Improving Nurse Responsiveness through Advanced Call Bell Implementation & Hourly Rounding

by

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Dedication

I would like to dedicate this project to my wonderful leadership team & staff that have supported, encouraged, and helped me on this adventure in the last few years! I also dedicate this project to my daughter--- I hope that she sees it as an example for achieving all that she wants to do in life!

Abstract

The purpose of this quality improvement project was to determine if patient perceptions of staff responsiveness, as measured by the HCAHPS survey, are impacted by the implementation of an advanced call bell system and competency-based hourly rounding training of Registered Nurses and Unlicensed Assistive Personnel. The use of an advanced call bell system partnered with hourly rounding resulted in universal improvement of the HCAHPS responsiveness scores and overall response times on a surgical oncology and a medical unit. Strengths of this evidence-based quality improvement project include ease of translation to multiple care team members and healthcare environments, as well as ability to tailor competency scenarios to patient-specific populations.

Key words: Evidence-based practice (EBP); responsiveness; HCAHPS; call bell; technology; quality improvement; nursing; purposeful rounding

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Chapter One: Overview of the Problem of Interest

In the United States, responsiveness of healthcare providers, specifically nursing, has emerged as an area of focus due to the transition to value-based payment models for health care reimbursement. Acute care hospitals are closely monitoring and working to improve patient experience metrics as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. Therefore, a quality improvement initiative focusing on patient perceptions of nursing responsiveness as measured by the HCAHPS survey was undertaken. This chapter establishes the importance of heath care responsiveness in the acute care setting and provides and overview of the problem of interest.

Background Information

In 2013, value-based purchasing (VBP) was implemented to establish pay-for-performance models of reimbursement for Medicare/Medicaid patients based on four domains (Brooks, 2016). The Centers for Medicare and Medicaid Services (CMS; 2017) have identified the Patient and Caregiver-Centered Experience of Care/Care Coordination domain to hold a 25% weight in the VBP model. Through the utilization of the HCAHPS survey, patients are provided an opportunity to score their experiences based on communication with nurses and doctors, responsiveness of hospital staff, communication about medicines, hospital cleanliness and quietness, discharge information, care transitions, and their overall rating of the hospital (CMS, 2017). The literature establishes a correlation between the vulnerable hospitalized adult patient and their overall satisfaction with their patient experience based upon nursing and provider responsiveness (Brooks, 2016; Manary, Staelin, Kosel, Schulman, & Glickman, 2015; Mitchell, Lavenberg, Trotta, & Umscheid, 2014). Furthermore, the correlation of improved health

outcomes with increased HCAHPS scores in the area of responsiveness strengthen the importance of quality initiatives with a nurse responsiveness focus (Manary et al., 2015).

Responsiveness is evaluated post-discharge by patients and/or their caregivers completing the HCAHPS survey. With three focus questions as outlined in Table 1, an average responsiveness rate of hospital staff was calculated and compared against CMS benchmarks to determine pay-for-performance rates and publicly available data (CMS, 2017). The patient scoring in the area of responsiveness of hospital staff directly affects the weighted score in the area of Patient and Caregiver-Centered Experience of Care/Care Coordination domain, coupled with communication with providers, hospital environment, discharge information, and the overall rating of the hospital (CMS, 2017).

Table 1

HCAHPS Survey Questions to Evaluate Responsiveness of Hospital Staff

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it? □ Never □ Sometimes □ Usually □ Always □ I never pressed the call button
10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or using the bedpan? □ Yes □ No → If No, Go to Question 12
11. How often did you get help in getting to the bathroom or using a bedpan as soon as you wanted? □ Never □ Sometimes □ Usually □ Always

Note. Adapted from "HCAHPS Survey" by Hospital Consumer Assessment of Healthcare Providers and Systems, 2018a. Retrieved from http://www.hcahpsonline.org/globalassets

/hcahps/survey-instruments/mail/july-1-2018-and-forward-discharges/2018_survey-instruments_english_mail.pdf

Benchmarking of performance for pay in the VBP model is completed through the use of comparison of calendar year to the hospital baseline period versus the performance period in addition to comparison to other hospitals receiving payment from Medicare/ Medicaid patients (CMS, 2017). As noted in Table 2, four types of total performance points are awarded to calculate a Total Performance Score (TPS; CMS, 2017). The resultant TPS correlates to a value based payment to a hospital based on their performance in the Six Domains of Quality Measurement Data (CMS, 2017). A summery graphic of this process titled *Summary of Value-based Payment Benchmarking* is located in Appendix A.

Table 2

Summary of VBP Performance Scoring

Score Name	**Comparison Group**	**Definition**
Benchmark threshold	All hospitals	Points awarded to the top 10% of performing hospitals
Achievement threshold	All hospitals	Points awarded to the top 50% of performing hospitals
Improvement points	Performance period versus baseline period	Points awarded for improvement of hospital performance compared to baseline period
Consistency points	All hospitals	Points award for performance for scoring higher than the "Achievement threshold" on all HCAHPS dimensions

Note. Adapted from "Hospital Value Based Purchasing" by Centers for Medicare and Medicaid Services, 2018. Retrieved from https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-

Significance of Clinical Problem

Responsiveness of hospital staff to the patient or family initiated call bell is secondary to a patient having an unmet need (Tzeng, 2010). The cause of utilizing the call bell by the patient and or family is a communication method to engage with the nurse and care team, and responsiveness is the subsequent effect on the utilization of the call bell (Tzeng, 2010; Tzeng, Ronis, & Yin, 2012). The subsequent effect of responsiveness has been positively correlated with increased patient satisfaction, which found that call bells responded to in-person by a care team member within four minutes result in higher gains for patient satisfaction (Tzeng et al., 2012). In addition to increased patient satisfaction with increased responsiveness to call bell use, patient safety outcomes have been impacted. Specifically, patient falls with and without injury are reduced when patients are encouraged to use their call bell by the care team (Tzeng & Yin, 2009). Thrice, increased responsiveness to call bell utilization has been positively correlated with increased patient satisfaction with pain control (Nelson & Staffileno, 2017). The above correlations show the translational impact that responsiveness has on the remaining Six Domains of Quality Measurement metrics for VBP. The importance of the patient, nurse, and care team to engage in behaviors that support responsiveness translate into increased financial benefits through VBP, increased patient safety, and increased patient satisfaction.

The community based inpatient care facility at the center of this quality improvement initiative was a 186-bed facility that supported 9,560 inpatient stays during fiscal year (FY) 2017. This community facility is part of a larger, academic health system, and is Magnet ™ Certified and maintains Joint Commission accreditation. As seen in Figure 1, for FY 2017 through 2018, the entity target of average hospital responsiveness was set at 65.1%. Performance for those two FYs ranged from a peak of 66.3% in period-1 of FY 2017 to a low of 48.6% in

period-2 of FY 2017. When comparing the community based inpatient facility to state and national averages for responsiveness during the same periods, the project site falls below the state and national averages of 68% and 69%, respectively, with a score of 59% (CMS, 2018). The current performance of the community-based hospital in the foci of this quality improvement initiative continues to perform below entity, state, and national standards, which directly affects patient safety, VBP reimbursement, and patient satisfaction.

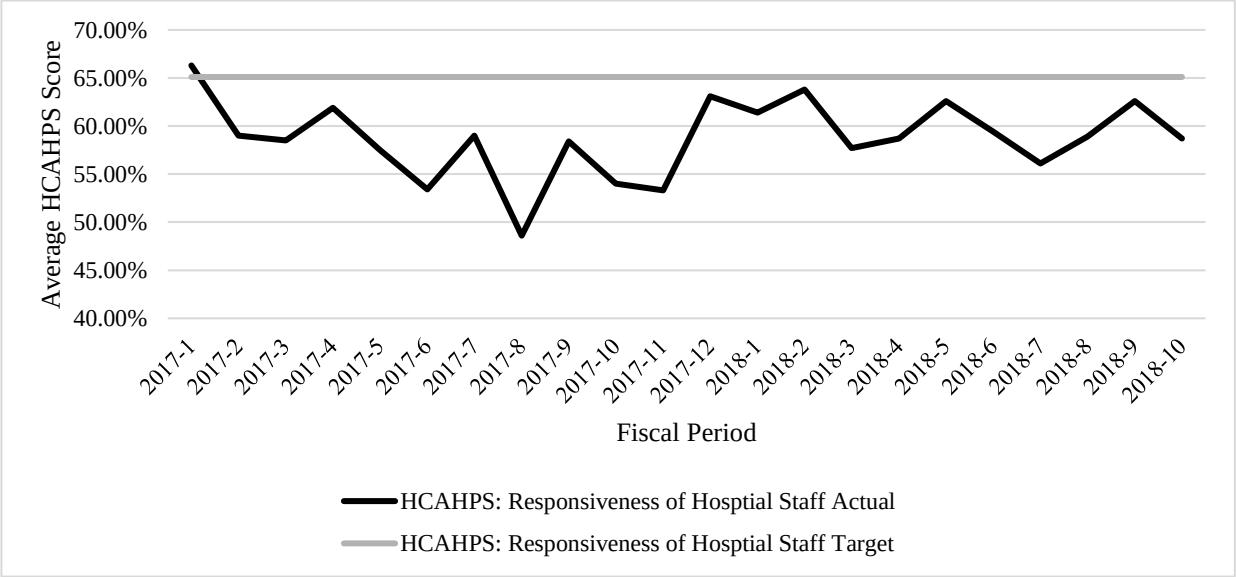


Figure 1. HCAHPS Entity Trends: Responsiveness of Hospital Staff. Run chart for average entity responsiveness score from FY 2017 period 1 through FY 2018, period 10.

Question Guiding Inquiry (PICO)

To assess the depth of the potential problem, the evidenced-based taxonomy of the PICO model was employed. As noted by Howe and Close (2016), the PICO model allows for organization of evidenced-based inquiries into the four areas of: (P) population; (I) intervention; (C) comparison; and (O) outcome. Through the application of the PICO model, the evidence-based question is framed to guide further inquiry towards evidence-based outcomes (Howe & Close, 2016). The use of evidence-based outcomes, as guided by evidence and clinician

experience, allows for implementation of solutions of the highest quality to impact a disease state or patient care environment (Howe & Close, 2016). Through the use of the PICO model for guiding evidence-based inquiry combined with clinician inquiry, the evidence-based inquiry this project examined asked; "*Will the Registered Nurses (RNs) and Unlicensed Assistive Personnel (UAP) team members (P) of the focus site benefit from implementation of an advanced call bell system and re-education on hourly rounding (I) increase patient satisfaction in the HCAHPS domain of responsiveness of hospital staff (O)?"*

Population. The targeted population was the adult RNs and UAP who work on four inpatient units at the targeted community-based hospital. The specialty care environments of these units include medical/surgical, oncology, telemetry, and orthopedic patient populations. These RNs have successfully completed inpatient-nursing orientation at this hospital as evidenced by a completed competency based orientation document. The UAP team members have successfully completed an inpatient UAP orientation under the direction and delegation of a RN as evidenced by a completed competency based orientation document.

Intervention. The intervention supporting this evidence-based practice (EBP) change project was implementation of an upgraded nurse call bell system that allowed the patient to communicate directly with staff at the time of pressing the call bell. Tzeng and Yin (2009) support the use of a call system that connects the patient with the nurse directly to meet patient needs. The call bell technology was complimented by the re-education of hourly rounding with the RNs and UAP. The combination of re-education of hourly rounding and an upgraded nurse call bell system made up the components of a Patient Experience Bundle. This re-education bundle improves patient satisfaction and perceptions of hospital responsiveness (Nelson & Staffileno, 2017).

Comparison. There was no comparison group for this project; rather, the pre- and post-implementation period response times and hospital HCAHPS for the responsiveness domain were evaluated. The HCAHPS survey is a national survey tool used by CMS for evaluation of the Six Domains of Quality Measurement (CMS, 2017). The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. Through the use of pre- and post- data, evaluation of outcomes was performed as outlined below to evaluate effectiveness.

Outcomes. The first defined outcome was to see a decrease in average response time from call to RN or UAP response for the comparison period. The second defined outcome was to see an increase in HCAHPS scores for each responsiveness question outlined in Table 1 within the responsiveness domain. These two outcomes were chosen due to the direct correlation between response time and improvement in overall patient satisfaction based on the patient perceptions of responsiveness (Nelson & Staffileno, 2017; Tzeng & Yin, 2009).

Summary

The importance of understanding the impact of responsiveness on clinical outcomes and patient satisfaction's impact on pay-for-performance reimbursement models is key to organizational health. The performance of a 186-bed community-based hospital has failed to meet entity targets over the last two FYs and continues to perform below the national and state averages. The opportunities for enhancement to directly impact responsiveness are ripe. In summation, the impact of a quality improvement initiative and installation of an upgraded call bell system focusing on perceived responsiveness as measured by the time from call to RN or

unlicensed assistive personnel response can positively affect HCAPHS survey results and improve the timely quality of care provided within the organization.

Chapter Two: Review of the Literature

In order to understand the concepts associated with this evidence-based project, a comprehensive literature review was undertaken to assess existing knowledge of responsiveness of hospital staff, patient rounding, Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey validity and reliability, nurse call systems, and patient satisfaction. This chapter explores the existing knowledge of the four aforementioned concepts, support the inter-rational nature these concepts have on one another, as well as provide operational definitions of these concepts relative to this project scope.

Methodology

A literature search for all concepts was undertaken originally to locate original research that supported all four concepts. However, searches of the Cumulative Index to Nursing and Allied Health Literature (CINAHL) revealed no search results that addressed all five areas. A re-design of the literature search to group the nurse-patient concepts of responsiveness, nurse rounding, and patient satisfaction with a separate searche for HCAHPS tool validity and nurse call systems was more fruitful for this project review.

Sampling strategies. As noted in Table 3, the topics reviewed returned a large number of search results, and varied inter-relation of topics. Through utilization of the East Carolina University Laupus Health Science Library CINAHL database, the search terms of “responsiveness”, “patient satisfaction”, “nurse call system”, and “patient rounds” returned a total of 38,184 results. When these four topics were combined, a total of zero results were available. A comprehensive search in the CINAHL database on HCAHPS survey validity returned 1,534 results.

Table 3

Concept Search Result Totals

	Responsiveness	Patient rounding	Patient satisfaction	Nurse call system	HCAHPS validity
Responsiveness	18, 702	102	287	10	197
Patient rounding	-	5,175	139	3	57
Patient Satisfaction	-	-	10,187	25	151
Nurse call system	-	-	-	111	0
HCAHPS Validity	-	-	-	-	1,534

Note. Above search result totals represent items available as of final search review on July 14, 2018 from the CINAHL database.

Evaluation criteria. Due to the high volume of search results for individual concepts, limitations were placed on literature for review. Evidence were limited to those in the English language publicized from January 2010 through June 2018. Further exclusion of literature was to include only study or review sites within the United States of America that addressed the inpatient setting for patients aged 18 years or older was employed. After all identified evidence was appraised, 16 studies were chosen and evidence to support the intervention of a Patient Satisfaction Bundle to improve HCAHPS scores in the responsiveness domain. The evidence is outlined in the literature matrix located in Appendix B.

Literature Review Findings

Studies discussed below represent the highest levels of research or are the most applicable to the scope and nature of this project. The areas explored include responsiveness, nurse-driven hourly rounding, patient satisfaction, nurse call systems, and HCAHPS survey validity. Based on the evidence outlined in the remainder of this chapter, the advantages of implementing a Patient Satisfaction Bundle outweigh the disadvantages for the patient. Support for this project is further enhanced by the reliability and validity of the HCAHPS survey as means for responsiveness measurement.

Responsiveness. Responsiveness is a term used throughout the literature with varying degrees of clarity, but with consistent ties back to patient experience. For the purpose of this evidence-based project, the concept of responsiveness was aligned with the utilization of the HCAHPS survey, which is randomly provided to patients after their hospital stay or medical site visit. Within HCAHPS, responsiveness of hospital staff falls under the domain of Patient and Caregiver-Centered Experience of Care/Care Coordination domain, which is coupled with communication with providers, hospital environment, discharge information, and the overall rating of the hospital (Centers for Medicare and Medicaid Services [CMS], 2017). With this in mind, responsiveness of hospital staff to the patient or family initiated call bell is secondary to a patient having an unmet need (Tzeng, 2010). The cause of utilizing the call bell by the patient and or family is a communication method to engage with the nurse and care team, and responsiveness is the subsequent effect on the utilization of the call bell (Tzeng, 2010; Tzeng, Ronis, & Yin, 2012). The subsequent effect of responsiveness has been positively correlated with increased patient satisfaction, which found that call bells responded to in-person by a care team member within four minutes result in higher gains for patient satisfaction (Tzeng et al., 2012). In

summation, responsiveness is a patient and/or family perspective on how well their unmet needs are responded to in a timely manner.

Nurse-driven hourly rounding. Unlike responsiveness, nurse-driven hourly rounding has a much more straight-forward conceptual definition in the literature. As the term suggests, hourly rounding is the process of nursing and/or unlicensed assistive personnel (UAP) engaging with patients at set intervals, usually hourly, to address any unmet patient needs and provide on-going communication with the patient outside of other therapeutic interventions (Mitchell, Trotta, Lavenberg, & Umscheid, 2014). Utilization of hourly rounding as a proactive approach to patient care helps reduce perceptions of helplessness, anxiety, and increase patient safety (Mitchell et al., 2014). Hourly rounding sounds task-driven for a nurse to complete, but it has ties that connect back to patient perceptions of responsiveness of hospital staff for the HCAHPS survey.

Multiple sources of evidence found a positive correlation in the literature of hourly rounding with increased patient satisfaction, decreased call bell utilization, decreased patient falls and pressure ulcers, positive perceptions of pain management, and decreased patient complaints (Bragg et al., 2016; Hutchinson, Higson, & Jackson, 2017; Mitchell et al., 2014; Sherrod, Brown, Vroom, & Sullivan, 2012). Subsequently, the impact on the aforementioned correlations associated with nurse-driven hourly rounding support decreased patient perceptions of anxiety and loss of control (Bragg et al., 2016). Additionally, nurse-driven hourly rounding that revolves around addressing the patient needs of pain control, potty/toileting, positioning and presence of the care team showed the greatest impact on HCAHPS overall scores (Mitchell et al., 2014). Furthermore, Brosey and March (2016) identify the strong correlation between presence

of nursing and nurse care to positively contribute to an overall higher hospital rating by the patient post-discharge.

Patient satisfaction. Patient satisfaction is a term that is often used interchangeably with patient experience, but these differ in application of the concepts. The concept of patient satisfaction has been evolving with the implementation of value-based purchasing (VBP) in healthcare, and high ratings of patient satisfaction are linked to high-quality care and outcomes (Evans, 2016). Patient satisfaction is how well a patient's expectations were met during their care, and focuses more broadly than patient experience, which evaluates how the care was delivered through the processes and operations of the facility (Agency for Healthcare Research and Quality [AHRQ], 2017). One of the greatest influencing factors for patient satisfaction is the nurse-patient interactions (Evans, 2016). Patients who scored a hospital higher on the overall rating of the facility are more likely to give higher ratings in the areas of communication with nurses and responsiveness of hospital staff (Kemp, McCormack, Chan, Santana, & Quan, 2015). Tzeng (2010) establishes the inverse relationship between nurse call light response time and patient satisfaction with overall perceptions of responsiveness. As discussed by Smith (2014), one of the most important elements of patient satisfaction is that the patient is the one who perceives the quality of the care, and the nurse often over-rates their overall patient satisfaction scores. However, the overall patient satisfaction is consistently rated higher in Magnet versus non-magnet facilities, which aligns with the improved patient outcomes seen in Magnet designated hospitals (Smith, 2014).

Nurse call system. The use of patient-nurse communication technology is supported in the evidence from the patient safety and patient satisfaction perspectives. When considering patient safety, nurse call systems have been shown to reduce falls, reduce hospital-acquired

pressure ulcers, and address the unmet needs of the patient (Galinato, Montie, & Titler, 2015: Sherrod et al., 2012; Tzeng 2010). The use of the nurse call bell impacts the overall patient satisfaction due to the patient-initiated communication of an unmet need, which allows the Registered Nurse (RN) or UAP to support the initiative shown by the patient to meet their needs (Lasiter, 2014). Furthermore, Montie et al., (2017) establish the evidence to support the use of the call bell as means to increased connectivity with a patients care team, which positively impacts their perceptions of patient experience and satisfaction. The use of a nurse call system to impact overall responsiveness is that the nurse call system becomes the tool for which patients can initiate communication with their care team, which impacts the patient and visitor perceptions of loss of control, quality of care, and communication with the care team members for concerns or unmet needs (Lasiter, 2014; Montie et al., 2017; Tzeng, 2010).

HCAHPS survey validity. High reliability and validity of the HCAHPS survey tool is evident in the literature and by the universal adoption of the tool by the CMS for hospital reimbursement in the VBP model. In the systematic review by Beattie, Murphy, Atherton, and Lauder (2015), the validity of 11 patient experience surveys was reviewed based on over 1,000 articles. The comprehensive review found that the HCAHPS survey provided the highest ratings of validity and reliability among the instruments reviewed (Beattie et al., 2015). The high validity and reliability of the HCAHPS tool is further supported by its wide adoption of use by 4,364 hospitals across the United States of America (CMS, 2018). With the use of the HCAHPS tool by the CMS to establish a hospital score for the Patient and Caregiver-Centered Experience of Care/Care Coordination domain of VBP model, it further supports the validity and reliability of the surveys ability to measure perceived quality of healthcare from the patient/care-giver perspective (Westbrook, Babakus, & Grant, 2014).

The use of the HCAHPS survey by hospitals across the United States and the average daily completion rate of 8,200 surveys has allowed for the survey to provide additional robust information for use (CMS, 2018). Mazurenko, Collum, Ferdinand, and Menachemi (2017) completed a comprehensive systematic review of the literature and found a high correlation of relationships between individual, hospital, and market predictions of HCAHPS scores around patient satisfaction. More interestingly, Kemp et al. (2015), found a Pearson's Correlation of 0.60, $p<0.001$, for the patient rating of communication with nurses and overall hospital rating. The ability of the literature to correlate and predict patient satisfaction based upon the HCAHPS domains further solidify the HCAHPS tool as exceedingly reliable, validated, and highly adopted tool in the health care industry.

Limitations of Literature Review Process

The greatest limitation of the literature review process related back to the high volume of results obtained on the concepts being investigated. Due to the implementation of VBP as means for reimbursement, the concept of patient satisfaction and the associated interventions that can be tested as means for improvement of scores is a hot topic for both the healthcare clinician and the healthcare administrator. The majority of evidence-based studies that were returned in the results were Level VI or Level VII evidence, which is not empirical findings supported by high-level evidence, so care prudence was used in the review of this evidence. The future of research around patient satisfaction, nurse driven hourly rounding, nurse call light systems and responsiveness will yield higher levels of evidence that are applicable across multiple populations, settings, and provide a higher level of support for correlation of outcomes.

Surprisingly, the literature search related to the HCAHPS survey tool yielded studies that showed independent tester validity and reliability, but limited public information was available

by the tool designers for review. This tool has been widely accepted among healthcare clinicians and healthcare administrators due to its adoption by CMS. However, HCAHPS only measures patient satisfaction, not patient experience. The criticism often shared by healthcare teams is that the patient satisfaction scoring is an individual event associated with perceptions and expectations, versus an objective approach to the delivery and outcomes of care (Kemp et al., 2015; Mazurenko, et al., 2017). The desired data for establishing HCAHPS tool validity and reliability would be published by the tool designers; however, this information appears to be proprietary in nature, and therefore limiting of the overall reviews within the literature.

Discussion

The linkage of the concepts of patient satisfaction, nurse driven hourly rounding, nurse call light systems, responsiveness, and the HCAHPS survey is stepwise. The use of nurse-driven hourly rounding is an operational application of engaging increased responsiveness through a pro-active approach to unmet needs (Nelson & Staffileno, 2017). The nurse call light system becomes the tool in which the patient can initiated communication of their unmet needs (Lasiter, 2014). The responsiveness of hospital staff is further evaluated by the patient and/or caregiver through their evaluation of how the unmet needs of the patient are rectified when nurse-driven hourly rounding does not mitigate a need in a proactive manner, and the nurse call system must be used. This retro-active response to an unmet need, coupled with the proactive use of nurse-driven hourly rounding impacts patient satisfaction scoring. As noted by Evans (2016), the nurse-patient interactions are often the most influencing on patient perceptions of satisfaction, so the impact that the RN and UAP can have on how needs are met are paramount.

Conclusion of findings. Ultimately, the qualitative capturing of responsiveness and overall patient satisfaction is quantitatively summarized by the HCAHPS survey for

reimbursement calculations. The approach to impacting patient satisfaction, and ultimately HCAHPS scores, is supported in the literature through enhancing nurse and UAP positive interactions with the patient and/or their caregivers (Evans, 2016). Failure to consider the interventions of hourly rounding, nurse call system, and responsiveness to unmet needs on patient satisfaction will be reflected in poor HCAHPS scores, and eventual financial reimbursement for care.

Advantages and disadvantages of findings. As previously noted, the infancy of the concepts being investigated as they relate to HCAHPS and VBP creates advantages and disadvantages. The most outright disadvantage is the absence of any large scale, direct-observation or interview studies related to patient satisfaction and responsiveness, the interventions outlined may not translate to all areas of the nurse-patient communication, and thus, satisfaction. However, this is also an advantage as the potential evidence based interventions are limited, so the opportunities for improvement are not clouded by laundry-lists of possible low-impact interventions. Furthermore, communication is characterized by complex verbal and non-verbal interactions, which were not fully explored by the literature and impact perceptions and subsequent ratings on the HCAHPS survey.

The advantages of the evidence in the literature establish the linkage between increased patient-caregiver communication and the positive impacts on hospital acquired pressure ulcers and patient falls. These two areas of nationally monitored and reported care quality outcomes were estimated to cost $21 billion annually as of 2012, which has only risen with inflation over the last six years (Sherrod et al., 2012). Furthermore, the evidence supports the use of licensed and unlicensed care team members to make positive impacts on patient perceptions of satisfaction and responsiveness through presence and communication with patients versus role

specific interventions only. This team approach to care continues to support the concepts of patient–centered care as a care delivery model supported through nursing theory.

Utilization of findings in practice. Operationalizing the evidence-based research for responsiveness to nurse-driven hourly rounding and nurse call systems into practice is key for the translation of the behaviors into patient satisfaction as represented on the HCAHPS survey. Based on the evidence presented, the implementation of a Patient Satisfaction Bundle focused on improved nurse call light responsiveness and hourly rounding is supported by from the literature on these emerging concepts of VBP in healthcare. The integration of a technology system to address patient-initiated unmet needs and the proactive use of hourly rounding increases responsiveness as measured by the HCAHPS survey randomly administered post-discharge from inpatient care.

Summary

In summation, responsiveness is a patient and/or family perspective on how well their unmet needs are responded to in a timely manner. Their perspective of responsiveness translates into a score on the HCAHPS survey, which provides consumers with an average score of the responsiveness of the hospital staff from an aggregate cared for in that area. With both responsiveness to nurse call systems and hourly rounding focusing on addressing unmet needs, hourly rounding is a proactive approach to preventing unmet needs, while responsiveness of hospital staff is the retrospective response to addressing unmet needs. Both of these concepts tie into patient and/or family views of how they feel they are being cared for, which is the focus of the RN and UAP care team.

Chapter Three: Theory and Concept Model for Evidence-based Practice

This chapter outlines the connection between this quality improvement (QI) project with the nursing theory and evidence-based practice (EBP) change model, which provided the underpinnings of this work. The nursing theory driving this quality improvement was Kristen M. Swanson's Theory of Caring. The EBP change model guiding the implementation of this project was the Plan-Do-Study-Act (PDSA) model. Furthermore, this chapter provides the concept definitions for responsiveness and hourly rounding as they are interpreted for use in the PDSA cycle.

Concept Analysis

To further explore the concepts of responsiveness and hourly rounding in detail, the topics are further expanded upon. These two concepts are corner-stone terms used throughout literature, but their functional definitions vary in clarity. Care was taken to understand the various perspectives of responsiveness in the literature, but the concept definition chosen for this project was aligned with the interpretation used on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. In addition, hourly rounding was clearly a defined concept in the literature, and provided a more concrete application of the intervention.

Responsiveness. Responsiveness is a term used throughout the literature with varying degrees of clarity, but with consistent ties back to patient experience. For the purpose of this project, the concept of responsiveness was aligned with the HCAHPS survey, which is randomly provided to patients after their hospital stay or medical site visit. Within HCAHPS, responsiveness of hospital staff falls under the domain of Patient and Caregiver-Centered Experience of Care/Care Coordination domain, which is coupled with communication with providers, hospital environment, discharge information, and the overall rating of the hospital

(Centers for Medicare and Medicaid Services [CMS], 2017). With this in mind, responsiveness of hospital staff to the patient or family initiated call bell is secondary to a patient having an unmet need (Tzeng, 2010). The cause of utilizing the call bell by the patient and or family is a communication method to engage with the nurse and care team, and responsiveness is the subsequent effect on the utilization of the call bell (Tzeng, 2010; Tzeng, Ronis, & Yin, 2012). The subsequent effect of responsiveness has been positively correlated with increased patient satisfaction, which found that call bells responded to in-person by a care team member within four minutes result in higher gains for patient satisfaction (Tzeng et al., 2012). In summation, responsiveness is a patient and/or family perspective on how well their unmet needs are responded to in a timely manner. Their perspective of responsiveness translates into a score on the HCAHPS survey, which provides consumers with an average score of the responsiveness of the hospital staff from an aggregate cared for in that area.

Hourly Rounding. Unlike responsiveness, hourly rounding has a much more straight-forward conceptual definition in the literature. As the term suggests, hourly rounding is the process of engaging with patients at set intervals, usually hourly, to address any unmet patient needs and provide on-going communication with the patient outside of other therapeutic interventions (Mitchell, Trotta, Lavenberg, & Umscheid, 2014). Utilization of hourly rounding as a proactive approach to patient care helps reduce perceptions of helplessness, anxiety, and increase patient safety (Mitchell et al., 2014). Hourly rounding sounds task-driven for a nurse to complete, but it has ties that connect back to patient perceptions of responsiveness of hospital staff for the HCAHPS survey. With both responsiveness and hourly rounding focusing on addressing unmet needs, hourly rounding is a proactive approach to preventing unmet needs, while responsiveness of hospital staff is the retrospective response to addressing unmet needs.

Both of these concepts tie into patient and/or family views of how they feel they are being cared for, which is the focus of the registered nurse (RN).

Theoretical Framework

As noted by Kristen M. Swanson's middle-range Theory of Caring (1991), it is characterized by four assumptions and five concepts that define how the professional nurse engages in caring for their clients. The next sections of this paper explore these assumptions and concepts, outline the caring model, review the creation of the theory, and provide a high-level review of the literature available in publication. The last, and considerably the most important section of this chapter, provides the clear link for the use of Swanson's theory as the theoretical underpinnings of this project.

Theory development. Kristen Swanson has developed the Theory of Caring over the course of her professional career that started with keen observations of caring in a focused population and has been applied to broader populations over the course of the last two decades. The initial population that Swanson investigated was women who have experienced miscarriages (Alligood, 2014). After studying this cohort, she completed research showing women with miscarriage experiences that experienced higher levels of caring interventions had a positive impact on the long term emotional states of the patient (Butts & Rich, 2017). Based on this, studies were replicated with families, nurses, physicians, and patients in the neonatal intensive care setting (Alligood, 2014). At that time, Swanson expanded her research and application of The Structure of Caring to other patient populations through expansive literature reviews and research partnerships with other nursing theorists (Alligood, 2014). This additional work has resulted in the development of the Caring Professional Scale, which is a validated tool for patients to rate the level of caring they experienced from their healthcare professionals (Butt &

Rich, 2017). The use of this tool across multiple clinical settings has increased the replicability of Swanson's work to populations beyond those described above, and therefore made the Theory of Caring widely accepted across clinical, educational, and research settings (Alligood, 2014).

Theory in the literature. As previously noted, Swanson's Theory of Caring has been replicated across multiple clinical and non-clinical environments as a valid and reliable middle-range theory. This is further evidenced by the amount of literature that utilize the theory to support various phenomenon. A brief search of the Cumulative Index of Nursing and Allied Health Literature (CINAHL) at the time of this writing with the term "Theory of Caring" results in 1,116 peer-reviewed journal articles published from 1967 to present. The patient populations that are addressed using this theory include neonatal to geriatric patients, patients being cared for in inpatient acute settings and outpatient settings, and populations that are culturally diverse from around the world. Major articles describing this theory were used for the writing of this paper, and are published by the theorist herself independently.

Assumptions. With the development of the Theory of Caring, Swanson identified four assumptions pertinent to the application of theory in practice (Swanson, 1991). Those four assumptions that apply to the nurse are nursing, person/client, health, and environment. From Swanson's perspectives supported by the empirical evidence, the concept of nursing by the nurse is a type of informed caring, and thus, the actions taking by a nurse are based on an expansive set of knowledge, experiences, and science (Swanson, 1993). Specifically, the conscientious actions by the nurse to provide aid to or care for a patient are a professional focus as a culmination of interventions, knowledge, capability, research, and insights (Swanson, 1993). The person/client assumption that helps define Swanson's Theory of Caring is characterized by appreciating each patient as an individual that has been shaped by their culture, experiences, feelings and beliefs

(Alligood, 2014). With the nurse understanding Swanson's perspective of the patient/client, the nurse is also able to understand the implication of free will and cultural limitations that shape each person and influence their interaction (Alligood, 2014). By understanding the assumptions that Swanson holds for the concept of nursing and the patient/client, the assumptions of health and environment are better appreciated.

Health and environment are less concrete in their definition, but maintaining an awareness of how they are defined relative to Swanson's Theory of Caring is key for understanding application. Swanson views health as a subjective appreciation the individual has about their physical, mental, and spiritual well-being and wholeness (Alligood, 2014). The definition of health may be impacted by the environment. The assumption of environment is defined by the situational context and perspective of the person/client has on the situation, which may vary based on how a concept, idea, health, or person is viewed (Alligood, 2014).

Concepts. As previously mentioned, Swanson's Theory of Caring is earmarked by five concepts, sometimes referred to as the structure of caring, and are known as maintaining belief, knowing, being with, doing for, and enabling (Swanson, 1993). Swanson's original graphic summarizing the Theory of Caring is located in Appendix C. Swanson (1991; 1993) strongly verbalizes in multiple publications that the concept of maintaining belief is the basis for the remaining four concepts in the theory. Maintaining belief is accepting the understanding that people will innately work through life events and re-emerge from the situation with a deeper personal understanding of why they exist (Swanson, 1993). The nurse and the patient will both experience maintaining belief, as their roles are different in the process but complimentary (Swanson, 1993). Knowing is described as the next layer in Swanson's Theory of Caring, as it describes the plight of the nurse to understand the events in which they are supporting the patient

through (Swanson, 1993). Knowing explicitly supports the nurse in striving to achieve an understanding of the patient and their experience as to support the caring interventions and caring transactions that occur (Swanson, 1993).

The third pillar of Swanson's Theory of Caring is being with. Being with addresses the physical and emotional presence displayed by the nurse to the patient as a show of support to them and the experiences in which they are engaging (Swanson, 1993). Doing for is the nurse providing the interventions, support, and treating the patient as a whole person (Swanson, 1993). Doing for is often related back to treating others as you would like to be treated while understanding that the patient may not be able to verbalize their needs without directive from the professional nurse (Swanson, 1993).

Lastly, enabling is the ability for the nurse to empower the client towards self-care, and healthy resolution of a life event (Swanson, 1993). As shown in Appendix C, the five concepts described in Swanson's Theory of Caring are a stepwise approach to overall client well-being. Of note, Swanson explicitly states that none of the five concepts can exist without the others, and that the nurse engages in caring through their experience with varied situations (Swanson, 1993).

Application to practice change. The use of Swanson's Theory of Caring as the theoretical underpinnings for the EBP change project are straight forward. Through the implementation of a Patient Experience Bundle to improve the HCAHPS scores in the responsiveness domain, the patient could experience a higher level of nurse caring behaviors, and thus, rate the responsiveness higher. The use of the upgraded call bell system increases the ability of the nurse to communicate with the patient, and the use of hourly rounding ties back to the concepts of being with, doing for, and enabling. The concepts of maintaining belief and knowing are addressed through this project with the re-education of the RN and unlicensed

assistive personnel (UAP) to understand the underlying theory of the interventions. Through the implementation of the Patient Experience Bundle, the five domains of maintaining belief, knowing, being with, doing for, and enabling could result in increased client well-being, and therefore, higher ratings in the responsiveness domain for hospitalized patients at the project site.

EBP Change Model

Unlike the theoretical underpinnings previously explained for this project, the EBP change model selected is much more straight-forward and widely accepted for use in healthcare. The PDSA model has been shown to support the QI process as it is highly applicable to multiple healthcare settings, and is scalable to the test aggregate size (Taylor et al., 2013). The evolution of the modern PDSA cycle, fathered by W. Edwards Deming, has roots in the QI movement started in the Japanese auto-industry in the mid-20th century, and has been successful measuring tests of change in a quick and step-wise manner (Taylor et al., 2013). Furthermore, the PDSA cycle for EBP change focuses on a systems approach change for QI, versus experimental (Speroff, & O'Connor, 2004). As outlined in the subsequent sections and in Appendix D, the PDSA model is broken down into four clear steps with defining characteristics of each step in the model.

In the first step of the PDSA cycle, plan encompasses the identification of a problem (Moen & Norman, 2010). With the problem identification, clear objectives and desired outcomes should be defined to maintain the overall aim of the project (Varkey, Reller, & Resar, 2007). This is also the time in this rapid, cyclic model to define the scope, timeline, and focus populations of the project at hand (Varkey et al., 2007). The second step of the PDSA cycle is Do. In this part of the process, the plan is implemented and data is collected for analysis in the next step (Moen & Norman, 2010). The collection of data for analysis should have been defined in the planning

stage to allow for alignment with project aim and outcomes measurement planning (Varkey et al., 2007). Another key component of this step of the cycle is to document any unexpected variances or defects encountered during implementation to be considered during the analysis phase (Moen & Norman, 2010; Varkey et al., 2007). The mid-point of the PDSA cycle transitions the process from implementation to analysis.

The third step in the PDSA cycle is study. This key step of the process allows for the QI team to analyze the data to determine if the actual outcomes met the desired outcomes as outlined in the plan phase (Moen & Norman, 2010; Varkey et al., 2007). As previously mentioned, deficits or variances documented in the "do" stage may impact data analysis during this stage (Moen & Norman, 2010; Varkey et al., 2007). The final stage of the PDSA cycle is act. Based on the QI project goals, this stage may be identified by translating the initiative into practice on a larger scope, or it may be identified that another cycle of the PDSA process must be completed to meet the desired outcomes (Moen & Norman, 2010). As noted throughout this section, the PDSA cycle is cyclic, meaning that one project may have multiple cycles of PDSA to reach a desired goal. This simple approach to QI allows this EBP change model to be implemented throughout healthcare and provide rapid change to systems impacting patient care.

Application to practice change. The use of the PDSA cycle for this EBP change project was straight-forward. Specifically, this cyclic process supports the ongoing changing needs of the RN and UAP as they provide care to patients impacted by the Patient Experience Bundle. Relative to the population specific needs at the project entity, different care teams may have varied experience, knowledge, or success with the Patient Experience Bundle. Understanding, identifying and tailoring those defects to support the initiative to meet the end-users needs

ultimately improves the success of the bundle, and thus, the perceived responsiveness and impact of hourly rounding on the patient experience.

Summary

As noted throughout this chapter, the concepts, theories, and EBP change models selected for this evidence-based project support the outlined outcomes of this QI initiative. The concepts of responsiveness and hourly rounding are clearly defined to support change from a systems perspective. Swanson's Caring Theory defines the nurse and patient interactions as a step-wise approach to achieve overall client well-being. The PDSA cycle for change allows for rapid implementation, assessment, and cyclic approaches to reaching desired outcomes as evidence-based care initiatives are implemented. This trifecta of validated concepts, theory, and EBP change models provides a framework for success with this QI project.

Chapter Four: Pre-implementation Planning

With the concepts, theories, and evidence-based practice (EBP) change models selected for this evidence based project supporting the outlined outcomes of this quality improvement (QI) initiative, focus moved to pre-implementation planning. The remainder of this chapter outlines the project purpose, project management steps taken, and planed project evaluation. Detailed information is presented on each implementation step taken to provide an overview of an integrated systems approach.

Project Purpose

The purpose of this project was viewed by the targeted organization as a QI initiative to support the organization with improving the responsiveness of registered nurses (RNs) and unlicensed assistive personal (UAP). The specific scientific inquiry driving this Doctor of Nursing Practice (DNP) project was: "*Will the RNs and UAP team members (P) of the focus site benefit from implementation of an advanced call bell system and re-education on hourly rounding (I) increase patient satisfaction in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) domain of responsiveness of hospital staff (O)?* By considering the project from the perspective of the organization, the goals are shared to improve the overall patient satisfaction ratings in responsiveness of nursing staff as measured on the HCAHPS survey.

The organization in which this QI project was completed specifically outlined a focus on patient experience in their three year strategic plan for 2017-2020. This plan, which is integrated at all levels of the organization and openly shared with the community highlights the HCAHPS overall rating of the hospital scores, which are directly impacted by responsiveness of hospital staff. Furthermore, the strategic plan highlights safety measures, including a reduction in patient

falls, as a key performance indicator for success. Increased responsiveness, hourly rounding, and a reduction in patient falls has been positively correlated in the literature to improve patient safety (Bragg et al., 2016; Hutchinson, Higson, & Jackson, 2017; Mitchell et al., 2014; Sherrod, Brown, Vroom, & Sullivan, 2012; Tzeng et al., 2012). The incorporation of these key performance metrics in the three year organizational plan highlights the prioritization of this QI project's purpose.

Project Management

Detailed prudence was given to the planning stages of this QI project to increase the opportunities for overall success. The majority of the project planning was given to organizational readiness for change, inter-professional collaboration, risk management assessment, the overall entity approval process, and information technology available. Outlined below, each of these project management considerations are discussed in more detail.

Organizational readiness for change. As previously highlighted, the organization at the foci of this project was failing to achieve organizational, state, and national goals for fiscal year (FY) 2017 & 2018 for staff responsiveness. Although the organization had set an entity target for responsiveness performance for FY 2017 through 2018 at 65.1%, the actual performance around responsiveness was routinely below target. Performance for those two FYs ranged from a peak of 66.3% in period-1 of FY 2017 to a low of 48.6% in period-2 of FY 2017. When comparing the community based inpatient facility to state and national averages for responsiveness during the same periods, the project site continuously fell below the state and national averages of 68% and 69%, respectively, with a score of 59% (Centers for Medicare and Medicaid Services [CMS], 2018).

While the business case for this QI project was supported through the data, the organizational culture further supported this initiative through the introduction of a safety project titled “Target Zero”. Beginning in July of 2018, a safety culture initiative was implemented on all inpatient units that provides real-time data feedback on patient safety events. Any event that met the criteria for an employee injury, patient fall with injury, hospital acquired Clostridium Difficile Colitis infection, catheter associated urinary tract infection, central line associated blood stream infection, or hospital acquired pressure ulcer was reported out to teams twice daily. This initiative lead a more astute focus on real-time prevention and increased organizational agility to prevent further events as patients, team members, and units changed day-to-day. This hyper-vigilance and transparency around prevention and safety laid the framework for increased expectations of hourly purposeful rounding and installation of an upgraded call system for care teams.

Inter-professional collaboration. With the selection of this QI project and consideration of the collaboration needed to achieve desired outcomes, three key team members were identified for their authority, responsibility, and expertise. The first team member holds the role of Director of Service Excellence. As a content expert, this RN has had extensive training and experience in evidence-based patient experience projects, HCAHPS interpretation and analysis, and is often used as a consultant on both clinical and non-clinical projects throughout the organization. The second key team member selected to serve on the team in a site champion role was the entity’s Associate Chief Nursing Officer (ACNO). By engaging the ACNO, this initiative is seen by front-line team members to have organizational support, and the ACNO has the authority to remove or reduce potential barriers to implementation. Thrice, the Clinical Team Lead of one of the two focus units was included as a key team member to act as a direct owner

and liaison to staff for support. Lastly, the Chief Nursing Officer (CNO) served as the DNP Project Community Member due to their direct interest in evidence based and quality care delivery for patients. Furthermore, these three team members have the moral and business responsibility to ensure that front-line team members provide consistent, excellent care as perceived by the patient and measured on the HCAHPS survey.

Risk management assessment. Due to the focus of this project on implementing EBPs to improve frontline team member's behaviors as they relate to overall responsiveness, the perceived benefits to the patient outweigh the risks for the patient and staff. However, without carefully considering the strengths, weaknesses, opportunities and threats through a S. W. O. T analysis, potential avoidable obstacles would be missed. The S.W.O.T analysis for this project is outlined in Table 4.

Organizational approval process. Due to the organizational readiness and alignment of the organizational culture on safety and transparency, this project was immediately adopted as a project of interest during a 2018 strategic planning retreat. At a high-level, the CNO immediately expressed interest and requested engagement by the Manager of Service Excellence. After a brief brainstorming session, the Project Manager (PM) engaged with the CNO, ACNO, and Manager of Service Excellence and was given approval to go forward with the project. Nearly immediately, literature reviews, long-term review of organizational performance on the HCAHPS survey, and engagement with the call bell upgrade project team was initiated. With the CNO's approval (see Appendix F), other key senior business leaders approved the quality improvement initiative without hesitation.

Table 4

S.W.O.T Analysis

	Helpful to achieving the objective	Harmful to achieving the objective
Internal Origin	Organizational culture of safety Culture that supports transparency of information Leadership support for the project Re-enforcement of positive patient behaviors when needs are met	Competing initiatives Turnover rates of RN and UAP staff High number of RN and UAP with less than 3 years of professional experience Staff member resistance to wear companion badges
External Origin	IT infrastructure improvement to support enhanced communication modalities	Implementation during influenza season causing peak census volume

Note. S.W.O.T. analysis for organizational risk assessment for quality improvement project planning.

Information technology. Information technology integration in this project was a key tenet in the implementation planning. Health information technology (HIT) can be used in many ways to enhance care delivery, reduce health care delivery costs, and increase safe care delivery practices (Reis et al., 2017). The installation and use of the Rauland R5 Nurse Call System was the greatest monetary and HIT investment associated with this QI project. Through the upgrade of the existing nurse call system to the R5 system, the patient and RN/UAP communication and data collection is enhanced, and thus supports the project purpose.

Beyond the use of the R5 Nurse Call System, all other project needs were met with the use of a basic computer. The HCAHPS survey results were accessed via the internet on the Press-Ganey Patient Experience portal. All unit based employee demographics were available via an organizational human resources database that provided de-identified employee information on written request by the PM.

Cost Analysis of Materials Needed for Project

Although the importance of this project is paramount to long-term patient experience success, the organization provided strict guidelines for this project to be budget-neutral for creation and implementation. Due to the robust electronic resources available within the health system and the financial commitment to the installation of the upgraded call bell system, consideration of the budget-neutral requirement had minimal impact on the ability of this quality improvement project to be successful. The project site also has a strict commitment to maintain their American Health Information Management Association (HIMSS) Level 7 rating, which is the highest excellence rating for a high utilization of HIT and electronic medical record (EMR) systems (Jha, DesRoches, Kralovec, & Joshi, 2010). By integrating the use of HIT to improve quality, safety, efficiency, and care, only 0.3% of hospitals and health systems in the United States have achieved this rating by 2010 (Jha et al., 2010). Therefore, the challenge of implementing a budget-neutral quality improvement initiative was seen as a positive opportunity to re-enforce the use of the new call bell system as well as existing HIT systems.

Plans for Institutional Review Board Approval

Institutional Review Board (IRB) approval was obtained through both the project site IRB and the East Carolina University IRB. As PM, all required training was completed on the Collaborative Institutional Training Initiative (CITI) website. Upon completion of this training

on May 20, 2018, both IRB processes were initiated, with the project site IRB taking precedence for approval. With this project already approved by senior business and nursing administration at the project site, overall IRB approval did not have to be a site-specific parallel process. Furthermore, this DNP project is not a research project, but rather a QI and translational science program aligned with the DNP Essentials. Based on this, IRB review was streamlined and a seamless process as outlined below.

With support from the project site Director of Nursing Research and Evidence Based Practice, the IRB process began with completion of required organizational documentation. Specific documentation included completion of the entity Nursing Research/Project Organizational Feasibility Form, Quality Improvement Project Summary, signatures of approval from unit based leadership for which the project would be implemented, and submission of the documents into the Legacy eIRB system. This step was completed on October 31, 2018 under protocol identification number Pro00101366. On November 15, 2018, approval from the entity specific IRB review board declared this activity as a QI project, and was therefore exempt from additional IRB review. A copy of this declaration, is located in Appendix G. In addition, this document is issued by the entity IRB and is held according to the site specific record-retention policy.

Once project site IRB approval was obtained, the East Carolina University IRB (ECU IRB) steps were initiated. Due to the high standards of both the project site and ECU IRB, limited additional review was required and approval was obtained. The first step of the ECU IRB process was to submit the “IRB QI/Program Evaluation Self-Certification” tool located in the Qualtrics database. This was completed on November 18, 2018. Based on the responses to this tool, an electronic notification from the ECU IRB team was provided on November 18, 2018 that

this QI project does not constitute research. A copy of this communication is located in Appendix H. In addition, this document is issued by the ECU IRB and is held according to the site specific record-retention policy. Overall, the IRB review process was less cumbersome than anticipated due to the strict focus of this project as a quality improvement project.

Plan for Project Evaluation

With this EBP project focused on translational science and QI, the project was defined by two key outcomes. The first defined outcome was to see a decrease in average response time from call to RN or UAP response for the comparison period. The second defined outcome was to see an increase in HCAHPS scores for each responsiveness question outlined in Table 1 within the responsiveness domain. Furthermore, the demographics of the front line team members who are required to complete The Patient Experience Bundle are described to provide a perspective of the aggregate engaged.

Demographics. As outlined in Appendix E, the descriptive, de-identified demographics obtained from the organization human resources team for this project included role, primary work unit and number of worked years in role. Of note, gender was actively excluded from the demographic request due to the limited number of males in specific roles within a unit to prevent possible identification within the aggregates. With both role and primary work unit being nominal data, the reporting of these demographics occurred through frequency groups in the form of tables. Each of the reportable variables in these categories are represented as frequencies according to the row and column identification. Number of worked years in role offer a deeper understanding of the data. The use of range, mean, and standard deviation as described by primary work unit allow the organization to consider the impacts these variables may have on the outcomes.

Response time. The first defined outcome was to see a decrease in average response time from call to RN or UAP response for the comparison period. This measurement is a key factor of success for this project due to the evidence presented in the literature. Tzeng, Ronis, and Yin (2012) provide the evidence supporting call bells responded to in-person by a care team member within four minutes result in higher gains for patient satisfaction. Through the measurement of time from call placed to team member in room, an analysis can be completed to review current performance.

R5 Nurse Call reporting tool. To evaluate this response time outcome, data for both the pre- and post-implementation phases of this project was obtained from the web-based vendor reporting system. Validation of this system with the wired patient call system, companion phones, and companion badges was completed at product installation. This portal allows for reports of both raw and aggregate data to be obtained, with pre-set and customizable reports available. Information from the HIT tool is used at all levels of the organization for reporting and is subpoenaed in the court of law as needed.

For this project, the main HIT system that was utilized is the Rauland Responder 5 Nurse Call System (R5). This system is a wired system that integrates wireless voice over internet protocol (VOIP) phones and real-time locator system (RTLS) badges by CenTrak. All RNs and UAPs are required to carry a companion phone and companion badge while assigned to a patient care shift. The R5 system allows for bi-directional communication between the nurse, patient, and main terminal located in the nurse station. A high-level overview is provided in Figure 2.

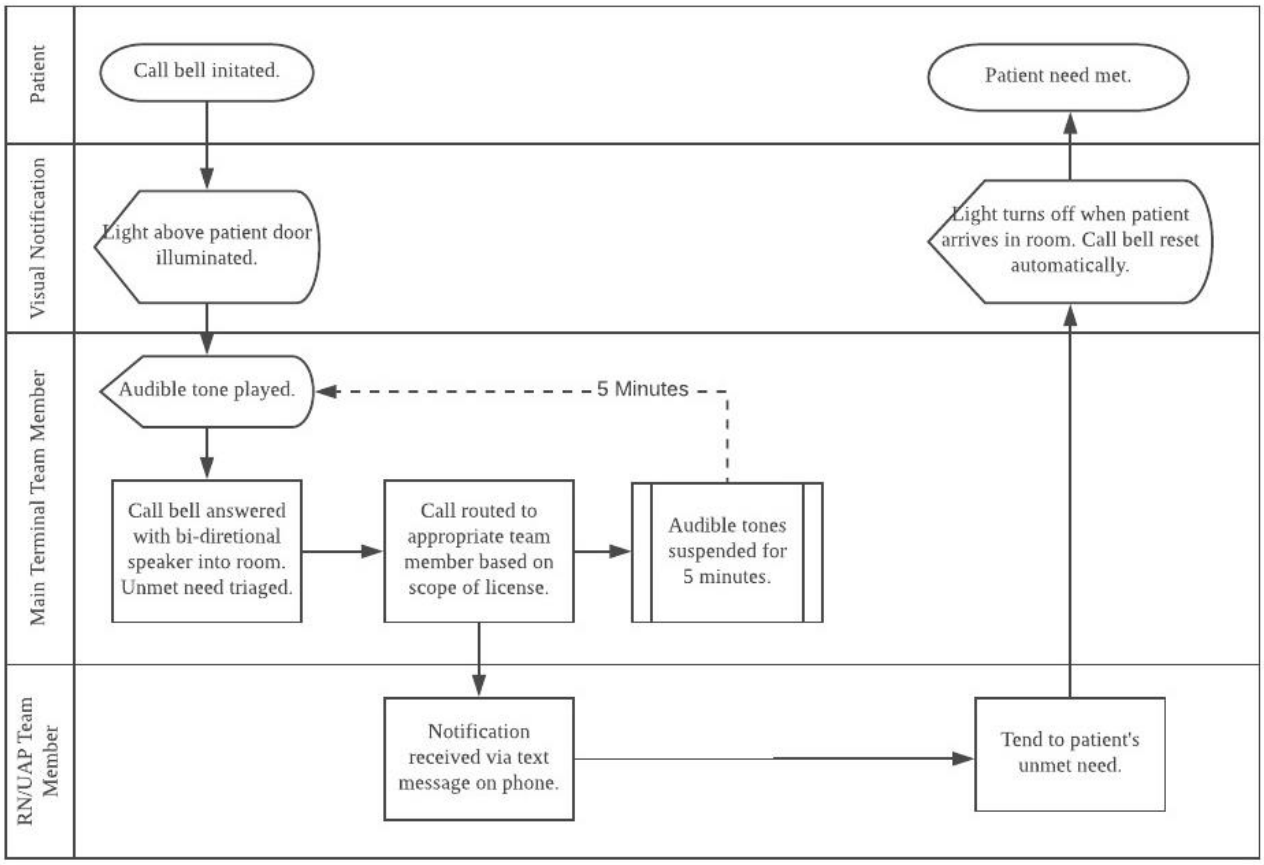


Figure 2. Overview of R5 Nurse Call System flow from a patient initiated, non-emergency call.

When a patient initiates a call from either their bed, handheld pillow speaker, bathroom, or wall terminal, it is routed to the main terminal and a light illuminates above the patient door. This call is then triaged by the team member assigned to the main terminal based on the patient request, and is then forwarded to an RN or UAP. Upon entrance to the room, the locator badge recognizes that a team member has entered the room to address the patient's unmet need, and suspends the audible call at the main terminal and discontinues the light illuminated outside the room. All reporting and analytics for the R5 system are accessed through the Responder Net web-based portal that is included with system purchase. Of note, all manipulations of the R5

system by any user (patient, employee, terminal) generate a pre-defined time stamp that can be queried for review.

Data analysis. To evaluate this outcome, there were two considerations for success. First, was a reduction in overall response time noted between comparison periods, and second, how close did the project site come to meeting or exceeding the EBP benchmark of four minutes or less to respond to a patient-initiated request. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. Full analysis of the raw data was completed by unit with comparison of pre- and post- implementation range, mean, and standard deviation by role for comparison to the evidence-based target benchmark of four minutes or less.

HCAHPS responsiveness scores. The second defined outcome was to see an increase in HCAHPS scores for each responsiveness question outlined in Table 1 within the responsiveness domain. Responsiveness scores are derived from a patient perception of how responsive care team members were to their unmet needs (Tzeng, 2010). By implementing evidenced-based, purposeful hourly rounding, the opportunity for a patient to have an unmet need is decreased through proactive approaches to care and increased communication (Mitchell, Lavenberg, Trotta, & Umscheid, 2014). Furthermore, the correlation between the vulnerable hospitalized adult patient and their overall satisfaction with their patient experience based upon nursing and provider responsiveness is captured by the HCAHPS survey (Brooks, 2016; Manary, Staelin, Kosel, Schulman, & Glickman, 2015; Mitchell et al., 2014).

HCAHPS survey evaluation. Through a thorough understanding of the HCAHPS survey, the pre- and post- comparison results were reviewed. The HCAHPS survey is a national survey tool used by the Centers for Medicare & Medicaid Services (CMS; 2017) for evaluation of the Six Domains of Quality Measurement. The Six Domains of Quality Measurement assessed in the Press-Ganey administered survey uses validated and standardized questions to gather experience and quality data from a randomly selected aggregate of patients who have been admitted to participating hospitals (CMS, 2017). To be eligible for potential selection for the survey, a patient must be at least 18 years old, have at least one midnight stay as an inpatient in a hospital, be alive at the time of discharge, and not have a psychiatric diagnosis as their discharge diagnosis from the hospital (HCAHPS, 2018b). Furthermore, patients who chose to not disclose their admission for privacy reasons on the hospital census, prisoners or patients in the custody of law enforcement, patient discharged to skilled nursing facilities and hospice, and patients with a foreign home address are further excluded from receiving the survey (HCAHPS, 2018b). Lastly, a hospital must maintain at least 300 discharges over a rolling 12 month period that meet the above criteria to participate in this program (HCAHPS, 2018b).

With this survey administered within two to forty-two days post discharge, the results of this survey are quantified and used as quality data for reimbursement and are publicly reported to promote improved quality through hospital to hospital comparison of outcomes (CMS, 2017). The survey is comprised of 32 questions using a four point Likert Scale that is dependent upon the question asked (HCAHPS, 2018a). To support an accurate representation of patients cared for, the survey is available in six languages and can be taken on paper through the United States Postal Service, through electronic mail, or over the phone with a standard script (CMS, 2017).

The questions of interest for this particular project relate directly back to the responsiveness domain on the HCAHPS survey. As noted in Table 1, the three focus questions of interest that make up the responsiveness score ask the patient to rate their perceptions of how the care team responded.

Table 1

HCAHPS Survey Questions to Evaluate Responsiveness of Hospital Staff

4. During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it? □ Never □ Sometimes □ Usually □ Always □ I never pressed the call button
10. During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or using the bedpan? □ Yes □ No → If No, Go to Question 12
11. How often did you get help in getting to the bathroom or using a bedpan as soon as you wanted? □ Never □ Sometimes □ Usually □ Always

Note. Adapted from "HCAHPS Survey" by Hospital Consumer Assessment of Healthcare Providers and Systems, 2018a. Retrieved from http://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/july-1-2018-and-forward-discharges/2018_survey-instruments_english_mail.pdf

The results of these questions are obtained from a reporting database that is managed by the CMS approved and entity-selected HCAHPS Survey vendor, Press-Ganey (PG). Through the web based portal with PG, administrators are able to review current performance, past performance, focus areas of interest based on current outcomes, and comparison data organized by survey receive date or patient discharge date. Outcomes can be reviewed by hospital, service

line, or unit, and further analysis can occur through advanced reporting features that allow the user to identify trends based on a large number of variables.

Data analysis. Analysis of the metrics associated with responsiveness questions as outlined in Table 1 was straight forward. These metrics were queried by discharge date to allow for pre- and post-implementation analysis. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. Furthermore, the metrics were analyzed by unit to consider any unit-specific identification of special cause variance. Data was analyzed based on entity, state, and national targets. The entity target goal of average hospital responsiveness scores was set at 65.1%, while state and national benchmarks for responsiveness are 68% and 69%, respectively (CMS, 2018). The project site performance failed to achieve the target metrics by maintaining an average hospital responsiveness score of 59% for the previous 22 months from July 2017 through October 2018.

Data management. For the purpose of this project, data management was a priority to maintain security of information. Although all frontline team member information was provided to the PM as de-identified and aggregate data, the integrity of this information was important. Through the use of the project site's approved, password protected cloud-based web storage service on an encrypted server, all project plans, data, and reporting items were maintained. Furthermore, to limit the possibility of mismanaged information, all communication was completed electronically with the organization's secure web server. All data security is maintained on the cloud-based platform with access limited to the PM. No portable drives, fixed

hard drives, or universal serial bus drive were used for information management. Data will be kept in accordance with project site policy, which will be for seven years from project completion. All information will be destroyed via organizational policy at that time, which is managed by the project site information technology team.

Summary

Overall, prior to the implementation of this QI project, astute attention was given to the pre-planning phase to allow for maximum success and reduction in overall barriers. Through the steps of project management, which included assessing readiness for change, establishing a project team, gaining organizational and IRB approval, and conducting a risk assessment, the plan for project evaluation could be designed. By considering the project outcomes, data analysis, demographics, and data management, the implementation process was positioned to be successful with minimal obstructions.

Chapter Five: Implementation Process

The implementation of this quality improvement (QI) process was streamlined due to the careful attention to detail in the pre-implementation planning phase. Mindful consideration of the project setting, participants, recruitment, and overall implementation was completed. Despite this, some plan variation was required to meet the demands of the project and organization. As discussed below, this project was constructed to support the maturation of responsiveness scores consistent with site specific strategic initiatives.

Setting

The community-based inpatient care facility at the center of this QI initiative was a 186-bed facility that supported 9,560 inpatient stays during fiscal year (FY) 2017. This community facility is part of a larger, academic health system, and is Magnet ™ Certified and maintains Joint Commission accreditation. The two units on which this QI project was focused was a 44 bed surgical-oncology floor who take general medicine overflow patients, and a 44 bed general medicine unit who take surgical overflow patients. The surgical-oncology unit is comprised of 42 single occupancy rooms and two double occupancy rooms, the unit maintains an average daily census of 35 patients. This unit provides inpatient chemotherapy, post-operative care for nearly all entity completed procedures not requiring the intensive care setting, and supports patients experiencing oncology or post-surgical complications. The general medicine unit is comprised of 26 single rooms and nine double occupancy rooms. This unit maintains an average daily census of 37 patients. The unit cares for a variety of medical diagnosis including congestive heart failure, pneumonia, sepsis, urinary tract infection, alcohol withdrawal, and patients with dual medical and psychiatric diagnosis.

Similar to other units in the hospital, the units of focus has a geographical footprint that resembles an uppercase letter “T”, with a nursing station centralized at the perpendicular juncture of the “T”. All patient-initiated calls ring to the main call terminal located at this nursing station, which is staffed 24/7 by a unit team member. The nurse to patient ratio on these unit ranges from one nurse to three to five patients depending on patient acuity needs. For example, a Registered Nurse (RN) who is administering chemotherapy or providing interventions every two hours would not exceed a total of three assigned patients, of which the other two are not receiving chemotherapy or high-frequency interventions. Unlicensed Assistive Personnel (UAP) staffing ratios range from eight to 12 patients per UAP, relative to patient needs and independence.

Participants and Recruitment

Inclusion and recruitment criteria for this QI project was simple. Participants were included in the hourly rounding education if their primary work department was listed as the targeted surgical-oncology or general medicine unit. Due to this and the lack of care team member specificity on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, no exclusion criteria was used to limit participants. The surgical oncology unit had a workforce budget of 65.82 full time equivalents (FTE) for FY 2019, this unit employs 51 RNs and 24 UAPs. The general medicine unit had a workforce budget of 76.96 FTE for FY 2019 and employs 49 RNs and 29 UAPs. Recruitment of project participants was completed with organizational support due to the strategic focus of responsiveness within the entity strategic plan for FY 2019. Therefore, if a team member had a primary employment with the surgical oncology or general medicine unit, the Associate Chief Nursing Officer (ACNO) made participation in the hourly rounding education a mandatory event. In addition to this expectation from senior nursing leadership, staff notification through unit-based fliers, emails, and notification at staff meetings

for a 3-week period occurred. Furthermore, use of the advanced call bell system is required for all RN and UAP team members as a condition of their employment as outlined in their respective job descriptions.

Implementation Process

With the project outcomes defined based on evidence in the literature and support from key project stakeholders, the project was implemented over a 12 week period with defined pre- and post- comparison phases. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours.

The first step in project implementation was a kick-off meeting with a project steering committee, led by the Project Manager (PM). Included in this meeting were the Nurse Manager, Operations for the unit of focus, Clinical Team Lead for the second unit of focus, and the Director of Service Excellence and Volunteer Services. During this kick-off meeting held on November 27, 2018, the overall project aim, outcomes, and implementation was reviewed. Questions were answered, and progress meetings were scheduled to occur bi-monthly for the duration of the project. Specific information related to the implementation process is outlined below in detail to allow for translation of this QI project.

Comparison period definitions. With this project comparing pre- and post-implementation phases with a defined intervention period, clarity around the dates and timeframes was required. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The

intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. It is key to note that the data obtained during the pre- and post- implementation periods was based on those patients who returned HCAHPS surveys with a discharge date in the defined time periods.

Hourly rounding competency validation. Due to the nature of hourly rounding on patients being a required behavior during this project, careful validation of the goals, process, and skills was required of project participants. Over the course of a two week period from January 7, 2019 through January 20, 2019, the PM held daily, pre-scheduled competency validation sessions for both RN's and UAP's at various times of the day. These sessions were communicated through unit-based signage, electronic communication, and verbally through huddles. Successful validation of hourly rounding skills was required for credit to be given for attendance, which was required of care team members in these roles per their job expectations. Competency validation was completed through a simulated case scenario in an inpatient room, where the PM played the patient. The specific scenario presented is located in Appendix I. During the simulation, care team members had to address the patient with a purposeful focus on toileting needs, pain management, positioning, staff presence, and environment. Failure to address the five above areas results in a need for remediation during another session. The competency check-off documentation form used is located in Appendix J. Learner specific feedback is provided to maximize the communication and rapport between the care team member and patient.

Advanced call bell implementation. The installation and education of the advanced call bell system occurred prior to the start of this project on the focus unit. However, due to the

complexity of the reporting and technology involved, the PM attended multiple education sessions relating to the system operation, reporting functionality, and project installation management. Care team members, including RNs and UAPs, were educated through a required internet based video or in-person class on the purpose, function, and operation of the advanced call bell system and locator badges in Fall 2018 by the entity education department and the product vendors. The installation of the advanced call bell system most impactful on this project was the individual locator badges that were required to be assigned to each team member, uploaded into the system, and validation of their communication with the system. Furthermore, the expectation of the care team members on the project unit to be compliant with wearing the badges had to be established. Therefore, in October 2018, the individual badges were distributed, assigned, and validated with the team. Clear behavioral expectations for care team members were communicated through staff meetings, huddles, evaluations, and job expectations that locator badges are required to be worn every day, consistent with hospital identification expectations.

Data collection and analysis considerations. Due to the pre- and post- implementation phase data being dependent on discharge date, data collection and analysis was delayed based on patient response to survey post-discharge. Therefore, a patient response lag time of 21 days between post-implementation period and data analysis initiation for responsiveness scoring from HCAHPS surveys. However, responsiveness time as captured through the advanced call bell system was queried for the pre- and post- implementation without pre-planned collection delays.

Plan Variation

Throughout the phases of the project, there was not any acute business need to modify the implementation plan. However, due to the census demands of the facility, additional double

occupancy rooms were added to support hospital throughput. The double occupancy rooms were added to the surgical oncology unit in mid-December 2018, and opened over a phased 7-day period. The total double occupancy rooms added was two. Furthermore, the leadership team of the surgical oncology unit was enhanced with the addition of one night shift clinical team lead, who functions as an administrative and clinical resource for the unit during their coverage hours. This team member had no leadership experience, and began their position on January 1, 2019.

Summary

In summation, this QI project implementation was supported through a variety of avenues well before the project was conspired. However, through organizational readiness, pre-implementation planning, and a well-supported and executed implementation phase, the project produced measureable outcomes. Those outcomes ultimately tie back to improving the patient experience and increasing the quality of care provided at the project site regarding staff responsiveness.

Chapter Six: Evaluation of the Practice Change Initiative

Evaluation of the pre- and post-implementation phases began on April 18 of 2019. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. The following chapter reviews the participant demographics, and reviews the outcome measurements in both the pre- and post- implementation phase. This chapter also focuses on the objective information gleaned during this quality improvement (QI) project. The specific scientific inquiry driving this Doctor of Nursing Practice (DNP) project was: "*Will the Registered Nurse (RN) and Unlicensed Assistive Personal (UAP) team members (P) of the focus site benefit from implementation of an advanced call bell system and re-education on hourly rounding (I) increase patient satisfaction in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) domain of responsiveness of hospital staff (O)?* By considering the project from the perspective of the organization, the evaluation of the practice change initiative was focused on the improvement of the overall patient satisfaction ratings in responsiveness of nursing staff as measured on the HCAHPS survey.

Participant Demographics

This QI project was undertaken by 150 team members on the two focus units. By reviewing each focus unit separately, a better understanding of the objective data is obtained. As noted in Table 5, the surgical oncology unit had a total of 73 team members complete purposeful rounding competency training, with 51 (68%) of those being Registered Nurses (RNs) and 24 (32%) Unlicensed Assistive Personnel (UAP). Similar to the surgical oncology unit, the medical

unit had a total of 77 team members complete the purposeful rounding competency training, with 50 (65%) of those being RNs and 27 (35%) UAP team members.

Table 5

Focus Unit Demographics by Project Unit

Unit	Role	*N*	Experience in Years			
			M	SD	Range	Mdn
Surgical Oncology	RN	50	5.19	7.75	31.07	2.17
	UAP	23	4.11	4.70	15.90	2.40
Medical	RN	50	4.93	6.52	30.89	2.17
	UAP	27	2.72	2.88	9.98	1.89
Total		150	4.49	6.27	31.07	2.07

Note. *N* = number of team members; *M* = mean years of experience; SD = standard deviation of years of experience; Mdn = median years of experience within the population; RN = Registered Nurse; UAP = Unlicensed Assistive Personnel.

As outlined, the average total experience was 4.49 years, with a standard deviation of 6.27 years. As seen in Figure 3, the team experience was skewed right with a median of 2.07 years, but a range of 31.07 years. When reviewing the demographics by role, RNs had a higher mean of years of experience, but a larger distribution versus the UAP team members. The standard deviation for both RNs and UAP team members on the surgical oncology and medical units is reflective of the previously mentioned right skewed appearance of the distribution in Figure 3.

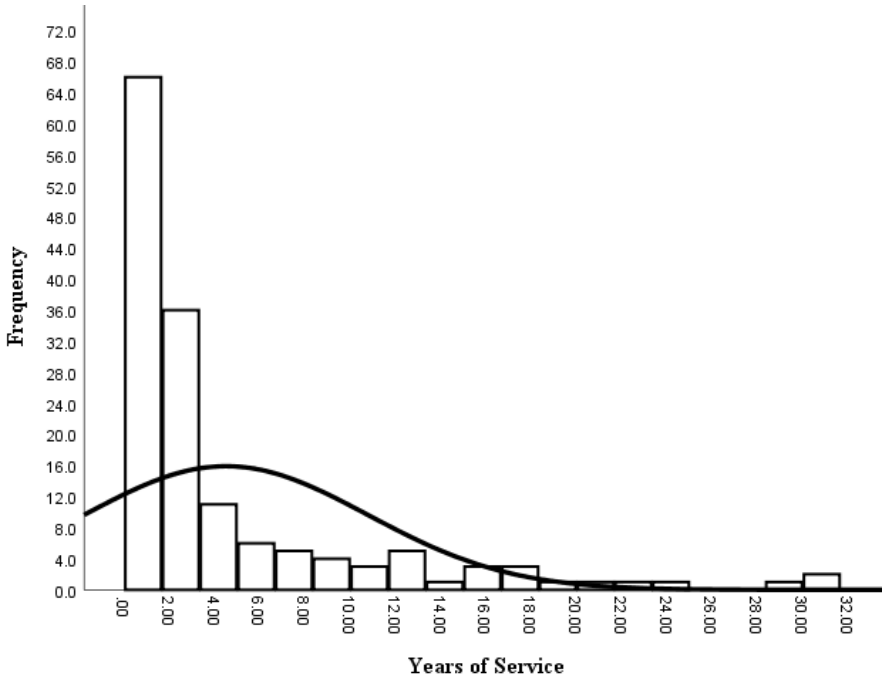


Figure 3. Years of Experience Distribution for the Surgical Oncology and Medical focus units distributed as a total team.

Intended Outcomes

The intended outcomes defined by this QI project were two-fold. First, an evaluation of the response time as noted captured by the health information technology (HIT) system elected by the project site. This raw data, as measured from the time the patient initiates a call to the time in which the RN or UAP enter the room, is reviewed. The first defined outcome was to see a decrease in average response time from call to RN or UAP response for the comparison period. The response time was defined as the measurement, in minutes, from the time the call was placed to the time a team member was in the room. The evidence-based benchmark for success was defined by Tzeng, Ronis, and Yin (2012) as a response in four minutes or less from the time of the call initiation.

The second defined outcome was to see an increase in HCAHPS top box scores for each responsiveness question within the responsiveness domain. Analysis of the metrics associated

with HCAHPS responsiveness questions was straight forward. These metrics were queried by unit by discharge date to allow for pre- and post-implementation analysis. Data was analyzed based on entity, state, and national targets. The entity target goal of average hospital responsiveness scores was set at 65.1%, while state and national benchmarks for responsiveness were 68% and 69%, respectively (Centers for Medicare and Medicaid Services [CMS], 2018).

Findings

Response time. The benchmark goal of four minutes or less for response time was not met by either project unit during the pre- and post-implementation phases. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. As outlined in Table 6, both focus units experienced an overall reduction in mean response time as measured from the time of call bell initiation to staff member arrival in room. Interestingly, the surgical oncology unit reduced the range of their overall responsiveness between the pre- and post-implementation phases from 28:22 minutes to 17:21 minutes. The medical unit experienced an increase in both overall call volume from 613 calls to 1,084 total calls per period. Interestingly, the range increased by almost four minutes, but the overall mean response time to call was not impacted.

Table 6

Focus Unit Response Time by Implementation Period

Unit	Pre-Implementation Period				Post-Implementation Period			
	n	*M*	SD	Range	*n*	*M*	SD	Range
Surgical Oncology	971	6:51	7:41	28:22	1,126	5:41	6:32	17:21
Medical	613	5:44	6:32	26:50	1,084	5:39	6:27	30:43

Note. *n* = number of calls; *M* = mean response time of calls in minutes and seconds; SD = standard deviation of response time in minutes and seconds.

HCAHPS responsiveness scores. Interestingly, the HCAHPS responsiveness scores showed general performance gains. As noted in Table 7, the overall responsiveness scores on the focus units improved between the pre- and post-intervention phases. The pre-implementation time period was defined as beginning on December 3, 2018 at 00:00 hours, and ending on January 6, 2019 at 23:59 hours. The intervention phase began on January 7, 2019 at 00:00 hours, and ended on January 20, 2019 at 23:59 hours. Lastly, the post-implementation phase began on January 21, 2019 at 00:00 hours and ended on February 24, 2019 at 23:59 hours. Surgical Oncology made the greatest gains in the perceptions of staff responsiveness as it relates to assistance with toileting, with patients reporting “Always” from 60.6% to 73.2%. The Medical unit experienced the greatest gain in their overall rating with an increase from 51.2% to 66.7%. Notably, the overall net gains from pre- to post-implementation periods were greatest on the Medical unit, but modest gains were made across the board on Surgical Oncology unit. The HCAHPS responsiveness overall scores in the post-implementation period for both units exceeded the entity target of 65.1%, but fell short of the state (68%) and national (69%) benchmarks for responsiveness, correspondingly (CMS, 2018). Regardless of falling short of the

state and national goals, there is positive gains to be celebrated at the entity level, as these targets have not been met for over two prior fiscal years.

Table 7

Focus Unit HCAHPS Responsiveness Scores

	Surgical Oncology				Medical			
	Overall	Q4	Q10	Q11	Overall	Q4	Q10	Q11
Pre-implementation	59.3%	58.0%	53.7%	60.6%	51.2%	50.0%	62.5%	52.4%
Post-implementation	67.2%	61.2%	57.4%	73.2%	66.7%	63.1%	59.5%	55.8%

Note. Overall = overall top box score for the HCAHPS responsiveness domain; Question (Q) 4 = During this hospital stay, after you pressed the call button, how often did you get help as soon as you wanted it; Q10 = During this hospital stay, did you need help from nurses or other hospital staff in getting to the bathroom or using the bedpan; Q11 = How often did you get help in getting to the bathroom or using a bedpan as soon as you wanted. Questions adapted from "HCAHPS Survey" by Hospital Consumer Assessment of Healthcare Providers and Systems, 2018a. Retrieved from http://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/july-1-2018-and-forward-discharges/2018_survey-instruments_english_mail.pdf

Summary

Ultimately, the focus site benefitted from the re-education on hourly rounding despite a failure to meet the evidence-based target of responding to a call in four minutes or less. However, considerable gains were made on both units through the decrease in the mean responsiveness time as measured from call initiation to team member presence. Through an improvement of the HCAHPS domain of responsiveness of hospital staff, patient experience made positive gains

towards goals. With the progress made by achieving the entity target goal of 65.1%, this shows continued opportunities for evolution to meet the state and national benchmarks for performance with a continued focus and exercise of the continuous improvement cycle.

Chapter Seven: Implications for Nursing Practice

A scholar's decision to embark on a Doctor of Nursing Practice (DNP) journey is not taken lightly. An understanding of the essentials of the DNP curriculum align the pursuit of this terminal degree with the theoretical underpinnings for the work to be done. Having this understanding enhances the identification, planning, implementation, and analysis of the DNP project. This chapter focuses on understanding the DNP essentials and how they impact the practice of nursing for the successful DNP student.

Practice Implications

The American Association of Colleges of Nursing (AACN; 2006) has defined eight key essentials for the DNP scholar to meet with the defined project work. These essentials guarantee the nurse leaders who has been successful in obtaining a DNP to be a steward of translational science, leadership, evidence-based practice, operational and systems thinking, and continuous quality improvement for the benefit of the population. The essentials below allow for a broad application to the DNP scholar; however, they are specific to this quality improvement project as described by the connections established in the literature.

Essential I: Scientific underpinnings for practice. The scientific underpinnings for practice, as defined by the AACN (2006) Essentials of Doctoral Education for Advanced Nursing Practice, focuses on the translation of knowledge and principles from peer sciences to support the advancement of professional practice. The basis for this project was rooted in the theoretical marriage of Kristen M. Swanson's Caring. Based on Swanson's Theory, the implementation of a Patient Experience Bundle to improve the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores in the responsiveness domain, the patient could experience a higher level of nurse caring behaviors, and thus, rate the responsiveness higher. The

use of the upgraded call bell system increases the ability of the nurse to communicate with the patient, and the use of hourly rounding ties back to the concepts of being with, doing for, and enabling. The practical application of Swanson's theory to the operational aspects of the quality improvement project align with DNP Essentials, as this theory is considered a middle-range theory, which borrows its knowledge from shared sciences (Zaccagnini & White, 2017). Adoption of a middle-range theory to guide the work of the DNP project supports the overall project implementation. Further expansion of the application of this middle-range theory includes addressing the needs of the non-English speaking or non-verbal patient, as those patients deserve the same evidence-based care.

Essential II: Organization and systems leadership for quality improvement and systems thinking. Leadership, by the DNP graduate, is a key element of the ability to influence and facilitate change to improve patient experience and outcomes (AACN, 2006). Utilization of systems thinking, such as using the Plan-Do-Study-Act (PDSA) process for quality improvement, facilitates an organized, methodical approach to opportunity identification and change. This project's adoption of the PDSA cycle to implement organizational and systems thinking recognizes that change is a continuous cycle that allows the stake holders to learn from the complex human and organizational process that impact behaviors, actions, and outcomes in the healthcare environment (Brimble, 2014). Through an understanding of organization and systems leadership with systems thinking, the use of the PDSA cycle should be used to further improve the delivery and outcomes of clinical practice through ownership at the frontline staff level. Recommendations for ongoing improvements would include differentiated call tones to allow the team member to triage multiple calls and requests without having to physically answer the phone. The importance of specifying alarm tones, frequencies, and settings to prevent overall

notification fatigue is a patient safety priority (Drew et al., 2014). Ideally, the use of the PDSA cycle to look at call-specific outcome types would be evaluated. By embracing the steps of the PDSA cycle to continuously improve the delivery and outcomes of clinical practice, the learnings from the project can be better captured for future use.

Essential III: Clinical scholarship and analytical methods for EBP. Both the first and second essentials previously described cannot exist without the synthesis and knowledge curated from EBP. The use of research to develop thought models around clinical outcomes and quality improvement activities lay the framework for the development of professional nursing theories (AACN, 2006). A benchmark for the development of this DNP project was to understand the existing knowledge in the literature, and develop a quality improvement project to further the clinical understanding of responsiveness at the project site. The application of this learned knowledge to further advance clinical outcomes support the advancement of knowledge in the area of patient experience and responsiveness. As described by Horntvedt, Nordsteien, Fermann, and Severinsson (2018), the use of evidence-based practice (EBP) is a multi-step process that requires understanding of knowledge hierarchies to adopt supported knowledge into practice. Thus, recommendations for further research in the area of responsiveness with technology integration must be approached in a step-wise fashion to facilitate adoption of empirical practices. For example, industries outside of health care have adopted technology for consumer use to improve responsiveness and feedback mechanisms. Consumer industries are adopting revolutionary technology-driven products (RTP) as communication and feedback mechanisms with customers within their target markets to focus the industry response (Park, Gunn, Lee, & Shim, 2015). The importance of the technology aligning with the task at hand as well as the perceived value by the consumer drive the overall adoption of the technology

integration into everyday life (Park et al., 2015). An example of the consumer driven technology adoption-feedback loop is with the Apple iPod. It beat out multiple competitors who came to market in the same timeframe, and based on consumer use and feedback, has morphed into a phone and a key part of millions of people's daily life (Park et al, 2015). By aligning the learnings of other industries and modeling the consumer-technology adoption in the healthcare area, technology can be created and more aptly integrated into the patient and care team process of caring for the whole patient and their loved ones.

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. Use of information technology and systems in healthcare delivery is still in its infancy, but has quickly become a focus on all fronts. Adoption of technology into quality improvement, as seen with the work of this project, has become a requirement for health care delivery, and thus, impacts outcomes. Negash, Musa, Vogel, and Sahay (2018) highlight the importance of the changes in provider's behavior to deliver care with technology integration to be successful with patient care interactions. As evidenced by this work, the changes in provider behaviors required for ongoing technology integration and patient care will be an on-going area of research. Furthermore, the advancement of technology is at a pace that will require clinicians to maintain an openness to learning and technology integration in practice. Therefore, the development of practice guidelines to support the use of the advanced call bell system and address care team members behaviors will further progress the goal to improve and transform healthcare using information systems.

Essential V: Healthcare policy for advocacy in healthcare. The creation of policy at the government or institutional level impacts care across the continuum, and the ability of both the advance practice nurse (APN) and frontline staff member to interpret and apply the

expectations (AACN, 2006). The wide variety of experience that nurses are able to bring to the policy making table at multiple levels is enhanced by the APN leading the focus (Lewinski & Simmons, 2018). The project at hand and the work of DNP programs allows for the APN to become an advocate, educator, and crucial decision maker in the policy making area through their advanced knowledge and leadership abilities. With the emphasis of this quality improvement project on meeting the patients unmet needs through responsiveness, clear policies to support integration of the behaviors and procedures associated with the technology need to be developed.

Leonenko and Drach-Zahavy (2016) highlight the close relationship that accountability, responsibility, and behaviors are heavily associated at the individual and unit levels. Despite this close relationship, there is an overall perception among professional nurses that accountability is not fully ingrained into the healthcare culture, thus, responsibility and behaviors fall short of the professional demands of the nurse (Leonenko & Drach-Zahavy, 2016). Therefore, the policymaking on the units and accountability at the individual level must meet the professional expectations of behaviors and responsibility for the care team. Failure to meet this standard allows for sub-par professional practices, which directly influence patient care.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. Interprofessional collaboration, as described by the AACN (2006), has communication as the cornerstone of this essential. The importance of collaboration for change management is paramount, as a lack of communication with stakeholders paralyzes the successes of the PDSA process. A major tenant of this project revolved around communication with patients and meeting their unmet needs. Based on this, recommendations for collaboration based on clear protocols, models, and defined education would further enhance the opportunities for

interprofessional collaboration for enhanced patient outcomes (Humbles, McNeal, & Paul-Richiez, 2017). The concentration of the ongoing interprofessoinal collaboration should focus on integration of the physicians with the front-line staff to address unmet physical needs or communication needs to enhance the overall patient experience around responsiveness. An example of this in practice would be the adoption of the daily rounds at the bedside as practiced in the intensive care setting into the intermediate and step-down unit environment. Henkin et al. (2016) implemented multi-disciplinary bedside rounds for select medical units. With their work, they found that the implementation of multi-disciplinary bedside rounds correlated with a positive increase in HCAHPS scores as well as safety and teamwork perceptions between the providers and nurses involved (Henkin et al., 2016). Positive examples such as this work highlight the importance of a multi-disciplinary approach to meeting unmet patient needs to enhance patient outcomes through safety and satisfaction, with effective communication being at the crux of all interaction.

Essential VII: Clinical prevention and population health for improving the nation's health. The goals of the APN affecting the overall population health could seem farfetched, but in review, efforts to make impacts start in the acute care setting. The AACN (2006) focuses on the importance of the APN to evaluate how care is provided in each unique setting, the ability to analyze validated data, and use that data to make informed decisions. Further enhancement of this project to affect population health should be centered upon prevention of hospital acquired conditions through responsiveness and ongoing integration of technology into care delivery. Graves (2004) identifies that 10% of all patients admitted to the hospital will experience a hospital acquired infection, which increases the amount of resources needed for treatment, prolonged length of stay, increased patient mortality, and profound economic burdens. The

ability of the APN to improve the care delivery in each unique setting through data analysis to make informed decisions directly impacts population health (Graves, 2004).

Essential VIII: Advanced nursing practice. The final DNP essential focuses on the ability of the DNP prepared nurse to critically assess the status of their practice area and lead improvement to impact care (AACN, 2006). With a focus on the APN working beyond the beside for positive patient care and outcomes, the APN is able to used their enhanced knowledge to implement evidence-based care to improve patient care outcomes (AACN, 2006). Based on the learned experiences in this project, the APN should focus future work on education around responsiveness, technology integration to care, and the overall patient experience through tailored learning sessions specific to compassionate care. Strauss et al. (2016) summarize the importance of integrating the five elements of compassion into communication education to enhance the shared patient and caregiver experiences. These five elements of compassion include identification, understanding, empathy, enduring suffering, and motivation to affect the suffering (Strauss et al., 2016). Research with patients report that compassionate care is a key competency of healthcare providers to provide patient centered care (Sinclair et al., 2016). The APN recognizes the complexity of compassionate care and the importance it plays in caring for the whole patient.

Summary

Understanding and aligning the DNP project work with the DNP essentials supports the ongoing development of both the project focus and the nursing profession. With the complementing of the essentials and implications for practice, the nursing profession benefits from the enhanced identification, planning, and implementation of the forthcoming DNP work. The nurse leader integrates these essentials into their practice through translational science,

leadership, EBP, operational and systems thinking, and continuous quality improvement for the improvement of patient outcomes.

Chapter Eight: Final Conclusions

In retrospective review of this continuous quality improvement project, there is opportunities for learning and translation for ongoing progress. This Doctor of Nursing (DNP) quality improvement project focusing on patient perceptions of nursing responsiveness as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey was undertaken with a goal to address the clinical question asking, "*Will the Registered Nurse (RN) and Unlicensed Assistive Personal (UAP) team members (P) of the focus site benefit from implementation of an advanced call bell system and re-education on hourly rounding (I) increase patient satisfaction in the HCAHPS domain of responsiveness of hospital staff (O)?* The learning gleaned from the project focus sites allows evidence to be shared across healthcare practice and beyond responsiveness. This chapter evaluates the significance of findings, overall strengths and limitations of the project, and recommendations for practice and dissemination.

Significance of Findings

The significance of the work and findings of this quality improvement project are synonymous. First, the decrease in the overall responsiveness time on both focus units coupled with the improved mean responsiveness scores on the HCAHPS survey hold the greatest significance for the work. These two data points correlated with overall improved responsiveness on the focus units between the pre- and post-implementation periods. The HCAHPS Survey results improved on the surgical oncology unit from a mean of 59.3% to 67.2%, and on the medical unit from 51.2% to 66.7%. The mean response time showed notable gains on the surgical oncology unit from 6:51 minutes to 5:41 minutes, while the medical unit made modest improvements from 5:44 minutes to 5:39 minutes. The work and focus placed on responsiveness

times and responsiveness communication perceptions as rated by the patients' facilitated overall improvement. This improvement met the entity goals, but additional work is needed to meet the state, national, and literature benchmarks of success. Furthermore, maintenance of these improvements will remain the greatest challenge, as the unit specific populations offer unique obstacles for continuous improvement opportunities.

Project Strength and Limitations

The project design and implementation had both strengths and limitations. The design of the project only focused on two units within the entity to decrease implementation variability, but this limited the progress made on other units; therefore, reducing the impact on the overall entity HCAHPS survey responsiveness scores. Another limitation identified was the single point of interaction that this training provided for the front line team member, versus on-going routine re-enforcement of the concepts. This creates difficult sustainability of high HCAHPS survey scores due to the cyclic training and subsequent boost in scores for a 60 to 90 day period, followed by a slight drop and plateauing.

Strengths of the project included the ability to tailor purposeful rounding check-offs to the specific needs of the learner's daily environment and the ease of replicability of the intervention. Furthermore, practice using the advanced call bell technology over time increases the overall competency and comfort level of the frontline staff, which was not qualitatively measured for the purpose of this quality improvement project. The use of patient population specific scenarios enhances the competency of the care team member to respond to common concerns or complaints associated with their hospital visit. The use of scenarios allows for the team members to practice their responses in a low-risk environment with constructive feedback versus the live environment of direct patient care. The ease of replicability of the intervention of

purposeful rounding competency can be replicated across the organization and across multiple disciplines. Members of the care team extend far beyond just the RN and UAP, and a collective approach to competency for all team members will further patient experience. The strength of the easy replicability of this quality improvement project is the greatest for all three mentioned, as translational ease for future use is a goal of the DNP project.

Project Benefits

This quality improvement project had some planned and unplanned benefits for the project site. One major benefit was the focus that this project created with the physician partners on the units. Due to the advertisement of the advanced call bell technology, purposeful rounding competency validation, and conversation generated within the teams, the physician partners took an indirect, yet noted interest in the work through formal report-outs and day-to-day conversation. Another major benefit of this project has been the recommendation of advanced call bell system improvement ideas brought forward by the staff. Some of these ideas are continuing to be evaluated, and include a greater differentiation in call tones for events such as bed alarms versus non-urgent requests. Lastly, the staff have realized that for non-English speaking patients, responsiveness is more than just a physical presence, but rather requires communication. Due to this, they have requested phone-based interpreter service applications installed on their smart phones to prevent further responsiveness and communication delays to meet the patients unmet needs in a timely manner.

Practice Recommendations

Based upon the lessons learned through the project implementation, the recommendations for practice are focused around immediate improvement of the existing purposeful rounding and responsiveness training. Specifically, this project had unit-specific training scenarios for the

purposeful rounding checkoff. Expansion of this concept for the next check-off are in development currently. Furthermore, the learnings from this project have solidified that this required training should be completed at least every six months, and expanded to unit based leadership to further re-enforce the learning. Lastly, the integration of compassion training with the purposeful rounding training will enhance the overall patient experience related to responsiveness (Sinclair et al., 2016).

At the conclusion of the DNP project, the goals for dissemination were internally and externally focused from the project site. The internal focus for sharing of learning and knowledge occurred almost immediately, as the next purposeful rounding check-off occurring in July 2019 was based from lessons learned and outcomes gained from the focus units. The DNP project poster was shared internally to the business and clinical leaders within the organization, with a focus on the executive leadership team and nursing leadership team. Lastly, this information was translated through the health system through poster submission to the 11th Annual Duke Health System Quality and Safety Conference, which will being accepting abstracts in November of 2019. The external dissemination of the learned experiences from this DNP project focused on publication in a respected, peer reviewed journal within the next 12 months. Journals of interest included the Patient Experience Journal or The Journal of Nursing Administration. Furthermore, this work was submitted as an abstract for the Press Ganey Patient Experience Conference for 2020. With the overall goals of the information sharing to focus on translational practices from the lessons learned, the dissemination of the work will be carried much further through future professional experiences of those involved in this quality improvement project.

Final Summary

Ultimately, the goals of this DNP project were met based upon the increased satisfaction scores in the responsiveness domain on the HCAHPS survey and slight decrease in response times. The formal outcomes were measureable for the institution, but the informal outcomes have placed future work in the area of responsiveness in the forefront of opportunities for improvement with ownership on the frontline staff. Integration of an advanced call bell system and purposeful rounding competencies to improve the patient experience aligns with the theoretical underpinnings of work by Kristen M. Swanson's Caring Theory and the Plan-Do-Study-Act (PDSA) quality improvement framework. As healthcare continues to evolve with the value-based payment models for health care reimbursement, acute care hospitals will be seeking out translatable, evidence-based work to improve patient care outcomes. This quality improvement project is in its beginnings for ongoing PDSA work, but provides numerous opportunities for adoption across acute care environments for translatable evidence.

References

Agency for Healthcare Research and Quality, U.S. Department of Health & Human Services. (2017). *What is patient experience?*. Retrieved from https://www.ahrq.gov/cahps/about-cahps/patient-experience/index.html

Alligood, M. R. (2014). *Nursing theorist and their work* (8th ed). St. Louis, MS: Elsevier

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education for advanced nursing practice* [PDF file]. Retrieved from https://www.aacnnursing.org/Portals/42/Publications/DNPEssentials.pdf

Beattie, M., Murphy, D. J., Atherton, I., & Lauder, W. (2015). Instruments to measure patient experience of healthcare quality in hospitals: A systematic review. *Systematic Reviews, 4*(97), 1-21. doi: 10.1186/s13643-015-0089-0

Bragg, L., Bugajski, A., Marchese, M., Caldwell. R., Houle, L., Tompson, R., …Lengerich, A. (2016). How do patients perceive hourly rounding. *Nursing Management, 47*(11), 11-13. doi: 10.1097/01.NUMA.0000502807.60295.c5

Brimble, M. (2014). Using systems thinking in patient safety: A case study on medicines management. *Nursing Management, 24*(4), 28-33. doi: 10.7748/nm.e1621

Brooks, J. A. (2016). Understanding hospital value-based purchasing. *American Journal of Nursing, 116*(5), 63-66. doi: 10.1097/01.NAJ.0000482974.56328

Brosey, L. A., & March, K. S. (2015). Effectiveness of structured hourly nurse rounding on patient satisfaction and clinical outcomes. *Journal of Nursing Care Quality, 30*(2), 153-159. doi: 10.1097/NCQ.0000000000000086

Butts, J. B., & Rich, K. L. (Eds.). (2017). *Philosophies and theories for advanced nursing practice* (3nd ed). Burlington, MA: Jones & Bartlett Learning.

Centers for Medicare and Medicaid Services. (2017). *Hospital value-based purchasing* (ICN Publication No. 907664). Retrieved from https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/Hospital_VBPurchasing_Fact_Sheet_ICN907664.pdf

Centers for Medicare and Medicaid Services. (2018). *Hospital compare* [Website]. Retrieved from https://www.medicare.gov/hospitalcompare/profile.html# profTab=1&ID =340073&Distn=0.8&dist=50&loc=27609&lat=35.8409242&lng=-78.6228504

Drew, B. J., Harris, P., Zegre-Hemsey, J. K., Mammone ,T., Schindler, D., Salas-Boni, R., … Hu, X. (2014). Insights into the problem of alarm fatique with physiologic monitor devices: a comprehensive observational study of consecutive intensive care unit patients. *PLoS One, 9*(10), e110274. Doi: https://doi.org/10.1371/journal.pone.0110274

Evans, E. C. (2016). Exploring the nuances of nurse-patient interaction through concept analysis: Impact on patient satisfaction. *Nursing Science Quarterly, 29*(1), 62-70. doi: 10.1177/0894318415614904

Galinato, J., Montie, M., Patak, L., & Titler, M. (2015). Perspectives of nurses and patients on call light technology. *Computer, Informatics, Nursing, 33*(8). doi: 10.1097/CIN.0000000000000177

Graves, N. (2004). Economics and preventing hospital-acquired infection. *Emerging Infectious Diseases, 10*(4), 561-566. doi: 10.3201/eid1004.020754

Henkin, S., Chon, T. Y., Chirstopherson, M. L., Halvorsen, A. J., Worden, L. M., & Ratelle, J. T. (2016). Improving nurse-physician teamwork through interprofessional bedside rounding. *Journal of Multidisciplinary Healthcare, 9*, 201-205. doi: 10/2147/JMDH.S106644

Horntvedt, M. T., Nordsteien, A., Fermann, T., & Severinsson, E. (2018). Strategies for teaching evidence-based practice in nursing education: A thematic literature review. *BMC Medical Education, 18*(1). doi: 10.1186/s12909-018-1278-z

Hospital Consumer Assessment of Healthcare Providers and Systems. (2018a). *HCAHPS* [Survey]. Retrieved from http://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/mail/july-1-2018-and-forward-discharges/2018_survey-instruments_english_mail.pdf

Hospital Consumer Assessment of Healthcare Providers and Systems. (2018b). *HCAHPS quality assurance guidelines* [Handbook]. Retrieved from https://www.hcahpsonline.org/globalassets/hcahps/quality-assurance/2018_qag_v13.0.pdf

Howe, C. J., & Close, S. (2016). Be an expert: Take action with evidence-based practice. *Journal of Pediatric Nursing, 31*(3), 360-362. doi: 10.1016/j.pedn.2016.02.010

Humbles, P. L., McNeal, G. J., & Paul-Richiez, D. (2017). Interprofessional collaborative practice in nursing education. *Journal of Cultural Diversity, 24*(2), 54-59.

Hutchinson, M., Higson, M., & Jackson, D. (2017). Mapping trends in the concept of nurse rounding: A bibliometric analysis and research agenda. *International Journal of Nursing Practice, 23*(6). doi: 10.1111/ijn.12584

Jha, A. K., DesRoches, C. M., Kralovec, P. D., & Joshi, M. S. (2010). A progress report on electronic health records in U. S. hospitals. *Health Affairs, 29*(10), 1951-1957.

Kemp, K., McCormack, B., Chan, N., Santana, M. J., & Quan, H. (2015). Correlation of inpatient experience survey items and domains with overall hospital rating. *Journal of Patient Experience, 2*(2), 29-69. doi: 10.1177/2374373515615977

Lasiter, S. (2014). “The button”: Initiating the patient-nurse interaction. *Clinical Nursing Research, 23*(2), 188-200. doi: 10.1177/1054773813479794

Leonenko, M., & Drach-Zahavy, A. (2016). “You are either out on the court, or sitting on the bench”: Understanding accountability from the perspectives of nurses and nursing managers. *Journal of Advanced Nursing, 72*(11), 2718-2727. doi: https://doi.org/10.1111/jan.13047

Lewinski, A. A., & Simmons, L. A. (2018). Nurse knowledge and engagement in health policy making: Findings from a pilot study. *The Journal of Continuing Education in Nursing, 49*(9), 407-415. doi: 10.3928/00220124-20180813-06

Manary, M., Staelin, R., Kosel, K., Schulman, K. A., & Glickman, S. W. (2015). Organizational characteristics and patient experience with hospital care: A survey study of hospital Chief Patient Experience officers. *American Journal of Medical Quality, 30*(5), 432-440. doi: 10.1177/1062860614539994

Mazurenko, O., Collum, T, Ferdinand, A., & Menachemi, N. (2017). Predictors of hospital patient satisfaction as measured by HCAHPS: A systematic review. *Journal of Healthcare Management, 62*(4), 272-283. doi: 10.1097/JHM-D-15-00050

Mitchell, M. G., Lavenberg, J. G., Trotta, R. L., & Umscheid, C. A. (2014). Hourly rounding to improve nursing responsiveness: A systematic review. *Journal of Nursing Administration, 44*(9), 462-472. doi: 10.1097/NNA.0000000000000101

Moen, R. D., & Norman, C. L. (2010). Circling back: Clearing up myths about the Deming cycle and seeing how it keeps evolving. *Quality Process, 43*(11), 23-28.

Montie, M., Shuman, C., Galinato, J., Patak, L., Anderson, C. A., & Titler, M. G. (2017). Conduits to care: Call lights and patients’ perceptions of communication. *Journal of Multidisciplinary Healthcare, 2017*(10), 359-366. doi: 10.2147/JMDH.S144152

Negash, S., Musa, P., Vogel, D., & Sahay, S. (2018). Healthcare information technology for development: Improvements in people's lives through innovations in the uses of technology. *Information Technology for Development, 24*(2), 189-197. doi: 10.1080/02681102.2018.1422477

Nelson, J. J., & Staffileno, B. A. (2017). Improving the patient experience: Call light intervention bundle. *Journal of Pediatric Nursing, 36*, 37-43. doi: 10.1016/j.pedn.2017.04.015

Park, J., Gunn, F., Lee, Y, Shim, S. (2015). Consumer acceptance of a revolutionary technology-driven product: The role of adoption in the industrial design development. *Journal of Retailing and Consumer Services, 26*, 115-124. doi: https://doi.org/10.1016/j.jretconser.2015.05.003

Reis, Z. S. N., Maia, T. A., Marcolino, M. S., Becerra-Posada, F., Novillo-Ortiz, D., & Ribeiro, A. L. P. (2017). Is there evidence of cost benefits of electronic medical records, standards, or interoperability in hospital information systems? Overview of systematic reviews. *JMIR Medical Informatics, 5*(3), e26. http://doi.org/10.2196/medinform.7400

Sherrod, B. C., Brown, R., Vroom, J., & Sullivan, D. T. (2012). Round with purpose. *Nursing Management, 43*(1), 32-38. doi: 10.1097/01.NUMA.0000409925.39096.19

Sinclair, S., Torres, M.B., Raffin-Bouchal, S., Hack, T. F., McClement., S., Hagen, N. A., & Chochinov, H. M. (2016). Compassion training in healthcare: What are patients' perspectives on training healthcare providers? *BMC Medical Education,16*(169). doi: 10.1186/s12909-016-0695-0

Smith, S. A. (2014). Magnet hospitals: Higher rates of patient satisfaction. *Policy, Politics, & Nursing Practice, 15*(1), 30-41. doi: 10.1177/1527154414538102

Speroff, T., & O'Conner, G. T. (2004). Study designs for PDSA quality improvement research. *Quality Management in Health Care, 13*(1), 17-32.

Strauss, C., Taylor, B. L., Gu, J., Kuyken, W, Baer, R., Jones, F., & Cavanagh, K. (2016). What is compassion and how can we measure it? A review of definitions and measures. (*Clinical Psychology Review, 47*(7), 15-27. doi: 10.1016/j.cpr.2016.05.004

Swanson, K. M. (1991). Empirical development of a middle range Theory of Caring. *Nursing Research, 40*(3), 161-166.

Swanson, K. M. (1993). Nursing as informed caring for the well-being of others. *Journal of Nursing Scholarship, 25*(4), 352-357.

Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2013). Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. *BMJ Quality and Safety, 9*(11). doi: 10.1136/bmjqs-2013-001862

Tzeng, H. M. (2010). Perspectives of staff nurses of the reasons for and the nature of patient-initiated call lights: An exploratory survey study in four USA hospitals. *Bio Med Central Health Services Research, 10*(52), 1-13.

Tzeng, H. M., Ronis, D. L., & Yin, C. Y. (2012). Relationship of actual response time to call lights and patient satisfaction at 4 U. S. hospitals. *Journal of Nursing Care Quality, 27*(2), 1-8.

Tzeng, H. M., & Yin, C. Y. (2009). Relationship between call light use and response time and inpatient falls in acute care settings. *Journal of Clinical Nursing, 18*(23), 3333-3341.

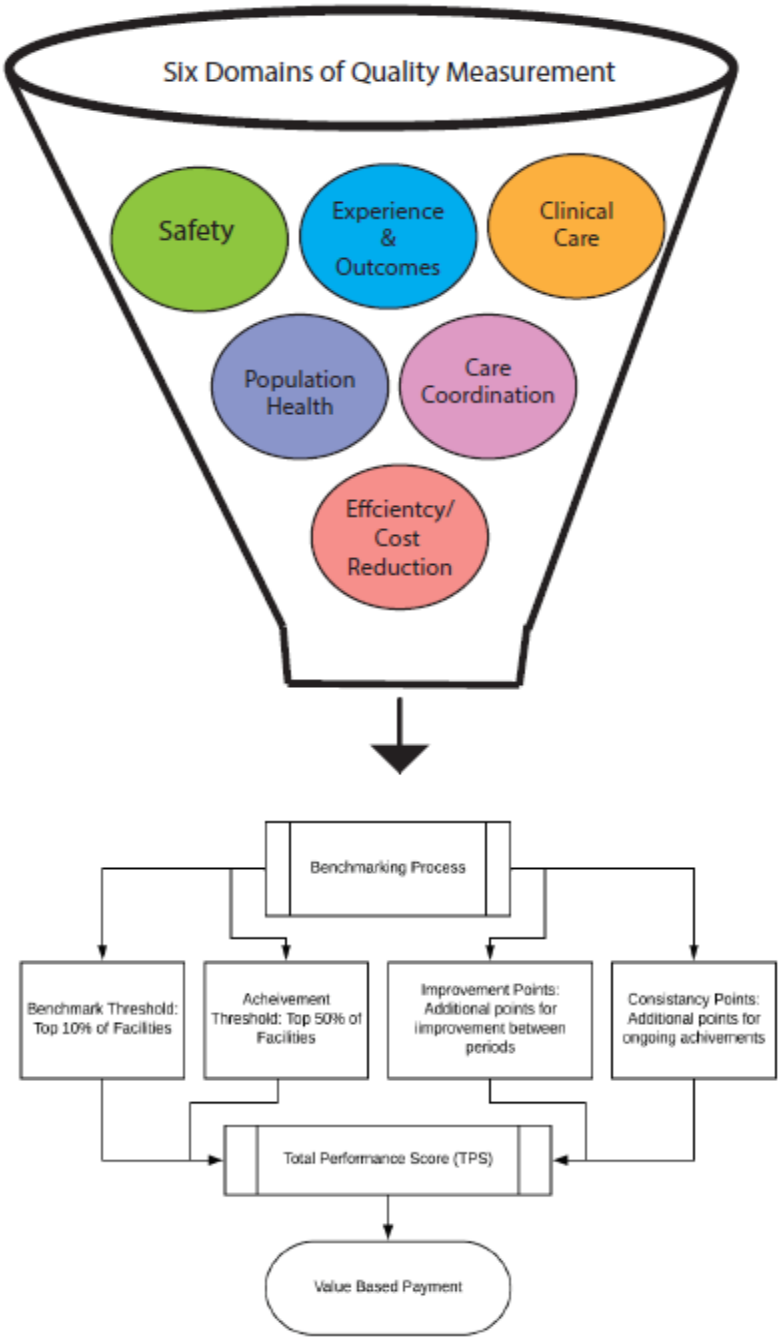
Varkey, P., Reller, M. K., & Resar, R. K. (2007). Basics of quality improvement in healthcare. *Mayo Clinic Proceedings, 82*(6), 735-739.

Westbrook, K. W., Babakus, E., & Grant, C. C. (2014). Measuring patient-perceived hospital service quality: Validity and managerial usefulness of HCAHPS scales. *Health Marketing Quarterly, 31*, 97- 114. doi: 10.1080/07359683.2014.907114

Zaccagnini, M., & White, K. (2017). *The doctor of nursing practice essentials* (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Appendix A

Summary of Value-based Payment Benchmarking



Note: Graphic created by project manager.

Appendix B

Literature Evidence Matrix

Article (APA Citation)	**Level of Evidence (I to VII)**	**Data/ Evidence Findings**	**Conclusion**	**Use of Evidence in EBP Project Plan (Include your evaluation, strengths/ limitations, and relevance)**
Beattie, M., Murphy, D. J., Atherton, I., & Lauder, W. (2015). Instruments to measure patient experience of healthcare quality in hospitals: A systematic review. *Systematic Reviews, 4*(97), 1-21. doi: 10.1186/s13643-015-0089-0	Level I	HCAHPS is rated the overall best tool to use to measure patient experience based on tools currently available. Table 6.	HCAHPS is rated the overall best tool to use to measure patient experience based on tools currently available	Supports HCAHPS as a reliable and valid tool to measure patient experience.
Bragg, L., Bugajski, A., Marchese, M., Caldwell. R., Houle, L., Tompson, R., …Lengerich, A. (2016). How do patients perceive hourly rounding. *Nursing Management, 47*(11), 11-13. doi: 10.1097/01.NUMA.0000502807.60295.c5	Level IV	Assessment of patient perceptions on hourly rounding on patient satisfaction and pain control.	Positive correlation between hourly rounding and pain control and consistently high patient satisfaction.	Evidence suggests that nurse driven hourly rounding reduces patient anxiety, falls, improved pain control, improved patient satisfaction and call bells.
Brosey, L. A. & March, K. S. (2015). Effectiveness of structured hourly nurse rounding on patient satisfaction and clinical outcomes. *Journal of Nursing Care Quality, 30*(2), 153-159. doi: 10.1097/NCQ.0000000000000086	Level IV	Pre/Post test study showed an overall increase in HCAHPS score with program implementation with sustainment of scores at	Pre/Post test study showed an overall increase in HCAHPS score with program implementation with sustainment	Implementation of a hourly nurse rounding program on a medical-surgical care unit decreased falls, pressure ulcers, call bell use, and increased overall patient

		one year. Table 1	of scores at one year.	satisfaction scores.
Evans, E. C. (2016). Exploring the nuances of nurse-patient interaction through concept analysis: Impact on patient satisfaction. *Nursing Science Quarterly, 29*(1), 62-70. doi: 10.1177/0894318415614904	Level VI	Concept analysis of Nurse-Patient interaction theories	Positive correlation between patient satisfaction and positive nurse-patient interactions	Establishes the positive correlation between high patient satisfaction and positive nurse-patient interactions.
Galinato, J., Montie, M., Patak, L., & Titler, M. (2015). Perspectives of nurses and patients on call light technology. *Computer, Informatics, Nursing, 33*(8). doi: 10.1097/CIN.0000000000000177	Level VI	Concepts of usability, technology improvement and improved communication nurse/patient perspectives of call lights.	Qualitative review of nurse call system supports use as a tool for patient/nurse communication, but opportunities for improvement exist.	Call lights are the tool for communication between the patient and the nurse. Link for patient to get unmet needs addressed.
Hutchinson, M., Higson, M., & Jackson, D. (2017). Mapping trends in the concept of nurse rounding: A bibliometric analysis and research agenda. *International Journal of Nursing Practice, 23*(6). doi: 10.1111/ijn.12584	Level V	Systematic review of the literature on nurse rounding	Four types of nurse rounding emerged from the existing literature to further enhance the research of the usefulness of this intervention	Nurse rounding remains a topic for development with the need for specific typology defined and further explored.
Kemp, K., McCormack, B., Chan, N., Santana, M. J., & Quan, H. (2015). Correlation of inpatient experience survey items and domains with overall hospital rating. *Journal of Patient Experience, 2*(2), 29-	Level IV	Evaluated the correlation of patient experience questions and domains with overall hospital	Communication with nurses & responsiveness had the highest correlation with overall	The patients overall hospital rating correlates with their perception of communication with nurses and

69. doi: 10.1177/2374373515615977		rating through use of correlation coefficients. N= 27,639	hospital rating- 0.60, *P<.001*	responsiveness of hospital staff.
Lasiter, S. (2014). "The button": Initiating the patient-nurse interaction. *Clinical Nursing Research, 23*(2), 188-200. doi: 10.1177/1054773813479794	Level VI	Qualitative review of patient interviews revealed that patients use the call systems as means to get help immediately	Underlying themes of anxiety and safety concerns due to loss of perceived situational control often cause the patient to utilize the nurse call system	The nurse call bell system is perceived by the patients as a way to address an unmet need immediately. Lack of responsiveness to call bells results in decrease patient satisfaction.
Mitchell, M. D., Trotta, R. L., Lavenberg, J. G., & Umscheid, C. A. (2014). Hourly rounding to improve nursing responsiveness; A systematic review. *The Journal of Nursing Administration, 44*(9), 462-472. doi: 10.1097/NNA.0000000000000101	Level I	Evaluated 16 studies that reviewed hourly rounding implementation.	Impacts of hourly rounding have been demonstrated across multiple care environments. Hourly rounding that includes the 4-P's was more impactful on improved responsiveness scores.	Impacts of hourly rounding have been demonstrated across multiple care environments. Hourly rounding that includes the 4-P's was more impactful on improved responsiveness scores.
Mazurenko, O., Collum, T, Ferdinand, A., & Menachemi, N. (2017). Predictors of hospital patient satisfaction as measured by HCAHPS: A systematic review. *Journal of Healthcare Management, 62*(4). 272-283. doi: 10.1097/JHM-D-15-00050	Level V	Use of HCAHPS data is able to identify predictors of patient satisfaction at individual,	Due to the high degree of validity and reliability of HCAHPS survey, predictors of patient	Limited number of articles available due to research type and non-longitudinal methodology.

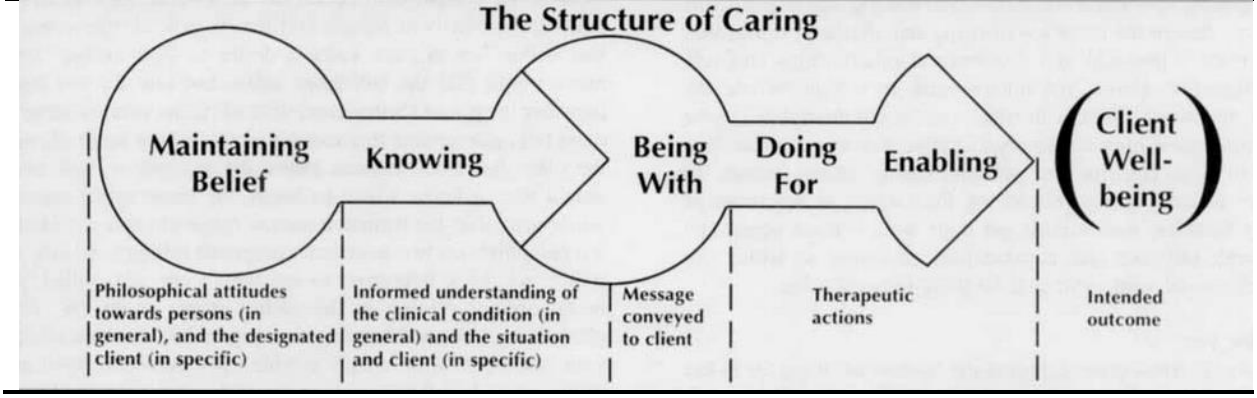
		hospital, and market levels	satisfaction emerge based on level of interaction.	
Montie, M., Shuman, C., Galinato, J., Patak, L., Anderson, C. A., & Titler, M. G. (2017). Conduits to care: Call lights and patients' perceptions of communication. *Journal of Multidisciplinary Healthcare, 2017*(10), 359-366. doi: 10.2147/JMDH.S144152	Level VI	Five themes emerged from why the patient used of call bell after qualitative reviews with previously hospitalized patients.	Themes: Establishing connectivity, safety concerns, lack of separation between health care and call bell, IT issues with call lights, need for communication, and when they felt the nurse was needed.	Patients perceive the call bell as synonymous with on-going healthcare and as a way to increase communication/ connectivity with their health care team.
Sherrod, B. C., Brown, R., Vroom, J., & Sullivan, D. T. (2012). Round with purpose. *Nursing Management, 43*(1), 32-38. doi: 10.1097/01.NUMA.0000409925.39096.19	Level IV	Purposeful rounding pilot on a medical /surgical unit improved patient satisfaction scores.	As measured by HCAHPS, purposeful rounding is a statistically significant intervention to improve patient satisfaction.	Purposeful, scripted rounding positively impacts patient satisfaction and helps to reduce the incidence of falls and hospital acquired pressure ulcers.
Smith, S. A. (2014). Magnet hospitals: Higher rates of patient satisfaction. *Policy, Politics, & Nursing Practice, 15*(1), 30-41. doi: 10.1177/1527154414538102	Level IV	Magnet hospitals have higher patient satisfaction scores ($p<.007$) than non-	Magnet hospitals have higher overall patient satisfaction.	Magnet hospitals (and hospitals pursuing Magnet designation) have higher patient satisfaction than their non-magnet counterparts.

		Magnet hospitals		
Tzeng, H. M. (2010). Perspectives of staff nurses of the reasons for and the nature of patient-initiated call lights: An exploratory survey study in four USA hospitals. *Bio Med Central Health Services Research, 10*(52), 1-13.	Level IV	Call bell use for toileting, pain management, and IV problems were the most common.	Nursing should not perceive call bells as interruptions in their day, but rather as meaningful patient requests based on the common call bell use reasons.	Nursing should not perceive call bells as interruptions in their day, but rather as meaningful patient requests based on the common call bell use reasons. Linkage between call lights and patient safety established, but under appreciated by care team members.
Tzeng, H. M., Ronis, D. L., & Yin, C. Y. (2012). Relationship of actual response time to call lights and patient satisfaction at 4 U. S. hospitals. *Journal of Nursing Care Quality, 27*(2), 1-8.	Level IV	Faster actual response time (4 minutes) to call lights contributed to higher patient satisfaction.	Response time to call bells does impact patient satisfaction.	Call light systems that have tracking and reporting capabilities will assist with quality improvement initiatives to improve responsiveness.
Westbrook, K. W., Babakus, E., & Grant, C. C. (2014). Measuring patient-perceived hospital service quality: Validity and managerial usefulness of HCAHPS scales. *Health Marketing Quarterly, 31*, 97- 114. doi: 10.1080/07359683.2014.907114	Level IV	Correlation of HCAHPS questions with overall quality outcomes ratings of hospitals- Table 1	There is a positive correlation of quality with HCAHPS results, however, the researchers feel the correlation values are not high enough for how the HCAHPS is	Limited to two hospitals, non-longitudinal study. Does address the validity and reliability of HCAHPS

			used with VBP.	

Appendix C

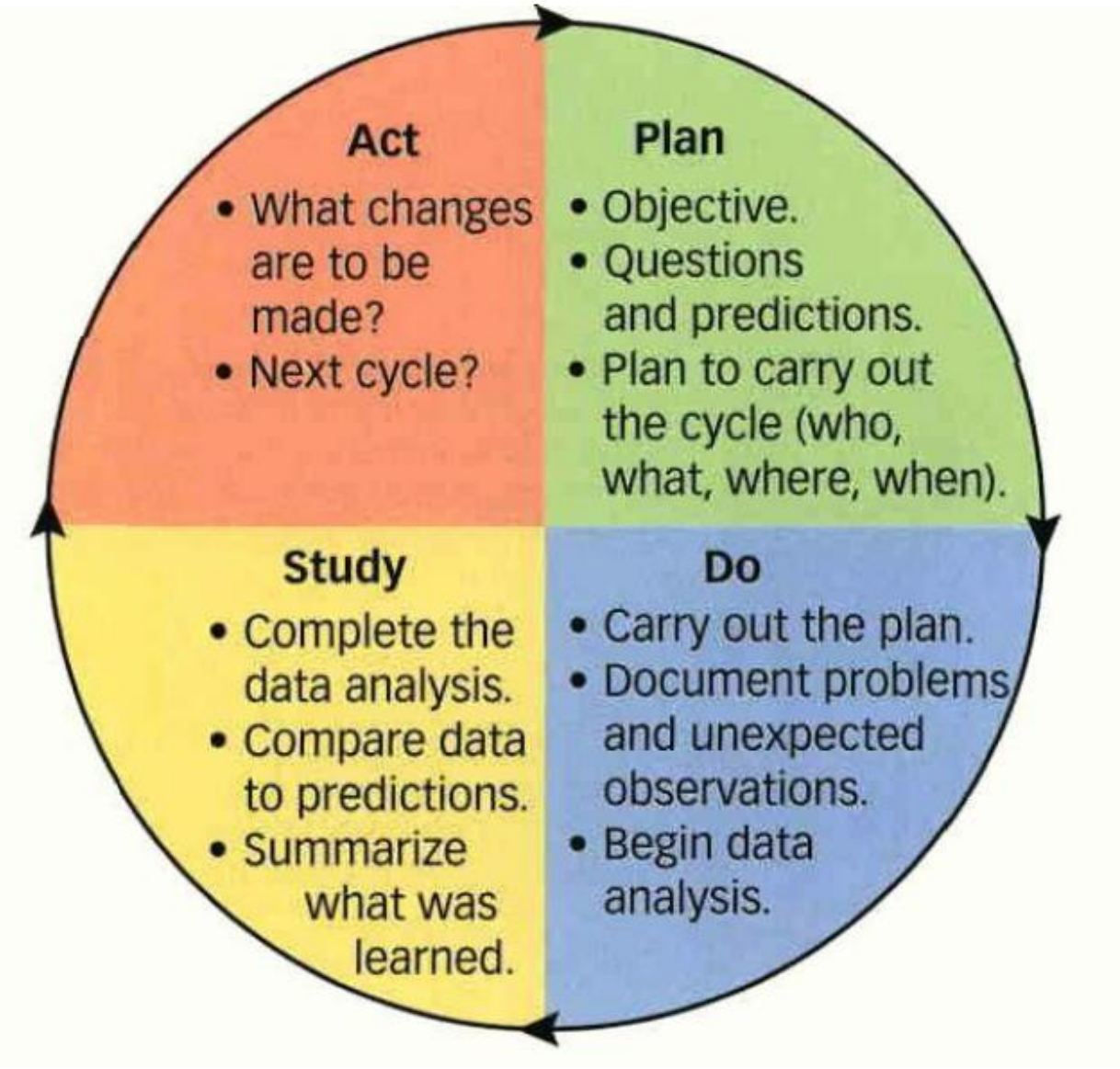
The Structure of Caring



Note. Reproduced from "Nursing as informed caring for the well-being of others" by K. M. Swanson, 1993, *Journal of Nursing Scholarship, 25*(4), p 355.

Appendix D

The PDSA Cycle



Note. Reproduced from "Circling Back" by R. D. Moen & C. L. Norman, 2010, *Quality Process, 43*(11), p. 27.

Appendix E

Front-line Team Member Demographic Information

Demographic	Reporting
Role- RN or UAP	Percentage of total aggregate via pie chart by role and unit
Primary work unit	Percentage of total aggregate via pie chart by role and unit
Number of worked years in role	Range, mean, and standard deviation by role and unit

Appendix F

Organizational Approval Letter

[redacted]

July 9, 2018

To Whom It May Concern:

We at [redacted] have reviewed Ms. Kimberly J. Morgan's DNP Project title "Enhancing HCAHPS Responsiveness through Responsiveness Bundle Implementation". Ms. Morgan has organizational support and approval to conduct her project within our institution. We understand that for Ms. Morgan to achieve completion of the DNP program, dissemination of the project will be required by the University, which will include a public presentation related to the project and a manuscript submission will be encouraged.

Our organization has deemed this project as a quality improvement initiative and requiring institutional IRB review.

Thank you,

Ms. Priscilla Ramseur, DNP, RN, CNOR, NEA-BC
Chief Nursing and Patient Care Services Officer
[redacted]

Appendix G

Project Site IRB Approval Letter

[redacted]

[redacted]INSTITUTIONAL REVIEW BOARD DECLARATION OF ACTIVITY NOT MEETING THE DEFINITION OF RESEARCH

The [redacted] IRB has determined that the following activity does not meet the definition of research as described in 45 CFR 46.102(d), 21 CFR 50.3(c) and 21 CFR 56.10(c) and satisfies the Privacy Rule as described in 45 CFR 164.514.

Protocol ID: Pro00101366
Reference ID: 291552
Protocol Title: Improving nurse responsiveness through advanced call bell implementation and hourly rounding
Principal Investigator: Deborah Allen

This IRB declaration is in effect from November 15, 2018 and does not expire. However, please be advised that any change to the proposed research will require re-review by the IRB.

[redacted]

Appendix H

ECU IRB Approval Letter

Click "download PDF" to save a copy of this page for your records.
Note: The IRB Office does not maintain copies of your responses.

Below is a summary of your responses Download PDF

Quality Improvement/Program Evaluation Self-Certification Tool

Purpose:

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Instructions:

Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research", and does not require IRB review. The IRB will not review your responses as part of the self-certification process.

Name of Project Leader:

Kimberly Morgan

Project Title:

Improving Nurse Responsiveness Through Advanced Call Bell Implementation & Hourly Rounding

Brief description of Project/Goals:

The evidence-based inquiry this project will examine is; “Will the Registered Nurses (RNs) and Unlicensed Assistive Personnel (UAP)team members of the focus site benefit from implementation of an advanced call bell system and re-education on hourly rounding increase patient satisfaction in the HCAHPS domain of responsiveness of hospital staff?” The identified project site for this project is Duke Raleigh Hospital inpatient units on the 4th and 5th floors. The intervention supporting this evidence-based practice (EBP) change project is implementation of an upgraded nurse call bell system that allowed the patient to communicate directly with staff at the time of pressing the call bell. The call bell technology will be complimented by the re-education of hourly rounding with the RNs and UAP. The combination of re-education of hourly rounding and an upgraded nurse call bell system made up the components of a Patient Experience Bundle. The first defined outcome is to see a decrease in average response time from call to RN or UAP response for the relative to the pre-implementation period through software reporting capabilities. The second defined outcome to be evaluated is to see an increase in HCAHPS scores for each responsiveness question within the responsiveness domain.

Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?

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Has the project received funding (e.g. federal, industry) to be conducted as a human subject research study?

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Is this a multi-site project (e.g. there is a coordinating or lead center, more than one site participating, and/or a study-wide protocol)?

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Is this a systematic investigation designed with the intent to contribute to generalizable knowledge (e.g. testing a hypothesis; randomization of subjects; comparison of case vs. control; observational research; comparative effectiveness research; or comparable criteria in alternative research paradigms)?

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Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?

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Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project.
11/18/2018

Appendix I

Hourly Rounding Simulation Scenarios

Scenario A

Mrs. Alexandra Smith is a patient that was admitted to your unit 6 days ago with upper abdominal pain. While here, she has undergone numerous tests and a biopsy that shows pancreatic cancer. Mrs. Smith has had multiple family members come visit, and she is exhausted from receiving a diagnosis and visiting with people. She has been increasingly frustrated about how long it takes for the call bell to get answered, and for someone to show up at her room. You are coming in to round on her mid-way through your shift, after you were alerted that she needed the nurse or NCA on your Zebra phone.

Scenario B

Mrs. Alexandra Smith is a patient who was admitted to your unit from the ED after waiting 23 hours for a room assignment. She has been having diarrhea with diffuse abdominal pain. Due to these symptoms, she is currently being ruled out for C. diff, and has to use the bathroom often, but is too weak to independently get out of bed. She has been increasingly frustrated about how long it takes for the call bell to get answered, and for someone to show up at her room. There is also a patient in the room next door who is intermittently agitated and confused, yelling throughout the night. You are coming in to round on her mid-way through your shift, after you were alerted that she needed the nurse or NCA on your Zebra phone.

Appendix J

Hourly Rounding Competency Documentation

Name: _____
Job title: _____
Unit: _____

Validation Methods
O: Observed V: Verbalize
D: Demonstration SE: Simulated event

Criteria/Behavior	Validation Method	Rating	Follow-up needed
1. Introduction: inform the patient why you are here (use term "hourly round")			
2. 5 P's: -**Pain** (inform when medication is due/when it was given) -**Potty** "When was the last time you used the restroom?" -**Position** "Can I help you change positions?" -**Partner** "Please remember you're at high risk for falling. Call if you need to get up" –**Pump** check to ensure IV bag is not running low			
3. Other needs: ice packs, room temperature, etc.			
4. Safety check: tidy room, ensure nothing is on the floor, bed alarm on			
5. Recap: Inform patient of all tasks completed. "What else can I do for you?"			
6. Time to return: "Between me and the RN/NA, we will be back within an hour to round on you. If you need anything else, you may use your call bell".			

Comments:

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Reviewer's Signature: _____ Date: _____