date: 08/20/2015

Email sent to: Murtaugh, Holly; Pessin, Elana; Diehl MSN,CCRN, Kelly Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

Appendix K

St. Luke's University Health Network IRB Addendum Approval

From: do_not_reply@ddots.com [mailto:do_not_reply@ddots.com] **Sent:** Monday, February 08, 2016 2:16 PM **To:** Silva, Jayne **Subject:** Documents have been IRB reviewed: SLHN 2015-75 IRB No.: SLHN 2015-75

//
///
This email has been auto-generated by the DDOTS
system.
Please do not reply to this email.
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///

An event for Protocol **SLHN 2015-75** has been marked as having completed review.

Local ID: SLHN 2015-75
Protocol: SLHN 2015-75
Type of Submission: Revisions & Amendments
IRB Meeting Date: 03/01/2016
Action: Approved
Reviewed By: Expedited Review
Action Date: 01/27/2016
Agenda: Please see the attached documents for review and approval; Amendment Form Key Personel Protocol.

List Documents and Comments for each Document:
Download File: slhn-2015-75-addendum.pdf
Download File: slhn-2015-75-projectprotocol.doc

Review Completed By: Silva, Jayne
Completed Date: 02/08/2016

Email sent to: Silva, Jayne; Diehl MSN,CCRN, Kelly Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

Appendix L

Collaborative Practice Assessment Tool: Pre-Survey and Demographics Sheet

Collaborative Practice Assessment Tool: Pre-Survey and Demographic Information

Introduction:

Collaboration is a key factor in better patient and provider outcomes. Collaborative practice has been described as a: "process for communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided" (Way, Jones, & Busing, 2000).

Instructions:

The content in the following statements contains items relevant to collaborative practice. Please respond to the following statements **from the perspective of being a member of the multidisciplinary team.** To respond to the questions, check the appropriate box for each closed-ended question and write your responses in the blanks provided for the open-ended questions. There are no right or wrong responses. Honest responses are the most helpful. If there are any questions that you feel are not applicable to your practice, you may skip them, but please try to answer each question to the best of your ability. Your responses are confidential and de-identified, and the results will be aggregated and used to understand the functioning of the multidisciplinary team. It will take approximately 30 minutes for you to complete this survey.

Thank you for your time and thoughtful consideration.

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Part One: Collaborative Practice Tool Pre-Survey

Mission, Meaningful Purpose, Goals	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
1. Our team mission embodies an interprofessional collaborative approach to patient care.							
2. Our team's primary purpose is to assist patients in achieving treatment goals.							
3. Our team's goals are clear, useful, and appropriate to my practice.							
4. Our team's mission and goals are supported by sufficient resources (skills, funding, time, space).							
5. All team members are committed to collaborative practice.							
6. Members of our team have a good understanding of patient care plans and treatment goals.							
7. Patient care plans and treatment goals incorporate best practice guidelines from multiple professions.							
8. There is a real desire among team members to work collaboratively.							
9. Communication is constant between advanced practitioners and registered nurses.							
General Relationships	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
9. Respect among team members improves with our ability to work together.							
10. Team members care about one another's personal well being.							
11. Socializing together enhances team work effectiveness.							
12. It is enjoyable to work with other team members.							
13. Team members respect each other's roles and expertise.							
14. Working collaboratively keeps most team members enthusiastic and interested in their job.							
15. Team members trust each other's work and contributions related to patient care.							
16. Our team's level of respect for each other enhances our ability to work together.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Team Leadership	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
17. Procedures are in place to identify who will take the lead role in coordinating patient care.							
18. Team leadership ensures all professionals needing to participate have a role on the team.							
19. Team leadership assures that roles and responsibilities for patient care are clearly defined.							
20. Team leadership discourages professionals from taking the initiative to support patient care goals.							
21. Team leadership supports interprofessional development opportunities.							
22. Our team leader models, demonstrates, and advocates for patient-centered best practice.							
23. Our team leader is out of touch with team members' concerns and perceptions.							
24. Our team leader encourages members to practice within their full professional scope.							
25. Our team has a process for peer review.							
General Role Responsibilities and Autonomy	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
26. Team members acknowledge the aspects of care where members of my profession have more skills and expertise.							
27. Advanced practitioners and physicians assume the ultimate responsibility for team decisions and outcomes.							
28. Team members negotiate the role they want to take in developing and implementing the patient care plan.							
29. Team members are held accountable for their work.							
30. It is clear who is responsible for aspects of the patient care plan.							
31. Advanced practitioners and physicians usually ask other team members for opinions about patient care.							
32. Team members feel comfortable advocating for the patient.							
33. Each team member shares accountability for team decisions and outcomes.							
34. Team members have the responsibility to communicate and provide their expertise in an assertive manner.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

35. Team members feel limited in the degree of autonomy in patient care that they can assume.							
Communication and Information Exchange	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
36. Patients concerns are addressed effectively through regular team meetings and discussion.							
37. Our team has developed effective communication strategies to share patient treatment goals and outcomes of care.							
38. Relevant information relating to changes in patient status or care plan is reported to the appropriate team member in a timely manner.							
39. Team members have relevant information ready for multidisciplinary rounds.							
39. I trust the accuracy of information reported among team members.							
41. Questions asked during multidisciplinary rounds receive prompt and accurate answers.							
40. Multidisciplinary rounds provide an open, comfortable, safe place to discuss concerns.							
41. The patient health record is used effectively by all team members as a communication tool.							
Coordination of Care	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
42. Our team has established partnerships between disciplines to support better patient outcomes.							
43. Members of our team share information relating to patient care.							
44. Our team has a process to optimize the coordination of patient care with each other.							
45. Multidisciplinary rounds are coordinated so that all disciplines can participate.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Decision-Making and Conflict Management	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
46. Processes are in place to quickly identify and respond to a problem.							
47. When team members disagree, all points of view are considered before deciding on a solution.							
48. Disagreements among team members are ignored or avoided.							
49. On our team, the final decision in patient care rests with the advanced practitioner or physician.							
50. In our team, there are problems that regularly need to be solved by someone higher up.							
51. Our team has an established process for conflict management.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Please complete the following questions to help us gain further understanding of your collaborative practice.

What does the multidisciplinary team do well with regards to communication and collaborative practice?

_____
_____
_____
_____

In your practice, what are the most difficult challenges to communication and collaboration?

_____
_____
_____
_____

What does your team need help with to improve communication and collaborative practice?

_____
_____
_____
_____

Part Two: Background Questions and Demographic Data

Please circle the most appropriate answer to each question.

What is your gender?	Male		Female	
What is your age?	< 25	26 – 30	31 – 35	36 – 40
	41 – 45	46 – 50	51 – 55	> 55
How much do you work?	Full-time	Part-time	Per diem	
What is your profession?	Registered Nurse		Advanced Care Provider	
How long have you been working in this profession?	< 6 months	< 1 year	1 to 5 years	6 to 10 years
	11 to 15 years	16 to 20 years	21 to 25 years	> 25 years
How long have you been working in critical care?	< 6 months	< 1 year	1 to 5 years	6 to 10 years
	11 to 15 years	16 to 20 years	21 to 25 years	> 25 years

Thank you very much for your time and thoughts. This information will be very useful in helping us to understand what learning opportunities to develop for health care professionals to support collaborative interprofessional practice.

Appendix M

Collaborative Practice Assessment Tool: Post-Survey

Collaborative Practice Assessment Tool: Post-Survey

Introduction:

Collaboration is a key factor in better patient and provider outcomes. Collaborative practice has been described as a: "process for communication and decision making that enables the separate and shared knowledge and skills of care providers to synergistically influence the client/patient care provided" (Way, Jones, & Busing, 2000).

Instructions:

The content in the following statements contains items relevant to collaborative practice. Please respond to the following statements **from the perspective of being a member of the multidisciplinary team.** To respond to the questions, check the appropriate box for each closed-ended question and write your responses in the blanks provided for the open-ended questions. There are no right or wrong responses. Honest responses are the most helpful. If there are any questions that you feel are not applicable to your practice, you may skip them, but please try to answer each question to the best of your ability. Your responses are confidential and de-identified, and the results will be aggregated and used to understand the functioning of the multidisciplinary team. It will take approximately 30 minutes for you to complete this survey.

Thank you for your time and thoughtful consideration.

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Collaborative Practice Tool

Mission, Meaningful Purpose, Goals	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
1. Our team mission embodies an interprofessional collaborative approach to patient care.							
2. Our team's primary purpose is to assist patients in achieving treatment goals.							
3. Our team's goals are clear, useful, and appropriate to my practice.							
4. Our team's mission and goals are supported by sufficient resources (skills, funding, time, space).							
5. All team members are committed to collaborative practice.							
6. Members of our team have a good understanding of patient care plans and treatment goals.							
7. Patient care plans and treatment goals incorporate best practice guidelines from multiple professions.							
8. There is a real desire among team members to work collaboratively.							
9. Communication is constant between advanced practitioners and registered nurses.							
General Relationships	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
9. Respect among team members improves with our ability to work together.							
10. Team members care about one another's personal well being.							
11. Socializing together enhances team work effectiveness.							
12. It is enjoyable to work with other team members.							
13. Team members respect each other's roles and expertise.							
14. Working collaboratively keeps most team members enthusiastic and interested in their job.							
15. Team members trust each other's work and contributions related to patient care.							
16. Our team's level of respect for each other enhances our ability to work together.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Team Leadership	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
17. Procedures are in place to identify who will take the lead role in coordinating patient care.							
18. Team leadership ensures all professionals needing to participate have a role on the team.							
19. Team leadership assures that roles and responsibilities for patient care are clearly defined.							
20. Team leadership discourages professionals from taking the initiative to support patient care goals.							
21. Team leadership supports interprofessional development opportunities.							
22. Our team leader models, demonstrates, and advocates for patient-centered best practice.							
23. Our team leader is out of touch with team members' concerns and perceptions.							
24. Our team leader encourages members to practice within their full professional scope.							
25. Our team has a process for peer review.							
General Role Responsibilities and Autonomy	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
26. Team members acknowledge the aspects of care where members of my profession have more skills and expertise.							
27. Advanced practitioners and physicians assume the ultimate responsibility for team decisions and outcomes.							
28. Team members negotiate the role they want to take in developing and implementing the patient care plan.							
29. Team members are held accountable for their work.							
30. It is clear who is responsible for aspects of the patient care plan.							
31. Advanced practitioners and physicians usually ask other team members for opinions about patient care.							
32. Team members feel comfortable advocating for the patient.							
33. Each team member shares accountability for team decisions and outcomes.							
34. Team members have the responsibility to communicate and provide their expertise in an assertive manner.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

35. Team members feel limited in the degree of autonomy in patient care that they can assume.							
Communication and Information Exchange	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
36. Patients concerns are addressed effectively through regular team meetings and discussion.							
37. Our team has developed effective communication strategies to share patient treatment goals and outcomes of care.							
38. Relevant information relating to changes in patient status or care plan is reported to the appropriate team member in a timely manner.							
39. Team members have relevant information ready for multidisciplinary rounds.							
39. I trust the accuracy of information reported among team members.							
41. Questions asked during multidisciplinary rounds receive prompt and accurate answers.							
40. Multidisciplinary rounds provide an open, comfortable, safe place to discuss concerns.							
41. The patient health record is used effectively by all team members as a communication tool.							
Coordination of Care	**Strongly Disagree**	**Mostly Disagree**	**Somewhat Disagree**	**Neither Agree nor Disagree**	**Somewhat Agree**	**Mostly Agree**	**Strongly Agree**
42. Our team has established partnerships between disciplines to support better patient outcomes.							
43. Members of our team share information relating to patient care.							
44. Our team has a process to optimize the coordination of patient care with each other.							
45. Multidisciplinary rounds are coordinated so that all disciplines can participate.							

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Decision-Making and Conflict Management	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
46. Processes are in place to quickly identify and respond to a problem.							
47. When team members disagree, all points of view are considered before deciding on a solution.							
48. Disagreements among team members are ignored or avoided.							
49. On our team, the final decision in patient care rests with the advanced practitioner or physician.							
50. In our team, there are problems that regularly need to be solved by someone higher up.							
51. Our team has an established process for conflict management.							

What is your profession? (circle one) Registered Nurse Advanced Care Provider

Adapted from Queen's University Collaborative Practice Assessment Tool. (2009). Retrieved from http://meds.queensu.ca/oipep. Permission granted from Queen's University.

Please complete the following questions to help us gain further understanding of your collaborative practice.

What does the multidisciplinary team do well with regards to communication and collaborative practice?

_____
_____
_____
_____

In your practice, what are the most difficult challenges to communication and collaboration?

_____
_____
_____
_____

What does your team need help with to improve communication and collaborative practice?

_____
_____
_____
_____

How did the addition of the Daily Goals Sheet affect communication and collaborative practice between nurses and advanced care providers?

_____
_____
_____
_____

How did the addition of the Daily Goals Sheet affect communication between bedside nurses, as well as the overall understanding of the daily goals of patient care?

_____
_____
_____
_____

Thank you very much for your time and thoughts. This information will be very useful in helping us to understand what learning opportunities to develop for health care professionals to support collaborative interprofessional practice.

Appendix N

Information Sheet

Information Sheet for Participants in Improving Communication and Collaboration Between Disciplines: Utilization of a Daily Goals Sheet During Daily Multidisciplinary Rounds in the Critical Care Setting

My name is Kelly E. Diehl. I am a Doctor of Nursing Practice (DNP) student at Regis University. My contact information is 531 Woodmont Circle, Easton, PA 18045 or 610-568-4142. I am conducting a research study, which is a requirement for my degree, which seeks to evaluate the effect of a Daily Goals Sheet during daily multidisciplinary rounds in the critical care setting on communication and collaboration between disciplines, specifically advanced care providers and bedside nursing staff.

I am asking you to participate in this study because you work in a critical care setting where daily multidisciplinary rounds occur and you are a member of the advanced practitioner and/or the bedside nursing staff. Your ICU will be routinely using a new tool, the Daily Goals Sheet, during morning daily multidisciplinary rounds. Your participation in the use of the Daily Goals Sheet during ICU multidisciplinary rounds is mandatory; however, your participation in completing the pre- and post-surveys is voluntary. Choosing not to participate will not affect your access to any goods or services. There are no direct benefits to participating in the study.

I will be conducting the study by asking you to complete a pre-survey, disseminated via a link to SurveyMonkey® through the confidential and secure St. Luke's University Health Network email system, with general questions related to communication, collaboration, and the current multidisciplinary rounding process, as well as general demographic questions (Step 1). I will then provide an education sheet and a copy of the Daily Goals Sheet via the confidential and secure St. Luke's University Health Network email system for how the new rounding process will occur, as well as the appropriate way to complete the Daily Goals Sheet (Step 2). Next, you will participate in daily multidisciplinary rounds with the addition of the Daily Goals Sheet, which will occur over a 6-week time period (Step 3). After the implementation period (Step 3), you will be asked to complete a post-survey disseminated via a link to SurveyMonkey® through the same confidential and secure email process with general questions again related to communication and collaboration, but also related to the new rounding process with utilization of the Daily Goals Sheet (Step 4). Participation in this study will take approximately 2 hours total, with up to 30 minutes each for the pre-survey and post-survey, and up to one hour for review of the education sheet, all of which can be done on work time as able. Time spent on daily multidisciplinary rounds and completion of the Daily Goals Sheet will vary depending on days worked throughout the 6-week implementation period.

I will not be collecting any data that can link you to the answers you provide. Your anonymity and the confidentiality of your responses will be protected as much as possible. If you are uncomfortable answering any question, you may choose to not answer that question or to stop your participation and have any notes, recordings, or hard copy answers destroyed. To further protect the confidentiality of your pre- and post-survey responses, I will not be collecting a signed consent form, but will instead consider your participation in the study as consent permitting me to collect the data you provide.

Should you have any questions or concerns about participation in this study, you may contact me using the information in the first paragraph. My Capstone faculty advisor is Dr. Kathleen S. Whalen, who can be contacted at kwhalen@regis.edu or 303-458-3599. You may also contact the Chair of the Regis University Institutional Review Board for human subjects participation by telephone at 303-346-4206, by mail at Regis University, Office of Academic Grants, 447 Main, Mail Code H-4, 3333 Regis Boulevard, Denver, CO 80221, or by email at irb@regis.edu with questions or concerns, or if you feel that participation in this study has resulted in some harm.

Sincerely,

Kelly E. Diehl, MSN, ACNP- BC, CCRN

Appendix O

Flyer

Appendix P

First Letter

Dear Colleague,

I am writing to inform you about the new daily rounding process that will be starting in the intensive care unit in October 2015. In October, the daily rounding process will include the use of a Daily Goals Sheet, which will be a tool utilized by the nursing staff to organize necessary information for daily rounds. In addition to this new rounding process, a research study will also be conducted related to the institution of the Daily Goals Sheet during daily rounds. More information will be given later on the entire process. Thank you for your time and attention to this matter.

Sincerely,

Kelly E. Diehl, MSN, ACNP- BC, CCRN
Regis University
Doctor of Nursing Practice Program

Appendix Q

Second Letter

Dear Colleague,

I am writing to you to invite you to complete a pre-survey about the current daily rounding process, as well as communication and collaboration, in the intensive care unit. Please see the information below regarding this research study and survey process. The pre-survey is available today at the link at the bottom of this email, and will remain available for 10 days. It will take a maximum of 30 minutes to complete this survey. Thank you for your help.

My name is Kelly E. Diehl. I am a Doctor of Nursing Practice (DNP) student at Regis University. My contact information is 531 Woodmont Circle, Easton, PA 18045 or 610-568-4142. I am conducting a research study, which is a requirement for my degree, which seeks to evaluate the effect of a Daily Goals Sheet during daily multidisciplinary rounds in the critical care setting on communication and collaboration between disciplines, specifically advanced care providers and bedside nursing staff.

I am asking you to participate in this study because you work in a critical care setting where daily multidisciplinary rounds occur and you are a member of the advanced practitioner and/or the bedside nursing staff. Your ICU will be routinely using a new tool, the Daily Goals Sheet, during morning daily multidisciplinary rounds. Your participation in the use of the Daily Goals Sheet during ICU multidisciplinary rounds is mandatory; however, your participation in completing the pre- and post-surveys is voluntary. Choosing not to participate will not affect your access to any goods or services. There are no direct benefits to participating in the study.

I will be conducting the study by asking you to complete a pre-survey disseminated via Survey Monkey with general questions related to communication, collaboration, and the current multidisciplinary rounding process, as well as general demographic questions (Step 1). I will then provide an education sheet and a copy of the Daily Goals Sheet via the St. Luke's University Health Network secure email system for how the new rounding process will occur, as well as the appropriate way to complete the Daily Goals Sheet (Step 2). Next, you will participate in daily multidisciplinary rounds with the addition of the Daily Goals Sheet, which will occur over a 6-week time period (Step 3). After the implementation period (Step 3), you will be asked to complete a post-survey disseminated via Survey Monkey with general questions again related to communication and collaboration, but also related to the new rounding process with utilization of the Daily Goals Sheet (Step 4). Participation in this study will take approximately 2 hours total, with up to 30 minutes each for the pre-survey and post-survey, and up to one hour for review of the education sheet, all of which can be done on work time as able. Time spent on daily multidisciplinary rounds and completion of the Daily Goals Sheet will vary depending on days worked throughout the 6-week implementation period.

I will not be collecting any data that can link you to the answers you provide. Your anonymity and the confidentiality of your responses will be protected as much as possible. If you are uncomfortable answering any question, you may choose to not answer that question or to stop your participation and have any notes, recordings, or hard copy answers destroyed. To further protect the confidentiality of your pre- and post-survey responses, I will not be collecting a signed consent form, but will instead consider your participation in the study as consent permitting me to collect the data you provide.

Should you have any questions or concerns about participation in this study, you may contact me using the information in the first paragraph. My Capstone faculty advisor is Dr. Kathleen S. Whalen, who can be contacted at kwhalen@regis.edu or 303-458-3599. You may also contact the Chair of the Regis University Institutional Review Board for human subjects participation by telephone at 303-346-4206, by mail at Regis University, Office of Academic Grants, 447 Main, Mail Code H-4, 3333 Regis Boulevard, Denver, CO 80221, or by email at irb@regis.edu with questions or concerns, or if you feel that participation in this study has resulted in some harm.

To take this survey, please click this link: https://www.surveymonkey.com/r/CY58MYD. If you are not able to open the link, copy and paste the SurveyMonkey® URL in the address bar of your browser. As always, thank you very much for your help. I look forward to receiving your survey.

Sincerely,

Kelly E. Diehl, MSN, ACNP- BC, CCRN
Regis University
Doctor of Nursing Practice Program

Appendix R

Third Letter

Dear Colleague,

I am writing to supply you with a copy of the Daily Goals Sheet that will be instituted as part of the new daily multidisciplinary rounding process. In addition to a copy of this sheet, I have attached an education sheet that will describe the plan for the Daily Goals Sheet. It will explain how the sheet is to be completed, as well as the daily process for its use, before, during, and after rounding, and between colleagues. The new rounding process will start on Monday, October 5th, 2015, with night shift initiating the Daily Goals Sheet for that day. Thank you for your time and attention to this matter.

Sincerely,

Kelly E. Diehl, MSN, ACNP- BC, CCRN
Regis University
Doctor of Nursing Practice Program

Appendix S

Fourth Letter

Dear Colleague,

I am writing to you to invite you to complete a post-survey about the new daily rounding process, as well as communication and collaboration, in the intensive care unit. Please see the information below regarding this research study and survey process. The post-survey is available today at the link at the bottom of this email, and will remain available for 10 days. It will take a maximum of 30 minutes to complete this survey. Thank you for your help.

My name is Kelly E. Diehl. I am a Doctor of Nursing Practice (DNP) student at Regis University. My contact information is 531 Woodmont Circle, Easton, PA 18045 or 610-568-4142. I am conducting a research study, which is a requirement for my degree, which seeks to evaluate the effect of a Daily Goals Sheet during daily multidisciplinary rounds in the critical care setting on communication and collaboration between disciplines, specifically advanced care providers and bedside nursing staff.

I am asking you to participate in this study because you work in a critical care setting where daily multidisciplinary rounds occur and you are a member of the advanced practitioner and/or the bedside nursing staff. Your ICU will be routinely using a new tool, the Daily Goals Sheet, during morning daily multidisciplinary rounds. Your participation in the use of the Daily Goals Sheet during ICU multidisciplinary rounds is mandatory; however, your participation in completing the pre- and post-surveys is voluntary. Choosing not to participate will not affect your access to any goods or services. There are no direct benefits to participating in the study.

I will be conducting the study by asking you to complete a pre-survey disseminated via Survey Monkey with general questions related to communication, collaboration, and the current multidisciplinary rounding process, as well as general demographic questions (Step 1). I will then provide an education sheet and a copy of the Daily Goals Sheet via the St. Luke's University Health Network secure email system for how the new rounding process will occur, as well as the appropriate way to complete the Daily Goals Sheet (Step 2). Next, you will participate in daily multidisciplinary rounds with the addition of the Daily Goals Sheet, which will occur over a 6-week time period (Step 3). After the implementation period (Step 3), you will be asked to complete a post-survey disseminated via Survey Monkey with general questions again related to communication and collaboration, but also related to the new rounding process with utilization of the Daily Goals Sheet (Step 4). Participation in this study will take approximately 2 hours total, with up to 30 minutes each for the pre-survey and post-survey, and up to one hour for review of the education sheet, all of which can be done on work time as able. Time spent on daily multidisciplinary rounds and completion of the Daily Goals Sheet will vary depending on days worked throughout the 6-week implementation period.

I will not be collecting any data that can link you to the answers you provide. Your anonymity and the confidentiality of your responses will be protected as much as possible. If you are uncomfortable answering any question, you may choose to not answer that question or to stop your participation and have any notes, recordings, or hard copy answers destroyed. To further protect the confidentiality of your pre- and post-survey responses, I will not be collecting a signed consent form, but will instead consider your participation in the study as consent permitting me to collect the data you provide.

Should you have any questions or concerns about participation in this study, you may contact me using the information in the first paragraph. My Capstone faculty advisor is Dr. Kathleen S. Whalen, who can be contacted at kwhalen@regis.edu or 303-458-3599. You may also contact the Chair of the Regis University Institutional Review Board for human subjects participation by telephone at 303-346-4206, by mail at Regis University, Office of Academic Grants, 447 Main, Mail Code H-4, 3333 Regis Boulevard, Denver, CO 80221, or by email at irb@regis.edu with questions or concerns, or if you feel that participation in this study has resulted in some harm.

To take this survey, please click this link: http://www.surveymonkey.com (final link to be determined). If you are not able to open the link, copy and paste the SurveyMonkey® URL in the address bar of your browser. As always, thank you very much for your help. I look forward to receiving your survey.

Sincerely,

Kelly E. Diehl, MSN, ACNP- BC, CCRN
Regis University
Doctor of Nursing Practice Program

Appendix T

Daily Goals Sheet Tracking Tool

October 2015

Daily Goals Sheet Tracking Tool

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1 # of ICU pts: _____ # of DGSs: _____	2 # of ICU pts: _____ # of DGSs: _____	3 # of ICU pts: _____ # of DGSs: _____
4 # of ICU pts: _____ # of DGSs: _____	5 # of ICU pts: _____ # of DGSs: _____	6 # of ICU pts: _____ # of DGSs: _____	7 # of ICU pts: _____ # of DGSs: _____	8 # of ICU pts: _____ # of DGSs: _____	9 # of ICU pts: _____ # of DGSs: _____	10 # of ICU pts: _____ # of DGSs: _____
11 # of ICU pts: _____ # of DGSs: _____	12 # of ICU pts: _____ # of DGSs: _____	13 # of ICU pts: _____ # of DGSs: _____	14 # of ICU pts: _____ # of DGSs: _____	15 # of ICU pts: _____ # of DGSs: _____	16 # of ICU pts: _____ # of DGSs: _____	17 # of ICU pts: _____ # of DGSs: _____
18 # of ICU pts: _____ # of DGSs: _____	19 # of ICU pts: _____ # of DGSs: _____	20 # of ICU pts: _____ # of DGSs: _____	21 # of ICU pts: _____ # of DGSs: _____	22 # of ICU pts: _____ # of DGSs: _____	23 # of ICU pts: _____ # of DGSs: _____	24 # of ICU pts: _____ # of DGSs: _____
25 # of ICU pts: _____ # of DGSs: _____	26 # of ICU pts: _____ # of DGSs: _____	27 # of ICU pts: _____ # of DGSs: _____	28 # of ICU pts: _____ # of DGSs: _____	29 # of ICU pts: _____ # of DGSs: _____	30 # of ICU pts: _____ # of DGSs: _____	31 # of ICU pts: _____ # of DGSs: _____
						Key Intensive Care Unit (ICU) Patients (pts) Daily Goals Sheets (DSGs)

November 2015

Daily Goals Sheet Tracking Tool

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 # of ICU pts: _____ # of DGSs: _____	2 # of ICU pts: _____ # of DGSs: _____	3 # of ICU pts: _____ # of DGSs: _____	4 # of ICU pts: _____ # of DGSs: _____	5 # of ICU pts: _____ # of DGSs: _____	6 # of ICU pts: _____ # of DGSs: _____	7 # of ICU pts: _____ # of DGSs: _____
8 # of ICU pts: _____ # of DGSs: _____	9 # of ICU pts: _____ # of DGSs: _____	10 # of ICU pts: _____ # of DGSs: _____	11 # of ICU pts: _____ # of DGSs: _____	12 # of ICU pts: _____ # of DGSs: _____	13 # of ICU pts: _____ # of DGSs: _____	14 # of ICU pts: _____ # of DGSs: _____
15 # of ICU pts: _____ # of DGSs: _____	16 # of ICU pts: _____ # of DGSs: _____	17 # of ICU pts: _____ # of DGSs: _____	18 # of ICU pts: _____ # of DGSs: _____	19 # of ICU pts: _____ # of DGSs: _____	20 # of ICU pts: _____ # of DGSs: _____	21 # of ICU pts: _____ # of DGSs: _____
22 # of ICU pts: _____ # of DGSs: _____	23 # of ICU pts: _____ # of DGSs: _____	24 # of ICU pts: _____ # of DGSs: _____	25 # of ICU pts: _____ # of DGSs: _____	26 # of ICU pts: _____ # of DGSs: _____	27 # of ICU pts: _____ # of DGSs: _____	28 # of ICU pts: _____ # of DGSs: _____
29 # of ICU pts: _____ # of DGSs: _____	30 # of ICU pts: _____ # of DGSs: _____					Key Intensive Care Unit (ICU) Patients (pts) Daily Goals Sheets (DSGs)

Appendix U

St. Luke's University Health Network Site Approval

St Luke's

Hospital
1872 St. Luke's Boulevard
Easton, PA 18045

Medical Office Building
1700 St. Luke's Boulevard
Easton, PA 18045

Cancer Center
1600 St. Luke's Boulevard
Easton, PA 18045

484-503-3000

Letter of Agreement

07/02/2015

To Regis University Institutional Review Board (IRB):

I am familiar with Kelly Diehl's research project entitled Improving Communication and Collaboration between Disciplines: Utilization of a Daily Goals Sheet during Multidisciplinary Rounds in the Critical Care Setting. I understand St. Luke's University Health Network's involvement to be allowing the participation of advanced practitioners and registered nurses in the critical care setting to participate in daily multidisciplinary rounds with the use of a Daily Goals Sheet to complete surveys and demographic sheets, and to complete a Daily Goals Sheet, as well as to provide archival data reports in the time surrounding the research project.

I understand that this research will be carried out following sound ethical principles and that participant involvement in this research project is strictly voluntary and provides confidentiality of research data, as described in the proposal.

Therefore, as a representative of St. Luke's University Health Network, I agree that Kelly Diehl's research project may be conducted at our agency/institution.

Sincerely,

Darla Frack, RN, MSN

Darla Frack, RN, MSN, NE-BC, CMSRN
Vice President, Patient Care Services
St. Luke's University Health Network,
484-503-0203

My Health. My Hospital.℠

Appendix V

CITI Training Certificates

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COURSEWORK REQUIREMENTS REPORT*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Kelly Diehl (ID: 4654639)
- **Email:** kdiehl001@regis.edu
- **Institution Affiliation:** Regis University (ID: 745)
- **Institution Unit:** Nursing

- **Curriculum Group:** Human Research
- **Course Learner Group:** Social Behavioral Research Investigators and Key Personnel
- **Stage:** Stage 1 - Basic Course

- **Report ID:** 15192513
- **Completion Date:** 02/02/2015
- **Expiration Date:** 02/01/2018
- **Minimum Passing:** 80
- **Reported Score*:** 100

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED
Belmont Report and CITI Course Introduction	02/02/15
History and Ethical Principles - SBE	02/02/15
The Federal Regulations - SBE	02/02/15
Assessing Risk - SBE	02/02/15
Informed Consent - SBE	02/02/15
Privacy and Confidentiality - SBE	02/02/15
Regis University	02/02/15

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

CITI Program
Email: citisupport@miami.edu
Phone: 305-243-7970
Web: https://www.citiprogram.org

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

COURSEWORK TRANSCRIPT REPORT**

** NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Kelly Diehl (ID: 4654639)
- **Email:** kdiehl001@regis.edu
- **Institution Affiliation:** Regis University (ID: 745)
- **Institution Unit:** Nursing

- **Curriculum Group:** Human Research
- **Course Learner Group:** Social Behavioral Research Investigators and Key Personnel
- **Stage:** Stage 1 - Basic Course

- **Report ID:** 15192513
- **Report Date:** 02/02/2015
- **Current Score**:** 100

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT
History and Ethical Principles - SBE	02/02/15
Belmont Report and CITI Course Introduction	02/02/15
The Federal Regulations - SBE	02/02/15
Assessing Risk - SBE	02/02/15
Informed Consent - SBE	02/02/15
Privacy and Confidentiality - SBE	02/02/15
Regis University	02/02/15

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

CITI Program
Email: citisupport@miami.edu
Phone: 305-243-7970
Web: https://www.citiprogram.org

Appendix W

Permission to Use and Modify the Daily Goals Sheet

From: Jamie Manfuso [jmanfuso@jhmi.edu]
Sent: Thursday, July 02, 2015 2:56 PM
To: Diehl, Kelly E
Subject: RE: ICU Goals Sheet

Hi Kelly,
We hereby give you permission to use the Johns Hopkins ICU Daily Goals Sheet in its original form, as well as to amend/edit it as necessary, for your research. Should any publications result from this work, we ask that you note that the tool was adapted from the Johns Hopkins ICU Daily Goals Sheet.
Thank you, and feel free to let us know how your research goes.
Best,

Jamie Manfuso
Marketing and Communications Manager
Armstrong Institute for Patient Safety and Quality
Johns Hopkins Medicine
jmanfuso@jhmi.edu
410-637-4372
www.hopkinsmedicine.org/armstrong_institute

From: Diehl, Kelly E [mailto:kdiehl001@regis.edu]
Sent: Thursday, July 02, 2015 2:22 PM
To: Jamie Manfuso
Subject: FW: ICU Goals Sheet

From: Diehl, Kelly E
Sent: Thursday, July 02, 2015 2:16 PM
To: jmanfuso@jhmi.edu
Subject: ICU Goals Sheet
Mr. Manfuso,

Thank you for talking with me today regarding the utilization of the Johns Hopkins ICU Daily Goals Sheet in my research with Regis University and St. Luke's University Health Network. I would like to use this tool for my research and edit/adapt it as necessary to meet the needs of my project. Could you please send me a letter or email confirming that I have permission to utilize the Johns Hopkins ICU Daily Goals Sheet in its original form, as well as to amend/edit it as necessary, for my research? Thank you so much for your assistance. It is greatly appreciated.

Kelly E. Diehl, MSN, ACNP-BC, CCRN
Regis University/St. Luke's University Health Network
610-568-4142

Appendix X

Permission to Use and Modify the Collaborative Practice Assessment Tool

From: Anne O'Riordan [ao3@queensu.ca]
Sent: Thursday, June 04, 2015 5:05 PM
To: Diehl, Kelly E
Subject: RE: CPAT

Hi Kelly,
The authors cannot guarantee validity if the tool is altered however you can use individual questions that you feel would best suit your project. In this case, you would cite the original tool and authors and indicate that you have adapted it. The composite scores of the teams who complete it can still be used for pre and post comparisons and plans for professional development of areas the teams feel are most challenging.
I hope this is helpful. Attached is the additional document as promised:
*CPAT
*Introduction
*Optional Demographics Page
*Scoring Guide
Best regards,
Anne

-----Original Message-----
From: Diehl, Kelly E [mailto:kdiehl001@regis.edu]
Sent: June-04-15 2:36 PM
To: Anne O'Riordan
Subject: RE: CPAT

Anne,

Thank you so much for your assistance. The completed form is attached to this email. I do have one question. I read on the form that the tool is intended to be used in its complete manner, as altering it will not guarantee its validity. Will I still have permission to use an altered version if necessary, or is this not possible? Thank you.

Kelly Diehl

From: Anne O'Riordan [ao3@queensu.ca]
Sent: Thursday, June 04, 2015 8:20 AM
To: Diehl, Kelly E
Subject: RE: CPAT

Hello Kelly,
We would be very pleased to share the CPAT with you and encourage its use in your research. We are maintaining a database of requests we receive with the hope of future research and possible revision if warranted by feedback. Once I receive your User Information Form, I will send the CPAT and some additional materials.
Best regards,
Anne

Anne O'Riordan
Clinical Educator, Office of Interprofessional Education & Practice Lecturer, School of Rehabilitation Therapy Queen's University

-----Original Message-----
From: Diehl, Kelly E [mailto:kdiehl001@regis.edu]
Sent: June-03-15 2:20 PM
To: Anne O'Riordan
Subject: CPAT

Hello,

I am emailing because I am a doctoral nursing student at Regis University and I am conducting my research related to communication and collaboration in the critical care setting. I found your survey tool to be very relevant to my research goals, and I am looking to obtain permission to possibly use your resources and CPAT, either in part (edited) or in whole, in my research. Can you further assist me in this endeavor? If not, can you please direct me to the appropriate person or department? Thank you so much for your time and assistance.

Kelly Diehl, MSN, ACNP-BC