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## The Impact of Nursing Staff Responsiveness on Patient Satisfaction: A Pilot Project

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The Impact of Nursing Staff Responsiveness on Patient Satisfaction: A Pilot Project

Submitted in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice  
at Eastern Kentucky University

By

Lisa Wallace

Morehead, Kentucky

2020

**Abstract**

Timeliness of healthcare staff responsiveness to patient requests is multifactorial. Inadequate responsiveness to patient requests may lead to increased patient injury, increased cost, and patient dissatisfaction which may impact stakeholders and profit margin. Evidence supports that proactive, timely, staff responsiveness to patient requests and call lights may lead to improved patient safety, higher patient satisfaction, and better healthcare outcomes. Bundled staff responsiveness interventions may be implemented to improve patient safety, patient and staff satisfaction. Examples of interventions include engaging staff project buy-in with formation of a patient experience team, hardwiring hourly safety rounding, providing staff education on the importance of prompt response to patient call light requests and instructions how to implement the “no pass zone.” The purpose of the project was to implement a bundle of evidence-based nursing interventions which included forming a patient experience team, hardwiring hourly safety rounding, and implementing the “no-pass zone.” The project educated staff about the nurse call light system, the importance of timely staff responsiveness, increasing patient/family satisfaction, safety, and outcomes. The pilot unit was a 48-bed medical/surgical unit in a Magnet- designated hospital. Improvement in staff responsiveness to patient requests may increase patient and staff satisfaction, optimize organizational profit margin, and improve patient outcomes.

*Keywords:* staff responsiveness, call lights, healthcare outcomes, patient satisfaction

The Impact of Nursing Staff Responsiveness on Patient Satisfaction: A Pilot Project

By

Lisa Wallace

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DNP Project Chair Date

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### The Impact of Nursing Staff Responsiveness on Patient Satisfaction: A Pilot Project

Nursing staff spend a significant amount of time at the bedside with hospitalized patients which allows them to directly influence patient safety, satisfaction, and outcomes. Educating nurses on how to apply evidenced-based interventions, such as nursing presence with frequent hourly safety rounding, being prompt with response to patient call light requests by implementing the “no-pass zone,” and frequent communication with patients and families during hospitalization, may improve outcomes (Lee, Crouse, & Gipson, 2016). Examples of improved patient outcomes include: higher patient/family satisfaction scores, increased nursing staff satisfaction and retention, decreased patient length of hospital stay, decreased patient falls, decreased patient/family anxiety, decreased hospital-acquired pressure ulcers (HAPUs), and improved organizational profit margin. (Agency for Healthcare Research and Quality [AHRQ], 2017; Mitchell, Lavenberg, Trotta & Umscheid, 2014). In a competitive healthcare environment with a time-oriented society, consumers expect to feel valued, receive timely response to requests, and receive delivery of high-quality, safe patient care with improved outcomes (Ketelsen, Cook, & Kennedy, 2014).

Patient perception of staff responsiveness during hospitalization can have a direct influence on revenue. A study by Yang, Liu, Huang, and Mukamel (2018) found that poor patient perceptions of interactions with hospital staff increased hospital 30-day readmissions leading to loss of organizational revenue. Therefore, staff responsiveness is vital to increasing patient/family satisfaction scores, delivering high-quality, safe care, and optimizing patient outcomes which directly affects organizational profit margin.

According to Luger and Dunham Taylor (2018), approximately 80% of insured individuals receive fiscal support for healthcare services from the Centers for Medicare and

Medicaid Services (CMS). Due to implementation of Value-Based Purchasing (VBP) and the Hospital Consumer Assessment of Healthcare Providers and Services (HCAHPS), hospitals receive incentive payments that are weighted heavily on evidence-based, safety, patient satisfaction, and quality outcome measures (CMS, 2018). Hospital future existence and reimbursement is directly impacted by CMS incentive payments from VBP and the HCAHPS based on performance outcomes and patient satisfaction. Healthcare is in a state of constant change influenced by many factors. Hospitals need to continuously strategize evidence-based improvement interventions to optimize outcomes with minimal costs (CMS, 2018). The purpose of this pilot project sought to apply the evidence-based bundle of interventions with formation of a patient experience team, hardwiring hourly safety rounds, implementing the “no-pass zone,” and educating staff about the call light system and importance to improve nursing staff responsiveness, patient/family satisfaction, and improve patient outcomes.

### **Problem Description**

Poor or inadequate staff responsiveness can lead to safety risks, low patient satisfaction scores, and poor quality outcome measures (Nelson & Staffileno, 2017). The HCAHPS is a tool developed by the CMS that participating hospitals can use to monitor patient/family feedback about healthcare experiences (CMS, 2018). Aggregate HCAHPS data collected in August through September, 2018 from the proposed project facility, reflected an overall satisfaction of 64.1% (ranking 3<sup>rd</sup> to 11<sup>th</sup>), staff responsiveness 64.1% (ranking 1<sup>st</sup>-60<sup>th</sup>), help toileting as soon as wanted 76.7% (ranking 4<sup>th</sup> to 8<sup>th</sup>), and call bell help when wanted 56.2% (ranking 4<sup>th</sup> to 10<sup>th</sup>). The HCAHPS staff responsiveness national mean is 84.2% (Leapfrog Hospital Safety Grade, 2018). Target HCAHPS scores set by the facility are to be within the top 10% of hospitals reporting with rankings at the 75<sup>th</sup>

percentile or above. Aggregate data supports the scores and rankings were low nationally and below facility expected targets identifying the need for improvement.

Inadequate staff responsiveness also increases the number of hospital-acquired pressure ulcers and creates poor patient pain management (Brosey & March, 2015; Daniels, 2016; Lee, Crouse, & Gipson, 2016; Negarandeh, Bahabadi, & Mamaghani, 2014; Yang, Liu, Huang, & Mukamel, 2018). In Fall 2018, the project facility Chief Nursing Officer (CNO) educated staff and set the staff expectation to perform hourly patient rounding. Project unit aggregate hourly rounding data collected on staff compliance was 82.3% in September and 74.3% in October, 2018, falling below the 100% compliance benchmark set by administration. Direct staff observations by the primary investigator (PI) after introduction of the hourly rounding education also resulted in receiving verbal patient/family complaints of poor staff responsiveness to requests, frequent call light requests, and audible call light bells ringing for long periods of time without acknowledgement. Aggregate data was collected in October 2018 on the mean number of call light requests in a 24-hour period. The mean call light requests were 181 in August 2018, 196 in September, and 197 in October, which averaged 7.5-8 call light requests per hour. Brosey and March (2015), concluded that if patients are checked on regularly, the number of call lights will decrease. The expected reduction trend with hourly rounding compliance did not occur, further supporting a need for improvement in staff responsiveness to patient requests.

Implementing a project to enhance patient satisfaction and patient outcomes may also contribute to staff satisfaction, promoting nursing retention. Promoting nursing staff satisfaction is critical as a nursing shortage of almost one million is expected to occur by 2020 which will limit available nurses to provide adequate patient care by 20% (Cochran,

2017). Therefore, retention of nurses is critical because staffing shortages may contribute to poor patient quality outcomes (Nelson & Staffileno, 2017; Yang, Liu, Huang & Mukamel, 2018).

Application of evidence-based practice (EBP) leads to high-quality care and outcomes (Melnik & Fineout-Overholt, 2019). The first step in applying EBP was to identify a patient population, area of interest, comparison intervention group, outcome, and time frame (PICOT). The PICOT question developed was: In a 48-bed, Magnet-designated, medical/surgical acute care hospital, how does implementation of a staff responsiveness bundle compared to standard procedures impact patient satisfaction over a six-week period?

### **Background and Significance**

Inadequate staff responsiveness may significantly affect patient quality, safety, and outcomes (Nelson & Staffileno, 2017). Poor staff responsiveness relays the message the patient is not valued or their call bell request is not important, and may lead to poor satisfaction (AHRQ, 2017). Dissatisfied patients in a competitive healthcare environment can lead to consumers selecting a different healthcare facility for services, resulting in stakeholder and revenue loss (Institute of Healthcare Initiatives, 2018). Loss of patient volumes can decrease the number of hospital staff needed, decrease the ability to pay competitive wages, and contribute to costly nursing turnover (Ketelsen, Cook, & Kennedy, 2014). Staff need to empathize and understand patient expectations of responsiveness, safe, and high-quality care to directly increase consumer volumes, positively influence perception of care which will be reflected in patient satisfaction HCAHPS surveys, and create higher profit margin. Three HCAHPS questions that may be affected by improving

staff responsiveness are patient overall satisfaction, likelihood to recommend hospital, and responsiveness of hospital staff (Nelson & Staffileno, 2017, p. 37).

CMS developed a Leapfrog Hospital Safety Grade (2018), which is publicly available for consumers to evaluate the quality of healthcare facilities. The Leapfrog Hospital Safety Grade (2018) uses 28 evidenced-based safety measures rating facilities on a scale A, B, C, D, or F (safest/best to least safe/poor). Public available healthcare facility quality rankings allows consumers to choose high-quality performing hospitals for treatment, care, or procedures over poor or low performing facilities. The project facility Leapfrog Hospital Safety Grade (2018) was a “B,” demonstrating the need for ongoing improvement. Patient satisfaction alone affects up to 30% of hospital payment from CMS (Nelson & Staffileno, 2017).

Patient safety is also affected by staff responsiveness which can negatively influence organizational costs. Project unit scores in the responsiveness and overall satisfaction were below targets. This score is also associated with CMS payments to healthcare organizations based on patient satisfaction and quality outcomes (Nelson & Staffileno, 2017). A patient may fall trying to go to the bathroom because of inadequate staff responsiveness to a call bell request. One patient fall can increase a patient length of stay and cost a healthcare organization approximately \$4,322 in unnecessary expenses (Lee, Crouse & Gipson, 2016). Hospital-acquired pressure ulcers (HAPUs) may also increase patient length of stay, risk of infection, and additional unnecessary expenses. Brosey and March (2015) concluded that improved staff responsiveness with hourly rounding prevented adverse outcomes, decreasing costs greater than \$200,000 for one organization.

The National Quality Forum (NQF, 2019) has multiple research and white papers supporting the need for staff to be responsive to patient requests to improve safety and quality of care. In addition, the Iowa Quality Transformation Consortium (2017) developed an EBP toolkit to aid in evaluating the root causes of staff responsiveness to target improvement strategies. It identified hourly rounding, answering call lights with a team approach, establishing clear staff timeliness expectations in responding to call lights, and “no-pass zones” as interventions to improve staff responsiveness.

### **Intervention**

A staff responsiveness bundle was proposed as a project intervention to improve staff responsiveness leading to improved patient satisfaction. Evidence-based strategies consisted of forming a staff patient experience team to involve staff with patient input in decision-making, strategic planning, engagement, project buy-in, and sustainment (Cox et al., 2017, Daniels, 2016, Nelson & Staffileno, 2017). The bundle also consisted of staff education on the use of call light systems and equipment, clearly defining staff expectations related to hourly safety rounding and hardwiring behaviors, how to respond to patient requests with implementation of the “no-pass zone” to increase patient satisfaction, and explaining the importance of ongoing change (Lee, Crouse, & Gipson, 2016; Negarandeh, Bahabadi, & Mamaghani, 2014; Brosey & March, 2015; Lee, Crouse & Gipson, 2016; Mitchell et al., 2014). The “no-pass zone” was defined as the staff member entering the room and acknowledging the patient request prior to walking past the room when a call bell is activated (Lee, Crouse, & Gipson, 2016).

Implementation of this project was supported by a collection of internal and external evidence. Melnyk and Fineout-Overholt (2019) described internal evidence as evidence obtained from facility quality improvement or EBP implementation projects,

whereas, external evidence may be outside the organization in order to find solutions to identified problems. Examples of internal evidence included the number of patient falls, data from hourly rounding tools, call light reports, staff observation, and patient/family feedback, survey results, and HCAHPS scores (Melnik & Fineout-Overholt, 2019). EBP guidelines and research were examples of external evidence. A systematic review by Mitchell, Lavenberg, Trotta, and Umscheid (2014) evaluated the effect of hourly rounding on nursing responsiveness concluded hourly rounding to be cost-effective, reduced patient harm, and improved patient satisfaction. Therefore, consideration of internal evidence and external evidence was directly related to optimizing quality, safety, and organizational fiscal reimbursement.

### **Theoretical Framework**

Kotter's (1996) 8-step process for leading change was used to guide this project (See Appendix A). A strength in Kotter's framework was the value placed in identifying urgency and clarity as to why the change was needed. Another strength of utilizing this framework was involving key stakeholders or staff to aid planning, driving, and sustaining the change. Previously, the project facility CNO had set the expectation for staff to perform hourly rounding in the Fall of 2018. Kotter's (1996) framework supported this top-down leadership decision for the improvement of healthcare quality and outcomes.

The first step in Kotter's (1996) process was to create urgency. This was done by educating staff on the importance of improving staff responsiveness to improve patient safety, outcomes, and financial reimbursement from CMS. Creating a Patient Experience Team may promote staff engagement, gain feedback, and achieve staff project buy-in. The second step was building a guiding coalition with the formation of the team to gather staff feelings, garner input on the project, and aid with strategic planning, buy-in, and sustaining

the change. The third step was to create a strategic vision and initiatives for the project change that align with the facility's mission, vision, and values to achieve facility administrative support and to aid in hardwiring a culture of high-quality care and outcomes. The fourth step was to enlist a volunteer army by involving several staff who will be affected by the changes. Melnyk and Fineout-Overholt (2019) supported the presence and visibility of the PI to increase project support, enhance success, and sustainment of evidence-based interventions learned. This also promoted staff communication, buy-in, incentives, and sustainment of changes through frequent education, change agent presence, and feedback/rewards.

Stakeholders may identify potential project barriers throughout to aid with revisions or modifications leading to increased project success. The fifth step of Kotter's (1996) process was to empower action through implementation of the staff responsiveness bundle to improve staff responsiveness. The sixth step was to generate short-term wins by performing staff rewards/recognitions face-to-face verbally, in writing on staff bulletin boards or memos, or via the hospital employee high-five recognition program. The high-five program allowed any employee to recognize/reward peer employees for demonstrating positive behaviors with points which can be used for purchasing a variety of items. The seventh step was to sustain acceleration by engaging staff, project leader presence/visibility, recognition of staff improvements, and providing ongoing support. The last phase was to institute the change which made the interventions hardwired as part of the unit culture and be applicable to the other units within the organization to improve staff responsiveness, patient satisfaction, patient safety, and outcomes.

### **Review of the Literature**

A literature search was performed using primary databases such as Cumulative Index to



Nursing and Allied Health Literature (CINAHL), Elton B. Stephens Company (EBSCO), PubMed, and Cochrane Database of Systematic Reviews. Key words in the search individually or in combination were: “call light,” “patient satisfaction,” “hourly rounding,” “HCAHPS,” and “staff responsiveness.” The initial search was to find high-level hierarchal evidence based on Melnyk and Fineout-Overholt’s (2019, p. 18) Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions ranging from Level I (highest) to Level VII (lowest) (See Appendix B). Five studies were selected to include in the literature review.

A controlled clinical trial was performed in Tehran on a medical/surgical unit by Negarandeh, Bahabadi, and Mamaghani (2014) to study the impact of regular nursing rounds on patient satisfaction with nursing care. The convenience sample (N=100) included patients greater than 18 years of age, hospital stay of at least 72 hours, able to communicate, and without mental illness or receiving treatment for altered mental processes. The sample was split (N=50 each) between the experimental and control group. A self-administered demographic survey and a modified Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) were the measurement tools used (Negarandeh, Bahabadi, & Mamaghani, 2014). The modified PSNCQQ contained 21 questions with 5-point Likert scale answers 1-5 (weak to strong), which was administered on day two (D2) and day five (D5) of the hospital stay. A PSNCQQ mean score was calculated and the tool validity was .91 indicating appropriate use in this study. Statistical significance ( $P < .0001$ ) was observed from the evidence with the experimental group mean satisfaction scores on D5 ( $M=68.8$ ,  $SD=+8.8$ ) on a paired t-test (Negarandeh, Bahabadi, & Mamaghani, 2014). Study limitations included lack of random assignment, non-equivalent control group, and the prolonged interval between evaluating the sample groups. Study conclusions were that

regular nursing rounds can increase patient satisfaction and quality of care, which can easily be applied to any practice setting.

Daniels (2016) conducted a direct observation project on a 28-bed medical/surgical unit at a tertiary care, non-academic, faith-based hospital to study the effect of patient satisfaction and safety from implementing purposeful and timely nursing rounds (See Appendix C). The Joanna Briggs Institute's (JBI) Practical Application of Clinical Evidence System (PACES) and Getting Research into Practice (GRiP) were used as the conceptual frameworks. The nurse rounding 12-step or 4P (pain, potty, position, and possessions) model for patient satisfaction including hourly rounding during awake hours and every two hours during sleep hours, rounding compliance, nurse rounding times, and rounding frequency were measured. Patient satisfaction scores were defined by using the HCAHPS top-box response as answering "always" or score of a 9 or 10 on a Likert scale of 1-10 point scale (low to high) as a percentage. The HCAHPS questions evaluated were nurse communication, staff responsiveness, and pain management percentage scores. Post intervention findings concluded significant improvement in staff rounding compliance by 64%, staff responsiveness 15%, help with toileting 41%, and pain management 16%. (Daniels, 2016). Although, call light responsiveness remained unchanged at 45% (Daniels, 2016). Patient safety significantly improved with conclusions supporting a 50% decrease in patient falls. The study supported increased patient satisfaction, patient safety, communication, and staff responsiveness applicability to clinical practice with the need to hardwire interventions over time (Daniels, 2016).

Brosey and March (2015) performed a descriptive, pre/post quality improvement project on a medical/surgical unit at a large community hospital to evaluate the outcomes related to nurse hourly rounding. Hourly rounding was done between 6:00 a.m. through 10:00 p.m. and every two hours between 10:00 p.m. and 6:00 a.m. The Promoting Action

on Research Implementation in Health Services (PARiHS) framework was used to facilitate necessary factors for successful implementation of evidence into practice (Brosey & March, 2015). Compliance and assessment of 3-12 elements were measured on each patient round. Pre/post intervention top-box (Likert score 9 or 10) HCAHPS scores, hospital-acquired pressure ulcer (HAPU) rates (number of HAPUs/total number of patient-days, multiplied by 1000), and inpatient fall rates (#/1000 patient days) were measured. HCAHPS scores increased in overall satisfaction from 48.6% to 72.3%, nurse communication 70.5% to 76%, and likelihood to recommend 60% to 74.7%. Patient falls decreased from 7.02 to 3.18 and hospital staff responsiveness slightly decreased from 49.3% to 48.6%. The findings supported improvement in top box HCAHPS scores with the exception of hospital staff responsiveness. The study concluded significant reduction in patient harm (falls & HAPUs) saved the facility more than \$200,000 (Brosey & March, 2015). The number of call light requests decreased and rounding compliance initially increased to 69.4%, yet was not sustained. Limitations included the study was performed on only one unit and in one hospital for only three months. Application of hourly nurse rounding to practice could increase overall patient satisfaction, increase efficiency, decrease falls, decrease call light requests, decrease HAPUs, and improve organizational profit margin (Brosey & March, 2015). The interventions are easily applied to any setting, although the level of evidence was low, and thus cannot be considered reliable to nursing clinical practice.

Cox et al. (2017) performed a clustered randomized trial to examine the impact of a Family-Centered (FCR) checklist, intervention, and provider training to evaluate performance of family centered engagement and patient safety. The setting consisted of four hospital pediatric services (two general hospitalist, one hematology, one oncology).

The population was 298 families and 673 pre and post videos. The eight elements evaluated on the FCR checklist were: nurse present, introductions made, assessment provided, plan summarized, family was asked for questions, health care team was asked for questions, discharge goals discussed, and orders were read back (Cox et al., 2017). The independent variable was the FCR rounds. The pre and post intervention videos were used to evaluate to FCR elements and family engagement. The dependent variables were performance of the FCR elements, family engagement and patient safety (See Appendix D). The FCR checklist elements, video coding schemes, and Children's Hospital Safety Climate Survey tools were used to collect data. The intervention significantly increased the number of FCR checklist elements performed 1.2 more per round (4.3 to 5.9 of 8 elements with a 95% CI and  $\beta$ -1.2, 0.72-1.67). Communication improved with read back of provider orders (OR-12.43 with a  $P < .001$ ), family engagement in decision making (increased 1.5%), perception of safety (improved 0.6), and relationship building with discharge goals (improved 5.3,  $P = .03$ ). The tool was valid and applicable to pediatric populations, although the proposed pilot project was an adult population.

The review of literature revealed improving staff responsiveness to patient call light requests and performing the "no-pass zone" supported improved patient safety, increased patient satisfaction, decreased falls, decreased HAPUs, and decreased organizational costs. Casey et al. (2019) stated that performing ongoing staff education was critical in preventing healthcare disparities. In addition, evidence supported hourly rounding resulted in statistically significant improvements in patient satisfaction (HCAHPS), safety, and overall quality of care. The Summary Evaluation Table contains detailed information on the studies discussed above (See Appendix E). A large, systematic review by Mitchell, Lavenberg, Trotta, and Umscheid (2014) concluded healthcare organizations needed to

consider implementation of evidence-based interventions to improve nursing staff responsiveness.

### **Synthesis of Research Findings**

Hourly rounding and staff responsiveness were repeated variables in all five studies to improve patient satisfaction/HCAHPS scores and patient outcomes (Brosey & March, 2015; Cox et al., 2016; Daniels, 2016; Lee, Crouse, & Gipson, 2016; & Negarandeh, Bahabadi, & Mamaghani, 2014). A systematic review by Mitchell et al. (2014) found hospital leadership should consider hourly rounding programs to improve outcomes. According to Ketelsen, Cook, and Kennedy (2014), staff must be trained in performing hourly rounding, use of call light equipment, how to respond to call lights or defining clear definitions, and setting clear staff expectations. Staff education/training, standardized workflows, staff engagement, family-centeredness, and “no-pass zones” were examples of interventions in the evidence supporting improved outcomes. Outcome measurements included patient satisfaction/HCAHPS, quality of care, hourly rounding compliance, communication, staff responsiveness, pain management, falls/safety, call light use, HAPUs, costs, safety, and family engagement (Brosey, 2015; Cox et al., 2016; Daniels, 2016; Lee, 2016; & Negarandeh, 2014). Evidence strengths included that three of the five studies (Negarandeh, 2014; Daniels, 2016; & Cox, 2017) improved quality of care and hourly rounding compliance which may lead to improved patient satisfaction, staff satisfaction, administrative satisfaction, improved pain management, and increased organizational revenue from CMS.

Daniels (2016) and Cox et al. (2017) findings supported hourly rounding and staff responsiveness led to improved communication contributing to improved patient safety. Patients expect to be listened to attentively and responded to in a timely manner which

leads to consumer feelings of being valued and safe. Patient safety may further be improved by engaging staff by formation of a patient experience team to improve communication and teamwork leading to improved quality outcomes (Agency for Healthcare Research and Quality, 2017). Furthermore, Brosey (2015) and Cox (2017) concluded staff responsiveness and hourly rounding enhanced safety by decreasing falls, HAPUs, and 30-day re-admissions leading to cost effectiveness.

Weaknesses identified in the evidence included inconsistent definitions of staff responsiveness, variant intervention strategies, and lack of one consistent guideline among the studies. Multiple measurement tools, short project time periods, non-adult target populations, and a variety of small, single location settings were also weaknesses. A difference in hierarchal levels of evidence was also noted between the studies reviewed.

### **Application to Evidence Based Practice**

Inadequate staff responsiveness and not performing hourly rounding leads to poor satisfaction scores (Nelson & Staffileno, 2017). Nursing staff interactions with patients directly affect patient perceptions of satisfaction or quality of care received (Brosey & March, 2015). A project performed by Hitchcock, Reiboldt, and Woolf (2016) at an Ohio hospital incorporating evidenced-based staff responsiveness interventions resulted in decreasing staff timeliness to answer call lights on day shift (32 to 18 seconds) and on night shift (25 to 16 seconds). The HCAHPS staff responsiveness scores increased (85 to almost 92), resulting in a statistical significant increase in ranking (8<sup>th</sup> to 68<sup>th</sup>) percentile (Hitchcock, Reiboldt, & Woolf, 2016). VBP and HCAHPS affect organizational revenue received from CMS based on patient satisfaction or HCAHPS scores.

Evidence-based practice (EBP) interventions target improving outcomes. Responsiveness was supported by evidence to directly effect outcomes. The proposed staff

responsiveness intervention bundle interventions included education, hardwiring hourly safety rounding, implementing the “no-pass zone,” forming a staff patient experience committee, and providing staff quantitative feedback and recognition (See Appendix F). The proposed bundle of evidence-based project interventions targeted overall improved patient outcomes. Examples included decreased HAPUs, decreased call light requests promoting staff efficiency and satisfaction, and decreased 30-day readmissions promoting improved profit margin (Brosey, 2015; Cox, 2017; Daniels, 2016; Lee, 2016; & Negarandeh, 2014).

Daniels (2016) and Lee (2016) concluded hourly rounding interventions support improving overall patient satisfaction and outcomes with improved staff responsiveness bundled interventions. All five studies (Brosey, 2015; Cox, 2017; Daniels, 2016; Lee, 2016 & Negarandeh, 2014) concluded various levels of increased patient satisfaction/HCAHPS from implementation of staff responsiveness and hourly rounding interventions.

Evidence-based interventions were critical to improve patient safety and outcomes (Melnyk & Fineout-Overholt, 2019). Evidence supported implementation to clinical practice of the staff responsiveness intervention bundle to improve patient satisfaction.

### **Purpose**

The purpose of this project was to evaluate the impact of a staff responsiveness bundle on patient satisfaction as evidenced by improved HCAHPS scores and call light responsiveness data on a 48-bed, Magnet-designated, medical-surgical acute care hospital unit. To ensure the team understood the intervention bundle, staff education was provided and additional feedback was collected from staff and stakeholders to improve project strategic planning, implementation, and evaluation. The bundle included forming a patient experience team, hardwiring hourly safety rounds, providing nursing staff education on the importance of prompt response to patient call

light requests, and instruction on how to perform the “no-pass zone.” Therefore, leading the proposed project facility unit to the ultimate goal of improved patient safety, satisfaction, and quality patient outcomes.

### **Agency Description**

The setting for the proposed project was a 48-bed, medical-surgical unit within a 173-bed acute care, Magnet-designated, acute care hospital which is also part of a larger healthcare corporation located in the Bluegrass Region of Kentucky. The project aligned with the facility mission, vision, and values to optimize patient safety, satisfaction, and deliver high-quality outcomes. The project had project facility administrative support and consent.

### **Stakeholders**

Internal stakeholders included the project unit staff, facility, and project unit patient, who were directly affected by the change. Non-nursing staff on the project unit were excluded from the project. External stakeholders included the facility healthcare corporation, third party payers, individuals in the community, insurance companies, and Eastern Kentucky University (EKU).

### **Project Design/Context**

The project was a descriptive, pre and post-test, quality improvement pilot project. The project ended six weeks post intervention. The Iowa Model of Evidence-Based Practice to Promote Quality Care (See Appendix G) was used to apply the staff responsiveness bundle to improve patient satisfaction and outcomes. The core components of the staff responsiveness bundle included creating a patient experience team, providing staff education, implementing a “no-pass zone,” performing random direct staff observations, and collection of HCAHPS and call light report data. A Data Outcomes



Measures Tool to record and compare data pre/post intervention bundle effects on patient satisfaction over a period of six weeks (See Appendix H).

### **Internal Review Board (IRB) Application Process**

The Exempt IRB application was completed and submitted to ECU IRB. The project facility consented to accept ECU IRB approval (See Appendix I). The PI completed the required Citi training (see Appendix J) prior to project implementation. Agency consent for the project was supported by signatures on the ECU Mutual Agreement Form (See Appendix K). The proposed pilot project did not involve more than minimal risk, nor any direct patient interventions.

Anonymity and privacy was upheld because no participant identifiers were included in the data to link to the project. Data was collected from facility unit dashboard HCAHPS report, random staff observations, and call light reports. Electronic mail through the facility Microsoft Outlook was secured by encryption. Project unit employment at the Magnet-designated facility served as implied consent to participate. All data was stored in password protected files using the agency's encrypted, secure network. Final project paper file will be stored in a locked cabinet at ECU, Rowlett Building, designated storage location and destroyed after three years per policy. Plans to publish and share findings post completion maintaining facility anonymity were disclosed.

### **Implementation Plan and Timeline**

#### **Recruitment and Consent**

The project unit was selected by the facility administration due to a need for quality improvement. As employees of a Magnet-designated facility, administration supported mandatory unit staff education as developed by the PI. The project aligned with the facility administrator's commitment to ongoing quality improvement and aligned with the facility

mission, vision, and values. Therefore, individual consent was exempted and implied (See Appendix L). The electronic mail script and PowerPoint education slides explained the project objectives and that education completion was mandatory by project unit staff, although application was voluntary (See Appendix M).

Project consent, fliers, project communication, education announcements, and updates were posted in the staff breakroom, other visible employee areas, and sent to pilot unit director for electronic mail to all staff affected by the project interventions (See Appendix N). Staff were assured that application of the project did not have any effect on facility employment or evaluation via email. No staff or facility names were shared unless recognized by the PI for positive behaviors/recognition with the High-Five program which was done through organizational program with password protected personal PI identification login access.

### **Intervention Plan and Timeline**

The implementation plan combined the guidance of Kotter's (1996) change theory with application of the Iowa Model for Evidence-Based Practice for Quality Outcomes for implementation of evidence-based practice change (Titler et al., 1994). Change takes time and Kotter's theory supported scholarly steps to achieve staff project buy-in, participation in planning, and sustaining the changes. The Iowa Model was revised in 2001 was used to apply the evidence-based intervention bundle to outline the steps to achieve the ultimate goal to improve patient satisfaction and outcomes (Titler et al, 2001). The study included unit nursing staff effected to promote project success. See Appendix O for the timeline of project events.

**Identifying a problem or opportunity.** The first step of the Iowa Model was to identify a problem or opportunity which was inadequate staff responsiveness. The initial inquiry to identify a problem was initiated in Fall 2018 by asking questions, observing, and

collecting aggregate data at the proposed project facility. The PI and facility administration identified this as a problem in need of improvement. Initial observations at the facility identified an opportunity to improve staff responsiveness. External evidence provided adequate support to improve patient satisfaction and overall healthcare outcomes by improving staffing responsiveness (Nelson & Staffileno, 2017). The project opportunity aligned with the facility mission, vision, and values to provide high-quality, safe patient care, and outcomes.

**Study purpose.** The second step in the Iowa Model was to state the study purpose which was to improve inadequate staff responsiveness. The PI and facility administration identified this as a problem previously which supported the need for higher priority. The chief nursing officer had implemented an expectation of hourly rounding in Fall 2018.

**Form a team.** The next step was to create a Project Experience Team (PET). The PET formation engaged staff effected by the change and created a spirit of inquiry. As a Magnet facility, the unit had a PET also known as a Department Activities Team (DAT). According to Melnyk and Fineout-Overholt (2019), creating a spirit of inquiry was essential for project success. The PET included the PI, unit director, and one or more staff members. Staff member participation was voluntary. Staff received credit on the facility clinical ladder by participating in the project. The PI inquired about staff participation to the Director and staff by email and in person. PI also asked for staff recommendations from the unit director which led to the already formed unit DAT. The DAT will be referred to synonymously as the PET in this project.

**Assemble, appraise, and synthesize body of evidence.** The PET, PI, and facility research committee met and reviewed the body of evidence discovered by the PI as sufficient evidence to implement the staff responsiveness bundle to improve outcomes.

Additional external evidence from team members may be reviewed. Key components of the staff responsiveness bundle included: engaging staff with the PET, implementing the “no-pass zone,” providing staff education, and hardwiring hourly rounding. The Institutional Review Board (IRB) expedited exempt application was completed and submitted to the ECU IRB for approval prior to implementing the pilot project. As the pilot study had minimal to no risk related to targeting nursing staff and no patients led PI to anticipate expedited review and approval in Fall 2019.

**Design and pilot the practice change.** Upon IRB approval, a PET was created. PET membership included one or more volunteer staff, unit director, and PI. The PET staff assisted with providing information for the education for the pilot practice change over a six week period based upon sufficient evidence to support the change. PI developed a Data Outcomes Measures Collection Tool and collected baseline data for pre-intervention comparison. The PET supported the project objectives and timeline. The project unit staff directly affected by the project and patients were the sample. Weekly meeting collaboration and communication occurred throughout the project to guide project development progression. The PI created meeting agendas, led meetings, recorded meeting minutes, and saved in a file repository. The PET helped provide input for the implementation and evaluation plan. Staff education, responsiveness expectations, communication, informed consent, and how to use call light equipment was done via an online voice-over PowerPoint on HealthStream for all staff members. Staff demographic information was collected (See Appendix P). Data was transparent and shared throughout the project. The “no-pass zone” was implemented, meaning if a call light was activated, no staff member was to go past the room without entering to acknowledge the request (Lee, Crouse, & Gipson, 2016).

The team helped provide weekly input for the mandatory, online video education led by the PI. The education were submitted to the corporation for approval and building onto the facility Healthstream Url. All nurses, techs, and secretaries/clerks were required to complete the online educational session and were paid regular salary. Staff were informed of the project with individual consent waived. Education event fliers were posted in staff areas, email attachments with script was sent to the director for staff forwarding. Director and PI discussed the project during huddles and while performing staff observation. Project unit nursing employment was considered expected participation for the project as a Magnet facility supporting application of evidence-based practice to improve outcomes.

All project unit nursing staff received the educational information as available through the HealthStream Url the week of February 9-15, 2020, which was delayed from the projected timeline for Fall 2019. Educational content included the importance of the change in relation to increasing patient satisfaction, safety, quality outcomes, staff engagement, efficiency, and reimbursement was provided via education. The education also provided evidence describing how hardwiring of hourly rounding, use of acknowledge, introduce, duration, explain, and thank you (AIDET), and implementing of a “no-pass zone” may increase each of these measures. Education provided clearer definitions of staff responsiveness and rounding expectations to improve outcomes, while also informing about the six-week project timeline and how project updates and results would be delivered. The education availability announcement was also shared verbally with staff when performing observation in addition to the written fliers, and technology email. The staff were asked to complete the education within two weeks, although the facility requested to keep the education available for all staff to complete. A post-education survey

was completed by staff at the end of the video education to evaluate knowledge gained (See Appendix Q).

The next step was to provide ongoing PI visibility; recognize/reward staff for small project wins throughout; and maintain open, transparent communication of project post-intervention data. Staff recognition was made for successes throughout the six-week post-intervention period with the high-five facility employee rewards system, via emails, verbal recognition or memos copied to the unit director to sustain and promote adoption of the change. The PI was also responsible to collect weekly data, compile the results, and write the study summary of conclusions which was shared with the pilot facility. In the seventh week following the initiation of the intervention, the project ended unit monitoring, data collection, and began compiling data and study findings.

**Applicable change for clinical practice.** Next, the PET and facility research committee evaluated the results and determined if the evidence supported the change and need to hardwire the behaviors in clinical practice. If not, the PET and/or research committee identified alternatives which were shared with the shared governance councils to allow modification and re-design future practice changes to improve outcomes. If evidence supported the change, the PET identified key stakeholders to engage and help sustain the practice change ongoing. The stakeholders continued to hardwire practice behaviors after the completion of the six-week post intervention pilot project.

**Disseminate results.** The last step was to share the study findings and results. The compiled study in a final scholarly paper was shared with the project facility, ECU staff, and ECU peers. The last step was preparing an inclusive written summary of the project, with the assistance of the Project Team (PT), comparing the effects of the EBP staff responsiveness bundle interventions with clinical practice outcomes post-intervention. The

outcomes were analyzed for validity, reliability, and further necessary improvements. The project leader provided a summary of the project findings in writing and shared with the project team members. PI anticipates sharing project results and publishing opportunities while maintaining facility anonymity.

### **Measures and Instruments**

#### **Staff Demographics Survey**

Staff demographics information was collected from the sample group. Information included age, position/role, employment status, education level, years of experience, and length of facility employment. No identifiable information was connected with the data.

#### **Staff Education Post-Evaluation Tool**

A seven question staff education post-evaluation tool was created to measure staff knowledge gained after completion via Healthstream Url upon review of the education to measure knowledge gained. The scale was based upon a Strongly Agree (high) to a Strongly Disagree (low) scale. Staff were to complete education within a two week period. The target staff response rate was 100% and majority Strongly Agree/Agree responses overall.

#### **Data Outcome Measures Collection Tool**

A Data Outcome Measures Collection Tool was created to collect data on three measures selected for the proposed project. The first measure was HCAHPS (Health Services Advisory Group, 2017). The second measure included the number of patient call light requests and average time from request until staff acknowledgement. The third measure was random, staff observations monitoring compliance with the “no-pass zone” (Lee, Crouse, & Gipson, 2016). The data was entered in Statistical Package for the Social Sciences Version 25 (SPSS; Pallant, 2016).

**HCAHPS**

The HCAHPS was an 8-dimension survey that randomly evaluated patient perceptions of care during hospitalization administered in a variety of methods 24-hours up to six weeks post discharge (Health Services Advisory Group, 2017). HCAHPS were validated by CMS and the Agency for Healthcare Research and Quality (AHRQ) proving to be a valid and reliable tool for measurement of patient perception of hospital experience (Health Services Advisory Board, 2017). The HCAHPS measures were collected for the project facility by a contract company, Press Ganey which collects patient experience survey data with scripted questions to maintain validity and reliability (Health Services Advisory Group, 2019; See Appendix R). The primary questions that were measured were: “overall hospital satisfaction” and “hospital staff responsiveness,” including “help with toileting” and “prompt response to call light requests” (Health Services Advisory Group, 2019). The responses to the selected questions were mean scores with a target based on “top-box” scores which were defined as “always” or Likert scale 9-10 (Health Services Advisory Board, 2017). Permission was granted from the project facility to obtain the HCAHPS data from the facility dashboard, while keeping the facility name anonymous. The target for the selected HCAHPS scores were to increase. The facility target was HCAHPS scores in the top 10<sup>th</sup> percentile of hospitals reporting.

**Call Light Reports**

A second instrument used was facility call light reports which were collected by the PI as granted by the facility. The facility has a Hill-Rom call light system that provided a variety of data reports. Random staff observations in Fall 2018 and verbal patient/family feedback reinforced staff were not answering call lights promptly. The goal was set to reduce the total number of call light requests weekly by 10% post-intervention bundle implementation.



The NQF #0166 concluded that staff responsiveness attributes to improved patient outcomes (Leapfrog Hospital Safety Grade, 2018). Patients like to feel valued. Therefore, timely response to their requests is vital to increasing satisfaction (Brosey & March, 2015). The goal was to reduce the average time interval between patient call light requests and staff acknowledgement to 20 seconds or less post intervention.

### **Staff Observations**

The third measure was random, direct, staff observations by the PI related to compliance with the “no-pass zone” (Lee, Crouse, & Gipson, 2016). PI aspired to observe improved staff communication, hand-off, and teamwork post-intervention bundle implementation although staff communication was not measured for this pilot project. The target for the “no-pass zone” compliance was 100% post-intervention bundle implementation.

Small staff wins were celebrated and staff recognized by the PI to hardwire positive improvements as the project progressed through the facility High-Five rewards program. No staff names were noted or shared that would punitively effect employment, merit, or performance evaluation. The data was collected solely for quality improvement monitoring.

Staff were encouraged to answer call light requests in the patient room as evidence supported increased patient satisfaction with face-to-face acknowledgement of requests (Brosey & March, 2015). Call lights were also answered at the nurses’ station via phone. The target for the “no-pass zone” was 100% “yes” compliance.

## **Data Analysis**

### **Data Outcome Measures Collection Tool**

Comparison data included HCAHPS, call light reports, and staff observations measures. Data was collected pre and then weekly post intervention education up to six weeks. Collected data was reviewed weekly throughout the pilot project post intervention for trends and shared with the PET. The opportunity to perform secondary data analysis existed if the data was flat or trending negatively. This analysis included evaluating data further by shift, day of the week, or by unit volumes. The secondary evaluation provided the PET and research committee the opportunity to identify areas for improvement. Beginning the seventh week, data and was compiled and a summary compiled of the findings with the SPSS (Pallant, 2016). Final outcome descriptive statistics were used to describe the measures and frequencies, such as percentages, means, rankings, and standard deviations. The pre and post intervention data was compared by independent t-test using the SPSS Survival Manual (Pallant, 2016). Tables and graphs were used to share the data findings per SPSS (Pallant, 2016) with the patient performance team. The opportunity existed for the facility to pursue ongoing or further measurement independently.

### **HCAHPS**

The HCAHPS aggregate data was collected pre-intervention for six months and then up to six weeks post staff responsiveness bundle implementation. The data was evaluated and shared weekly with the PET and director for trends. The scores were means of the responses. The number of responses (N), mean score (%), and ranking (per HCAHPS hospitals reporting) were collected as available weekly. Descriptive frequencies were used to code data for the project (Pallant, 2016). The data was evaluated weekly per the unit dashboard. An opportunity existed for evaluating throughout for project barriers if

data remained flat or decreased negatively. Comparisons with independent t-test were done on the pre-post HCAHPS.

### **Call Light Reports**

The call light report data was listed as “Total Number of Call Light Requests” and “Average Response Time of Call Lights.” The pre-intervention data was collected and recorded six weeks prior to the intervention bundle application. This data was the total number of call lights initiated weekly. The response time was measured in seconds, averaged weekly, and recorded on the Data Outcomes Measures Collection Tool.

Call light data was collected pre-post intervention bundle implementation up to six weeks post intervention bundle implementation and compared with independent t-test in two parts. Descriptive data collection consisted of the number of patient call light requests weekly and average for daily and weekly trends pre/post intervention implementation. Median staff response time between call light request and staff acknowledgement/response to the request to evaluate timeliness of staff responsiveness was also included. This measure did not include measuring the time in staff fulfilling the patient request. Call light data findings were compared pre-post per independent t-test, to the HCAHPS scores, and to staff observations to determine if the Staff Responsiveness Bundle interventions increased staff responsiveness leading to increased patient satisfaction. The total number of call light requests post intervention bundle was anticipated to decrease per evidence.

### **Staff Observations**

Random staff observations of “no-pass zone” compliance pre and post intervention bundle implementation were conducted, at least one day per week, two weeks prior and five weeks post-implementation of the staff responsiveness bundle. The direct observations were a qualitative monitoring component post-intervention data as “yes” or

“no” for staff compliance with the “no-pass zone.” Successful “no-pass zone” observations were recorded as “yes” (compliant) if staff were observed “Not-Passing By” a room when a call light is initiated and entering to acknowledge request, or “no” (non-compliant) if staff were observed “Passing By” a room when a call light was initiated without stopping to acknowledge it. Data was recorded on the Data Outcomes Measures Tool labeled as “Not Passed By” (compliant) and “Passed By” (non-compliant).

### **Resources and Budget**

No additional or capital costs were associated with the implementation of the project. The facility already had use of the HealthStream Url for staff education. The facility policy defined staff hourly personnel payment for education when completed while working routine scheduled productive shifts, therefore not adding additional pay. The facility policy did not allow for staff pay when completing education online during non-productive time. The online educational video program lasted approximately 20-30 minutes per nursing employee on the projected unit. Salaried nursing staff were exempted from hourly pay while attending the staff education or involved in the PET. PI personnel time was voluntary as part of the doctoral of nursing practice degree completion. The facility was well-equipped with available software, technology, and internet for completion of the staff education. High-Five recognition points for project rewards were estimate at less than \$100 which was supported by the facility for planning, implementation, and evaluation of the project.

### **Data Analysis**

Data analyses were conducted using IBM SPSS software version 25. Descriptive statistics were collected via the Staff Demographic Survey which provides background on staff age, position, knowledge level, employment status, experience, length of time employed at the project facility. The Staff Education Post-Evaluation Tool measured

knowledge acquired from the staff education. Project data was collected Pre-Post on the Data Outcomes Measures Tool for comparison for evaluating effect of education. A paired t-test was computed to assess effect change comparing mean pre-post HCAHPS, Call light, and staff observation scores.

### **Staff Demographics**

A total of 36 participants completed the video education session out of 60 for a 60% completion rate. Demographic staff information was collected. A total of 60 participants were targeted. The age range was 18-65 years with a median range of 30-34 years of age. Sixty-seven percent of participants were full-time and 62% were nurses (RN/LPN). Forty-seven percent had an associate degree, 17% had a bachelor's degree, and three percent had a master's degree or higher. Eighty-seven percent had less than five years' experience and 23% had been employed by the facility for 2-5 years (See Appendix S).

### **Staff Education Post-Evaluation Tool**

Post-education survey responses for knowledge gained were 100% for N=36 answering strongly agree/agree for questions one, six, and seven. Thirty-five responses were strongly agree/agree for survey questions two through five. One neutral response was recorded for survey questions two through five (See Appendix T).

### **HCAHPS**

HCAHPS Overall Satisfaction pre-intervention score range was 57.58 to 71.3 with rankings of 2<sup>nd</sup> to 7<sup>th</sup> (0= low to 100<sup>th</sup> =high; target >75<sup>th</sup>). HCAHPS Overall Satisfaction weekly scores post intervention were improving from 57.69 up to 63.83 post-intervention Week 4 when the Covid-19 pandemic crisis occurred. The first week post-intervention the HCAHPS staff responsiveness score increased from 47.53 in the 4<sup>th</sup> Quarter 2019 to 65, then dropped back to 58.19 at post-intervention week 4 before Covid-19, which was still

well above the 4<sup>th</sup> quarter Staff Responsiveness Staff Help with Toileting pre-intervention was 45.9, significantly increased post-intervention week one to 70, and remained increased from pre-intervention at post-intervention week six to 50.8. HCAHPS Staff Response to Call Light Request pre-intervention range score was 43.9 to 54.1, increased week one post intervention to 60, and ending increased week six post-intervention at 58.3 rising steadily to the 10<sup>th</sup> percentile. No paired t-test was done comparing the quarterly data with only two scores. While the Overall Satisfaction compared 4<sup>th</sup> quarter 2019 decreased by 12.27 post-intervention week six, PI points out the length of time to receive surveys may take longer than the project length of six weeks to measure accurate effect trending. The 4<sup>th</sup> quarter 2019 and 1<sup>st</sup> quarter 2020 HCAHPS Staff Help with Toileting resulted in a 4.9 increase and a large 14.4 increase in HCAHPS Staff Response to Call Light Requests. Overall positive score changes until week five and six which were possibly related to the national pandemic crisis (See Appendix U).

### **Call Light Reports**

The total number of call lights were collected weekly for six weeks pre and post intervention. The hypothesis was that the evidence-based staff responsiveness interventions would decrease the total call lights, weekly call lights, and staff response time means. The weekly total call light pre-intervention mean range was 829 to 1868, weekly means were 1428.5, and 204 daily. The post intervention total weekly call light total range was 1241 to 1719, weekly mean 1403, and 200 daily. In comparing the total call light requests pre-intervention (8563) and post-intervention total (8420), study concluded support of the hypothesis with a decrease in 143 or mean decrease of 25.5 which was statistically significant  $t=0.14$  and  $p=0.897$ . The median response time (seconds) pre-intervention range was 63 to 75 with a mean of 68.5. The post-intervention response time range increased slightly 70 to 84 with a mean of 75.5 which may have been attributable to

the time to don personal protective equipment the last two weeks more frequently during the pandemic (See Appendix V).

A paired *t*-test was calculated to determine if there was a decrease in mean Total Call Light Request scores from pre-intervention to post-intervention. There was not a significant decrease in mean pre total number of call lights in the pre- period ( $M = 1427$ ,  $SD = \pm 398$ ) compared to the post-period quiz ( $M = 1403$ ,  $SD = \pm 169$ ),  $t(6) = 0.14$ ,  $p=0.897$  (two-tailed). The mean decrease was 24 with a 95% confidence interval (CI) range from -408 to 455. The *p*-value (0.897) was very large, hence a Cohen's *D* (0.078) indicated a <small effect size.

A paired *t*-test was calculated to determine if there was a decrease in the Weekly Average of Daily Call Light Requests from pre-intervention to post-intervention. There was not a significant decrease in the mean weekly scores in the pre-intervention period ( $M=203.5$ ,  $SD=\pm 56.6$ ),  $t(6) = 0.14$ ,  $p=0.894$  (two-tailed). The mean decrease was 3.5 with a 95% confidence interval (CI) range from -58 to 65. The *p*-value (0.894) was very large, hence Cohen's *D* (0.0803) indicated a <small effect size.

A paired *t*-test was calculated to determine if there was a decrease in the Response Time to Call Light Requests from pre-intervention to post-intervention. There was a significant difference in the mean response to call lights in the pre-intervention period ( $M=68.50$ ,  $SD \pm 4.72$ ) compared to the post-intervention period ( $M= 75.50$ ,  $SD= \pm 4.85$ ),  $t(6) = -2.53$ ,  $p= 0.032$ . Due to the significant difference between the pre and post means in response time a one-tail test was done to determine the direction of the difference. The one-tail test resulted in a *p*-value of 0.016, concluding the average for the pre and post response time was significantly larger than the average for the pre-post response time. The difference was -7, supporting a negative outcome of

increased response time, which may have been impacted due to the national Covid-19 pandemic crisis. A Cohen's D (-1.46277) indicated a significant large effect.

### **Staff Observations**

Random Staff observations were performed pre-intervention and post-intervention. Fifty-eight staff were observed pre-intervention with 53 "yes", 5 "no", resulting in an average of 91.5% compliance with the "no-pass zone" meaning staff not passing by a room when a call light was lit up. Seventy-eight observations were performed post-intervention observations with 77/78 Yes or 99% compliance with the no-pass zone. Pre-Post comparison average resulted in 7.5% improvement post intervention education. The on-site staff observations were not done week 6 due to the Covid-19 pandemic PI safety (See Appendix W).

A paired t-test was calculated to determine if there was an increase in the "Yes" staff performance of the "no-pass zone" in Response to Call Lights when initiated by a patient during random PI observations weekly pre-intervention to post-intervention. The mean pre-intervention "yes" was significantly different than the mean post-intervention "yes. The "yes" response to call lights in the pre-intervention period ( $M=26.5$ ,  $SD \pm 0.707$ ) compared to the post-intervention period ( $M=15.2$ ,  $SD= \pm 7.79$ ),  $t(4) = 3.21$ ,  $p=0.033$ . The mean change was 11.3 with a 95% confidence interval (CI) range of 1.53 to 21.07. Note two week pre-intervention data was collected compared to the post five week data. Cohen's Ds (1.87) indicated a significant effect size  $>0.8$ . Hence, a one-tailed test was done to determine the direction of the difference. The one-tail test compared the pre-post "yes" to the no-pass zone. The p-value was 0.016, concluding that the mean for the pre-intervention "yes" was greater than the mean for the post-intervention "yes" with the uneven number of pre-post data weeks collected.



A paired t-test was calculated to determine if there was an increase in the “no” staff were not compliant with the “no-pass zone” in response to call lights when initiated by a patient during random PI observations weekly pre-intervention to post-intervention. The mean pre-intervention “no” was no significantly different than the mean post-intervention “no.” The “no” response to call lights in the pre-intervention period ( $M=2.5$ ,  $SD \pm 0.707$ ) compared to the post-intervention period ( $M=0.20$ ,  $SD= \pm 0.447$ ),  $t(4) = 4.27$ ,  $p=0.146$ . The mean change was 2.3 with a 95% confidence interval (CI) range of -4.543 to 9.143. Cohen’s Ds (3.255) indicated a large effect size. The mean “no” was not significantly difference post-intervention compared to pre-intervention “no.”

A paired t-test was calculated to determine if there was an increase in the Percentage of Staff Compliance with performing the “no-pass zone” in response to call lights when initiated by a patient during random PI observations pre-intervention as compared to post-intervention. The mean pre-intervention “yes” compliance was not significantly different than the mean for the post-intervention “yes.” The mean “yes” response to call lights in the pre-intervention period ( $M=91.5$ ,  $SD \pm 2.12$ ) compared to the post-intervention period ( $M=99.2$ ,  $SD= \pm 1.79$ ),  $t(1) = -4.53$ ,  $p=0.138$ . The mean change was -7.70 with a 95% confidence interval (CI) range of -29.3 to 13.9. Cohen’s Ds (-4.13) indicating a large effect size. The mean for pre-intervention compliance with the No-Pass Zone was not significantly different than the mean for the post-compliance scores. Data results support observations of very different pilot unit teamwork, communication, and responsiveness from the period of aggregate data collection in 2018 to 2020, possibly attributable to management and/or staff changes.

### **Discussion**

Overall, this project aligned well with the facility mission, vision, and goals to improve quality outcomes. Improvements concluded post-intervention of the staff responsiveness bundle were a decrease in the total number of call light requests, a decrease in the mean weekly call lights, and only one event of a nursing staff member not compliant with the no-pass zone when a call light was activated. Due to the length of time that HCAHPS surveys take to be mailed to patients post-discharge and returned with a six week post intervention project was too short to obtain sufficient survey numbers and PI recommends a period of three to six months to observe trending for improved accuracy of data outcome. HCAHPS scores were observed to increase weekly until after week four post-intervention with the impact of the Covid-19 pandemic crisis. The facility may have recognized the need to improve staff responsiveness, leading to the purchase and implementation of the iMobile devices which occurred in late Fall 2019, which had initially coincided with the project start time and may have effected staff observation compliance data with the “no-pass zone” because staff could go directly to the patient’s room as a result of the call request going directly to their iMobile device.

### **Implications**

#### **Clinical Practice**

Poor or inadequate staff responsiveness can lead to safety risks, low patient satisfaction scores, and poor quality outcome measures (Nelson & Staffileno, 2017). The pilot project data supports project staff responsiveness interventions increased the HCAHPS Staff Responsiveness Help to the Bathroom (increased 4.9) and Staff Response to Call Request (14.4). In addition, the total number of patient call light requests decreased post intervention. Although, the overall satisfaction scores for the period allotted did not improve, the PI observed weekly post-intervention score improvement until entering into the last few weeks which coincided with the national pandemic, including visitor

restrictions. The frequent staff rounding, no-pass zone, and education changes support the ongoing clinical application by nursing staff to improve patient outcomes, safety, and satisfaction (Brosey & March, 2015).

The implementation of the iMobile device improving patient to nurse communication and timeliness may impact the patient perception of value and response at the bedside. Due to the call light requests going directly to the nurse, the environmental noise was minimized and the PI was not able to hear every patient call light request during the random observations. Literature supports that nurses spend a significant amount of time with patients at the bedside, lending the opportunity to make a positive impact on patient and family perception of care. Individual behaviors, values, and ethics may also have impacted the nursing staff's choice or speed of response when working.

### **Policy**

Hospitals are a quantum, competitive business dependent upon revenue, volumes, quality, safety, and reimbursement to thrive and grow. The pilot interventions could be applied to all staff and in other departments as an expected behavior in policy and job description to align with the facility mission. The data could also be used as part of the facility strategic plan impacting the fiscal bottom line. A hospital must strategize methods to implement evidence-based practice to improve and remain competitive with others to profit.

### **Quality and Safety**

Literature and project data supports the application of evidence-based interventions to improve patient safety and outcomes. The decrease in total call light requests may lead to less patient falls, better pain management and decreased patient length of stay which drive healthcare costs which was supported by literature review. The difference in

improvements of the HCAHPS Staff Help to Bathroom and Staff Response to Call Requests scores may impact the overall Patient Satisfaction Score over more time leading to increased revenue from CMS without the negative effect of the pandemic crisis. A minor change in an HCAHPS score may lead to a significant change in the amount of revenue a hospital is paid in comparison with other hospitals. Maintaining high quality outcomes and patient safety is vital in retaining and growing patient volumes leading to higher revenue.

### **Education**

Sustaining life-long learning for nurses is vital in improving patient safety, satisfaction, and outcomes. Healthcare is in a quantum state of change necessitating ongoing nursing pursuit of knowledge to keep up with concurrent evidence-based practice. Healthcare leaders need to review data, trends, and provide ongoing education and transparency of facility needs to perform quality improvement leading to better patient satisfaction, safety, and outcomes.

Changing the staff education from in-person to video decreased the ability of the PI to ensure all staff completed the education within a designated period of time and limited staff ability to ask questions about the project. Although, advantages of the video education allowed staff flexibility in staff being able to view the education at their convenience any time of the day not dependent upon the PI presence and no additional personnel costs for completion of the education.

### **Feasibility for Sustainability**

The project methodology was clearly described and is feasible to apply to other units or facilities. As with any change, it is vital for healthcare leaders to reinforce positive staff behaviors to hardware them into practice and set clear, staff expectations. The PI recommends a

longer post-intervention data monitoring period for HCAHPS surveys to allow a larger sample of surveys to compare trends.

A variety of limitations occurred during the project including: delay with implementation plan; project facility administrative changes (new chief executive office, chief nursing officer, project unit clinical leader, and project unit manager/director); facility fiscal limitations changing project education from in-person to video, and a revised internal review board application. All staff did not complete the education as targeted during the project, although administration selected to keep the education available online. Personal bias related to professional practice, values, ethics, and work performance could have also occurred effecting the data outcomes collected. A Covid-19 nationwide pandemic also occurred during the post-intervention period leading to visitor restrictions, more staff time to don personal protective equipment, overall increased fear and anxiety, which could have negatively influenced the data collected. Staff compliance of performing the No-Pass Zone could have also been enhanced with the visibility of the PI and knowing they were being observed. A bias could have occurred due to most of the staff observations occurred on day shift (7:00 a.m.-7:00 p.m.).

A limitation was the PI's ability to access the HCAHPS data and build the online education directly. Another limitation for the PI was the pilot facility was part of a larger healthcare corporation adding multiple contacts for project approval and change in administration who initially encouraged and supported the project idea. The sample was also limited to the nursing staff as the only group receiving the education, excluding dietary, physical/occupational therapy, lab, transport staff, and hospitalists which could have changed the outcomes. The time projected to perform post-intervention staff observation was decreased to five instead of six weeks due to the Covid-19 pandemic.

The Data Outcomes Measures Collection Tool and project methods were clearly described, promoting continuation or application of the pilot to the rest of the facility or with others. The post-intervention data monitoring of HCAHPS needed to be extended for longer than six weeks to observe trending. The facility research council expressed an interest to continue with project in the future.

Literature supported application of the evidence-based practice staff responsiveness bundle to clinical practice leading to improved staff responsiveness, patient satisfaction, and overall outcomes. The research literature methods, measurement tools, findings, and conclusions support validity and sustainability. Organizational mission alignment with project objectives and administration supported throughout the project supports sustainability.

### **Future Scholarship**

Application of evidence-based practice staff responsiveness interventions can improve patient safety, quality, and patient satisfaction over time. The results from the pilot suggests that the project interventions need to continue to allow trend monitoring, changes or continuation to achieve higher patient satisfaction, safety, and quality outcomes. As a Magnet-designated facility, the research council has requested the results of the study with the possibility to continue the project in the future.

### **Conclusions**

The American Association of Colleges of Nursing Doctor of Nursing Practice Essential II (2006) supports leadership skills applying evidence-based practice interventions to improve, sustain, and achieve high quality care. The Institute of Medicine (2018) Health Care Quality Domain of patient-centeredness aligns with the pilot project targeting prompt staff responsiveness to the patient and family to improve satisfaction, safety, and outcomes. Further, Skaggs, Daniels, Hodge, and DeCamp (2018) site the

importance nursing has to improve patient care and outcomes with application of the bundled evidence-based practice staff responsiveness bundle.

Although, PI project targets and some data outcome scores did not improve as aspired, a leader must be willing to ask questions, take risks, and actions to improve patient outcomes in clinical practice. The PI recognizes extended periods of time may be needed to monitor data trends and increase the number of returned surveys to improve the pre/post data comparing of HCAHPS scores.

The PI will share the pilot project results with the facility research council as requested. The PI also plans to pursue future publication with possibility to apply the pilot project at other facilities to improve patient satisfaction, safety, and outcomes in the future. It is imperative in a quantum healthcare environment, to engage leadership and multiple stakeholders to continuously review available data reports, technology, and patient/family feedback to improve patient safety and outcomes (Porter-O'Grady & Malloch, 2018).

## References

Agency for Healthcare Research and Quality. (2018). Six domains of health care quality.

Retrieved from <https://www.ahrq.gov/talkingquality/measures/six-domains.html>

Agency for Healthcare Research and Quality. (2017). Strategy 2: Communicating to

Improve quality. Retrieved from <https://www.ahrq.gov/professionals/systems/hospital/engagingfamilies/strategy2/index.html>

American Association of Colleges of Nursing. (2006). The essentials of doctoral

education for advanced nursing practice. Retrieved from <https://www.aacnnursing.org/dnp/dnp-essentials>.

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.

Casey, B. R., Chisholm-Burns, M., Passiment, M., Wagner, R., Riordan, & Weiss, K. B.

(2019). The role of the clinical learning environment in preparing new clinicians to engage in quality improvement efforts to eliminate health care disparities. *National Collaborative for Improving the Clinical Learning Environment*.

doi:10.33385/NCICLE.0001

Center for Medicare & Medicaid Services (2018). *Hospital Value-Based Purchasing*.

Retrieved from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/HVBP/Hospital-Value-Based-Purchasing.html>



- Center for Medicare & Medicaid Services. (2017). *HCAHPS: Patients' perspectives of care survey*. Retrieved from <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-instruments/hospitalqualityinits/hospitalHCAHPS.html>
- Cochran, C. (2017). The effectiveness and best practice of nurse residency programs: A literature review. *MEDSURG Nursing*, 26, 53-63.
- Cox, E. D., Jacobsohn, G. C., Rajamanickam, V. P., Carayon, P., Kelly, M. M., Wetterneck, T. B., Rathouz, P. J., & Brown, R. L. (2017). A family-centered rounds checklist, Family engagement, and patient safety: A randomized trial. *Pediatrics*, 139(5). doi:10.1542/peds.2016-1688
- Daniels, J. F. (2016). Purposeful and timely nursing rounds: A best practice implementation project. *JBI Database of Systematic Reviews & Implementation Reports*, 74(1), 248-267. doi: 10.11124/jbisrir-2016-2537.
- Health Services Advisory Group. (2017). *HCAHPS fact sheet*. Retrieved from [https://www.hcahpsonline.org/globalassets/hcahps/facts/hcahps\\_fact\\_sheet\\_november\\_2017.pdf](https://www.hcahpsonline.org/globalassets/hcahps/facts/hcahps_fact_sheet_november_2017.pdf)
- Health Services Advisory Group. (2019). HCAHPS V13.0 appendix G-telephone script (English) March 2018. Retrieved from <https://www.hcahpsonline.org/globalassets/hcahps/survey-instruments/scripts>
- Hitchcock, R., Reiboldt, A., & Woolf, C. (2016). *The power of improving call light Responsiveness* [PowerPoint slides]. Retrieved from <https://ohiohospitals.org/OHA/media/Images/Membership%20Services/Images/Presentation-Hitchcock,-Reiboldt.pdf>
- Institute for Healthcare Improvement (2018). *How to Improve*. Retrieved from <http://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>

- Iowa Quality Transformation Consortium (2017). *Managers toolkit: Improving the patient experience: "Responsiveness of staff"*. Retrieved from <https://hthu.net/site/wp-content/uploads/2016/06/Managers-Toolkit-for-Responsiveness-of-Staff.pdf>
- Ketelsen, L., Cook, K., & Kennedy, B. (2014). *The HCAHPS Handbook 2: Tactics to improve quality and the patient experience*. Gulf Breeze, FL: Fire Starter Publishing.
- Kotter, J. P. (1996). *Leading change*. Boston, MA: Harvard Business School Press.
- Leapfrog Hospital Safety Grade. (2018). [Anonymous facility]. Retrieved from [www.hospitalsafetygrade.org](http://www.hospitalsafetygrade.org)
- Lee, T. L., Crouse, M., & Gipson, K. (2016). No-pass zone: Multidisciplinary approach to responding to patient needs. *Journal of Nursing Care Quality, 31* (4), 327-334. doi:10.1097/NCQ.000000000000179
- Leger, J.M., & Dunham-Taylor, J. (2018). *Financial management for nurse managers: Merging the heart with the dollar* (4<sup>th</sup> ed.). Burlington, MA: Jones & Bartlett Learning, LLC.
- Melnyk, B. M., & Fineout-Overholt, E. (2019). *Evidence-based practice in nursing and healthcare: A guide to best practice* (4<sup>th</sup> ed.). Philadelphia, PA: Wolters Kluwer.
- Mitchell, M.D., Lavenberg, J.G., Trotta, R., & 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.000000000000101
- National Quality Forum (2019). *NQF-endorsed measures for person and family centered care*. Retrieved from [www.qualityforum.org/projects/person\\_family\\_centered\\_care/](http://www.qualityforum.org/projects/person_family_centered_care/)
- Negarandeh, R., Bahabadi, A. B., & Mamaghani, J. A. (2014). Impact of regular nursing rounds on patient satisfaction. *Asian Nursing Research, 8*, 283-285. doi.10.1016/j.anr.2014.10.005

- 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.
- Pallant, J. (2016). *SPSS survival manual* (6<sup>th</sup> ed.). New York, NY: McGraw Hill.
- Porter-O'Grady, T. & Malloch, K. (2018). *Quantum leadership: Creating sustainable value in Health Care* (5<sup>th</sup> ed). Burlington, MA: Jones and Bartlett Learning.
- Skaggs, M. K., Daniels, J. F., Hodge, A. J., & DeCamp, V. L. (2018). Using the evidence-based practice service nursing bundle to increase patient satisfaction. *Journal of Emergency Nursing Online.org, 44*(1), 37-45. doi:10.1016/j.jen.2017.10.011
- Titler, M. G., Kleiber, C., Steelman, V.J., Rakel, B.A., Budreau, G., Everett, L. Q., Buckwalter, K.C., Tripp-Reimer, T., Goode, C. J. (2001). The Iowa model of evidence-based practice to promote quality care. *Critical Care Nursing Clinics of North America, 13*(4), 497-509. doi:10.1016/S0899-5885(18)30017-0
- Yang, L., Liu, C., Huang, C., & Mukamel, D. B. (2018). Patients' perceptions of interactions with hospital staff are associated with hospital readmissions: A national survey of 4535 hospitals. *BMC Health Services Research, 18*(50). doi: 10.1186/s12913-018-2848-9.

Appendix A

Kotter's 8-Step Process for Leading Change Theory

Appendix B

Levels of Evidence Synthesis Table

Appendix C

Interventions/Outcomes Synthesis Table

Appendix D

Operational Definitions Table

Appendix E

Summary Evaluation Table



Appendix F

Staff Responsiveness Education Lesson Plan

Appendix G

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

Appendix H

Data Outcomes Measurement Collection Tool

Appendix I  
Project Consent Letter

Appendix J  
Citi Training

Appendix K  
Mutual Agreement Form

Appendix L

EKU IRB Informed Consent Cover Text to Exempt Studies

Appendix M  
Electronic Mail Script



Appendix N

Flier

Appendix O

Timeline for Improving Patient Experience

Appendix P  
Staff Demographic Survey

Appendix Q  
Post Education Survey

Appendix R  
HCAHPS Survey

Appendix S

Results: Staff Demographics

Appendix T

Results: Staff Post-Education Evaluation Survey

Appendix U

Results: HCAHPS



Appendix V

Results: Call Light Reports

Appendix W

Results: Staff Observations