# INTERPROFESSIONAL BEDSIDE ROUNDS TO IMPROVE PATIENT PERCEPTION OF HEALTHCARE TEAM COMMUNICATION

by

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# ABSTRACT

STAR AUSTIN-CONNOLLY. Interprofessional bedside rounds to improve patient perception of healthcare team communication. (Under the direction of DR. KELLY POWERS)

To improve patient outcomes, there is an increased emphasis on patient-centeredness and effective communication among the patient and healthcare team. Patients complete the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey once discharged from the hospital to measure perceptions of the hospital experience; including communication of the nurse and doctor. The purpose of this quality improvement project was to examine if implementing interprofessional bedside rounds (IBR) improved adult medical surgical patients' perceptions of healthcare team communication, which was measured using HCAHPS scores. In addition, HCAHPS scores were used to assess the impact of hiring nurse practitioners (NP) and the Interprofessional Collaborative Competency Attainment Scale (ICCAS) was used to examine team members' perceptions of collaboration abilities. ANOVA was used to detect significant changes in nurse and doctor HCAHPS communication scores from baseline in 2016, after NPs were hired in 2017, and post-IBR intervention in 2018. Average nurse scores improved from 2016 (79%) to 2017 (86%) to 2018 (90%) but these changes were not statistically significant ($p= 0.310$). Changes in average doctor scores were statistically significant ($p=0.040$) and scores improved from 2016 (69%) to 2017 (88%) and then slightly decreased in 2018 (85%). Scores on the ICCAS from pre- to

post-IBR intervention were evaluated using t-tests and there was a 29% improvement ($p=0.000$). Findings support NPs and IBR as two strategies that can help improve patient perceptions of communication and healthcare team members' perceptions of their collaboration abilities.

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# DEDICATION

This study is dedicated to my children Jaden Jenkins, Shauntiree Austin, Shelia Austin, and Treaquan Jenkins who have been my inspiration and the main purpose of my life. Thank you for your unconditional love, support, and encouragement. I strive for excellence because of all of you.

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| | |
|---|---|
| ADIET | Acknowledge, Introduce, Duration, Explanation, Thank you |
| AHRQ | Agency of healthcare Research & Quality |
| ANOVA | analysis of variance |
| CMS | Center for Medicare and Medicaid |
| CHF | congestive heart failure |
| COPD | chronic obstructive pulmonary disease |
| DVT | deep vein thrombosis |
| HCACPS | Hospital Consumer Assessment of Healthcare Providers |
| IBR | interprofessional bedside rounds |
| IRB | Institutional Review Board |
| ICCAS | Interprofessional Collaborative Competency Attainment Scale |
| IVR | interactive voice response |
| NP | nurse practitioner |
| PPACA | Protective and Affordable Act |
| RN | registered nurse |
| QI | quality improvement |

# Chapter 1: Introduction

It is estimated that 250,000 people die each year from medical errors, making it the third leading cause of death in the United States (Shojania & Dixon-Woods, 2017). Ineffective communication accounts for 66% of medical errors (Institute of Healthcare Communication, 2014). Furthermore, poor communication has been associated with poor patient outcomes and increased healthcare cost. The Institute of Medicine (2010) reported over $380 billion was wasted on healthcare due to poor communication and an additional $290 billion from nonadherence to medical treatment (Fung, 2012). More than half of the patients who report difficulties with medical treatment adherence report communication issues with their healthcare team (Bientzle, Fissler, Cress, & Kimmerle, 2016). Complex medical information, including health diagnosis, treatment management, and medications are given to patients daily. Because 77 million adults demonstrate basic or below basic health literacy competencies; nonadherence, misinterpretation, and dissatisfaction are inevitable without the appropriate communication from their healthcare team.

## 1.1 Background

Hospitalized patients are at an amplified risk for misinterpreting their health information due to the overwhelming amount of new information they receive, acute stress, and lack of knowledge about the disease process. Communication problems with the healthcare team has the potential to leave patients feeling disenfranchised from their own healthcare and discouraged about self-management of their chronic diseases

(Benham-Hutchins, Staggers, Maker, Johnson, & deBronkart, 2017). Moreover, these patients are then discharged from the hospital and expected to continue with self-management. Evidence shows only 40 percent of discharged patients 65-years or older could explain the reason for their hospitalization and 54 percent could not accurately recall instructions about their follow-up appointment (Horwitz et al., 2017). Communication between the healthcare team and patients needs to be transformed to enhance the quality of healthcare and reduce cost.

The increased emphasis on improving healthcare team communication is improving patient-centered practices, including patient engagement and shared-decision making. While patient-centered care has been linked to improved communication and patient engagement, a recent study showed that physicians often misjudge patients' desire for information, needs, and level of understanding causing a gap in the quality of healthcare (Parker, Clayton, & Hancock, 2007). Patient-centered care is supported by good healthcare team communication that addresses the patient's needs and promotes participation in their own care, and this then results in better patient understanding of their health (Agency of Healthcare Research and Quality [AHRQ], 2017). Interprofessional bedside rounds (IBR) are an intervention that can foster an environment that encourages patient-centered care and heightens communication with the patient, both leading to improved patient satisfaction with their healthcare.

In 2014, the Center for Medicare and Medicaid Services (CMS), partnered with the AHRQ to establish a survey to measure patients' experience while hospitalized. This

survey is known as Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). The HCAHPS is a 32-question survey measuring patient perception of their recent hospital stay and it encompasses ten key aspects, with communication the focus of four of these key aspects (CMS, 2017). The survey purpose is to measure perceptions rather than satisfaction. Specifically, the goal of HCAHPS is to measure the patient's perspectives of the quality of care, provide incentives to hospitals to improve the quality of care by publicly reporting the data, and enhance accountability (CMS, 2014). This data is collected monthly and published quarterly for the public. In 2012, the Patient Protection and Affordable Care Act (PPACA) started including HCAHPS performance in the calculation of the value-based incentive payments that are issued to hospitals (CMS, 2014) and the HCAHPS account for 30% of the reimbursement (Jordan, White, Joseph, & Carr, 2005). Currently, CMS withholds 2% of reimbursement on hospitals' inpatient payments. This money can be earned back if the hospital meets the national benchmark for HCAHPS scores; however, the money is withheld if the hospital is penalized for being below the benchmark standards. The national benchmark for HCAHPS scores are set from the median ($50^{th}$ percentile) of all facilities nationwide that participate and receives reimbursement from CMS. This directly affects reimbursement for the provider in regard to Medicare and Medicaid patients. Although HCAHPS is a volunteer survey, hospitals that do not participate with the HCAHPS survey do not receive full reimbursement from CMS.

## 1.2 Problem Statement

Quality improvement measures such as nurse to nurse bedside report and rounds, the Acknowledge, Introduce, Duration, Explanation, Thank you (ADIET) format, and bedside communication boards have been implemented at the project facility to help improve communication between the nurses and patients. These measures resulted in improvements in patients' perception of nurse communication. Yet, in 2015 the project facility was one of the 16 hospitals in South Carolina that was penalized for HCAHPS scores, causing a loss in revenue. HCAHPS scores were still failing for the project facility's medical surgical unit in 2016. At this time, HCAHPS scores were above the state and national average for nurse communication, however physician to patient communication HCAHPS measures had the lowest scores in the facility. The HCAHPS questions "how often did doctors listen carefully to you" and "how often did doctors explain things in a way you could understand" were at 76-78%, which was below the national average of 82% (CMS, 2017). In 2017, the patient population at the project facility consisted of 61.4% Medicare and 8.2% Medicaid patients (CMS, 2017). Thus, more than half the facility's reimbursement was being affected by HCAHPS scores. Interestingly, there are no HCAHPS items that specifically measure communication with nurse practitioners (NP). Therefore, it is unclear if patients completing the HCAHPS are including communication with NPs in the items focused on nurses or the items focused on physicians. It is essential to identify interventions that can improve patients' perceptions of communication with the entire healthcare team, and because NPs work

closely with both physicians and nurses, they are uniquely positioned to implement projects involving the entire healthcare team. Although, patients' perceptions are currently positive for nursing communication, there is always room for improvement. Moreover, patients' perception of physician communication needs to be amplified.

The patient population at the project facility largely consists of patients with acute medical illnesses and exacerbations of chronic illnesses. Chronic illnesses consist of diseases such as Chronic Obstructive Pulmonary Disease (COPD), Congestive Heart Failure (CHF), hypertension, and diabetes mellitus. Research shows that only 50% of patients with chronic illnesses such as these are adherent to their treatment regimen (Hamine et al., 2015). Self-management and adherence for these chronic diseases are crucial to prevent exacerbation of the disease and readmission to the hospital. Good communication with the healthcare team impacts adherence to treatment regimens, improves self-management, and incorporates a feeling of support and care (Al-Amin, Makaram, & Canose, 2016; Osch, Dulem, Vliet, & Bensing, 2017). According to the AHRQ (2014), 3.3 million adults in the United States are readmitted to the hospital in less than 30 days, causing 41.3 billion in healthcare cost. As CMS does not reimburse hospitals for 30-day readmissions, the ramifications for readmissions can further impact the costs to the project facility.

The project facility's medical surgical unit is a 20-bed unit that is managed by the hospitalist group. There is one physician and one NP that collaborate to manage the patients on the unit. The NP manages 10-12 patients, with the physician overseeing all

the patients on the unit. Prior to implementation of this project, communication consisted of a daily table top meeting with an interprofessional team to discuss patients' plans of care. This interprofessional team consists of the physician, NP, charge nurse, pharmacist, physical therapist, dietician, palliative care specialist, and case manager. This process would appear to be very effective; with all the professional individuals involved, but a critical component was missing, which was the patient. To improve healthcare team communication with patients, an increased emphasis on patient engagement is imperative.

## 1.3 Purpose of the Project

There have been different approaches to improve communication between providers and patients. Evidence has shown that patients' perception of their care is unswervingly affected by the healthcare team communication. Good communication correlates with increased patient satisfaction, improved safety, enhanced self-management, and better healthcare outcomes. The healthcare team, including the physician, NP, and nurse are the first line of direct communication with patients and how this communication occurs can impact the patients' perceptions of their care. A patient-centered focus to communication using interprofessional bedside rounds is vital to improve patients' perceptions of the healthcare team's communication, which can improve satisfaction and hospital reimbursement, as well as patients 'quality of life. The purpose of this DNP project was to examine if implementing IBR can improve adult medical surgical patients' perceptions of healthcare team communication as measured

with HCAHPS scores. The secondary aims of this project were to examine the impact that hiring NPs had on the medical surgical unit's HCAHPS scores and to examine the impact of starting the IBR intervention on the medical surgical unit's healthcare team's perceptions of their collaboration abilities.

### 1.4 Clinical Question

The question that guided the primary aim of this project was: In adult medical surgical patients (P), do IBR (I) versus rounds conducted away from the bedside without the patient presence (C) improve the patient perception of healthcare team communication (O)?

### 1.5 Project Objectives

The primary objectives of this DNP project were to: (1) design and implement a process for IBR that included patient involvement and (2) evaluate HCAHPS scores pre- and post-implementation of the IBR intervention for changes in patients' perception of healthcare team communication. The secondary aims were to: (1) evaluate HCAHPS scores pre- and post-hiring of NPs on the project unit for changes in patients' perception of healthcare team communication and (2) determine if the IBR intervention improved healthcare team member's perceptions of their collaboration abilities.

# Chapter 2: Literature Review

A rigorous search of various systematic reviews, randomized controlled trials, and qualitative and quantitative studies was conducted using the Cumulative Index for Nursing and Allied Health, Scopus, Cochrane Library, and Google Scholar. The search terms used were: *physician-patient communication, communication and patient satisfaction, physician-nurse bedside rounds, nurse practitioner roles with interprofessional team, shared-decision making, interprofessional rounds, interdisciplinary rounds, and intentional rounds*. The inclusion criteria were current information published within the last 7 years, and studies involving adult patients age 18 years old or older. The search resulted in several research articles to include in this review of literature.

There have been different approaches to improve communication with providers and patients. Evidence has shown that the patient's perception is inevitably affected by the healthcare team communication. Furthermore, communication correlates with increased patient satisfaction, increased safety, enhanced self-management, and better healthcare outcomes. The healthcare team including the physician, NP, and nurse, are the first line of direct communication and that communication can impact the patient's perception. Research has shown that IBR can foster an environment that will encourage patient-centered care and heighten communication with the patient.

## 2.1 Research Focused on Nurse Practitioners

To explore perceptions of the value of NP role, Hurlock-Chorostecki et al. (2013) did a supplementary analysis of 30 hospital focus groups, including 210 volunteers who worked with NPs in acute care settings within nine academic and community hospitals. The focus groups consisted of all interprofessional team members, including nurses and physicians. A constructivist grounded methodology was used, and re-usability was assessed using determinants of accessibility, quality, and suitability. The volunteers were interviewed and asked to describe their experiences working with NPs. Findings suggest that members of the interprofessional team perceive NPs as easing the work-load, holding patient care together, and evolving practice (Hurlock-Chorostecki et al., 2013). In the study, holding patient care together consisted of improving communication with the patient and the family. Further findings suggested that NPs communicate on a level of understanding with the patient, resolve concerns, reduce frustrations, and address issues in a timely manner (Hurlock-Chorostecki et al., 2013). This study makes clear the vital role that NPs have in patient communication and care.

An additional qualitative descriptive study included 89 health professional participants (5 were NPs) to assess how interprofessional teamwork practice was enacted (Kvarnstrom, Jangland, & Dahlgren, 2017). Observations were made during a range of structured and unstructured interactions between team members, including 60 interprofessional rounds. The observations took place at four hospital sites consecutively over a six-month time range totaling up to 170-hours. Findings revealed that the NPs

provided high-grade knowledge that helped support registered nurses with clinical problems when encountered, bridged roles in the team by taking autonomous positions that were traditionally attributed to either nurses or physicians, and enhanced communication with the team and patients to improve quality and care flow (Kvarnstrom et al., 2017).

Research has also been conducted to explore patients' perceptions of NPs. In a descriptive study with N=49 patient participants recruited using purposeful sampling over a course of eight-months, it was found that participants believed the healthcare team was more effective and communication was improved once NPs were implemented within the healthcare team (Kilpatrick, Jabbour, & Fortin, 2016). Bowling semi-structured interviews were conducted and participants were asked to describe the care they received from their healthcare team and how NPs influenced decisions about their care. The participants felt NPs made a positive difference with communication, involvement in decision-making, cohesion, care coordination, problem-solving, and focusing on the needs of patients and families (Kilpatrick et al., 2016). These findings demonstrate NPs have a vital role in the interprofessional team, and patients value their involvement.

### 2.2 Research Focused on Physicians

Monash et al. (2017) conducted a randomized control study to examine the effects of bedside rounding on patient satisfaction with their providers. A five-point Likert scale survey was used to measure patient satisfaction. The study consisted of 1200 patients, with 595 that received bedside rounds and 605 who did not receive bedside rounds. One

hundred forty-six (24.5%) patients in the intervention group and 141 (23.3%) patients in the control arm completed the surveys. The patients who received bedside rounds reported significantly higher satisfaction (4.49 vs 4.25; P = 0.01) and felt that their providers cared more (4.54 vs 4.36; P= 0.03) (Monash et al., 2017). In addition, the time to complete rounds was lessened by eight minutes when conducted at the bedside (143 vs 151 minutes; P = 0.052) (Monash et al., 2017). The study further found that use of a patient-centered model can be implemented to increase patient satisfaction and perception of their providers.

Additional research has supported the use of physician bedside rounds because they have the potential to positively affect communication and patient perceptions, but better understanding of this process is needed to improve safety and satisfaction (Burns, 2011). In this pilot study, nurses and physicians agreed the quality of care and communication was improved with bedside rounds, but only 30% of the staff participated due to time constraints. Despite this, there was still an increase in patient satisfaction with physician communication from 40% to 66% during the pilot study (Burns, 2011). These findings support how including physicians in bedside rounds can enhance satisfaction but demonstrate the need for careful planning to encourage staff involvement.

Research has also shown that physician communication can affect anxiety, mood, satisfaction, and patient outcomes. A 2x2 randomized control design study was conducted and consisted of N=323 participants that viewed four video simulations of medical consultations with positive-affect communication which included empathy vs

negative communication that was cold and formal (Osch et al., 2016). The study showed significant statistical differences with positive physician-affect communication, including reduced anxiety ($p<0.001$), reduced negative moods ($p=0.001$), increased satisfaction ($p<0.001$), increased feelings of self-efficacy ($p<0.001$), and improved outcome expectancies ($p<0.001$), (Osch et al., 2016). It was therefore concluded that positive physician communication could impact patient outcomes and satisfaction.

### 2.3 Research Focused on Nurses

According to Burns (2011), nurses can bridge the gap of communication between the patient and physician. In addition, involving nurses in bedside rounds will help nurses learn about the plan for the hospital course to be better able to help reinforce the plan with the patient when needed. Good communication between the nurse and physician has been shown to improve patient perceptions and patient outcomes by reducing errors and nosocomial infections (Henkin et al, 2016). The literature shows that when communication is valued by the whole team, it improves patient satisfaction, staff satisfaction, and reduces errors.

Recently, a quality improvement project was conducted to incorporate nurses into the daily bedside rounds on four general medical surgical units. A Safety Attitudes Questionnaire survey was used to assess team members' perceptions of the impact of bedside rounds on physician and nurse communication. It was found that 64% of nurses, 79% of resident physicians, and 94% of attending physicians felt that it was not difficult to speak when they found a problem with the patient's care ($P=0.02$) (Henkin, et al.,

2016). Another finding revealed that 62% of resident physicians and 82% of attending physicians respected the nurses' input (P=0.01) (Henkin et al, 2016). The study found that interprofessional rounds improved the team work between team members. In addition, the face-to-face communication with the interprofessional team during bedside rounds improved the perception of the teamwork.

Another pilot study surveyed the attitudes of the nursing staff at a tertiary community hospital to explore the nursing staff attitudes before and after IBR with the hospitalist. The study consisted of collaborative rounds including the hospitalist, bedside nurse, patient and their family to discuss the patient's condition and plan of care (Sharma & Klocke, 2014). There were N=90 nurses who completed a five-question survey with a follow up survey 4-months later that included questions on rounding, communication skills, work-flow involvement and job satisfaction. Nursing staff satisfaction related to communication with the hospitalist providers significantly improved (7% to 54%, $p<0.001$), as did satisfaction with rounding (3% to 49%, $p<0.001$), (Sharma & Klocke, 2014). In addition, patient-centered rounding positively impacted nursing workflow (5% to 56%, $p<0.001$), nurses' perceptions of value as a team member (26% to 56%, $p=0.018$) and their job satisfaction (43% to 59%, $p=0.010$), (Sharma & Klocke, 2014). This study showed how accessibility and face-to-face communication can help improve interprofessional communication and magnifies a team-based approach to improve the quality of patient care. In addition, the study found that improved communication from the interprofessional rounds prevented medication errors and timely removal of

indwelling catheters escalated. Furthermore, this study shows how interprofessional rounds can improve communication with the healthcare team and improve staff satisfaction which can positively influence the patient's perception of the healthcare team's communication.

### 2.4 Research Focused on Interprofessional Bedside Rounds

Burdick, Kara, Ebright, and Meek (2017) conducted a descriptive study to evaluate patient perceptions of IBR. The interprofessional team consisted of a hospitalist, pharmacist, bedside registered nurse, and unit nursing coordinator. The study only consisted of 35 patients, who were all cared for by the same hospitalist. Individual patient interviews for 10-15 minutes were conducted, which focused on the rounding process, clinical information, and impact of the rounding. The study lacked generalizability due to the small sample size, however it revealed that the patients had positive perceptions related to empathy and teamwork from their providers (Burdick et al., 2017).

An additional pilot study on physician and nurse bedside rounds supported these findings (Pritts & Hiller, 2014). In this study, the Press Ganey survey was analyzed with a specific focus on the healthcare team. Results demonstrated that patients perceived a higher level of teamwork during their hospital stay with a 5.2% improvement in scores from baseline to 1 year (Pritts & Hiller, 2014). It was concluded that the collaborative approach that was implemented with the rounds made the patients feel valued, increasing their satisfaction.

Previous literature has shown a gap in the research on IBR and there is a need for additional studies. However, statistically significant improvements in patient perceptions of communication with their healthcare team have been noted. Interventions that improve communication have been shown to improve the quality of healthcare by increasing provider efficiency, reducing errors, and improving patient perceptions of care. Overall, these studies demonstrate that a collaborative approach between the healthcare team and the patient can improve patient perceptions of healthcare team communication. Studies findings indicate that IBR is an intervention that is capable of improving patients' perceptions of communication.

## 2.5 Evidence-Based Practice Model and Conceptual Framework

The Stetler Model of Evidenced-Based Practice and Patient-Family-Centered Care Framework were used to guide the creation and implementation of this project's IBR intervention. This model and framework have been shown to transform healthcare, while improving patient outcomes. Both have components that focus on patient care and quality improvement, which were vital to help make the project successful.

The Stetler Model of Evidence-Based Practice was created in 1970 and it has been used frequently for quality improvement projects employing research utilization (McEwen & Wills, 2014). It is a five-phase model that was adopted by practicing nurses and is useful at the bedside. The five phases include preparation, validation, comparative evaluation, translation, and application into practice (McEwen & Wills, 2014). This systematic approach was used as the framework for implementing research evidence

about IBR into clinical practice. Each phase (or step) of this model considers the clinical situation prior to using the research evidence in clinical practice. Improving patient outcomes and enhancing professional practice are the main goals of this model and its step-wise approach ensured analysis, evaluation, and readjustments were done throughout the project in an effort to secure sustainability of the IBR.

Additionally, for the IBR to be successful, it was important for the patients and families to be active participants. Involving patients and families is essential for healthcare quality and safety (Johnson & Abraham, 2012). The Patient-Family-Centered Care Framework is based on a mutual partnership between providers, patients, and families. The core concepts are dignity and respect, information sharing, participation, and collaboration; which leads to better outcomes, improved patient and family experience of care, provider and nurse satisfaction, and better decision making (Johnson & Abraham, 2012). Creation and implementation of the IBR intervention was guided by this framework. The intervention aimed to give the patients the opportunity to participate in their plan of care, ask questions, and review safety issues. Involving the patient while rounding empowers the patient and keeps them engaged in their care, while redefining healthcare through collaboration.

# Chapter 3: Methods

## 3.1 Project Design

This quality improvement (QI) project used a quasi-experimental design, and pre- and post-intervention data was collected to evaluate the effect of implementing IBR on patient perception of healthcare team communication. A quasi-experimental design was also used to accomplish the secondary aims which were to evaluate the impact of hiring NPs to the project unit on patient perception of healthcare team communication and to evaluate self-reported changes in interprofessional collaboration competencies among healthcare team members who participated in the IBR.

## 3.2 Setting

This QI project occurred on a 20-bed medical surgical unit that is in a 172-bed, non-profit hospital in Charleston, South Carolina. The QI project coordinator was employed as a hospitalist NP on this unit. The hospitalist service specializes in caring for patients that are admitted to the hospital from the time of admission until they are discharged. For the project unit, the hospitalist service consists of one attending physician and one NP; there are no resident physicians currently part of this service. This service replaces the primary care physician as overseer of patient care while they are hospitalized. The project unit was designated for adult medical surgical hospitalist patients that are not requiring step-down or intensive care.

### 3:3 Sample

A convenience sample of patients admitted to the project unit during the time of the QI project was evaluated. Inclusion criteria were adult patients age 18-years old and older, non-psychiatric admitting diagnosis, admitted to the project unit for at least one-night hospital stay, and completion of the voluntary HCAHPS survey administered by the project facility upon discharge. Patients admitted to other units, transferred from other units, not admitted under the hospitalist service, or those that expired during the admission were excluded. Members of the interprofessional team who participated in the IBR were asked to complete voluntary surveys to describe their self-reported changes in interprofessional collaboration competencies to identify further educational needs and promote sustainment of the bedside rounds following project completion.

### 3.4 Intervention

The project intervention began July 2018 and involved the nurse, charge nurse, NP, and physician meeting at the unit's nursing station at 0930 every morning to start the IBR. At this time, a brief huddle occurred to prioritize which patients needed to be seen by the team first. A Bedside Rounds Checklist was created by the QI project coordinator and it was provided to each team member to review and use as a guide for participating in the IBR (See Appendix A). The Bedside Rounds Checklist was used to structure the rounds and included the items: each team member was introduced, nurse reported on events throughout the night and current patient status, discussion of patient status and review of the plan of care by the physician and NP with inclusion of nurse and

patient/family input, patient issues and concerns were addressed, and safety checks occurred. To ensure patient safety while IBR were transpiring, the charge nurse took over the care of the nurse's other patients.

Additionally, on admission each patient was informed about the IBR to encourage patient/family participation.

After the initial huddle meeting, the healthcare team entered each patient's room, introduced each member of the healthcare team, informed them of the purpose of the bedside rounding, asked permission to do the bedside rounds, and asked the patient if they wanted to include their family (if present) during the rounds or have them step out of the room. The physician or NP provided the patient with a clear explanation of their condition and plan of care including diagnostic test and laboratory results. The nurse discussed events within the last 24-hours, laboratory results, medications, treatment regimen, physical therapy, nutrition, pain, and potential discharge plans. The nurse and patient participated in the discussion of the plan of care and assisted with decision making. The patient was specifically encouraged to ask questions concerning their plan of care. Education on new medications, necessity, and side effects was provided by members of the rounding interprofessional team. A tentative discharge date was discussed, and patient concerns were addressed. Last, a safety check was done including deep vein thrombosis (DVT) prophylactics and checking the necessity for urinary catheters, central lines, and telemetry if being used. Upon conclusion of the IBR intervention, the patient was asked if they have any other concerns or questions, and then

thanked for their participation. The patient was informed that if they have any questions later, they can request an individual meeting with the physician, NP, and/or nurse. The team repeated this same process with each patient on the unit.

3.5 Measures and Tools

**Patient perceptions of communication.** To measure patient perception of the healthcare team's communication, data from the project unit's HCAHPS survey results from pre-intervention (August-October 2017) and following implementation of the QI project (August-October 2018) was monitored and analyzed. The project began in July 2018 and thus, results from this month were not included in analysis to ensure post-intervention results were actually surveys completed by patients who experienced the IBR. The decision to utilize HCAHPS survey data from the same months of the year prior was made because patient acuity and census varies depending upon the time of the year. Further, the time of the year can impact the unit staff composition because of new staff joining the unit after graduating nursing school. Therefore, pre-intervention HCAHPS scores for August-October 2017 were compared to post-intervention HCAHPS scores for August-October 2018. Additionally, HCAHPS scores for August-October 2016 were collected because this time period was prior to the hiring of NPs to the project unit, which occurred in June 2017. This data allowed for comparisons to evaluate if hiring NPs impacted HCAHPS scores.

The HCAHPS results related to communication were evaluated as part of this QI project. These specific six HCAHPS questions analyzed for this project included the

following: “how often doctors listened carefully to you”, “how often doctors explained things in a way you could understand”, “how often doctors treated you with courtesy and respect”, “how often nurses listened carefully to you”, “how often nurses treated you with courtesy and respect”, and “how often nurses explained things in a way you could understand” (See Appendix B). These HCAHPS questions are measured using a 5-point Likert scale, asking patients to respond with always, usually, sometimes, never, or do not know. The percentage of “always” responses were evaluated for significant changes.

The HCAHPS results are reported monthly to the project unit and are expressed as the percentage of patients that responded “always” out of all patients who responded to the survey during that month. The HCAHPS survey is administered to all hospitalized patients between 48 hours and 6 weeks after discharge by a third-party survey vendor. It is a voluntary survey, and discharged patients can elect not to complete it. The HCAHPS survey is available in four different modes including mail only, telephone only, mail with telephone follow-up (also known as Mixed mode), and Active Interactive Voice Response (IVR) (CMS, 2017). The survey vendor for the project unit primarily uses the IVR method for the project facility. Once the aggregate data for the unit is collected by the survey vendor, the scores are submitted to the unit manager weekly. The unit manager provides a copy of the unit’s cumulative scores for each HCAHPS question each month in the form of amount of the response “always” to the survey questions versus the total number of patients who competed the voluntary survey. The HCAHPS survey has

been supported as a valid and reliable measurement tool in multiple studies (Al-min, 2016; Elliott et al., 2009; Jha, Joynt, Orav, & Epstein, 2012).

**Healthcare team collaborative competencies.** A secondary aim of this QI project was to evaluate the self-reported changes in interprofessional collaboration competencies of the participating members of the interprofessional team to shape ongoing and future efforts related to the IBR intervention. The Interprofessional Collaborative Competency Attainment Scale (ICCAS) was used to evaluate self-reported changes in interprofessional collaboration competencies (see Appendix C). The ICCAS is a validated 21-item self-report instrument designed to assess perception associated with competencies for patient-centered, team-based, collaborative care (Schmitz et al., 2017). It is administered post-intervention but collects self-report data about interprofessional competencies before and after an intervention. It uses a Likert scale asking participants to rate their collaborative competencies as poor=1, fair=2, good=3, very good=4, or excellent=5. Question 21 asks participants if their ability to collaborate interprofessionally is much better now=1, somewhat better now=2, about the same=3, somewhat worse now=4, or much worse now=5. Completion of this ICCAS survey was voluntary and members of the interprofessional team were emailed the ICCAS survey link (survey administered via secure platform Qualtrics©) in October 2018. The ICCAS is available open access from National Center for Interprofessional Practice and Education (2016).

## 3.6 Data Collection Procedures

**Pre-intervention procedures.** Prior to starting the IBR, the pre-intervention data of HCAHPS scores was collected from the unit nurse manager retrospectively for the August-October time period for the two previous years (2016 & 2017). The unit staff including the hospitalist physicians, manager, NPs, and nurses were educated on the new process of the IBR through staff meetings and emails. The education included information on the healthcare team huddle and the new checklist for the bedside rounds, as well as the data collection plan (HCAHPS scores and the ICCAS survey). In addition, the Bedside Rounds Checklist was provided for review through the staffing emails and handouts posted on the unit's bulletin board. The education, emails, and posting of handouts occurred one month before the QI project was implemented.

**Intervention procedures.** Following institutional review board (IRB) approvals**,** the IBR began July 2018 and continued until October 2018. The IBR occurred each morning during this period of time as previously described.

**Post-intervention procedures.** Post-intervention data of HCAHPS scores were collected during the entire time the QI project was executed (from July to October 2018); however, scores for July 2018 were excluded from data analysis to ensure HCAHPS surveys were completed by patients who actually experienced the IBR intervention that began in July 2018. The HCAHPS scores were provided by the unit's manager each month. The data from the HCAHPS scores was stored on an excel spreadsheet on a password protected computer, and only the QI project coordinator had access. In

addition, the link to the ICCAS survey on Qualtrics© was provided to members of the interprofessional team via email in October 2018 after the IBR intervention was completed. These results were transferred to and stored on an excel spreadsheet without personal identifying information. Once the QI project was complete, data was transferred to SAS 9.4 for analysis.

### 3.7 Data Analysis

The QI project coordinator inputted the data from the HCAHPS survey results into an excel worksheet in an ongoing manner. Following completion of data collection, Microsoft Excel and SAS 9.4 were utilized for all data analyses. The HCAHPS data were analyzed for 2016, 2017, and 2018 separately for each HCAHPS item and as an aggregate of all items. Results for each HCAHPS item related to communication were presented using descriptive statistics. Average rates for improvement in nurse, physician, and overall provider communication from a patient perspective were calculated and described by month and year and compared with single factor ANOVA analysis. The confidence interval was set at 95% and p-value $<0.05$ was considered significant in the analysis. Finally, census data for 2018 were utilized to identify the rate of patients that completed the HCAHPS survey for the time during the post-intervention year.

Data from the ICCAS (individual item means and total scale scores) were transferred to an excel worksheet upon survey closure and SAS 9.4 was used for data analysis. The individual item means and total scale scores were first presented using

descriptive statistics. To evaluate for statistically significant changes, t-tests were used with p-value <0.05 considered significant in the analysis.

3.8 Ethical Considerations

Protocols for obtaining exemptions for QI project from the IRBs of both the project hospital site and the QI project coordinator's university were sought and granted (See Appendix D). The HCAHPS surveys were monitored at the project facility each month, with results shared with the unit's staff, clinical manager, hospitalist service, and senior nurse vice president. The aggregated data of the hospital's overall HCAHPS scores are publicly displayed quarterly on the CMS website. To ensure comparability, hospitals may not switch the type of sampling, mode of survey administration, or survey vendor within a calendar quarter (CMS, 2017). In addition, the HCAHPS results are provided monthly in the form of aggregate data and individual scores and responses are not provided to the unit or hospital. Furthermore, no identifying patient information is collected as part of the HCAHPS survey. It is voluntarily completed and returned to the survey vendor who reports the results to the project facility. The QI coordinator obtained copies of these aggregate HCAHPS results and did not collect any data from individual patients.

For the interprofessional team member surveys (the ICCAS) to evaluate self-reported changes in their interprofessional collaboration competencies, no identifying data was collected from participants and completion of the surveys was voluntary. The survey was administered via the secure platform Qualtrics© and a link to the survey was

emailed to the healthcare team on the project unit. Qualtrics© is password protected and only the QI coordinator had the password to access to the survey results. A request for a waiver of informed consent for these participants was sought and granted by the IRBs as there was minimal risk associated with providing input related to this QI project. Data obtained in this project was stored on a password protected computer and destroyed after the project was completed.

# Chapter 4: Project Results

## 4.1 HCAHPS Completion Rates Post-Intervention

The HCAHPS survey is administered by a third-party vendor, and the completion rate was obtained from the quality control administrator for the project unit from August-October 2018. During these intervention months, 233 out of 248 (93.9%) eligible patients were offered the survey and 55 (23.6%) completed the survey. In August 2018, 13 out of 84 eligible patients (15%) completed the HCAHPS survey. Of the 84 eligible patients, 14 (17%) were off service and 2 (2%) declined rounds. In September 2018, 20 out of 77 eligible patients (26%) completed the survey. Of the 77 eligible patients, 19 (25%) were off service and one (<1%) declined rounds. In October 2018, 18 out of 87 eligible patients (21%) completed the survey. Of the 87 eligible patients, 2 (2%) were off service and none of the patients declined the rounds. The patients that were off service (9.6%) and declined the rounds (<1%) did not receive the rounding intervention, however; were still eligible to complete the survey and it is unknown if they participated in the HCAHPS survey.

## 4.2 HCAHPS Results for Bedside Rounds Intervention

After the evaluation of descriptive statistics, single factor ANOVA was utilized to identify if there was a statistically significant difference between the HCAHPS average scores of all domains for nurse and doctor communication for the months of August to October from 2016 (pre-intervention) to 2017 (NPs hired and pre-intervention) to 2018 (post-intervention). In each analysis, the average HCAHPS scores for communication

under the domains of respect, listen, and explain domains were included. The confidence interval was set at 95% and alpha was set at 0.05.

Average scores per year for each item on the HCAHPS are displayed in Table 1. As previously described, HCAHPS scores are expressed as the percentage of patients that responded "always" out of all patients who responded to the survey during that month. Scores for "how often nurses treated you with courtesy and respect" (Nurse Respect) increased at all three timepoints starting at 90% in 2016 and ending at 96% in 2018. Scores for "how often nurses listened carefully to you" (Nurse Listen) also increased at all three timepoints starting at 76% in 2016 and ending at 89% in 2018. Finally, scores for "how often nurses explained things in a way you could understand" (Nurse Explain) also increased at all three timepoints starting at 77% in 2016 and ending at 84% in 2018. Scores for all three of these items combined increased from 79% in 2016 to 86% in 2017 to 90% in 2018. Figure 1 displays the nurse HCAHPS scores by year for each item and for the 3 items combined.

Average scores for physician communication are also presented in Table 1. Scores for "how often doctors treated you with courtesy and respect" (Doctor Respect) increased from 77% in 2016 to 93% in 2017, but dropped to 89% in 2018. Scores for "how often doctors listened carefully to you" (Doctor Listen) increased from 75% in 2016 to 85% in 2017, but again dropped in 2018 to 84%. Finally, scores for "how often doctors explained things in a way you could understand" (Doctor Explain) also increased from 56% in 2016 to 86% in 2017 but ended at 84% in 2018. Scores for all three of these

items combined increased from 69% in 2016 to 88% in 2017, but then dropped to 85% in 2018. Figure 2 displays the doctor HCAHPS scores by year for each item and for the 3 items combined. Scores for all three items for the doctor and nurse combined increased from 74% in 2016 to 87% in 2017 to 88% in 2018.

Table 1: HCAHPS communication nurse and doctor scores 2016-2018.

| *HCAHPS Nurse & Doctor Communication Scores* | | | |
|---|---|---|---|
| HCAHPS | 2016 | 2017 | 2018 |
| Nurse respect | 90 | 92 | 96 |
| Nurse listen | 76 | 88 | 89 |
| Nurse explain | 73 | 79 | 84 |
| Nurse average | 79 | 86 | 90 |
| Doctor respect | 77 | 93 | 89 |
| Doctor listen | 75 | 85 | 84 |
| Doctor explain | 56 | 86 | 84 |
| Doctor average | 69 | 88 | 85 |
| Nurse & doctor average | 74 | 87 | 88 |

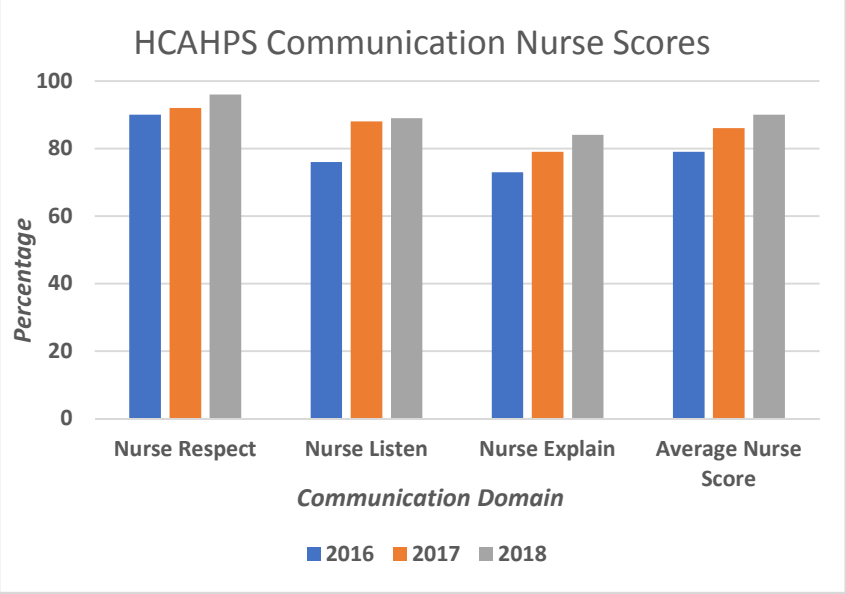


Figure 1. HCAHPS communication nurse scores for 2016-2018.

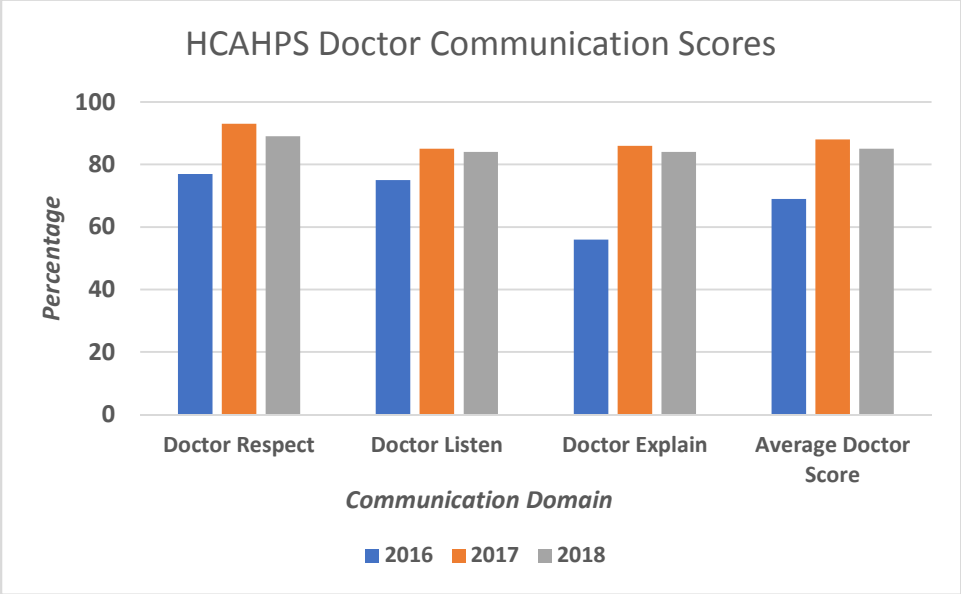


Figure 2. HCAHPS communication doctor scores for 2016-2018.

Although the average nurse scores improved from 2016 (79%) to 2017 (86%) to 2018 (90%), there were no statistically significant differences detected between any sets of the years (F=1.431, p=0.310). The 4% increase in nurse HCAHPS scores from pre-intervention 2017 (86%) to post-intervention 2018 (90%) was not statistically significant (F=0.413, p=0.555). Nurse HCAHPS scores from 2016 (79%) to 2018 (90%) demonstrated a larger improvement at 11%, which almost reached statistical significance (F=5.303, p=0.061). See Table 2 for changes in nurse HCAHPS scores.

Table 2: Changes in nurse HCAHPS scores.

| *Changes Nurse HCAHPS scores pre & post intervention* | | |
|---|---|---|
| Years | Percent Change | p-value |
| 2016 (pre-intervention) to 2018 (post-intervention) | +11% | 0.061 |
| 2017 (pre-intervention) to 2018 (post-intervention) | +4% | 0.555 |

The average doctor scores also improved from 2016 (69%) to 2017 (88%) with a slight decrease in 2018 (85%). A statistically significant difference among these years was noted (F=5.759, p=0.040). The average doctor HCAHPS score improved 16% from 2016 (69%) to 2018 (85%), but this improvement was not found to be statistically significant (F=5.610, p= 0.077). From 2017 to 2018, average doctor scores decreased from 88% to 85%, which was also nonsignificant (F=0.598, p=0.483). See Table 3 for changes in doctor HCAHPS scores.

Table 3: Changes in doctor HCAHPS scores.

| *Doctor HCAHPS Scores Pre-to- Post Intervention* | | |
|---|---|---|
| Years | Percent Change | p value |
| 2016 (pre-intervention) to 2018 (post-intervention) | +16% | 0.077 |
| 2017 (pre-intervention) to 2018 (post-intervention) | -3% | 0.483 |

4.3 HCAHPS Results for Hiring Nurse Practitioners

The analysis showed an improvement with nurse and doctor HCAHPS scores after NPs were hired on the project medical-surgical unit in 2017. From 2016 (pre-NPs) to 2017 (post-NPs) there was an improvement in the nurse average HCAHPS score from 79% to 86%. However, this 7% increase was not statistically significant (F=1.053, p=0.363). The average doctor HCAHPS score from 2016 to 2017 improved from 69% to 88%. Although this 19% change was a remarkable increase, it was close to but did not reach statistical significance (F=6.817, p=0.059). See Table 4 for changes in nurse and doctor HCAHPS scores following the hiring of NPs to the unit.

Table 4: Changes in HCAHPS scores when nurse practitioners hired to unit.

| *Changes HCAHPS scores after hiring nurse practitioners* | | |
|---|---|---|
| Years | Percent Change | p value |
| 2016 to 2017 (nurse) | +7% | 0.363 |
| 2016 to 2017 (doctor) | +19% | 0.059 |

4.4 ICCAS Results Post-Intervention

Nineteen out of fifty-three healthcare team members (35.8%) completed the ICCAS survey to compare perceived ability to collaborate interprofessionally from the time before IBR began on the unit to post-intervention. The survey was sent to unit physicians, RN, licensed practical nurses, patient care technicians, and unit secretary. After data collection ended, t-tests were utilized to identify if there was a statistically significant difference in mean item scores and for total scale mean score from pre- to post-intervention. For each of the 20 items on the ICCAS, healthcare team perspectives of interprofessional collaboration improved from pre to post intervention, with mean scores on all items demonstrating a statistically significant improvement. See Table 5 for mean pre- and post-intervention ICCAS scores for each item and for the overall scale. Overall ICCAS score from pre- to post-intervention improved from a mean of 3.47 to 4.46, which was a 29% improvement. This improvement was statistically significant ($p=0.000$).

Table 5: ICCAS results pre- to post-intervention.

| *ICCAS Results Pre-to Post-Intervention* | | | |
|---|---|---|---|
| ICCAS Item | Pre-Intervention Mean | Post-Intervention Mean | p-value |
| Promote effective communication among members of an interprofessional (IP) team | 3.26 | 4.42 | 0.0000* |
| Actively listen to IP team members' ideas and concerns | 3.37 | 4.52 | 0.00000* |
| Express my ideas and concerns without being judgmental | 3.74 | 4.21 | 0.02* |
| Provide constructive feedback to IP team members | 3.47 | 4.21 | 0.002* |
| Express my ideas and concerns in a clear, concise manner | 3.58 | 4.32 | 0.002* |
| Seek out IP team members to address issues | 3.42 | 4.47 | 0.0009* |
| Work effectively with IP team members to enhance care | 3.32 | 4.74 | 0.0000* |
| Learn with, from and about IP team members to enhance care | 3.05 | 4.42 | 0.0000* |
| Identify and describe my abilities and contributions to the IP team | 3.58 | 4.42 | 0.0006* |
| Be accountable for my contributions to the IP team | 3.89 | 4.37 | 0.04* |
| Understand the abilities and contributions of IP team members | 3.89 | 4.42 | 0.01* |
| Recognize how others' skills and knowledge complement and overlap with my own | 3.84 | 4.53 | 0.003* |
| Use an IP team approach with the patient to assess the health | 3.42 | 4.68 | 0.0000* |
| Use an IP team approach with the patient to provide whole person care | 3.32 | 4.58 | 0.0000* |
| Include the patient/family in decision-making | 3.47 | 4.37 | 0.0008* |
| Actively listen to the perspectives of IP team members | 3.47 | 4.58 | 0.002* |
| Take into account the ideas of IP team members | 3.37 | 4.63 | 0.0001* |
| Address team conflict in a respectful manner | 3.32 | 4.37 | 0.0001* |
| Develop an effective care plan with IP team members | 3.26 | 4.53 | 0.0000* |

| | | | |
|---|---|---|---|
| Negotiate responsibilities within overlapping scopes of practice | 3.32 | 4.32 | 0.005* |
| Overall Mean Score | 3.47 | 4.46 | 0.0000* |
| Notes. *indicates statistically significant change with p value significant <0.05 | | | |

Finally, item 21 on the ICCAS asked participants if their ability to collaborate interprofessionally is much better now=1, somewhat better now=2, about the same=3, somewhat worse now=4, or much worse now=5. Results showed 13 out of 19 (69%) responding healthcare team members indicated they are much better now at collaborating interprofessionally, while 5 out of 19 (26%) healthcare team members indicated they are somewhat better now at collaborating interprofessionally. One out of 19 (5%) healthcare team members indicated they are about the same at collaborating interprofessionally and no healthcare team members indicated they are somewhat or much worse now. See Figure 3 for ICCAS item 21 results.

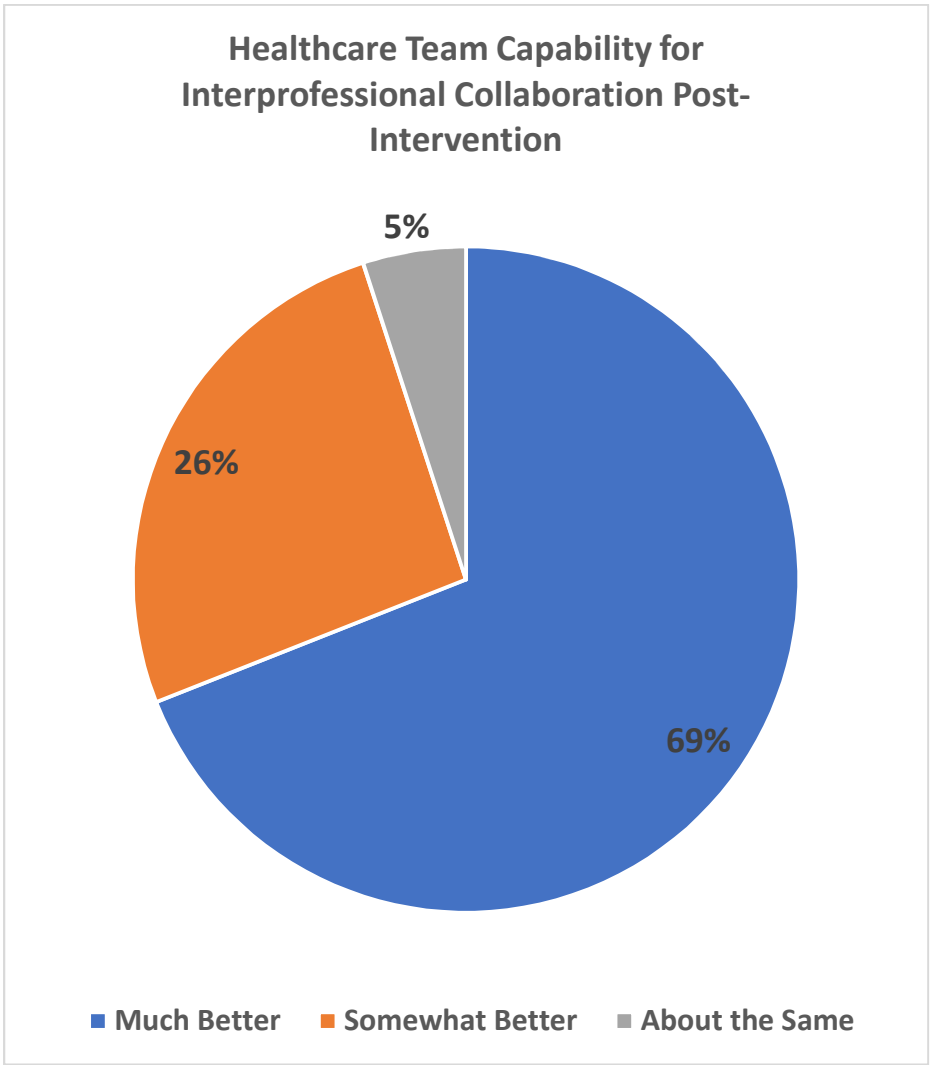


Figure 3. ICCAS item 21 results

# Chapter 5: Significance and Implications

## 5.1 Interpretation of the Results

**HCAHPS results.** The results of this QI project showed HCAHPS nurse communication scores for all three items, which included respect, listen, and explain improved after adding NPs to clinical practice and again after the IBR intervention was implemented. However, the increase in scores from 2016 (pre-NPs and pre-intervention) to 2017 (post-NPs and pre-intervention) and from 2017 (post-NPs and pre-intervention) to 2018 (post-NPs and post-intervention) were not found to be statistically significant. On the 3 nurse items, there was an increase of 2-6% from 2016 to 2017 and then an increase of 1-5% from 2017 to 2018. The average of these 3 items increased from 79% to 86% to end at 90%. This demonstrates that although the improvements were not statistically significant, patient perception of nurse communication did improve after adding nurse practitioners to the unit and then increased further after adding IBR.

Results for HCAHPS doctor communication scores for all three items, which included respect, listen, and explain improved after adding NPs to clinical practice but then all 3 decreased after the IBR intervention was implemented. The score increases from 2016 (pre-NPs and pre-intervention) to 2017 (post-NPs and pre-intervention) were not statistically significant, and the score decreases from 2017 (post-NPs and pre-intervention) to 2018 (post-NPs and post-intervention) were also not statistically significant. Overall, the average for the 3 items measuring doctor communication increased from 69% in 2016 to 88% in 2017, but then decreased in 2018 to 85%. This

demonstrates that patient perception of doctor communication was greatly improved after adding NPs to the unit. It also demonstrates that adding IBR did not effectively improve patient perception of doctor communication.

The HCAHPS survey does not have a specific item to measure the communication of NPs. Therefore, it may be that patients measure the NP as the nurse or doctor on the HCAHPS survey, or that they do not measure NPs at all. There were improvements with HCAHPS scores for nurse and doctor communication after NPs were hired to the project unit, with the biggest improvement being noted for doctor scores. The 2016 average score for doctor communication was well below the national benchmark at 69%. This trended up above the national benchmark to 88% once NPs were added to their team in 2017, with the 19% score increase almost reaching statistical significance ($p=0.059$). It has been shown that NPs communicate with patients at their level of understanding and patients are more satisfied due to the timely manner in which their questions are answered (Hurlock-Chorostecki et al., 2013). NPs also connect with family members, providing information on the plan of care and this makes care more patient-centered. In addition, it has been found that patients are more satisfied with the healthcare team's care when NPs are part of that team because patients believe the care is more comprehensive (Kilpatrick, Jabbour, & Fortin, 2016). Furthermore, studies have found that NPs relieve all team members' workloads and close gaps, enhancing the quality of care (Hurlock-Chorostecki et al., 2013; Kilpatrick, Jabbour, & Fortin, 2016). It is possible that the improvement in doctor communication HCAHPS scores after NPs

were hired to the unit was in part due to lessened doctor workloads or better overall team functioning, or that the improved scores were due to patients including NP communication in their HCAHPS survey answers to doctor communication items.

The IBR intervention particularly focused on ensuring all team members were present to be able to thoroughly explain the plan of care to the patient. Thus, findings related to the Nurse Explain and Doctor Explain items are of particular importance. The "nurse explain" item improved from 73% to 79% after NPs started working on the unit and then improved to 84% post-intervention. During the bedside rounds and then on the unit, NPs were readily available to address patients' questions, update family members, and follow through with the care plans which could explain the upward trend noted for the Nurse Explain item for three possible reasons: patients received better explanations during the IBR intervention, nurses had more time to explain care to patients both on rounds and throughout the day, and/or patients included NP explanations when responding to the Nurse Explain HCAHPS item. In addition, NP availability for explanations may have contributed to the noticeable improvement in the Doctor Explain item which went from 56% in 2016 to 86% in 2017 after NPs started on the unit. This is supported by previous studies that demonstrated NPs can make a positive difference with patient satisfaction regarding communication and can enhance communication with patients by being readily available, following through with care plans, and connecting with family members- all of which takes the workload off of nurses and doctors (Hurlock-Chorostecki et al., 2013; Kilpatrick et al., 2016; Kvarnstrom et al., 2017). The

Nurse Explain scores continued to trend up after IBR were implemented which provided an opportunity for the nurses to engage more with the patients while allowing the patients to see how the nurses interact with the healthcare team. The 2% decrease noted for the Doctor Explain item following the start of the bedside rounds was not significant and this score may have decreased in part due low participation rates for the HCAHPS survey.

After NPs were hired on the unit, HCAPHS scores for 5 of the 6 communication items, which included Nurse Respect and Listen and Doctor Respect, Listen, and Explain, trended up and exceeded the national marker of 82%. Next, all 6 HCAHPS items were above the national benchmark of 82% after IBR began on the project unit. This demonstrates not only the importance of an interprofessional team that includes NPs and includes the patient in team communications, but it has financial implications related to Medicare and Medicaid reimbursement. Up to 30% of reimbursement is entwined with HCAHPS scores that measure the patient perception of their hospital experience (CMS, 2017); therefore, it is essential to implement interventions capable of improving and sustaining HCAHPS scores to ensure they are above the national benchmark of 82%. Furthermore, top performing hospitals usually attain more revenue by attracting more patients to their facility through their reputation for quality of care and patient perception of their experiences. Based on this project's findings, implementing best practices, which includes employing NPs and conducting IBR, can help improve patient perception and reimbursement. Although the findings of this project did not reach statistical significance, there were noticeable improvements in HCAHPS scores that corresponded

to the hiring of NPs to the unit and to implementing IBR. These improvements may not have reached statistical significance due to the low number of patients who completed the HCAHPS survey and therefore, further research and projects are important.

**ICCAS results.** The ICCAS survey demonstrated improvement in the participating healthcare team members' perspectives of their interprofessional collaboration competencies post-intervention. Effective collaboration improves the delivery of quality healthcare and enhances patient safety which will improve the patient experience in the hospital. The ability to collaborate with others on the healthcare team improves communication and reduces medical errors (Shojania & Dixon-Woods, 2017). The ICCAS measured self-reported interprofessional competencies, such as the ability to provide constructive feedback to other team members, before and after the IBR began on the project unit. Project findings demonstrated statistically significant improvements for all ICCAS items and for the overall mean ICCAS score ($p<0.0000$). There were statistically significant improvements post-intervention for all six domains of the ICCAS. Items 1 to 5 focused on communication, 6 to 8 focused on collaboration, 9 to 12 focused on role and responsibilities, 13 to 15 focused on collaborative patient/family-centered approach, 16 to 18 focused on conflict management/resolution, and 19 to 20 focused on team functioning. Improvements in communication items included "promote effective communication among members of an interprofessional (IP) team" ($p<0.0000$), "express my ideas and concerns in a clear, concise manner" ($p<0.0002$), and "work effectively with IP team members to enhance care" ($p<0.0009$). This signifies that team members

felt their ability to communicate with interprofessional team members improved. IBR can foster an environment of respect and trust between the healthcare team so the team can collaborate effectively with each other and with patients/family members (Henkin et al., 2016). Improvements in items: "use an IP team approach with the patient to assess the health" ($p<0.0000$), "use an IP team approach with the patient to provide whole person care" ($p<0.0000$), and "include the patient/family in decision-making" ($p<0.0008$) demonstrate that team members felt their capabilities to encourage a patient-centered environment also improved.

The majority of responding healthcare team members, which included physicians, NPs, RNs, licensed practical nurses, patient care technicians, and unit secretary, felt their ability to collaborate was much better (69%) than it was prior to the start of the IBR. None of the participants felt their ability to collaborate was somewhat worse or worse. These findings show the impact that IBR can have on team members' perceived ability to collaborate and how the rounds can help to foster a collaborative environment. It has been shown that the ability to collaborate interprofessionally can result in decreased rates of medication errors and increased rates of timely urinary catheter removal (Sharma & Klocke, 2014); therefore, improving healthcare team members' ability to collaborate can have positive implications related to patient safety.

## 5.2 Limitations

The use of the HCAHPS survey to measure patient perceptions of communication was a limitation of this QI project. There are possibilities of bias and skewed results

because the HCAHPS could be affected by different circumstances. For example, a patient could have a negative or positive view of events from their hospitalization that have nothing to do with communication and this could bias the results. Additionally, perception of specialty providers that were consulted to assist with patient management could also be reflected on HCAHPS scores impacting the results. Another limitation was the low response rate to the HCAHPS survey. Post-intervention, 233 out of 248 (93.9%) eligible patients were offered the HCAHPS survey but only 55 (23.6%) completed it. The small sample size limited generalizability for the project. The project was conducted over a short time frame with post-intervention HCAHPS scores monitored for 3 months and this also limited the sample size. Furthermore, there was no way to ensure that the healthcare team was compliant with implementing the IBR daily or using the bedside checklist. The QI project lead was present for many of the days in which the bedside rounds were conducted, but was not present on all days due to unit scheduling. The small number of team members who completed the entire ICCAS survey was another project limitation. The ICCAS was emailed to 53 healthcare team members on the unit, but only 19 (35.8%) completed the survey.

## 5.3 Implications

This QI project did not show a statistically significant difference in HCAHPS scores with the hiring of NPs and implementation of IBR, however the findings do demonstrate clinical significance. HCAHPS score increased for both nurse and doctor communication after NPs were hired to the unit. Post-intervention, the HCAHPS scores

for nurse communication increased further. After the IBR began on the project unit, the scores for all 6 HCAHPS items were noted to be above the national benchmark of 82%. This supports earlier studies that showed actively engaging patients with their healthcare team can improve the patient's perception and satisfaction (Burdick et al., 2017; Johnson & Abraham, 2012; Pritts & Hiller, 2014). As good communication can impact patient adherence to treatment regimens and self-management abilities (Al-Amin et al., 2016; Osch et al., 2017), findings of this project have potential implications related to improved patient outcomes. Further, by raising HCAHPS scores above the national benchmark, another clinical implication is cost savings for the project facility.

Whether including IBR and/or NPs are the strategies being used, patient outcomes are likely to improve with both interventions. These strategies encourage patients and family members to participate, ask questions, and be thoroughly educated about their plan of care, medications, side effects, and safety. Effective communication is vital and both IBR and inclusion of NPs provide the opportunity for better communication among the patient and healthcare team through a focus on patient-centeredness. Use of strategies that promote effective patient-centered care can improve the quality of care and the healthcare team's collaboration competencies. Improving collaboration is essential to delivering quality care, decreasing hospital length of stay, and ensuring patient safety (Burdick et al., 2017). Adding NPs to a hospitalist program and implementing IBR are efficient and affordable strategies to deliver quality healthcare.

## 5.4 Recommendations for Future Projects

The QI project findings indicate gaps and thereby opportunities for future projects and research studies. First, the NP's role within the healthcare team and their impact on patient perceptions needs to be diligently examined in the hospital setting. The hiring of NPs made an obvious difference in doctor HCAHPS scores, with a smaller difference noted for nurse HCAHPS scores. This opens up questions related to how patients perceive the NP's role in the hospital setting. As more NPs are entering into the hospital setting, there is a need for research on this role and its effect on patient perceptions of communication. The HCAHPS does not include items to directly measure perceptions of NP communication and it is not known whether patients include NP communication under nurse HCAHPS items or doctor HCAHPS items. There is a need to explore whether HCAHPS communication scores would be more accurate if there were items specific to NPs or whether the items that state "doctor" should be changed to "healthcare provider" to adequately measure the patient's perception of NPs. Research on patient perceptions related to availability of unit-based NPs is important to help support the necessity of NPs and show their impact on patient perception.

The project sample size was small and the completion rate for the HCAHPS survey was low. Therefore, it is recommended for future projects and studies to obtain a larger sample size. Studies might also consider use of other measurement tools capable of assessing patient perception. Use of inpatient surveys (data collection during hospital stay) may promote a larger sample size. There have been some studies that found IBR

did not improve patients' perceptions; however, it is argued that IBR creates a patient-centered environment to promote engagement and safety to thereby improve the patient perception (Hurlock-Chorostecki et al., 2013; Kilpatrick, Jabbour, & Fortin, 2016; Kvarnstrom, Jangland, & Dahlgren, 2017; O'Leary et al, 2015). Further projects and research on IBR are needed to help close the gap in the evidence.

## 5.5 Summary

This QI project evaluated the effect of IBR on patient perception of healthcare team communication and provided the healthcare team an opportunity to improve interprofessional collaboration on a medical surgical unit. In addition, this project evaluated if the NP's role improved the patient perception of healthcare team communication. Promoting effective communication and patient-centered care are major goals for healthcare providers, hospitals, and insurance companies, with positive patient perceptions of communication via HCAHPS scores being essential for reimbursement. Results demonstrated improvement in patient perception of nurse and doctor communication after NPs were hired to the unit and IBR were implemented; however, changes were not statistically significant. Clinical significance was demonstrated because all 6 HCAHPS measures were higher than the national benchmark post-intervention. It was also found that the healthcare team members' perceived interprofessional collaboration competencies markedly improved post-intervention. It is recommended that medical surgical unit leadership and management should consider employing NPs and implementing IBR to help improve HCAHPS scores related to

healthcare team communication. These strategies should also be considered to help improve interprofessional collaboration competencies of staff working on inpatient medical surgical units.

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## Appendix A: Interprofessional Bedside Rounds Checklist

1. Introduction of each healthcare team member (name and role)
    a. Inform of bedside rounds purpose
2. Obtain patient permission to do the bedside rounds and ask if they want family present
3. Nurse led rounds
    a. Report of events throughout the night
    b. Laboratory results reviewed
    c. Diagnostic test results reviewed
    d. Current assessment, vital sign, and pain level reviewed
    e. Discharge anticipation and needs presented
4. Physician/Nurse practitioner-led discussion, involving nurse and patient/family input
    a. Patient prognosis
    b. Review of plan of care, seeking input from nurse and patient/family
    c. Education on new medications
    d. Tentative discharge date discussed
    e. Open for patient/family questions, inquire about issues and concerns and encourage participation in decision-making
5. Safety checklist
    a. Ensure DVT prophylactics

   b. Necessity of central lines
   c. Necessity of Foley catheter
   d. Necessity of telemetry

6. Ask patient if any other concerns or questions
   a. Thank patient for their participation
   a. Provide patient with instructions for asking additional questions at a later time

## Appendix B: Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Questions

Your Care from Nurses

1. During this hospital stay, how often did nurses treat you with courtesy and respect?
2. During this hospital stay, how often did nurses listen carefully to you?
3. During this hospital stay, how often did nurses explain things in a way you could understand?

Your Care from Doctors

1. During this hospital stay, how often did doctors treat you with courtesy and respect?
2. During this hospital stay, how often did doctors listen carefully to you?
3. During this hospital stay, how often did doctors explain things in a way you could understand?

## Appendix C: Interprofessional Collaborative Competency Attainment Scale (ICCAS) Items

1. Promote effective communication among members of an interprofessional (IP) team
2. Actively listen to IP team members' ideas and concerns
3. Express my ideas and concerns without being judgmental
4. Provide constructive feedback to IP team members
5. Express my ideas and concerns in a clear, concise manner
6. Seek out IP team members to address issues
7. Work effectively with IP team members to enhance care
8. Learn with, from and about IP team members to enhance care
9. Identify and describe my abilities and contributions to the IP team
10. Be accountable for my contributions to the IP team
11. Understand the abilities and contributions of IP team members
12. Recognize how others' skills and knowledge complement and overlap with my own
13. Use an IP team approach with the patient to assess the health situation
14. Use an IP team approach with the patient to provide whole person care
15. Include the patient/family in decision-making
16. Actively listen to the perspectives of IP team members
17. Take into account the ideas of IP team members
18. Address team conflict in a respectful manner
19. Develop an effective care plan with IP team members

20. Negotiate responsibilities within overlapping scopes of practice

21. Compared to the time before the learning activities, would you say your ability to collaborate interprofessionally

## Appendix D: Roper Saint Francis Hospital And UNC Charlotte IRB Approval Letters

Institutional Review Board
316 Calhoun Street
Charleston, S.C. 29401
(843) 724-2089 Phone
(843) 724-2100 Fax

DATE: June 6, 2018 TO: Star Austin-Connolly, MSN FROM: Roper-St. Francis Healthcare IRB PROJECT TITLE: [1245895-1] Interprofessional Bedside Rounds to Improve Patient Perception of Healthcare Team Communication REFERENCE #: SUBMISSION TYPE: New Project ACTION: DETERMINATION OF EXEMPT STATUS DECISION DATE: June 6, 2018 REVIEW CATEGORY: Exemption category Thank you for your submission of New Project materials for this project. The Roper-St. Francis Healthcare IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. We will retain a copy of this correspondence within our records. If you have any questions, please contact Kara Melin at (843) 724-2089 or kara.melin@rsfh.com. Please include your project title and reference number in all correspondence with this committee.

Sincerely,

George Geils, Jr., M.D. IRB Chairman

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Roper-St. Francis Healthcare IRB's records.

To: Star Austin-Connolly From: Office of Research Compliance

Date: 6/14/2018 RE: Notice of Approval of Exemption with No End Date Exemption

Category: 2.Survey, interview, public observation,4.Existing data, public or deidentified

Study #: 18-0177 Study

Title: Interprofessional Bedside Rounds to Improve Patient Perception of Healthcare Team Communication

This submission has been reviewed by the Office of Research Compliance and was determined to meet the Exempt category cited above under 45 CFR 46.101(b). This determination has no expiration or end date and is not subject to an annual continuing review. However, you are required to obtain IRB approval for all changes to any aspect of this study before they can be implemented. The Investigator Responsibilities listed below applies to this study only. Carefully review the Investigator Responsibilities.

Study Description:

Poor communication between the healthcare team and patient have been associated with poor patient outcomes and increased health care cost. There have been different approaches to improve communication and the patient perception of their healthcare team. Interprofessional bedside rounding is a method that has been proven to improve communication and patient satisfaction. The purpose of this DNP scholarly project is to evaluate if implementing interprofessional bedside rounds on a medical-surgical unit will improve the patient perception of their healthcare team's communication.

Your approved consent forms (if applicable) and other documents are available online at http://uncc.myresearchonline.org/irb/index.cfm?event=home.dashboard.irbStudyManagement&irb_id=18-0177. Investigator's Responsibilities: The above-cited determination has no expiration or end date and is not subject to annual continuing review.

However, the Principal Investigator needs to comply with the following responsibilities: Modifications must be submitted for review and approval before implementing the modification. This includes changes to study procedures, study materials, personnel, etc. 1. Data security procedures must follow procedures as approved in the protocol and in accordance with ITS Guidelines for Data Handling. 2. Promptly notify the IRB (uncc-irb@uncc.edu) of any adverse events or unanticipated risks to participants or others. 3. Complete the Closure eform via IRBIS once the study is complete. 4. Be aware that this study is now included in the Office of Research Compliance (ORC) Post-Review & Post-Approval Monitoring program and may be selected for post-review monitoring at some point in the future. 5. Reply to ORC post-review monitoring and administrative check-ins that will be conducted periodically to update ORC as to the status of the study. 6. Three years (3) following this Exemption determination, ORC will request a study status update (active/not active).

Please be aware that approval may still be required from other relevant authorities or "gatekeepers" (e.g., school principals, facility directors, custodians of records).

CC: Teresa Gaston, School of Nursing Kelly Powers, School of Nursing

Institutional Review Board