

Improving Nursing Teamwork through TeamSTEPPS

by

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### Abstract

Nursing teamwork is a critical element of patient care delivery. The willingness to work cross-functionally is imperative to ensure patients' progression through the health care continuum in a safe manner. TeamSTEPPS is an evidence-based practice (EBP) intervention that encompasses tools and strategies to enhance teamwork. In this EBP change project, a TeamSTEPPS tool called huddle, was used to improve teamwork of nurses in three subgroups (pre-op, block room, and postop) in a Same Day Surgery (SDS) unit. Teamwork climate scores from Culture Pulse Surveys were used to determine project success. Huddle compliance was another success determinant. The results revealed high participation percentages in TeamSTEPPS Essentials training and the charge nurse huddles, which contributed to an improvement in SDS nursing teamwork.

*Key words:* Nursing, Teamwork, TeamSTEPPS, Charge Nurse Huddle, Same Day Surgery, Subgroups

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## **Chapter One: Overview of the Problem of Interest**

Nurses play a significant role in healthcare delivery and have the most direct interactions with patients. Nurses also represent the largest group of professionals who administer patient care (Kaiser & Westers, 2018; Yanchus, Ohler, Crowe, Teclaw, & Osatuke, 2017). Therefore, nurses have a considerable influence on patient outcomes. Innately, nursing care requires a team approach for effective administration (Kalisch, Aebersold, McLaughlin, Tschannen, & Lane, 2015). One nurse, working in silo does not possess all the skills and knowledge, nor the time and availability to meet the needs of an individual or group of patients (Kalisch et al., 2015). Teamwork is essential to meet the needs of each patient.

Effective teamwork contributes to improving health care quality through avoidance of errors, decreased missed nursing care, reductions in procedure time, and improved communication among patients, families, and providers (Kalisch et al., 2015; Kaiser & Westers, 2018). Furthermore, teamwork has been found to increase nurse productivity, enhance job satisfaction, and promote optimum quality care (Kaiser & Westers, 2018). The purpose of this paper is to outline a change project regarding improving teamwork using the organizational change theory as a guide with a focus on the evidence-based practice (EBP) intervention of Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS).

### **Background Information**

Teamwork was evaluated in a Same Day Surgery (SDS) unit within a community hospital that is a part of a large three-hospital health system in eastern North Carolina. Teamwork is defined as consisting of two or more individuals with specific roles working interdependently to perform independent tasks (Kalisch, Labelle, & Boqin, 2013a; Kalisch, Russell, & Lee, 2013b; Yanchus et al., 2017). The “big five” framework suggests that there are



five knowledge, skill, and attitude attributes one must have to engage in teamwork (Kaiser & Westers, 2018; Kalisch et al., 2015; Kalisch et al., 2013a; King et al., 2008; Salas, Sims, & Burke, 2005). These attributes include team leadership, mutual performance monitoring, backup behavior, adaptability, and team orientation with coordinating mechanisms shared mental models, closed looped communication, and mutual trust (Kaiser & Westers, 2018; Kalisch et al., 2015; Kalisch et al., 2013a; King et al., 2008; Salas et al., 2005). Within the SDS unit, opportunities to improve teamwork were observed and validated by a Culture Pulse Survey and Perioperative Culture Transformation Listening sessions. A review of the 2016 SCORE Culture Survey also identified teamwork as a culture component that needed an evidence based solution within SDS.

The Culture Pulse Survey evaluated work settings in the entire community hospital. However, unit specific results were made available to the staff. Elements of the culture evaluated were belonging, commitment/engagement, teamwork climate, well-being, career development/growth, work-life balance, management/leadership skills, empowerment, and safety. Survey results were plotted on a heat map, which identified areas within the culture that should be maintained, monitored, promoted, and to focus efforts. Fifty-six percent of the culture components fell within the monitor quadrant. Forty-four percent of the culture components were in the focus quadrant. None of the culture attributes plotted were in the “maintain” or “promote” quadrants. The lowest culture attributes were “well-being” and “teamwork climate” scoring 2.34 and 2.83 respectively.

Although well-being is an area of opportunity, this change project focused on teamwork. Comments related to teamwork climate included, communication breakdowns are common when my work unit/department interacts with other work unit/departments, dealing with difficult

colleagues is consistently a challenging part of my job, and disagreements within my work unit/department are not appropriately resolved. Communication is essential to effective team work (Bramhall, 2014). Communication provides information exchange regarding patient care needs and responses to treatment (Bramhall, 2014; Kourkouta & Papathanasiou, 2014).

Communication is a key driver of performance accuracy, consistency, and efficient nursing care delivery (Bramhall, 2014; Kourkouta & Papathanasiou, 2014). Effective communication plays a vital role in ensuring patient safety (Bramhall, 2014; Kourkouta & Papathanasiou, 2014).

Ineffective communication continues to rank among the top three root causes for sentinel events (Cooke, 2016). It has been identified by the Joint Commission sentinel event data that communication is the root cause for 63% of sentinel events reported from 2004-2013 (Cooke, 2016).

Additionally, the perioperative culture, which includes SDS within the health system were assessed. Information specific to each hospital was made available, highlighting the areas of opportunity. Safety, innovation, teamwork and collaboration, and initiative and ownership were the areas of focus. Two methods of data collection were used including a Likert scale and comments and quotes frequency. The Likert scale ratings were as follows: 1 = weak: nonexistent, fragmented, counter or contrary behavior that is ignored or accepted as the current culture, 3 = average: pockets of desired behavior, yet spotty, inconsistent, and occasional across perioperative levels, roles and teams, and 5 = strong: prevalent behaviors within the team, at levels of perioperative roles, and across pre-op, inter-op, and post-op teams. Comments and quote frequency were comprised of the number of mentions, descriptions, and examples that described themes and trends.

In terms of teamwork and collaboration, at the targeted community hospital, working together within the team and across perioperative disciplines to deliver excellent care was evaluated. The perioperative area scored 3.5 out of 5, which was rated as average. Comments and quotes indicative of the perioperative teams' strengths included "intact teams typically work together well to execute roles" and "teams work well together in a crisis". Indications of average or weak performance were evident in comments and quotes that described teamwork and collaboration as the following a silo mentality, cross-team collaboration tension, unclear common goals and shared metrics, pressure pushes teams to focus on their work, communication and coordination gaps exist, capacity tension drives individuality versus teamwork, and team leadership can be lacking or weak.

In 2016, the SCORE Culture Survey evaluated teamwork by work settings. Teamwork was rated on a 0 to 100% rating scale. Respondents aggregated rating of teamwork within the targeted perioperative area was 57%.

The targeted areas within SDS of focus encompasses pre-op, post-op, and the regional block room. The clinical area was characterized as fast paced with high patient volumes. In the regional block room, registered Nurses (RNs) assist anesthesiologists with pain block placement prior to orthopedic surgeries, averaging 10 – 15 per day. The pre-op nurses prepare patients for non-orthopedic procedures averaging 60 – 70 per day. Wherein, the post-op nurses care for patients after surgery who have met criteria for discharge and are considered "street ready", averaging 65 patients per day.

Pre-operatively, the number of patients seen per hour averaged 18 per hour beginning at five o'clock a.m. to five by 12 noon. From a monthly perspective, pre-op RNs were seeing as many as 275 patients by five o'clock a.m., averaging 148 every hour, before seeing a drop-in

volume at 12 noon to 60 patients. Postoperative length of stay data indicates that within a given month up to 397 patients received patient care and discharged within 16 - 20 minutes and 383 within 31 – 45 minutes, respectively.

Teamwork among the three subgroups is imperative. The lack of collaboration among the subgroups has led to missed nursing care, feelings of overwhelm, job dissatisfaction, an increase in absenteeism, and physician frustration. Therefore, a quality improvement project using theory and an evidence-based intervention was conducted to enhance the teamwork climate.

### **Significance of Clinical Problem**

Lower levels of teamwork are more apparent in nursing compared to other healthcare disciplines (Rochon, Heale, Hunt, & Parent, 2015). Nursing teamwork has been correlated to less missed nursing care while unfinished care, in turn, contributes to decreased nurse-reported quality of care and increased adverse events (Yanchus et al., 2017). Higher teamwork in an intensive care unit was found to be related to lower mortality rates (Kalisch et al., 2013b). It was also discovered that lower vacancy rates and turnover were associated with a higher level of teamwork, while another study showed that an increase teamwork improved staff satisfaction. (Kalisch et al., 2013a).

Research from the airline industry determined that most of aviation accidents were caused by failures in communication and teamwork (Kalisch et al., 2013a). The Institute of Medicine (IOM; 1999) “To Err is Human” cited evidence that at least 44,000 and perhaps as many as 98,000 deaths a year were caused by medical errors. The IOM report was released to emphasize the importance of teamwork and communication to reduce errors in the healthcare system and to save lives.

**Question Guiding Inquiry (PICO)**

The PICO model is an effective method to derive a clinical question at the genesis of a quality improvement project. PICO stands for population, intervention or issue, comparison, and outcome (Moran, Burson, & Conrad, 2017). PICO is designed to guide the search for evidenced-based practice data that addresses the defined clinical problem (Moran et al., 2017). The clinical question guiding this literature inquiry asked, *“Does implementation of TeamSTEPPS within the same day surgery (SDS) unit improve the teamwork climate?”*

**Population.** The target population was defined as RNs in SDS. SDS is a unit that falls under the perioperative umbrella. The perioperative department is comprised of pre-admission testing, SDS, the operating room, sterile processing, and post-anesthesia care unit. SDS is comprised of three subareas including pre-op, post-op, and the regional block room. All the RNs were 18 years of age or older. All genders and ethnicities were also included in the targeted population. The RN work status included both full-time and part-time staff, in addition to travelers.

**Intervention.** The TeamSTEPPS initiative was the EBP intervention used to improve teamwork amongst the three subgroups within the SDS unit. Through the collaborative efforts of the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense (DoD), TeamSTEPPS was the federal governments’ response to improving patient safety post the IOM’s report, *“To Err is Human”* (King et al., 2008). In 2006, TeamSTEPPS was released as the national standard for team training in healthcare (King et al., 2008).

TeamSTEPPS was delivered as a four-part curriculum. The core of the curriculum consisted of a discussion on barriers to patient safety, tools and strategies used to improve patient safety, and expected outcomes (King et al., 2008). There were several sessions of TeamSTEPPS

delivered by various members of the implementation team to accommodate unit staffing demands and nurses' schedules.

**Comparison.** In lieu of a comparison group, pre- and post- Culture Pulse Survey data was used to evaluate teamwork climate improvements. This survey was usually given annually. However, permission was granted, by administration, to evaluate SDS improvements regarding teamwork utilizing the Culture Pulse Survey.

**Outcome.** The targeted outcome was an increase in teamwork across the three subgroups in SDS. Teamwork was evaluated in aggregate for SDS, as well as specific to each of the three subgroups within SDS. The teamwork improvement project was undertaken to increase staff morale within the SDS unit. Providing a team based atmosphere can have positive outcomes for staff and well as patients cared for within this environment.

### **Summary**

Teamwork is accomplished when a group of two or more people work interdependently to achieve a shared goal. Teamwork does not require individuals to remain in the same location. Instead, individuals must possess the will to cooperate, coordinate, and communicate with others in various settings to achieve a shared goal when in different settings (King et al., 2008).

On a patient care unit, the work load, pace of care, and communication deficits can influence nurses to work in silos. Conversely, in a perioperative setting, such as SDS, nurses should rely on each other to ensure the delivery of high quality care. Teamwork is an integral part of working in healthcare settings. By improving teamwork patient outcomes and the overall unit culture the staff were on course to improve patient care delivery.

## Chapter Two: Review of the Literature

Teamwork amongst nurses is imperative to meet the demands of a growing population, challenges with access to healthcare, and organizations choosing to work leaner. There are many benefits to working as a team. From a nursing perspective, teamwork enables assignment completion, ensures safe patient care delivery, and reduces the stress levels when there are variances in available staff (Kalisch, Aebersold, McLaughlin, Tschannen, & Lane, 2015). A comprehensive literature search was completed to identify an evidence-based practice (EBP) intervention for improving teamwork between Registered Nurses (RNs) within a Same Day Surgery (SDS) unit. This chapter reflects the methodology and findings regarding this literature review.

### Methodology

**Sampling strategies.** A comprehensive electronic literature search was performed using the following database: Google Scholar. According to Moran, Burson, and Conrad (2017), a literature review is necessary to understanding what has been done around the topic of interest, to synthesize the information, and determine implementation strategies. Furthermore, a literature review helps to identify gaps or flaws in the literature (Moran et al., 2017). Keywords used in the search were: nurse, nursing, teamwork, performance, workload; effectiveness, communication, shared mental model, TeamSTEPPS, and big five. The Boolean operator “AND” was used to increase subject results by combining keywords. The search was conducted with limits of five years (2013 – 2018), then expanded to 10 years to gain a better understanding of TeamSTEPPS, and lastly 15 years to put into context the knowledge, skill, and attitude concepts that encompasses the foundation of TeamSTEPPS. Other limits applied were English only, journal articles, and full text (see Appendix A).

**Evaluation criteria.** Literature was selected as evidence for inclusion in the change project base on its significance to the clinical question and evidence-based intervention that supported the use of charge nurse huddles to improve nursing teamwork within three SDS subgroups (pre- op, block room, and post-op). Critical appraisals of the studies were performed to examine each studies relevance. Studies were selected that demonstrated the correlation of increased teamwork as a result of integrating charge nurse huddles.

### **Literature Review Findings**

Beitlich (2015) conducted a descriptive comparative design study of 200 nurses in the labor and delivery (L&D) and neonatal intensive care unit (NICU) departments to determine if standardized communication based on the TeamSTEPPS model would lead to an improved perception of teamwork. Beitlich reported that TeamSTEPPS training was completed by both L&D and NICU departments with a primary focus on using briefs, huddles, debriefs, and situation, background, assessment, and recommendations (SBAR) communication. Charge nurses championed the use of briefs, huddles, and debriefs, while SBAR guided communication related to patient care concerns. Quantitative results were determined from pre-TeamSTEPPS Hospital Survey on Patient Safety (HSOPS) and post-implementation. The paired Mann-Whitney U Test at significance level of 0.05 was used for responses from 42 out of 200 nurses. Results specific to teamwork within hospital units were: on this unit, people treat each other with respect and when one area on this unit gets really busy, others help out scoring 0.032 and 0.001, respectively.

Goldenhar, Brady, Sutcliffe, and Muething (2013) conducted a qualitative study to obtain a comprehensive understanding of benefits of implementing a three-level tiered micro level (unit huddles), meso level (inpatient huddles), and macro level (daily operations brief) huddle system



that was grounded in high-reliability organization-situation awareness principles. Ten individuals from diverse levels of the organization, as well as bedside nurses, charge nurses, and respiratory therapist participated in focus group style interviews. Focus group participants represented 14 of the 19 inpatient units, which included acute and critical care patients from general pediatrics, medical and surgical patients. Goldenhar et al., discovered five overarching themes emerged depicting the benefits of the tiered huddle system including improved efficiencies and quality of information sharing, accountability, empowerment, sense of community, and culture of collaboration /collegiality. Goldenhar et al., found that in the area of improved efficiencies and quality of information sharing, it was widely mentioned by the participants that the new huddle structure facilitated additional and useful information sharing and communication within and across units (microsystems) and departments (mesosystems). The interviewees noted that meeting at a designated time allowed them to interact and listen to representatives from other interconnected units and coordinate care. The huddles were also credited for providing a time to ask questions and get answers in a timely manner. Accountability emerged as a benefit of the huddles. The three-tiered huddle system provided a vehicle for individuals to verbalize concerns and discuss mitigation and escalation plans. Bedside and charge nurses reported the new huddle structure has empowered them to speak up and voice disagreements. Goldenhar et al. learned that the huddles have given participants a more hospital-wide view of patient safety, census, staffing, admissions, discharges, resulting in a sense of community. Having a larger perspective of daily operations lent a deeper understanding of what their colleagues are dealing with, which make them feel more connected. The final theme that ensued from the huddle implementation was a culture of increased staff collaboration and

collegiality. There was less competition for bed and staff, beds and staff were more likely to be offered to other units in need, and the request were more realistic (Goldenhar et al., 2013).

Kellish, Smith-Miller, Ashton, and Rogers (2015) conducted a comparative study of four RNs and three nursing assistants (NAs), who worked in a general pediatric clinic to compare TeamSTEPPS Teamwork Perceptions Questionnaire findings pre- and post-implementation of team huddles. Two subscales within the TeamSTEPPS Teamwork Perceptions Questionnaire were evaluated before implementing the team huddles, then three-month post-implementation. Team Structure and Communication were the two subscales assessed in the questionnaire. A five-point Likert scales ranging from strongly disagree to strongly agree was used in the questionnaire. When comparing pre-and post-test results, the overall median scores pertaining to team structure and communication increased. However, there was not any statistically significant differences noted. Qualitative data showed an improvement in teamwork and communication (Kellish et al., 2015).

Martin and Ciurzynski (2015) conducted a comparative study of 33 nursing staff to improve communication, teamwork, and RN job satisfaction in pediatric emergency department using joint nurse practitioner (NP) and RN patient evaluations and huddles. The Huddle, SBAR, and Communication Observation Tool (HSCOT) and a pre- and post-test Collaboration and Satisfaction about Care Decisions (CSACD) survey were used. There were 36 patient encounters. Among the 36 patient encounters, 30 (83%) performed joint patient evaluations and 31 (86.1%) had a huddle conducted. Martin and Ciurzynski reported the remaining six encounters (16.7%) were not performed due to increased acuity of the patient. In terms of huddles, 86% of the 36 patient encounters had a joint huddle following the patient evaluation. There was an improvement in communication and teamwork after the joint evaluation and

huddle. The mean for communication increased from 5.68 (standard deviation [SD], 1.11) to 6.59 (SD, 1.12) after implementation. Perception of teamwork also improved between the NPs and RNs with a mean increase from 5.47 (SD, 1.08) at baseline to 6.46 (1.13) post-intervention (Martin & Cieurzynski, 2015).

Townsend, McNulty, and Grillo-Peck (2017) conducted a comparative study to determine if interdisciplinary huddles performed on individual units would coordinate care to decrease length of stay (LOS) and readmissions. Townsend et al. studied five units including cardiovascular surgery, orthopedics, renal-metabolic, trauma, and urology/plastics. Huddles were led by the unit charge nurse. In 2013, the mean readmission rate for these units was 12.89%. While results in 2015, identified a mean readmission rate decreased to 12.3%. In 2013, the mean LOS was 5.78 days, which decreased to 5.20 days in 2015 (Townsend et al., 2017).

### **Limitations of Literature Review Process**

A plethora of TeamSTEPPS related literature can be found over the last 5-10 years, supporting the success of the evidence-based tool. As the popularity of TeamSTEPPS has expanded, there has also been an evolution in training TeamSTEPPS concepts to include simulated training sessions; yet little has been published regarding this new training method. Additionally, there is a vast amount of data pertaining to the use of huddles within interdisciplinary and nursing teams, much of which approaches the use from a safety perspective. Pediatrics, Emergency, and the Operative Suite are the most common specialties with published research with minimal literature regarding SDS areas.

### **Discussion**

**Conclusion of findings.** The context of the literature review reinforced the use of huddles to increase nursing teamwork. Beitlich (2015) provided an excellent example of how

TeamSTEPPS training and the use of briefs, huddles, debriefs, and SBAR can enhance nursing teamwork between two units. Goldenhar et al. (2013) further illustrated how huddles can be beneficial at all levels of the organization.

**Advantages and disadvantages of findings.** Advantages of the literature evidence includes the use of huddles to improve nursing teamwork and teamwork among units with charge nurse champions. Huddles aid in forming teams, establishing plans, and preparing for issues and contingencies that the team may encounter (Agency for Healthcare Research and Quality [AHRQ], 2014; Beitlich, 2015; Goldenhar et al., 2013; Kellish et al., 2015). The benefits of huddle implementation can improve teamwork by enhancing working dynamics, increase trust across departments, and enable staff to appreciate other contributions seeing them as allies and not enemies working together toward a common goal (Goldenhar et al., 2013).

Disadvantages of the literature evidence was the limited evidence related to enhancing teamwork in SDS environment, particularly among nursing staff. While an ambulatory care setting is similar and contains a similar atmosphere, even evidence pertaining that area was sparse. Another disadvantage was the lack of research completed with randomized trial studies and higher levels of evidence.

**Utilization of findings in practice.** Implementation of charge nurse huddles within the three subgroups in SDS has the probability to increase teamwork. Huddles provide time for co-worker to talk and collaborate by sharing mental models (Forgarty & Schultz, 2010). The charge nurses from each subgroup benefits from attending the morning huddle by obtaining information about the census, staffing, and resources can be shared and plans made to work together a cohesive unit. Nursing teamwork is a crucial element to the SDS arena, evidence has proved that

the lack thereof makes environments vulnerable to preventable medical errors and staff dissatisfaction. Thus, the implementation of a change project to increase nursing teamwork.

### **Summary**

In summary, there is evidence supporting the proposition to implement a huddle involving charge nurses from the three subgroups within SDS. Huddles are short meetings designed to assemble staff for planning the daily work flow, usage of resources, and assisting other units. Success is not instantaneous. Project champions can be a crucial element to defuse doubt, encourage compliance, and model huddle participation. Given the number of patients that receive care in SDS and pace by which they transition through the perioperative process teamwork is imperative to ensure care that is high-quality and safe.

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

A nurse's ability to implement evidence-based practice (EBP) through the use of theory and conceptual models is imperative, as it influences patient care outcomes. Utilizing EBP as a doctoral prepared nurse integrates the best evidence, expertise, values, and preferences to realize care improvements (McEwen & Wills, 2014). A change in the teamwork climate at the targeted project site inspired the use of an EBP intervention guided by a theory and conceptual model.

A conceptual model was used to provide guidance throughout the change project. The EBP change project was designed to determine if implementing TeamSTEPPS within a same day surgery (SDS) unit composed of three sub groups (pre-op, block room, and post-op) improves a teamwork climate. This change project was conducted utilizing the concept of teamwork. The use of a theory and conceptual model that guided the EBP change project is discussed in this chapter.

#### **Concept Analysis**

A concept analysis was conducted to explore the various meanings of the concept teamwork, with the purpose of arriving at a common definition (McEwen & Wills, 2014). It was important to understand how the concept was defined in the literature to align interventions and evaluation tools. Although, teamwork was defined by various authors, their definitions had descriptive similarities. The Merriam-Webster's online dictionary defines teamwork as work done by several individuals who suppress personal prominence for the efficiency of the whole (Merriam-Webster, 2018). In nursing literature, teamwork is defined as two or more individuals with specific roles performing independent tasks (Kalisch, Russell, & Lee, 2013b; Yanchus, Ohler, Crowe, Teclaw, & Osatuke, 2017). According to Kalisch, Labelle, and Boqin (2013a), "teamwork is a group of two or more people working interdependently to achieve a common

goal” (p. 245) and is the definition utilized to define the concept of teamwork in this EBP change project.

### **Theoretical Framework**

Theory is an EBP construct used to guide change projects in order to achieve an expected outcome. A theory was used as a structural basis to guide the implementation of TeamSTEPPS and the use of huddles to improve the overall teamwork climate in SDS. Since this is a project, it was important to identify a theory that could methodically guide the project and integrate an EBP.

Kristen Swanson’s Theory of Caring served as the theoretical framework to improve teamwork across the three SDS subgroups. In Swanson’s (1991) theory caring is defined as “a nurturing way of relating to a valued other toward whom one feels a personal sense of commitment and responsibility” (p. 162). While Swanson’s theory was derived to assist women who miscarried, neonatal intensive care unit caregivers, and at-risk mothers, caring for each other is essential to improve teamwork in the SDS unit.

Swanson asserts five steps in the caring process; maintaining belief, knowing, being with, doing for, and enabling to achieve well-being. Maintaining belief demonstrates faith in the ability of others serve, as well as communicate their needs. Knowing refers to understanding others condition without negative assumptions and focusing on the one being cared for. Being with involves empathizing with others current situation by being present in their time of need. Doing for incorporates nursing behaviors that maintains stability. Enabling implies assisting others by providing information, being present, and sharing (Butts & Rich, 2018; Wojnar, 2014).

**Application to practice change.** Swanson’s Theory of Caring was a useful structure to facilitate teamwork into the interactions between the SDS subgroups. Components of Swanson’s

Theory of Caring including maintaining belief, knowing, being with, doing for, and enabling were used as the subgroups engaged in charge nurse huddles. Maintaining belief is believing in other's ability to endure an event or transition, holding others in high esteem, maintaining an optimistic attitude, and supporting others through all levels of challenging situations (Wojnar, 2014). The huddles provided an opportunity for the charge nurses for communication exchanges that would maintain each other's beliefs, as information was learned about each other's needs, concerns, and challenges. This was a time where peer-to-peer support was given and received.

Knowing is attempting to understand the meaning of another person's situation, avoiding assumptions, focusing on the person's well-being, and engaging in conversation with the person experiencing difficulties (Wojnar, 2014). During the charge nurse huddles the total number of patients expected to arrive for each subgroup, time of last patient, total number of staff, and the number of staff that was available for the purpose of floating to other subgroups was discussed to provide a sense of knowing for each subgroup. Having knowledge of this information allowed each subgroup to know each other's situation. Thereby, preventing thoughts of unequal workloads.

Being with means being emotionally available for others, which sometimes means being there in person and sharing feelings without over burdening the one seeking support (Wojnar, 2014). The huddles allowed the charge nurses to hear each other challenges, empathize with each other's needs, and give emotional support. Each subgroup benefited from knowing that they were not alone.

Doing for means to do for others what you would do for yourself, if you were in the same situation (Wojnar, 2014). One of the primary reasons for the charge nurse huddles was to share resources. By having a designated time to discuss needs and availability of resources promoted



resource sharing and teamwork between the three subgroups. Enabling is navigating others through an experience by focusing on the event, informing, clarifying, supporting, generating alternatives, thinking things through, and giving feedback (Wojnar, 2014). The huddles provided an opportunity for the charge nurses to inform each other of their unit status and offer support that would enable each subgroup to meet their patient demands. The discussion during the huddles helped with problem solving and allocating resources to meet their patients' needs. Adhering to the process steps of Swanson's Theory of Caring influenced the attended outcome of improved teamwork within the SDS unit.

### **EBP Change Theory**

Kotter's Change Model was the evidence-based change theory used to facilitate the implementation of TeamSTEPPS and the charge nurse huddles. The Kotter's Change Model evolved from Lewin's Change Model that consists of unfreezing, change, and refreezing. The purpose of unfreezing is to effectively communicate the need for change. In the change phase, EBP is implemented, while re-freezing seeks to sustain change through periodic monitoring.

The Kotter's Change Model is an eight-step framework used to promote organizational change. The first four steps are used for unfreezing, steps five through seven integrates EBP, and step eight pertains to standardization (Ritter, 2011). The eight steps are as follows: 1) establishing a sense of urgency: this step means to "unfreeze" undesired behaviors; examining benchmarks; discussing harmful events; identifying medical errors, near misses, and areas of opportunity; 2) create a powerful guiding coalition: leadership creates an interdisciplinary group of stakeholders to address the areas of deficiency; 3) develop a vision: leadership develops a vision to direct change efforts and define strategies to realize the vision; 4) communicate the vision: leadership applies various methods of communication to communicate the new vision and

strategies; Additionally, the interdisciplinary team models the new behavior; 5) empower others to act on the vision: leadership must eliminate barriers to change, encourage risk taking, and create problem solving. Furthermore, actions are taken to defuse ambitions to undermine the vision; 6) plan for and create short-wins: leadership must use methods that display improvements; Furthermore, those involved in improvement efforts must be recognized and rewarded; 7) consolidate improvement and produce more change: leadership should use successes to produce more wins; and 8) industrialize new approaches: leadership must reinforce the benefits of change by emphasizing the correlation between outcomes and organizational success (Ritter, 2011).

**Application to practice change.** The Kotter's Change Model was used to support the EBP change project. Using Kotter's Change Model to improve teamwork in the SDS unit within the three subgroups (regional block room, pre-, and post-op) was as follows:

- 1) Create a sense of urgency: the project leader explained research findings as it pertained to teamwork. The airline industry has determined that most of aviation accidents were caused by failures in teamwork and communication (Kalisch et al., 2013a). The Institute of Medicine (IOM; 1999) "To Err is Human" cited evidence that at least 44,000 and perhaps as many as 98,000 deaths a year were caused by medical errors. The report was released to emphasize the importance of teamwork and communication to reduce errors in the healthcare system and to save lives. This information poses a concern as a Culture Pulse Survey was completed by the SDS staff evaluating their sense of belonging, commitment/engagement, teamwork climate, well-being, career development/growth, work-life balance, management/leadership skills, empowerment, and safety. Teamwork climate was determined to be one of the lowest culture attributes within the SDS unit.

The average score for teamwork climate was 2.83 compared to 3.51 for the health system, and the national healthcare benchmark of 3.45.

- 2) Create a powerful guiding coalition: an interdisciplinary team was created consisting of TeamSTEPPS Master Trainers and TeamSTEPPS champions (physicians, certified registered nurse anesthetists, a clinical lead, and charge nurses from each subgroup) to train the SDS staff TeamSTEPPS Essentials.
- 3) Develop a vision: the vision was to improve the 2.83 teamwork climate score to the national healthcare benchmark of 3.45 by using an EBP noted within appraised literature of charge nurse huddles.
- 4) Communicate the vision: charge nurse huddles between the three subgroups was the method emphasized to increase teamwork.
- 5) Empower others to act on the vision: morning charge nurse huddles were implemented and huddles throughout the day were encouraged.
- 6) Plan and create short-term wins: consistency in huddles were celebrated; a post-Culture Pulse Survey was implemented to evaluate improvement.
- 7) Consolidate improvement and produce more change: a plan of action to address areas of opportunity was created; while maintaining implementation strategies that were going well.
- 8) Standardize innovative approaches: huddles were monitored to verify compliance.

### **Summary**

The concept of teamwork was defined for this project as a “group of two or more people working interdependently to achieve a common goal” (Kalisch et al., 2013a, p. 245).

Additionally, a theoretical framework and change model were identified to promote an increase

in teamwork within a SDS unit. The Swanson's Theory of Caring gave underlying meaning to teamwork within the SDS areas. Kotter's Change Model was utilized to implement the EBP of TeamSTEPPS, with charge nurse huddles as the focus intervention.

## **Chapter Four: Pre-implementation Planning**

TeamSTEPPS became the national standard for team training in health care in 2006 as a result of a collaboration between the Agency for Healthcare Research and Quality (AHRQ) and the Department of Defense (DOD; King et al., 2008; Libson et al., 2016; Sawyer, Laubach, Hudak, Yamamura, & Pocrnich, 2013). The initiative was an evidence-based response to mitigate the massive amounts of annual deaths that resulted from medical errors highlighted in the 1999 publication “To Err is Human”. TeamSTEPPS Essentials training was highly advised by all unit employees in 2016 at the organization where the project has been performed. However, due to unit turnover many of the staff who had received the training are no longer working in the Same Day Surgery (SDS) unit, which partly explains the lack of teamwork and need to train project champions. Therefore, the evidence-based practice (EBP) change project was planned to implement TeamSTEPPS to the SDS nursing staff to improve teamwork through the use of learned tools and strategies, with an emphasis on the use of huddles. This chapter discusses the purpose of an EBP change project, the pre-implementation steps taken, and an evaluation plan.

### **Project Purpose**

The purpose of this EBP change project was to implement TeamSTEPPS on a SDS unit that consists of three subgroups (pre-op, block room, and post-op) with the intent of improving the teamwork climate. The project sought to use the TeamSTEPPS strategy of huddles to create an opportunity for communication between charge nurses from the three subgroups for the purpose of discussing unit needs, concerns, and how to share resources. According to the 2017 Culture Pulse Survey, the average score for teamwork climate was 2.83 compared to 3.51 for the health system, and the national healthcare benchmark of 3.45. The anticipated outcome was to

improve nursing teamwork through the use of charge nurse huddles indicative of a teamwork climate rating of 3 post-implementation.

### **Project Management**

Before implementation of the EBP change project, organizational readiness was assessed to understand the project setting. The area involved in the change project was the SDS unit within a community hospital. The SDS unit was made up of 35 beds divided between three subgroups (regional block rooms [5], pre- [18], and post-op [12]), that care for patients at various levels of their perioperative stay. On average there were 10 – 15 regional blocks, 80 – 90 pre-op patients, and 65 – 70 post-op patients per day. The organization has experienced a tremendous amount of growth in surgical volumes, which is indicative of the growing population in eastern North Carolina. In 2016 15,797 surgeries were performed and 2017 volumes increased to 16,534. Surgical volumes were expected to increase to 18,000 in fiscal year 2019.

**Organizational readiness for change.** There are three organizational levels that should be considered when gauging organizational readiness for change (Harris, Roussel, Dearman, & Thomas, 2016). These levels include the macro system – entire organization, mesosystem – division within the organization, and microsystem – patient care unit. The entire organization represents the macro system, which was often viewed as a surgical hospital. The macro system was led by an executive leadership team, in which the Chief Nurse Officer (CNO) served as my project preceptor and supported the change project.

The organization was a proponent for professional development, as it viewed this time of maturation a future asset. Additionally, the organization promoted cultural development fore it believed a healthy culture is the invisible architect that distinguishes hospitals from each other.

Furthermore, teamwork was one of the hospitals core values that leaders expected everyone to adhere to.

The mesosystem in this project was surgical services, which comprised of SDS, the Operating Room, Sterile Processing, the Perianesthesia Care Unit (PACU), Endoscopy, and the Catherization Lab. The strategic services associate (SSA) in surgical services selected the target area for the change project. The 2017 Culture Pulse Survey results helped to identify the need to improve teamwork climate which impacts morale, managing patient volume, and effectively utilizing staff. The administrative director of surgical services approved the change project and pledged her support throughout the project.

The microsystem was the SDS unit, which encompassed the regional block room, pre-, and post-op areas. The issue of these three subgroups working in silos was apparent, making meeting the daily demand of the operating room schedule difficult. The nurse manager of SDS was in full support of the change project, as the forecast of higher surgical volumes would soon be a reality. In conclusion, there was a sense of organizational readiness detected to demonstrate our core values, enhance job satisfaction, and meet the growing needs of our patients.

**Inter-professional collaboration.** Assembling an operational team that was well respected and engaged in unit improvement efforts was the first critical step in implementing the EBP change project. Examples set by leaders influence the behaviors of others. The operational team consisted of two aggregates: instructional and practice champions. Within the instructional aggregate, there were TeamSTEPPS Master Trainers (two physicians) and TeamSTEPPS coaches (two physicians and two certified registered nurse anesthetists). The practice champions consisted of three unit charge nurses from each subgroup and a clinical lead. Each champion attended the TeamSTEPPS Essentials training and a coaching session.

Non-nursing staff were selected for the instructional group to deflect any resemblance of bias that would inhibit buy-in. The instructional team conducted four TeamSTEPPS Essentials training sessions. Afterwards, the instructional group served as constant reminders of teamwork while modelling behaviors learned in TeamSTEPPS. The practice champions were charge nurses who led the huddles. Practice champions were important to ensure charge nurses from each subgroup met and that the SDS Charge Nurse Huddle Tool (see Appendix D) was used. The practice champions were highly useful in modeling teamwork from a nursing perspective.

The charge nurses involved in the huddles supported the change project and saw it as a valuable tool, especially useful on high census days to effectively allocate resources. The charge nurses also felt that the huddles gave them a deeper appreciation of the other subgroups and helped them dismiss negative assumptions of why the other teams were not helping them. Meetings took place with the team for planning, assess pre-implementation needs, project implementation, and post project evaluation and analysis.

**Risk management assessment.** An assessment of the change projects' strengths, weaknesses, opportunities, and threats (SWOT) was conducted to identify areas of concern, understand weaknesses, and map out potential threats. One of the strengths was the support from the SDS Nurse Manager, who approved her staff attending the TeamSTEPPS Essentials training sessions. Another strength was the involvement of physicians, as these individuals are nurse advocates who normally support efforts to enhance work culture. A third strength was the Patient Safety Manager who lent her expertise in planning the training sessions and supporting project efforts.

Potential weaknesses identified included: staff attendance in the TeamSTEPPS Essentials training and resistance to change. There were anticipated difficulties getting nurses to the



training sessions. The weakness was abated by collaborating with the SDS Nurse Manager to identify an appropriate time to send up five staff to the sessions. Thursday mornings were identified as the best time to send staff to training as surgeries started 1-hour later. Additional collaboration took place with the Patient Safety Manager to construct the class as a 2-hour session opposed to 3-hours, such that staff could return to patient care.

Opportunities that were evident for this change project included improving teamwork climate through TeamSTEPPS training. Another opportunity was to improve nursing teamwork between the three subgroups by implementing a charge nurse huddle. The intent was to create a designated time for the charge nurses to meet to discuss unit needs, concerns, and a way to share resources.

Threats included conflict during huddle discussions. Nurses from different subgroups had a different perspective on unit needs and when to share resources. Conflict resolution strategies were used to keep meeting time constructive. Another threat to the project was time constraints to complete the change project. Therefore, pre-implementation the TeamSTEPPS Essentials training slides were e-mailed to the instructional team to familiarize themselves with the content. The instructional group was also able to sign up for the content segments they wanted to teach. In terms of the staff, planning was done ahead of time to assign staff to sessions to avoid staff not getting through the training.

**Organizational approval process.** Organizational approval was obtained after presenting Culture Pulse Survey findings to the CNO, Administrative Director of Surgical Services, the SDS Nurse Manager and the Director of Clinical Education that identified an opportunity to improve teamwork climate. A meeting also took place with the Chief Human Resource Officer who explained the Culture Pulse Survey results and agreed enhancing the

teamwork climate in SDS was a necessary project that would positively impact the work culture and patient care outcomes. The project received verbal approval from said stakeholders. The CNO provided written approval to conduct the project (see Appendix B)

**Information technology.** An electronic Qualtrics Survey was used to collect pre- and post-op data in each SDS subgroup. The employees' birthdate and last four digits of their employee unique identification was the subjects' identifier. The SPSS analytics was used to assess data from each subgroup to compare and contrast findings.

### **Cost Analysis of Materials Needed for Project**

Minimal materials were needed for the change project. The project materials included: flyers and sign-up sheet was created to announce the TeamSTEPPS Essentials training, times, locations, and how to sign-up. Approximately, 800 sheets of 8 ½ x 11 construction paper, 10 glue sticks, 100 paper clips, 400 rubber bands, and 100 paper clamps were needed for activities during the TeamSTEPPS sessions. The organization provided the necessary to conduct the project, which involved. Snacks were provided during the four TeamSTEPPS Essentials training sessions costing \$5.00 a piece, which came to a total of \$200.00. The expenses were paid from the SDS cost center.

### **Plans for Institutional Review Board Approval**

The Institutional Review Board (IRB) is an entity established to ensure individuals who participating in research are protected from harm (Vitak, Proferes, Shilton, & Ashktorab, 2017). Plans for IRB approval began with meeting the project sites Research Scientist to discuss the change project and steps for IRB obtainment at the targeted project organization. CITI training specific to the organization was completed. A Nursing Research/Project Organizational Feasibility form was completed to determine if the project was suitable for the organization. The

IRB project proposal and Nursing Research/Project Organizational Feasibility Form was submitted on October, 25, 2018 and approved on November 25, 2015 (see appendix E).

The East Carolina University (ECU) IRB process began after organizational IRB review was completed and approval was received. An IRB QI/Program Evaluation Self-Certification Qualtrics was completed to determine, if the project involved research on human subjects or QI exempt on November 16, 2018. Upon review the project was deemed nonhuman subject research. Afterwards, the organizational IRB approval letter and ECU IRB QI/Program Evaluation Self-Certification Qualtrics results were submitted to ECU faculty for review (see Appendix F).

### **Plan for Project Evaluations**

**Demographics.** Demographics included age, race, gender, education level, years of nursing experience, and the subgroup most commonly worked. Means and percentages were the descriptive statistics reported for each subgroup of regional block room, pre-, and post-op areas. Age and Years of service were presented as a mean score with range noted. The remaining demographic information were noted as a percentage of respondents. Race included African American, Caucasian, Hispanic, Asian, and other. Gender was described as male or female. Education level descriptors included diploma prepared, associate, bachelors, and masters prepared nurses.

**Outcome measurement: Teamwork climate.** Teamwork climate was chosen as the area of focus, as teamwork influences staff morale and a key component to meeting the demands of the busy SDS unit. With the SDS staff utilizing the Nurse Huddle process it represented an increased probability of an improved teamwork climate in the post-implementation Culture Pulse Survey.

From a staffing perspective this indicated the charge nurses collaborated one to three times a day to problem solve issue within their subgroups that benefited the SDS unit as a whole.

***Evaluation tool: Teamwork climate.*** The Culture Pulse Survey is an on-line tool developed by Press Ganey for the purpose of measuring staffs' perception of 10 elements of the culture belonging, commitment/engagement, teamwork climate, well-being, career development/growth, work-life balance, management/leadership skills, empowerment, and safety. The Culture Pulse Survey uses a Likert scale to measure staffs' responses using the following format: 0 = not applicable, 1 = disagree strongly, 2 = disagree slightly, 3 = neutral, 4 = agree slightly, and 5 = agree strongly. The teamwork climate survey questions were those previously used in the 2017 Culture Pulse Survey. The Culture Pulse Survey contained four teamwork climate specific questions (see Appendix C) that were used for project evaluation.

***Data analysis: Teamwork climate.*** The first pre-implementation data was collected via Culture Pulse Survey in December 2017, supporting the change projects EBP interventional efforts to improve teamwork climate. The average score for SDS teamwork climate was 2.83, the health system scored 3.51, while the national healthcare benchmark was 3.45. A second pre-implementation Culture Pulse Survey was administered to the SDS nursing staff during the December 3<sup>rd</sup> – 17<sup>th</sup>, 2018 timeframe to obtain a current sense of teamwork climate closer to project implementation. After project implementation, the project manager distributed a post-implementation Culture Pulse Survey in March 2019 to assess potential improvements from the intervention.

The targeted SDS benchmark metric for this change project post-implementation was an average score rating of 3.0 in teamwork climate. The Culture Pulse Survey results presented aggregate data for SDS as a whole, then provided a breakdown for each of the three subgroups

(regional block room, pre-, and post-op). A trend analysis of post-implementation results were compared to the 2018 and 2019 Culture Pulse Surveys to determine if an improved teamwork climate was achieved.

**Outcome measurement: Huddle compliance.** Huddles are brief meetings that usually occur at the beginning of each shift to discuss contingencies, express concerns, address conflicts, or reassign resources (Baloh, Zhu, & Ward, 2017; Donnelly, 2017; Glymph et al., 2015). Charge nurse huddles were performed by the charge nurse from each subgroup every morning at 5:35 am, 9:00 am, and 12:00 pm to maintain constant communication with each subgroup and confirm previously established plans. The huddles provided an opportunity for the staff discuss current staffing numbers, forecast staffing needs, and work through the sharing resources (i.e., nurses, nursing care assistants). Staffs' engagement in charge nurse huddles was essential to the project, as it provided an opportunity for information exchange about the various needs of each subgroup and influenced collaboration to resolve issues.

**Evaluation tool: Huddle compliance.** The project manager devised the SDS Charge Nurse Huddle Tool (see Appendix D) for weekly use, which promoted communication between the three groups pertaining to the daily patient census, arrival times of the last patient, total number of staff, and shared resources. Daily completion of the SDS Charge Nurse Huddle Tool was used to guide the huddles and measure compliance. Monitoring the use of the new tool helped to evaluate compliance and detect breaks in consistency that may interfere with process completion.

**Data analysis: Huddle compliance.** The completed SDS Charge Nurse Huddle tools were kept in a three ringed-binder at each charge nurse desk. The huddle tools were evaluated for completion by the project manager. A compliance percentage was determined by dividing the

number of completed huddle tools by the total number of huddle tools, then multiplying the number by 100 to get the percentage of completed huddle tools. An internal compliance benchmark of 90% was established, by the project team, to assess staff performance post huddle implementation.

**Data management.** The completed SDS Charge Nurse Huddle Tools were kept in three-ringed binders at the subgroups nurse's stations before collected at the end of each week by the project manager. Survey compliance was notated in an Excel spreadsheet, which represented the primary method of storage. The Excel file was then maintained in an approved protected server "box" storage program specific to the project organization on-line. The completed paper copies of the SDS Charge Nurse Huddle Tools were then stored in a locked file cabinet located in the Surgical Services suite at the organization, behind a door with key pad entry. Both hard copy and digital files were to be kept for 10 years. The primary storage location for the Qualtrics pre- and post-implementation surveys containing teamwork climate specific questions and results were stored on the Press Ganey Culture Pulse website, accessed only by the program managers' login information. The secondary method of storage was within an Excel spreadsheet detailing the teamwork climate results for SDS in its entirety, then categorically representing each subgroup housed on the protected server.

### **Summary**

The effectiveness of nursing teamwork is incumbent upon possessing a baseline knowledge of tools and strategies underpinned by EBP. There is a plethora of literature supporting the use of TeamSTEPPS to enhance nursing teamwork with an emphasis on communication and providing platform to communicate – huddles. TeamSTEPPS Essentials training was used to raise an awareness of the importance of teamwork. Moreover, this training

was used to expand the SDS nurses' knowledge base of the tools and strategies that foster teamwork. With the use of the EBP huddles, an environment was created for the charge nurses to communicate unit status, needs, and available resources.

The planning phase of a change project is paramount to implementation success. After obtaining an understanding of the organizational structure and culture, an assessment of strengths and areas of opportunity were identified. An EBP change project using TeamSTEPPS Essentials training and charge nurse huddles was launched to improve teamwork between the SDS subgroups. By determining the projects needs in the pre-implementation phase made implementation a more efficient and effective process. The next steps was to begin implementing the change project.

## **Chapter Five: Implementation Process**

Implementing the evidence-based practice (EBP) change project began in January 2019. The EBP change project was designed to create a culture of teamwork within the Same Day Surgery (SDS) unit nurses erasing the imaginary lines that separated the department's subgroups (pre-op, block room, and post-op). This chapter discusses the implementation process of TeamSTEPPS Essentials training and a charge nurse huddle, which was the focus intervention to improve the clinical environments teamwork climate.

### **Setting**

A 35 bed SDS unit consisting of three subgroups (pre-op, block room, and post-op) within a community hospital was the setting of this quality improvement project. This SDS unit pre-ops and recovers patients that come in from home, inpatient units, emergency department, and for radiology procedures. On average this unit cares for up to 80 patients a day, and roughly 500 patients per week. Since the patients are seen in the pre-op areas (pre-op, block room, and pre-op) before their procedures, then arriving to post-op for recovery, the pace of care flows in waves. Patient care delivery is steady and sometimes fast paced in the pre-op areas, which is the mirrored experience in post-op. The busiest times in the block room and pre-op are between 5:30 am to 8:00 am; whereas, the pace picks up around 9:00 am, peaking at 12:00 noon, before decreasing in the 2:00 pm hour. Smooth and efficient patient throughput can be exacted by SDS nursing teamwork to ensure a seamless transition for every patient cared for through SDS. Nursing teamwork helps deliver safe, effective, and efficient patient care.

### **Participants**

All nursing staff including travelers, part-time, full-time, and casual nurses who were licensed Registered Nurses (RNs) working in the SDS unit participated in the EBP change



project. There were no restrictions to nurses based on age, gender, race, level of RN licensure, years of experience or employment status. Participation in the Culture Pulse Survey was strongly advised and encouraged by the project manager and SDS nurse manager.

### **Recruitment**

Recruitment to participate in the pre-implementation Culture Pulse Survey slated for distribution December 3<sup>rd</sup> – 17<sup>th</sup> began in November 2018. The project manager sent an e-mail notification and reminders of the Culture Pulse Survey to RNs within SDS. Other notifications included flyers in the staff breakroom, locker room, as well as a posting on the digital signage (TV monitor) in the staff breakroom. Moreover, a week before the Culture Pulse Survey was available to the staff the project manager made an announcement about the survey at the 5:30 am morning briefs and 2:00 pm volume huddles.

During the staff meeting in December 2018, the project manager provided an overview of the EBP change project that would include the second pre-implementation Culture Pulse Survey, TeamSTEPPS Essentials training, charge nurse huddle, and a post-implementation survey. Information about the project was also communicated via e-mail and at staff meetings one month prior to the pre-implementation survey release. Discussions were designed to prep the SDS for the journey ahead. The project manager explained the coming of an exciting project geared towards improving teamwork climate. The project would begin with a pre-implementation Culture Pulse Survey to measure the current teamwork climate followed by TeamSTEPPS Essentials training, implementation of a charge nurse huddle, and a post-implementation Culture Pulse Survey to measure improvements. A digital signage board in the SDS break room was also used to remind the staff of important dates such as the window for taking the pre- and post-implementation Culture Pulse Surveys, TeamSTEPPS Essentials training, and huddle initiative.

Additionally, the staff were reminded the project was supported by the nurse manager and TeamSTEPPS Essentials training was mandatory.

In December 2018, nursing staff were urged via face-to-face conversations, e-mail, flyers, and digital signage communication to sign-up for a 2-hour TeamSTEPPS Essentials training that began January 23 and ran through February 8, 2019. A sign-up sheet with morning (6:00 am – 8:00 am) and afternoon (2:00 pm – 4:00 pm) sessions were posted in the SDS breakroom. Given there were 40 staff, eight sessions were offered to accommodate 5-7 individuals. In order to ease staff anxieties about attending training on a work day, SDS staff were made aware of the nurse managers' approval for them to attend the training before work on a work day or leaving early to attend if able.

Recruitment for participation in the post-implementation Culture Pulse Survey slated for distribution in March 2019 mimicked the steps taken for the second pre-implementation survey. An e-mail notification, announcements in the staff meeting, and a post on the digital signage was initiated one month prior to the Culture Pulse Survey release date. Flyers were also posted in the staff breakroom and locker room. One week prior to the Culture Pulse Survey window began, mid-way through the survey and the day before the last day, staff were urged via e-mail and face-to-face staff encounters to complete the survey.

### **Implementation Process**

Data from the 2017 Culture Pulse Survey served as pre-data 1, justifying the need for an EBP change project aimed at improving teamwork climate. An EBP change project began on December 3, 2018 with the administration of a second Culture Pulse Survey. Information gathered was considered pre-data 2. The pre-data 2 results supported a continuous need for the

EBP change project, as well as provided comparative data to measure improvements in the post-implementation survey.

Beginning January 23, 2019 through February 8, 2019, Wednesday, Thursday, and Fridays were selected to conduct TeamSTEPPS Essentials training. Because of the staffs' work schedules classes were 2-hours in duration, from 6:00 am – 8:00 am to accommodate the post-op staff whose patient intake began within the 8:00 hour and from 2:00 pm – 4:00 pm for the pre-op staff, since the bulk of the patients already gone transported to surgery. With a nursing staff of approximately 45 staff nurses, there were nine classes offered over a three week period to accommodate five nurses per class. The 9<sup>th</sup> class was a make-up session to catch those staff members who were unable to make any of the other times.

The TeamSTEPPS Essentials training discussed team structure, leading a team, communication, situation monitoring, mutual support, advocacy, assertion, and conflict resolution, with a focus on charge nurse huddles to improve the teamwork climate. Copies of the presentation, a handbook, and web addresses to on-line resources were provided to the nursing staff to reinforce the content. Classes were held on the hospital campus. A continental breakfast was available for the morning classes and snacks for the afternoon sessions.

On February 11<sup>th</sup> 2019, the charge nurse huddles were initiated by the project champions using the SDS Charge Nurse Huddle tool (see Appendix D). The charge nurse huddles were conducted twice (7:20 am and 11:00 am) per shift, with the 7:20 am as the required meeting time. The project manager attended all huddles to offer guidance and monitor the process. Completed charge nurse huddle tools were stored in a designated three-ringed binder kept in the project managers' office. The completed huddle tools were later used to calculate the compliance

percentage to determine if a high percentage of huddle correlated to an improvement in teamwork climate.

At the conclusion of the project, a post-implementation Culture Pulse Survey was administered to the SDS nursing staff to evaluate teamwork climate. Teamwork climate results represented SDS as whole, in addition to the three subgroups (pre-op, block room, and post-op). Culture Pulse Survey results from pre-data 1 and pre-data 2 were compared to the post-project survey data. The post-project Culture Pulse Survey data was also compared to the national benchmark to determine the level of improvement.

### **Plan Variation**

The project manager (PM) collaborated with the organizations' Safety Department and system-level Chief of Staff to arrange administration of a teamwork climate specific Culture Pulse Survey. Collaboration with the two teams prior to implementation was important to provide the Finance Department justification for survey administration outside the normal contracted timeframes and preparing for survey distribution to the SDS nursing staff. The second pre-implementation Culture Pulse Survey was distributed between December 3<sup>rd</sup> -19<sup>th</sup>, 2018. In an effort to increase SDS staff nurse survey participation, accessibility was granted via e-mail, cell phone, and iPad. The Culture Pulse Survey hyperlink was e-mailed to the SDS nursing staff. This hyperlink also made it possible to complete the Culture Pulse Survey via cellphones for those who had their work e-mails linked to their personal phones. Additionally, at 2:00 pm three days a week (Monday, Wednesday, and Friday) the PM went around with iPads to facilitate completion of the Culture Pulse Survey.

The PM contacted the Chief of Staff to arrange for the post-implementation Culture Pulse Survey. However, it was discovered that a second survey was not permitted, as it was not

included in the contract agreement and administering another survey within months of the organizations survey window would lead to survey fatigue. Given the importance of the post-implementation survey data an alternative option was sought. It was identified by the Chief of Staff that the survey questions were not proprietary. Therefore, the Culture Pulse Survey questions could be used by the student and administered to the staff via a survey program (i.e., Survey Monkey; Qualtrics Survey). The Chief of Staff drafted a letter granting permission to use the Culture Pulse Survey questions (see Appendix G). Thereafter, the PM created a post-implementation Qualtrics Survey with teamwork climate focused questions to be distributed March 25<sup>th</sup> – April 8<sup>th</sup>, 2019.

### **Summary**

Teamwork is a culture characteristic that is not present, merely because individuals share the same space, but in many cases an attribute that must be taught and refined. An opportunity to improve the teamwork climate in a SDS unit consisting of three subgroups (pre-op, block room, and post-op) arose. High work demands on the nursing staff warranted a plan to unite the subgroups making the volume of patients, the ebbs and flows of patient care delivery in each area, and the pace of care more manageable.

The SDS staff grasped the TeamSTEPPS concepts and integrated charge nurse huddles in their daily routines. Mutual support between the three subgroups were modeled by the project champions, which led similar behaviors among the staff. The effectiveness of the EBP change project was assessed, which is explained in detail in the next chapter.

### **Chapter Six: Evaluation of the Practice Change Initiative**

The purpose of the evidence-based practice (EBP) change project was to improve nursing teamwork within a Same Day Surgery (SDS) unit comprised of three subgroups (pre-op, block room, and post-op). Nursing teamwork was evaluated through the use of four Culture Pulse Survey questions (see Appendix C) that focused on teamwork climate. The teamwork climate Culture Pulse Survey questions were administered before and after implementation of TeamSTEPPS Essentials training and a charge nurse huddle to measure improvement in nursing teamwork.

TeamSTEPPS Essentials training was administered during a four-week time period, spanning from January 23, 2019 to February 8, 2019. Thereafter, charge nurses from each subgroup engaged in charge nurse huddles for six-weeks from February 11, 2019 to March 22, 2019. Over the course of two weeks March 25, 2019 through April 8, 2019, the nursing staff completed a four question post-implementation Qualtrics Survey evaluating the teamwork climate. There was 59.2% (n = 28) participation in the pre-implementation Culture Pulse Survey. Participation for the post-implementation survey was 60% (n = 27).

#### **Participant Demographics**

Demographic data was assessed. In terms of TeamSTEPPS Essentials training, there was 83% (n = 34) participation out of 45 eligible individuals. Participation was not limited to race, gender, ethnicity, nursing class or level of education. The racial background of the participants consisted of 21% (n = 7) African American, 79% (n = 27) Caucasians, and 3% (n = 1) Asian descent (see Appendix H; Figure 1). Among the 34 participants there was one male who attended the class, which was representative of the demographic make-up of the unit (see Appendix H; Figure 2). Work status of the training attendees consisted of 94% (n = 32) full-time

employees, while 6% (n = 2) were part-time employees (see Appendix I; Figure 3). No travelers participated in the training. When examining nursing class, 80% (n = 28) were clinical nurse (CN) two's, 6% (n = 2) CN three's, and 17% (n = 6) CN four's (see Appendix I; Figure 4).

### **Intended Outcome**

The goal of the EBP change project was to increase teamwork between the nurses in a SDS unit consisting of three subgroups (pre-op, block room, and post-op) indicative of an increase in the Culture Pulse Survey teamwork climate scores to a project benchmark of three. Interventions used to reach the teamwork climate target was TeamSTEPPS Essentials training and charge nurse huddles. Pre- and post-Culture Pulse Surveys were administered to measure project outcomes. The Culture Pulse Survey questions measured teamwork dynamics among the nursing staff. Areas of focus within the teamwork climate questions included the nurses' ability to ask questions, resolve conflict, and work with other subgroups.

The charge nurse huddle (see Appendix D) was used to serve as a guide, in addition to measure process compliance. Charge nurses from each of the three subgroups (pre-op, block room, and post-op) were expected to attend the huddles at 7:20 am and 11:00 am each morning. While the charge huddles were conducted at two specified times, ad hoc use was encouraged to problem solve as plans and needs of the unit changed. During the huddles the total number of expected patients in each area, time of last patient, total number of staff, and what staffing resources could be shared was discussed.

Improvements in teamwork climate were expected as the staff attended TeamSTEPPS Essentials training prior to initiating the charge nurse huddle and the post-implementation Culture Pulse Survey. TeamSTEPPS Essentials training covered tools and strategies to assist

with communication, conflict resolution, and mutual support. The charge nurse huddle was designed to create a shared mental model and facilitate the sharing of staffing resources.

### **Findings**

TeamSTEPPS Essentials training participation was satisfactory with 34 of 45 (75%) nurses attending. Morning and afternoon classes were offered three-days a week for 4-weeks in a conference room on the hospital campus. Light snack and drink refreshments were also, available for the staff. Additionally, copies of the PowerPoint presentation, TeamSTEPPS pocket handbooks, and badge reminders were distributed.

Each day the charge nurse huddles were held in the SDS breakroom. Charge nurse huddles were well attended with 28 of 30 (93%) attended during the implementation phase, which slightly exceeding the project target of 90%. The completed huddle tools were stored in separated binder representative of each subgroup and locked in the project managers' office.

The overall scores for the Pre-1, Pre- 2, and Post Culture Pulse Surveys were evaluated to determine level of teamwork climate improvement (see Appendix J; Figure 5). Figure 5 illustrates that Pre-2 and Post Culture Pulse Survey scores met the project benchmark of three (see Appendix J). Figure 6 shows teamwork climate evaluated at the subgroup level in Pre-and Post-Culture Pulse Surveys (see Appendix J). According to the pre-op and post-op sub-groups Culture Pulse Survey results, the teamwork climate benchmark of three was met (see Appendix J; Figure 6). However, teamwork climate scores for the block room remained flat at 2.1 and below the project benchmark of three (see Appendix J; Figure 6).

To gain a more granular understanding of the level of nursing teamwork, aggregate data was evaluated from the three subgroups (block room, pre-, and post) using the Pre-2 and Post Culture Pulse Surveys' teamwork climate scores. The objective was to identify the mean



percentage increase in teamwork climate for each subgroup. Examining the aggregate scores helped to determine if deficits in teamwork climate were associated with a particular subgroup. The opportunity to improve teamwork climate was identified by the subgroup whose teamwork climate score fell below the project benchmark of three. Additionally, teamwork education using the TeamSTEPPS Essential training would be given to those subgroups falling below the benchmark.

Pre-2 and Post-Culture Pulse Survey teamwork climate scores improved in the pre-op (3.5 to 4.3) and post-op (2.5 to 3.5) areas. Aggregate findings revealed a percentage increase in these areas at 22% (pre-op) and 24% (post-op), respectively. Conversely, the Pre-2 and Post-Culture Pulse Survey teamwork climate score decreased minutely in the block room from 2.2 to 2.1, which represented a percentage decrease of - 4.5%.

The consistently low teamwork scores in the block room, led to a closer look at the staffing model. There are six nurses that have received training to work in the block room. The block room is considered a specialty area comprised of five beds and is staffed with three nurses. Two nurses have up to two patients and the third takes care of a patient and carries out charge nurse duties. While other staff would be inclined to assist in the block room, not everyone is cross-trained work in the specialty area. However, recent hires are being trained to work in all three subgroups.

### **Summary**

The EBP change project was designed to improve nursing teamwork climate. Participation from the nursing staff was commendable in both the TeamSTEPPS Essentials training and charge nurse huddles. Nursing teamwork was measured by teamwork climate questions from the Culture Pulse Survey. Overall Culture Pulse Survey findings determined that

the project benchmark of three was met in Pre-2 and Post-Culture Pulse Surveys. Subgroups, pre- and post-op, saw improvements in their teamwork climate scoring 4.30 and 3.15, respectively, while the block room saw no improvement remaining flat at 2.1.

### **Chapter Seven: Implications for Nursing Practice**

An evidence-based practice (EBP) change project was implemented to improve nursing teamwork in a Same Day Surgery (SDS) unit comprised of three subgroups (pre-op, block room, and post-op). The EBP change project involved two interventions including teaching TeamSTEPPS Essentials training to the nursing staff and engaging the charge nurses from each subgroup in a charge nurse huddle. TeamSTEPPS Essentials training resulted in 34 of 45 (75%) nurse participation. Charge nurse huddles were attended 28 of 30 days equivalent to 93% participation.

Results from the Pre-2 and Post-implementation Culture Pulse Survey showed an improvement from the Pre-1 2017 Culture Pulse Survey meeting the project benchmark of three. Although the targeted benchmark was met, Pre-2 and Post-implementation SDS scores remained flat at 3.2. The short timeframe between pre- and post-evaluations were thought to be a causative factor. When examining the results specific to subgroups, pre-op (3.15) and post-op (4.3) met the target benchmark. However, scores for the block room remained low at 2.2 and 2.1, respectively, which was below the benchmark. After reviewing these results implications were considered to expand improvements, if another EBP change project was implemented. This chapter outlines implications in relation to the eight Doctorate of Nursing Practice (DNP) essentials.

#### **Practice Implications**

The practice implications for this EBP change project were grounded in the American Association of Colleges of Nursing (AACN; 2006) eight essentials of DNP education for advanced nursing practice. The eight DNP essentials served as the competency requirements to obtaining an advance practice degree (AACN, 2006). Practice implications are suggestions or

recommendations learned from the EBP change project to guide continued work after project completion. A summary of each essential is described and practice implications are provided to assist in further improvements in teamwork.

**Essential I: Scientific underpinnings for practice.** Doctoral level nursing practice is supported by the underpinnings of science and the evidence from these findings guide change projects that improve nursing practice (AACN, 2006). Nursing science, theory, analytics, and organizational studies are integrated in the DNP program to prepare nurses to practice at their full potential (AACN, 2006). A unique element of this essential is the ability to use theories from other disciplines to improve nursing practice (AACN, 2006).

The practice implications based on this essential would be to use the plan-do-check or study-act (PDCA) cycle to guide the EBP change project and extend huddle participation to the nursing staff. The PDCA cycle is a four step quality improvement framework designed to effect change in a short window of time (Anderson, 2018). Huddles are short meetings usually lasting approximately 10-minutes occurring at the start of the day to discuss safety concerns and problem solving issues (Agency for Healthcare Research and Quality [AHRQ], 2017).

The first implication is to use the PDCA cycle to ground the change project with an EBP change model. The planning phase is the first step of the PDCA cycle which includes identifying the improvement opportunity, analyzing the current state or process, pin pointing root causes, and generating solutions by asking who, what, when, where, and how questions (Anderson, 2018; Spath & Kelly, 2017). The second step is the “do” phase. In this step, the solution is trialed, data is collected, problems or unexpected outcomes are documented, and the data analysis begins (Anderson, 2018; Spath & Kelly, 2017). The third step is the “check” phase. This step involves analyzing results, comparing data to targets, and summarizing what

was learned (Anderson, 2018; Spath & Kelly, 2017). The check phase is critical because it determines whether or not the intervention(s) succeeded in meeting the target or more work needs to be done. The fourth step is the “act” phase. Actions in this step requires a decision to adopt or abandon changes (Anderson, 2018; Spath & Kelly, 2017). Adopting the changes would result in holding on to the gains and continue monitoring. Whereas, abandoning the changes prompts the initiation of another cycle.

Using the PDCA cycle is an efficient and effective tool to facilitate change. One of the notable benefits to this tool is that its cyclical nature allows the project manager to continue problem solving until the expected outcome has been reached. Thereby, making room for future implications. Being able to see results in a short timeframe is an asset, because it helps the project manager determine what works, making it an appropriate model to use given the length of time allocated within a semester.

Curtsinger (2018) conducted a change project on a medical surgical unit to improve the lack of leadership training in communication and teamwork. The PDCA methodology was used to guide the implementation of a nursing leadership training program that involved TeamSTEPPS education. By using the PDCA cycle, the learner was able to test the effectiveness of TeamSTEPPS (Curtsinger, 2018).

TeamSTEPPS training was implemented to all of the staff including the nurse leaders. Pre- and post-implementation surveys were administered including a Team Perceptions Questionnaire, Learning Benchmark Quiz, and Observation Tools. The surveys were used to assess perception and usage of the TeamSTEPPS fundamentals (team structure, leadership, situation monitoring, mutual support, and communication).

There were improvements in leadership communication and teamwork after implementing TeamSTEPPS training. The post Team Perception Questionnaire showed improvements in leadership and situation monitoring, while communication and team function showed the least (Curtsinger, 2018). Nevertheless, with the  $p$  – value of all five categories being less than 0.05, it was concluded the average score from the post-survey was significantly higher (Curtsinger, 2018). In the Learning Benchmark Quiz the post-test scores resulted in a t-test of 0.002, outcome significance validated (Curtsinger, 2018). According to Curtsinger, the Observation Tools also identified improvements in all five TeamSTEPPS categories (team structure, leadership, situation monitoring, mutual support, and communication).

The second implication would be to extend huddle participation to the nursing staff. Frontline staff are vital members to huddles success, as they have firsthand knowledge of the day to day challenges and serve as a collective voice for their colleagues. By including the front line staff and bedside nurse in the huddles creates an environment of collaboration and collegiality (Goldenhar, Brady, Sutcliffe, & Muething, 2013). As a result teamwork is enhanced through the working relationship, trust is built across units, and staffs' perception of each other changes to seeing each other as allies working to achieve a common goal (Goldenhar et al., 2013).

Goldenhar et al. (2013) trialed huddles involving nursing staff as key stakeholders in a three-tiered huddle which included a micro, meso, and macro level. During the huddles, unexpected events and safety concerns were identified by the nursing staff that was communicated to the charge nurse, from the charge nurse to the manager, and from the manager to the director. At each level, efforts are taken to identify solutions to safety concerns raised within 24 hours. According it Goldenhar et al. (2013), the huddles improved efficiencies and

quality of information sharing, accountability, staff empowerment, sense of community, and teamwork.

**Essential II: Organization and systems leadership for quality improvement and systems thinking.** The DNP graduate has been educated on how unit level input can impact the downstream output from a departmental and organizational level (AACN, 2006). This requires the DNP graduate to examine how nursing practice behavior effect the quality of patient care delivery. DNP graduates implement processes and EBP change projects with patient outcomes and the impact on the organization in mind (AACN, 2006).

The practice implications based on this essential would be to use a checklist and clinical leads as preoperative facilitators (Panni, Shah, Rawl, Wojnarwsky, & Panni, 2013). These implications would aid in avoiding upstream delays that may impact the patients' progression downstream postoperatively. The practice implications would assist with meeting the operating room start times, particularly first cases.

The checklist would be developed to ensure all required pre-operative elements such as labs and identification bands are included. According to Panni et al. (2013), the clinical lead facilitator would arrive on the floor at 6:30 am. From 6:30 am to 6:50 am the clinical lead facilitator rounds reviewing each patient's checklist and start issuing notifications to the staff that they are missing certain pre-op items (Panni et al., 2013). If there were missing items, the clinical lead facilitator would start calling team members based on the chain of command beginning with the nurse practitioner, resident, or physician assistant (Panni et al., 2013). After 5-minutes the clinical lead facilitator calls the staff nurse to validate the item was no longer missing (Panni et al., 2013). If after another 5-minutes the item was still missing, the attending surgeon, or anesthesiologist is called to resolve the issue (Panni et al., 2013). In a preoperative setting, this

practice model was implemented. As a result, 10 first case on time start delays decreased to 5 over 6-months.

The first case on time starts are monitored within the organization and health system at the project site to determine appropriateness in operating room time utilization and patient satisfaction. Therefore, a first case on time start benchmark has been established. By utilizing the checklist and a team approach through the use of the clinical lead facilitators has shown to have a positive impact on reducing the number of patient delays.

**Essential III: Clinical scholarship and analytical methods for EBP.** The DNP graduate understands that research used to produce new knowledge that is grounded by evidence of effectiveness should be used as interventions in nursing practice. The DNP graduate learns to appraise existing literature and determine the best sources that support the intervention used in the EBP change project. Moreover, the DNP graduate uses information technology to analyze the project findings (AACN, 2006).

The practice implication based on this essential would be to inform the SDS Unit Practice Council of the project managers' teamwork focused EBP change project findings and results. Afterwards describe the use of Qualtrics Surveys to facilitate the evaluative portions of the project. Emphasize the importance of monitoring teamwork climate perception either with the Culture Pulse Survey or Teamwork Perceptions Questionnaire using a web based survey such as the Qualtrics Survey. Afterwards the results from the Qualtrics Survey can be used to devise solutions to sustain or improve the teamwork climate.

A Qualtrics Survey is one of many simple web-based survey tools to collect data pre- and post-implementing change. The benefits of using the Qualtrics Survey is that it is user friendly



and free. Moreover, data can be exported to Statistical Package for Social Sciences (SPSS), Word, Excel, or PowerPoint.

A study was performed to determine if mutual support can be influenced by an educational intervention (Bridges, Sherwood, & Durham, 2014). The authors created an educational tool by adapting a PowerPoint and videos from the TeamSTEPPS curriculum describing the teamwork and collaboration components of mutual support. Bridges et al. used the Nursing Teamwork Survey specific to assessing nursing teamwork, which was embedded into a Qualtrics Survey. Thereafter, the Qualtrics Survey was used to assess nursing teamwork pre- and post-implementation of the education intervention (Bridges et al., 2014). The Qualtrics Survey was instrumental in collecting participation and demographic data such as educational background, roles, age, and length of time working on the unit (Bridges et al., 2014). Bridges et al. was also able to derive statistical data from the Qualtrics Survey results such as mean ranges, category comparison scores, variance, and standard deviation.

**Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare.** The DNP graduate is expected to utilize information systems/technology to support process improvement projects that enhance quality of patient care outcomes (AACN, 2006). DNP prepared nurses also use information technology systems to extract data and formalize graphs to interpret the findings. Information technology programs are used by the DNP graduate to analyze data in order to determine trends and guide the direction of care.

The practice implication as it relates to this essential is to use of information technology to transform healthcare. A recommendation for future would be to provide TeamSTEPPS Essentials training via webinars for individuals who are not able to attend the training in person.

Perhaps this may be the viable option for the future, since there are limited Master Training sites and given the expansion of the initiative overseas.

The AHRQ (2018) has TeamSTEPPS Essentials recorded webinar trainings on their website for public use. In the AHRQ library, webinars are tailored to certain healthcare practice environment such as surgical services or the operating room. Innovative implications for this essential would be to create a YouTube video reviewing the TeamSTEPPS Essentials concepts or providing the staff with an online webinar to view in lieu of attending the class.

**Essential V: Healthcare policy for advocacy in healthcare.** The DNP graduate is expected to participate in the design, promotion, and implementation of healthcare policies (AACN, 2006). Policies are created to guide actions, decisions, actions and behaviors that are grounded in evidence (Longest, 2016). DNP prepared graduates integrate policy in change projects to establish a standard to ensure patient care that is safe.

The practice implication based on this essential would be to create a unit-based policy that must be signed by the nursing staff; wherein, teamwork is the expectation. It was identified that teamwork was a part of the project sites' core values. By creating a policy, establishes a practice standard that can assist in holding individual accountable.

The Birthing Center at an organization in eastern North Carolina has created a policy that supports teamwork. The policy reinforces being a team player, avoiding negativity, and pulling your weight contributes to the success of the overall team. The project manager learned that the policy was effective in communicating teamwork as an expectation, serving also as a point of reference during times corrective action.

**Essential VI: Inter-professional collaboration for improving patient and population health outcomes.** The DNP graduate employs effective communication and collaborative skills

in creating an inter-professional team to improve patient health outcomes (AACN, 2006). DNP graduates provide leadership in identifying appropriate members of the team that will contribute to meeting the objectives of the EBP change project. The DNP graduate also utilizes practice models to guide the collaborative team interactions.

A practice implication would be to incorporate the Perianesthesia Care Unit (PACU) charge nurse in attending TeamSTEPPS Essentials training and the charge nurse huddles with the SDS staff. The PACU is a unit that sends patients downstream to the Post-op unit. Both SDS and PACU have work has a team to ensure the forward progression of patients, to avoid delaying the operating room. Therefore, equipping both teams with the tools and strategies work as a cohesive team is crucial.

Optimal patient care outcomes is the byproduct of inter-professional teamwork and collaboration (Franklin, Benhardt, Lopez, Long-Middleton, & Davis, 2015). Franklin et al. (2015) found that healthcare worker are more effective and have a higher sense of job satisfaction when a part of a team. Therefore, promoting teamwork is fundamental workplace success. Franklin et al. found that inter-professionalism is a process when professionals reflect and develop ways to integrate their efforts to arrive at a common goal. Collaboration is the exchange of ideas and applying collective action to reach mutual outcome. According to Franklin et al., teamwork is the practice of collaboration.

Franklin et al. (2015) performed an integrative review identifying five assumptions that should be present for effective inter-professional teamwork and collaboration in a healthcare setting. These assumption run parallel to many of the TeamSTEPPS concepts: 1) teamwork is a shared understanding, which is similar to the shared mental model concept in TeamSTEPPS; 2) teamwork is inclusiveness in preferences, decision making, and goal setting – team paradigm in

TeamSTEPPS; 3) teamwork is working in a cooperative manner – task assist in TeamSTEPPS; 4) teamwork is interdependent – mutual support in TeamSTEPPS; and 5) teamwork is comprised of combined efforts and shared decision making – mutual support and task assist in TeamSTEPPS (Franklin et al., 2015).

Franklin et al. (2015) found in 12 of 47 studies that at least one assumption of effective inter-professional teamwork. According to Franklin et al., four studies contained all five assumptions of inter-professional teamwork effectiveness. Due to the lack of assumptions identified, it was imperative to foster teamwork.

**Essential VII: Clinical prevention and population health for improving the nation’s health.** The DNP graduate integrates epidemiologic data that supports teamwork as a clinical prevention to improve population health (AACN, 2006). The DNP graduate engages in observation and reviewing the data pertaining to teamwork climate to grasp a better understanding of the areas of opportunity. Unit and organizational base surveys are tools that can be used to improve the quality of care.

The practice implication on this essential is periodic reviews of teamwork to detect drift. In a trauma center, nurses sought EBP interventions to integrate teamwork training into their advanced trauma nurse core curriculum. Identified benefits were an enhancement in clinician confidence, attitude towards safety, team performance, and patient outcomes (Hughes, Gregory, Joseph, Sonesh, Marlow, Lacerenza, & Salas, 2016). The curriculum included TeamSTEPPS training, a high-risk safety review, intraosseous catheter placement, trauma nurse process review, and inter-professional simulation-based on team training from TeamSTEPPS (Harvey et al., 2019).

A Teamwork Performance Observational Tool (TPOT) was developed using the TeamSTEPPS four domains (Harvey et al., 2109). The TPOT was administer to establish baseline data. The tool was used again after six and 12 months after the training. According to Harvey et al., teamwork improved immediately after the training in all four domain. Harvey et al. found that the scores to decrease between six and 12 months.

Periodic reviews of teamwork climate results can be useful in sustaining acquired knowledge and skills. Receiving education in areas of deficiency assist with continual learning and further improvements. When teamwork concepts are heard and immediately put into practice new behaviors are hardwired that support that supports clinical prevention and population health.

**Essential VIII: Advanced nursing practice.** The DNP graduate uses a systematic approach grounded by nursing science and theory to improve nursing practice (AACN, 2006). Mentorship and support was given to the SDS nurses, by the project manager, to improve teamwork climate. The project manager also established a professional relationship with the SDS staff, while working to achieve the EBP change project outcomes.

The practice implications based on this essential was the use of Roger's Diffusion of innovation theory, to promote change. According to Neumeier (2013), early adopters are important stakeholders to have in change projects, as they are influential leaders that others look to when determining if the innovation has validity. These individuals are change agents who model the behaviors we seek to replicate.

The Roger's Diffusion of Innovation Theory contains three steps: knowledge, persuasion, and decision (Mohommadi, Poursaberi, & Salahshoor, 2018; Neumeier, 2013). In the knowledge stage, individuals learn about an innovation and acquires understanding about the

mechanism of action (Mohommadi et al., 2018; Neumeier, 2013). The persuasion stage is where individuals begin to develop an opinion towards the innovation based on the perceived attributes – relative advantage, compatibility, simplicity, and trialability (Mohommadi et al., 2018; Neumeier, 2013). The choice to adopt or reject the innovation is made in the decision stage. There are five categories of individuals when it comes to adopting an innovation – innovators, early adopters, early majority, late majority, and laggards (Neumeier, 2013).

In a descriptive correlation study, Roger's Diffusion of Innovation Theory was used to advance the use of EBP data among nurses and nursing students. The study involved 482 individuals (322 nurses and 160 nursing students). The individuals were educated on the use and importance of EBP usage. Thereafter, perceived attributes of EBP data was communicated. In the decision stage a demographic information checklist, standard scale for the perception of EBP attributes, EBP scale, and individual innovation inventory questionnaires were administered. Results from the questionnaires were designed to prove if Roger's Diffusion of Innovation Theory would enhance the use of EBP among nurse and nursing students. According to the findings, there was a positive correlation between EBP adoption and individual innovation ( $r = 0.575, p < 0.001$ ), knowledge ( $r = 0.657, p < 0.001$ ), attitude ( $r = 0.623$ ), and age ( $r = 0.357, p < 0.001$ ) (Mohommadi et al., 2018). With this knowledge early adopters were identified and used to teach nurses and nursing students how to apply EBP data to their daily practice (Mohommadi et al., 2018). Therefore, utilizing the Roger's Diffusion of Innovation Theory has shown validity in facilitating change.

### **Summary**

The implications identified based on this EBP change project suggested improvements in nursing teamwork through the use of TeamSTEPPS Essentials training and a charge nurse

huddle. While the AACN (2006) DNP essentials are the framework of the doctoral degree, these essentials also served as a guide in completing the EBP change project. Upon examining other implications related to each DNP essential, it was identified that future interventions can be instituted to produce improved results regarding a teamwork climate.

## **Chapter Eight: Final Conclusions**

An opportunity to improve nursing teamwork between subgroups (pre-op, block room, and post-op) in a Same Day Surgery (SDS) unit was identified. It became commonplace for the nursing staff to work in silos, instead of one cohesive team. Silo behaviors had a trickle down affect to the patients resulting in delays in treatment, missed care, and low morale.

A Doctor of Nursing Practice (DNP) evidence-based practice (EBP) change project was implemented to improve nursing teamwork using TeamSTEPPS Essentials training and a charge nurse huddle. During the TeamSTEPPS Essentials training the nursing staff learned team strategies that facilitated information sharing such as briefs, huddles, and debriefs. In this EBP change project huddles were critical to understanding each subgroups needs and developing a plan to assist.

### **Significance of Findings**

In the absence of teamwork the risk for patient harm is heightened. Missed patient care responsibilities shifting to other department's compromised workflow and created tendencies for error. The nursing staff felt overworked and neglected, despite accurate nurse to patient ratios. The lack of focus on developing a culture of teamwork led to low morale that created an environment prone to medical errors and absenteeism.

An EBP change project was implemented to improve nursing teamwork between the nurses in the SDS unit. The Pre-1 and 2 or baseline teamwork climate Culture Pulse Survey score was 2.83 and 3.21, respectively (see Appendix J; Figure 5). A project benchmark of three for teamwork climate was established. Improving the teamwork climate score took a culmination of efforts. Among the interventions were TeamSTEPPS Essentials training and a charge nurse huddle.



The TeamSTEPPS Essentials class yielded 75% participation. Whereas, the charge nurse huddle participation was 93%, slightly exceeding the project benchmark of 90%. After applying the two interventions, the post-implementation teamwork climate score was 3.22 (see Appendix J; Figure 6). However, there were differences at the subgroup level. While the teamwork climate scores for the pre-op and post-op unit met the project benchmark at 4.3 and 3.1, respectively the block room scored low at 2.1 (see Appendix J; Figure 6). It was determined that unique skills required to work in the block room limited outside participation from the other subgroups. The need to cross-train existing and newly hired nurses became apparent by the result.

### **Project Strength and Limitations**

The administrative director of surgical services had previous experience implementing TeamSTEPPS who shared her experience with familiarity to EBP effectiveness. Additionally, the SDS nurse manager was supportive as it was a previous expectation that all staff attended TeamSTEPPS Essentials training. Because of staff turnover which has led to the hiring of new staff, many of the staff needed the training.

During the project there were limiting circumstances that hindered nursing staff from participating in certain events. The inability to mandate participation gave nursing staff the liberty to choose their level of involvement with project activities. Thereby, making it difficult to harness staff buy-in. In the block room, the charge nurse has a patient assignment, which made it challenging to get to the charge nurse huddles at times.

### **Project Benefits**

There were some noteworthy “wins” throughout the course of the project including an increase in charge nurse awareness of needs in other subgroups within SDS, staff became more

receptive to the concept of cross-training to work in multiple subgroups, and a boost to the units' morale. The charge nurse huddle was deliberately structured to get the charge nurses from each subgroups to talk about staffing, the number of patients that would be seen throughout the course of the day, and needs. The product of doing this was the development of a shared mental model of how to manage available staff. Additionally, relationships were strengthened as charge nurses from the subgroups saw the willingness to share staff.

While the idea of cross-training was met with resistance in past, the concepts acquired acceptance as staff saw the benefits of individuals having the ability to work in multiple areas helped the upstream and downstream flow. On occasions nursing staff would start off in one subgroup and end the day in another. This nursing practice came at a great time as new hires were orienting to all three areas, which less prevented the formation of a silo complex.

Devoting time to focus on teambuilding energized the morale. Laying the foundation with TeamSTEPPS Essentials training equipped the staff on how to communicate their needs, come together to form share mental model, problem solve, and handle conflict. By having this foundation the staff felt more inclined to give and receive help from others regardless of what subgroup they were from. The staff understood that not working as a team jeopardized the safety of the patient, because there may be an expertise that their colleague may have that their patient may need. However, if teamwork does not exist in the interaction the patient may never receive the level of care they deserve.

### **Recommendations for Practice**

Practice implications for future application are evidence-based and correspond to eight essentials of Doctorate Nursing Practice (DNP) for advanced practice nursing. The recommendation for practice to encourage further growth in teamwork included the following:

include frontline nursing staff in the charge nurse huddles, utilize a pre-op checklist and clinical lead facilitator, adapt the use of Qualtrics Surveys for quicker evidence gathering, incorporate the use of the TeamSTEPPS webinar, devise a teamwork specific policy, partner with the PACU staff, periodically review teamwork climate scores, and utilize early adopters. While these recommendations are evidence-based, interventions should be chosen to meet the needs of the particular project site.

### **Final Summary**

Teamwork plays a critical role in guaranteeing patient safety. It is imperative that nurses work as one connected team. This improves the chances of proper care administration, which could be the difference between life and death. Therefore, it was important to strengthen the teamwork climate in the SDS unit subgroups (pre-op, block room, and post-op).

An areas of strength in this EBP change project was the dialogue that occurred in the huddles between the charge nurses. It was amazing to witness charge nurses' discussions about their areas, needs, and resources. This communication allowed everyone to realize they are a part of one cohesive team.

The EBP change project was timely, as there was a spike in patients seen in SDS due to the number of new surgeon making teamwork of paramount importance. The huddles provided a platform for the nursing staff to construct plans to meet the needs of patients and respond to changes. The EBP change project also helped to usher in the new norm of nurse's cross-training to work in all three subgroups (pre-op, block room, and post-op).

Engaging in this project was a life altering experience. The project manager acquired the skills of carrying out an effective EBP change project at a doctoral level. Relationships with the

SDS nursing staff were fortified, stimulating participation throughout the duration of the change project.

The EBP change project was successful in improving nursing teamwork through the use of TeamSTEPPS. Witnessing the teamwork between the subgroups has sparked genuine optimism. The project manager expressed sincere gratitude for the opportunity to carry out a doctoral level change project, while assisting in patient care delivery within the organization.

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## Appendix A

## Literature Search Strategy Log

<b>Database</b>	<b>Key Word Searches</b>	<b>Limits</b>	<b># of Citations Found / Kept</b>	<b>Rationale for Inclusion / Exclusion (include rationale for excluding articles as well as for inclusion)</b>
Google Scholar	Nursing AND teamwork	5-year period	22, 900 found kept 6	4 redundant; kept articles related to PICO question;
Google Scholar	What is teamwork?	2018	17,000 found 3 kept	Articles lead to a more specific articles related to healthcare
Google Scholar	TeamSTEPPS	5-year period	3,250 found	1 redundant; article related to PICO question; more investigation needed to validate intervention
Google Scholar	TeamSTEPPS AND Agency for Healthcare Research and Quality	10-year period	2,810 found 3 kept	3 redundant; kept articles kept articles related to PICO question

Appendix B  
Project Site Approval


July 11, 2018

To Whom It May Concern:

We at  have reviewed Candice Stringfield’s DNP Project title “Improving Nursing Teamwork Using TeamSTEPPS”. Ms. Stringfield has organizational support and approval to conduct her project within our institution. We understand that for Ms. Stringfield 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 quality improvement initiative and requiring institutional IRB review.

Thank you,


Appendix C

Culture Pulse Survey: Teamwork Climate Assessment Tool

Teamwork Climate Assessment Tool							
Teamwork Climate	Questions	Responses					
		Not Applicable = 0	Disagree Strongly = 1	Disagree Slightly = 2	Neutral = 3	Agree Slightly = 4	Agree Strongly = 5
	If I perceive a problem with quality. It is difficult to speak up in my department/work unit						
	Disagreements with my work unit/department are appropriately resolved (i.e., not who is right but what is best for the patient)						
	Dealing with difficult colleagues is consistently a challenging part of my job						
	Communication breakdowns are common when my work unit/department interacts with other work unit/department						

Appendix D

Same Day Surgery Charge Nurse Huddle tool

Same Day Surgery Charge Nurse Huddle Tool Week of _____				
Time				
Monday	Tuesday	Wednesday	Thursday	Friday
Total Number of Expected Patients				
Time of Last Patient				
Total Number of Staff: Block room ____ Pre-op ____ Post-op ____				
What resources can be shared?				
Comments				

Appendix E

Institutional Review Board Approval Letter

**INSTITUTIONAL REVIEW BOARD DECLARATION OF ACTIVITY NOT MEETING THE DEFINITION OF RESEARCH**

The  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:** Pro00101363

**Reference ID:** 291545

**Protocol Title:** Improving nursing teamwork using TeamSTEPPS in the Same Day Surgery Center

**Principal Investigator:**

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.



Federal wide Assurance No: FWA 00009025

## Appendix F

## ECU IRB Approval

**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:

Candice Stringfield

Project Title:

Improving nursing teamwork using TeamSTEPPS in the Same Day Surgery Center

Brief description of Project/Goals:

DNP project will teach nurses teamwork tools and strategies through TeamSTEPPS Essentials training. The TeamSTEPPS tool – huddles will be utilized by the charge nurses to improve teamwork among the three work areas (regional block room, pre- and post-op) within the Same Day Surgery Center.

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

Yes

No



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

---

Yes

No

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)?

---

Yes

No

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)?

---

Yes

No

Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?  
Would the project occur regardless of whether individuals conducting it may benefit professionally from it?

---

Yes

No

Does the project involve "no more than minimal risk" procedures (meaning the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests)?

---

No

Yes

Is the project intended to improve or evaluate the practice or process within a particular institution or a specific program, and falls under well-accepted care practices/guidelines?

---

Yes

No

---

Yes

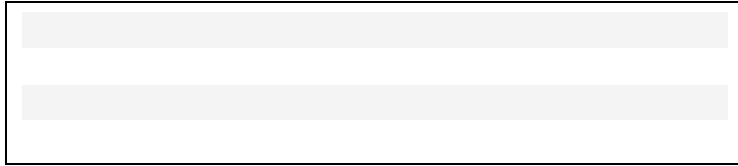
No

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. 11/16/2018

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Appendix G

Permission to Repurpose Culture Pulse Survey Questions

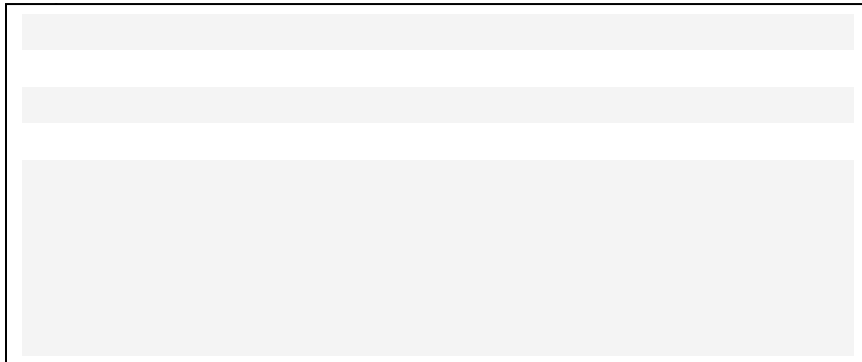


To whom it may concern,

East Carolina University Doctorate of Nursing Practice (DNP) in Leadership student Candice Stringfield has permission to use [redacted] Culture Pulse Survey questions, which includes the “teamwork climate” section to support her DNP project. Culture Pulse’s questions are not proprietary and may be used by any third party for the purpose of workforce engagement survey efforts or any other initiatives.

Therefore, Candice is able to use any and all Culture Pulse Survey questions in conjunction with other evaluative methods (i.e., survey monkey, qualtrics survey) to assess team work climate within her target population.

Thanks,



Appendix H

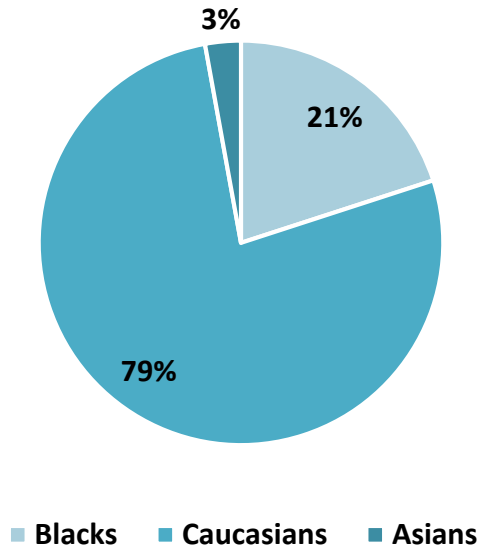


Figure 1. TeamSTEPPS Race Demographics

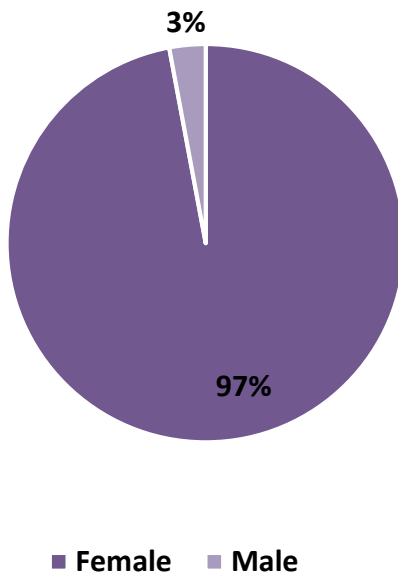


Figure 2. TeamSTEPPS Gender Demographics

Appendix I

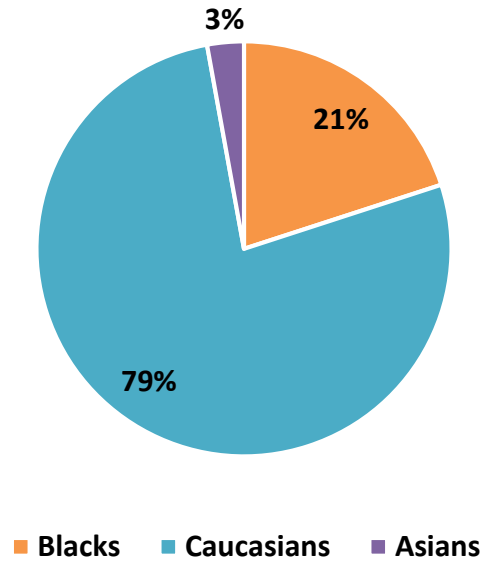


Figure 3. TeamSTEPPS Clinical Status Demographics

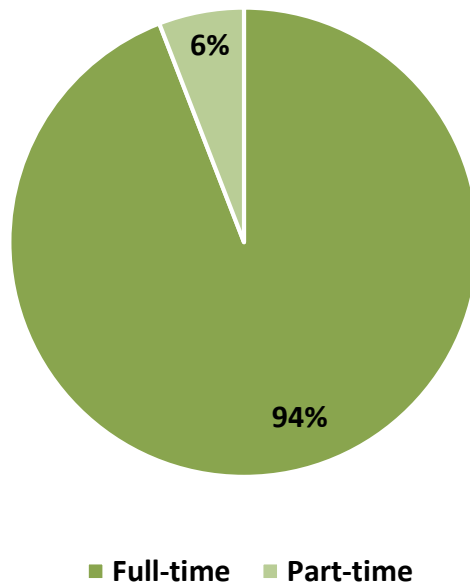


Figure 4. TeamSTEPPS Employment Demographics

Appendix J

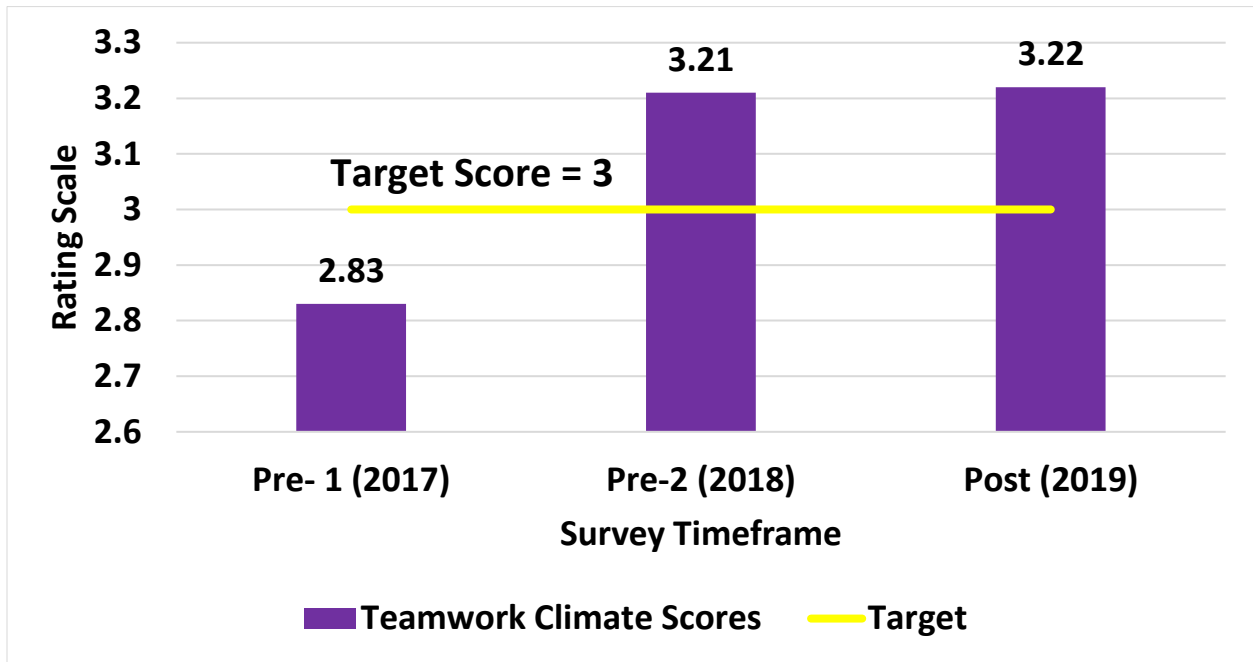


Figure 5. Overall Culture Pulse Survey Results.

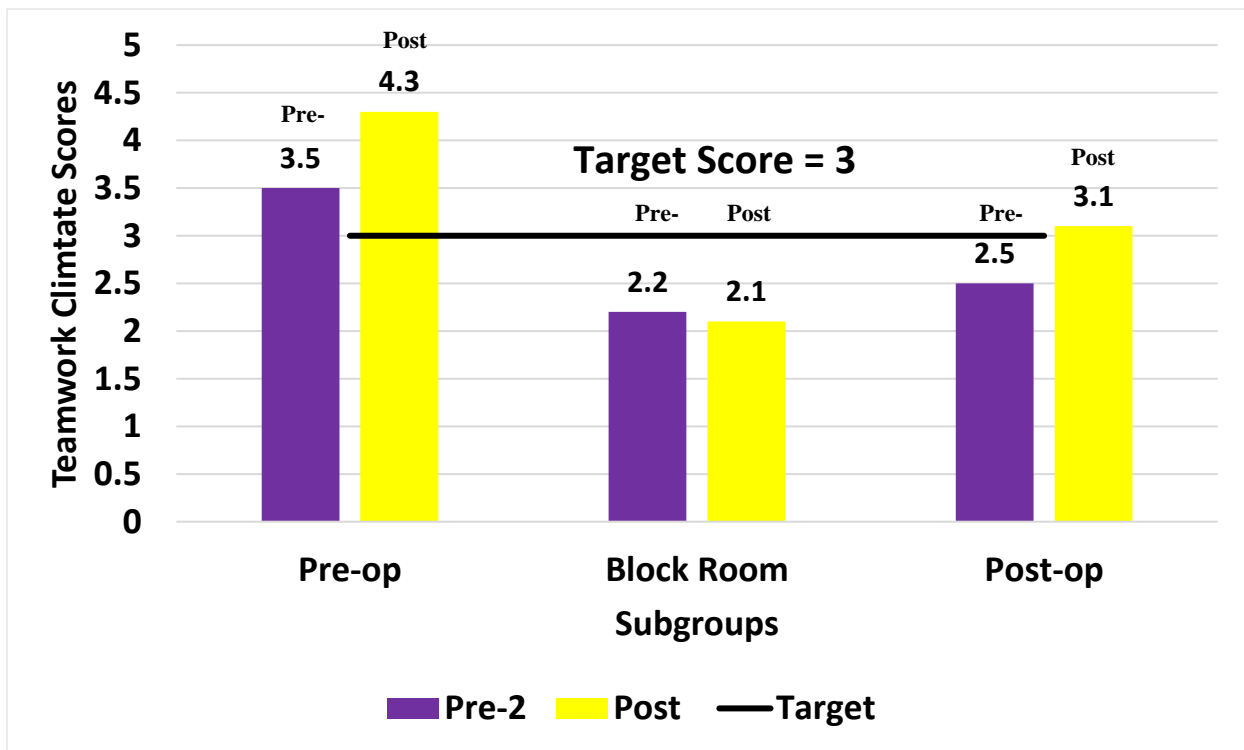


Figure 6. Pre-2 and Post Culture Pulse Survey Results