IMPACT OF TEAMSTEPPS ON RN-TO-RN INTERACTION

DNP Final Project

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By

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Abstract

Background: The performance of a nursing team is a key component of hospital quality and safety. Baseline data at this practice site was below the national benchmark for RN-to-RN Interaction on the National Database of Nursing Quality Indicators (NDNQI) Job Satisfaction Scale. Findings from the literature demonstrate TeamSTEPPS and interactive learning is one method to address teamwork and support among a healthcare team. **Purpose:** The purpose of this Doctor of Nursing Practice evidence-based practice project was to increase teamwork among nurses after implementation of TeamSTEPPS. **Methods:** Registered nurses on a medical-surgical unit completed escape room sessions to learn about TeamSTEPPS concepts. The primary outcome measure included NDNQI RN-to-RN Interaction scores. Additional data was gathered on Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) Nurse Communication scores and TeamSTEPPS rounding observations. **Results:** The primary outcome data measuring NDNQI RN-to-RN Interaction demonstrated an overall increase from baseline. Secondary outcome data measuring HCAHPS Communication with Nurses showed a positive influence on scores after intervention. The third outcome measure of TeamSTEPPS rounding observations demonstrated very good to excellent understanding and skill on how to apply the appropriate learned techniques. **Conclusions:** Integration of TeamSTEPPS tools and strategies in an escape room session is a fun, interactive way to learn while providing an effective team-building activity. **Implications for Nursing:** The integration of TeamSTEPPS had overall practical significance on the impact of RN-to-RN Interaction when delivered in an escape room setting. This has the potential to help organizations needing to improve teamwork and communication among nurses.

Keywords: teamwork; TeamSTEPPS; communication; escape room.

Statement of the Problem/Issue

The 2020 coronavirus pandemic coupled with a growing global shortage has had a significant impact on nurses. According to the American Nurses Association (ANA), there will be more jobs available in 2022 in nursing than in any other profession (Morris, 2022). As more and more nurses are leaving the profession through retirement or for other reasons, hospitals must put strategies in place to support and retain their nursing workforce (Harer, 2022). The United States Bureau of Labor projects that more than 275,000 additional nurses are needed from 2020 to 2030. Employment opportunities for nurses are forecasted to grow at a faster rate than any other occupation from 2016 through 2026 (Haddad et al., 2022). A key driver of attracting and retaining nurses is a healthy work environment, which centers on communication, teamwork, and the ability to provide high quality care and eliminate errors (Wei et al., 2018). Collaboration among the team is essential to providing quality care, and respect for each other is perceived as vital in promoting a healthy workplace environment which, in turn, lowers the intent to leave (Kowalski et al., 2020). Effective team communication improves relationships, job satisfaction and patient safety and quality (Mohsen et al., 2021).

Despite literature supporting the need for healthy work environments to promote provision of safe patient care and retain nurses, multiple reports highlight pervasive problems with patient safety. Patient safety reports, such as “To Err is Human”, identify that health care organizations lack effective teamwork. The report highlights that almost 100,000 patients die in hospitals annually because of medical errors, many of which are caused by communication breakdown (Eddy et al., 2014). Annually, The Joint Commission's report on quality and patient safety has recognized inappropriate communication to be a main cause of

adverse patient events.

Teamwork and communication failures are often the main causes of medical errors and can be the cause of several detrimental patient outcomes, such as disability, injury, and even death. Communication failures are brought about by several factors including ineffective exchange of information, differences in hierarchy, superior influence, and interpersonal power. Barriers that lead to ineffectiveness in communication among health workers include low competence, minimal skills, and training on patient safety, and lack of coordination and team performance (Ahsan et al., 2021).

Another reason that effective communication is critical is that creating an environment that promotes teamwork and collaboration can increase nurse engagement and subsequent retention (Kutney-Lee et al., 2016). Nurse engagement can be a key contributor to patient safety and decreased patient mortality, as high levels of turnover can increase risk of errors, fatigue, and burnout (Kruse, 2015, Shimp, 2017). According to Kutney-Lee et al, (2016), nurses working in hospitals that have higher levels of engagement are less likely to report burnout, job dissatisfaction, intent to leave and an important aspect of job satisfaction for nurses has been linked to their ability to provide high-quality care to their patients (Spence Laschinger & Fida, 2015). Retention of nurses to ensure the delivery of high-quality patient care is a worldwide priority in current healthcare settings, so every effort must be made to ensure that nursing work environments support high-caliber professional practice, which promotes job satisfaction and minimizes nurses' intentions to leave the profession (Spence Laschinger & Fida, 2015).

Organizational assessment of the problem/readiness for change

The National Database of Nursing Quality Indicators (NDNQI) is recognized as the national nursing standard in collecting, analyzing, comparing, and reporting unit-based nursing

sensitive quality indicators (Press Ganey, 2015) and is intended to enable action-planning for specific units needing improvement. NDNQI utilizes nursing-sensitive quality indicators and leading job satisfaction and practice environment Registered Nurses (RN) surveys. The NDNQI RN Survey with Practice Environment Scale contains the Practice Environment Scale of the Nursing Work Index (PES-NWI), in addition to Nurse-Nurse Interaction (from NDNQI Job Satisfaction Scales-RN survey), Job Enjoyment, work context items, RN, and patient outcome items, and nurse characteristic items (Press Ganey Associates, 2020). This survey is administered annually to all nurses in the organization where this DNP project was implemented.

Registered nurses eligible to take the survey are full or part-time, regardless of job title, who spend at least fifty percent of their time in direct patient care and have been employed a minimum of three months on their home unit. Unit-based diem or per-diem RNs employed by the hospital are eligible, agency or contract RNs are not eligible. The NDNQI Job Satisfaction Scale measures Nurse-Nurse Interaction with the following questions: 1) RNs I work with count on each other to pitch in and help when things get busy 2) there is a good deal of teamwork among RNs I work with 3) RNs I work with support each other (Press Ganey, 2015). The organization historically has scored below the national benchmark in the category of RN-to-RN Interaction in most inpatient units. As a result, improving the RN-to-RN Interaction metric has been identified as a high priority by the System Chief Nurse Executive.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey is the first national, standardized, publicly reported survey of patients' perspectives of hospital care (CMS, 2021). One of the questions this survey asks patients is centered on nurse communication. The communication with nurses overall for the medical-

surgical unit intended for this project was 71% for the 2022 period score. The organizational goal for this metric is 78.1%. See Appendix A. Although the long-term organizational goal is to improve interactions with all members of the healthcare team, the scope of this project focused on nurse-to-nurse interaction. The internal champions/leaders who support practice changes needed to address this problem include the Chief Nursing Executive/Vice President of Patient Care Services/System Associate Vice President Nursing Education and Magnet the Magnet Program Director, and the Education Coordinator.

The organization is a nationally respected academic health system recognized for its work as leaders in advancing outcomes across many disciplines through clinical innovation, pioneering research, and world-class education. It is a level one trauma center located in a major under-served metropolitan city and offers primary, specialty, and urgent care throughout the city and the surrounding region and is academically affiliated with a large, urban university that includes prestigious schools of medicine, nursing, public health, and dentistry with a total of one hundred and sixty undergraduate majors and countless graduate programs.

Notable statistics about the health system include: 979 licensed inpatient beds, 34,283 admissions annually, 341,100 outpatient visits, 165,000 emergency room visits, 6,100 inpatient and outpatient surgeries, 335 organ transplants, 2,336 births, 44 accredited residency training programs and 10,000 plus faculty members and employees. The health system has earned The Gold Seal of Approval from The Joint Commission and three of the five campuses were recognized for nursing excellence through Magnet designation by the American Nurses Credentialing Center (ANCC) in January 2019.

There are multiple structures in place to support a culture of evidence- based practice (EBP), quality improvement and change demonstrated by several shared governance councils in

the health system including the Professional Development and Education Council, Professional Practice Council, Research and EBP Council, Quality and Patient Safety Council, Nursing Informatics Council, Shared Governance Coordinating Council, and the Night Shift Nursing Council. There is also a Nurse Manager Council, Joint Nurse Practice Council comprised of union board members, and an Advanced Practice Council. In addition to Magnet councils, the organization has hospital acquired harm prevention committees for falls, catheter associated urinary tract infections (CAUTI) and central line associated blood stream infections (CLABSI).

Background and significance of the problem/issue

Several landmark reports from the Institute of Medicine (IOM) highlight the need to better understand and enhance teamwork among nurses and interdisciplinary teams to reduce medical errors and the associated patient morbidity and mortality (Bae et al., 2017). The national standards for teamwork in health care and team training include the behaviors of leadership, mutual support, situation monitoring and communication (Bae et al., 2017). Respect and teamwork are key to a healthy workplace environment, and collaboration among the nursing team is essential to providing quality care, as respect for each other is vital in promoting a healthy environment (Kowalski et al., 2020). Moore et al. (2019) found that successful collaboration and high-quality, collaborative teamwork reduces missed nursing care, errors, and patient mortality. Similarly, benefits for nurses when collaboration is high include improved job satisfaction, better work environments, increased retention rates, and greater work productivity. Successful collaborative relationships involve positive attitudes, shared values, empathy, compassion for one another, and a pleasant and friendly work environment (Moore et al., 2019). While the literature supports the many benefits of collaboration for nurses and healthcare teams, more information on the optimal approaches for increasing teamwork and communication is

needed. Therefore, the identified clinical problem is what are the best approaches and strategies to increase teamwork and communication among nurses?

PICO(t) and Search Strategy

The search for evidence began with the following PICO(t) question: In nurses, how do best practices or strategies compared to current practice affect teamwork, interprofessional collaboration and communication? The search terms identified were as follows: (P) nurses, acute care nurses (I) best practices or strategies (C) current practices (O1) interprofessional collaboration, (O2) teamwork, and (O3) communication. Boolean terms included in the search were AND and OR. Upon initial search of Pub Med, thirty-nine articles were identified. Of the thirty-nine Pub Med articles screened, twenty two were excluded and twelve were critically appraised for quality and strength. Those excluded did not contain content relevant to the above stated PICO(t) question. The twelve assessed for eligibility contained perceptions of collaboration and teamwork, one key article reported on TeamSTEPPS and “simulation training” [MeSH}.

An additional PICO(T) search was subsequently conducted through both Pub Med and CINHAL using following search terms: (teamwork OR communication OR "interprofessional collaboration") AND nurses [Mesh] AND "acute care". Of the thirty-nine results in Pub Med, one article reported on TeamSTEPPS and “simulation training”. Further refinement of the PICO included a Pub Med Query utilizing the following search terms: ("Simulation Training"[Mesh] OR "simulation training"[tw] OR "High Fidelity simulation training"[Text Word] OR TeamSTEPPS[tiab] OR TeamSTEPPS[tw]) AND (nurses [Mesh] OR "nurs*"[All Fields]) AND ("teamwork"[tw] OR team*[tw] OR "nurse to nurse interaction"[tw]). A secondary search in CINHAL was conducted utilizing the following search terms: (MM "Simulation Training" OR

AB "simulation training" OR AB "High Fidelity simulation training" OR AB TeamSTEPPS OR TI TeamSTEPPS) AND (MM nurses OR AB nurs*) AND (AB "teamwork" OR AB team* OR AB "nurse to nurse interaction"). Nine hundred and thirty-six articles were identified in Pub Med and one hundred and sixty-seven articles were identified in CINHAL. Limits were applied and eighty-one duplicates were removed. Seventeen articles reported on interventions to support improved communication, teamwork, and collaboration. Critical appraisal of the remaining articles utilized yielded seventeen keeper articles. Of those seventeen that were critically appraised for quality and strength, three were excluded. A total of fourteen studies were kept for synthesis. A PRISMA Flow Diagram was completed to record the number of articles found and outlines the selection process. See Appendix B.

Critical appraisal and synthesis of literature review

An established level of evidence hierarchy was used to evaluate the literature in the body of evidence (Melnyk & Fineout-Overholt, 2018). The Helene Fuld Trust National Institute for Evidence-based Practice in Nursing and Healthcare critical appraisal tools were used for appraisal. Fourteen articles were appraised and synthesized and formed the body of evidence (Table 1). One study was a Level II: Randomized controlled trial, two studies were Level III: Controlled trial without randomization, another study was a Level V: Systematic review of qualitative or descriptive studies and ten studies were Level VI: Qualitative or descriptive study (includes evidence implementation projects).

Table 1

Levels of Evidence

Levels of Evidence Synthesis Table Template

	Matzke et al., 2021	Clay-Williams et al., 2013	Ahsan et al., 2021	Emich, 2018	Adjei, 2022	Fitzpatrick, et al., 2021	Krivanek, et. al, 2020	Gaston et. al 2016	Vertino, 2014	Obenrader et.al, 2019	Mohsen et. al, 2021	Adams et. al, 2018	Gordon et. al, 2019	Zheng et. al, 2018
Level I: Systematic review or meta-analysis														
Level II: Randomized controlled trial		X												
Level III: Controlled trial without randomization			X								X			
Level IV: Case-control or cohort study														
Level V: Systematic review of qualitative or descriptive studies					X									
Level VI: Qualitative or descriptive study (includes evidence implementation projects)	X			X		X	X	X	X	X		X	X	X
Level VII: Expert opinion or consensus														

Source: © 2012, Adapted with permission from Evidence-based practice in nursing and healthcare. (p. 521), by Melnyk, Bernadette Mazurek, and Ellen Fineout-Overholt. Lippincott Williams & Wilkins, 2011.

The literature review revealed several interventions that demonstrated success in increasing perceptions of teamwork and support among healthcare professionals (Table 2). Nine articles reported on the use of TeamSTEPPS as an intervention to build collaborative teamwork (Adjei, 2022; Emich, 2018; Fitzpatrick, et al., 2021; Gaston, et al., 2016; Krivanek, et al, 2020; Matzke et al., 2021; Mohsen et al., 2021; Obenrader et al., 2019; Vertino, 2014). The qualitative/descriptive studies occurred in a variety of clinical inpatient settings. One Level III study focused on a modified TeamSTEPPS intervention and its impact on teamwork on a med-surg unit (Mohsen et al., 2021). A Level II article evaluated classroom training followed by simulation training (Clay-Williams et al., 2013), one-day classroom training along with one-day crisis resource management (CRM) style simulation-based training on interventions thought to

improve teamwork attitudes and behaviors of participants (Clay-Williams et al., 2013). Three additional descriptive studies assessed the impact of escape rooms and game-based experiential learning (gamification) on student experiences and perceptions of working in teams (Adams et al., 2018; Gordon et al., 2019; Zheng et al., 2018). Escape rooms/experiential learning was found to assist students in taking control of their learning, build teamwork and supports current knowledge-based critical thinking (Adams et al., 2018). Gamification/experiential learning was effective in content retention and increased perceptions of communication and teamwork (Gordon et al., 2019).

Table 2

Interventions

Interventions Synthesis Table Template

	Matzke et al., 2021	Clay-Williams et al., 2013	Ahsan et al., 2021	Emich, 2018	Adjei, 2022	Fitzpatrick, et al., 2021	Krivanek, et. al, 2020	Gaston, et. al 2016	Vertino, 2014	Obenrader et.al, 2019	Mohsen et. al, 2021	Adams et. al, 2018	Gordon et. al, 2019	Zheng et. al, 2018
TeamSTEPPS education/training	X			X	X	X	X	X	X	X	X			
Modified TeamSTEPPS			X											
1- Classroom training followed by simulation training		X												
2- One day classroom training		X												
One-day CRM style simulation-based training		X												
Escape Room active learning/gamification						X						X	X	X

Across the studies evaluating interventions for teamwork, several outcomes were included: perception of teamwork, perception of improved communication, perception of collaboration, safety culture, knowledge, independently observed teamwork behavior, teamwork attitudes, self-assessed teamwork behavior, HCAHPS patient satisfaction scores, retention, incivility, mutual support, and patient adverse events (Table 3). Eight articles that implemented

TeamSTEPPS as an intervention demonstrated improved perception of teamwork (Adjei, 2022; Fitzpatrick, et al., 2021; Gaston, et al., 2016; Krivanek, et al., 2020; Matzke et al., 2021; Mohsen et al., 2021; Obenrader et al., 2019; Vertino, 2014). Of those eight articles, six also showed an improvement in the perception of communication (Adjei, 2022; Fitzpatrick, et al., 2021; Gaston, et al., 2016; Matzke et al., 2021; Obenrader et al., 2019; Vertino, 2014). Additional improved outcomes in this grouping of articles were as follows: one demonstrated an improvement in the culture of safety (Emich, 2018), two reported an improvement in HCAHPS patient satisfaction scores (Adjei, 2022; Mohsen et. al, 2021), two demonstrated an improvement in teamwork attitudes (Obenrader et al., 2019; Vertino, 2014), one an improvement in retention (Krivanek, et al., 2020) and one an improvement in mutual support (Vertino, 2014). One, additionally, demonstrated an improvement in perception of collaboration (Matzke et al., 2021), while a decrease in patient adverse events were reported in another study. (Mohsen et al., 2021) There was no impact on incivility in the one study where it was measured (Krivanek, et al., 2020).

Clay-Williams et al., (2013) studied the following outcomes of “knowledge”, “independently observed teamwork behavior”, “teamwork attitudes”, and “self-assessed teamwork behavior” using simulation and classroom-based training. An improvement was seen in all measured outcomes except for “no impact on teamwork attitudes”. Three additional studies assessed the intervention of “escape room active learning” demonstrated an improvement in “perceptions of teamwork and communication” (Adams et al., 2018; Gordon et al., 2019; Zheng et al., 2018).

Table 3

Outcomes

Outcomes Synthesis Table Template

↑↓—(select symbol and copy as needed)	Matzke et al., 2021	Clay & Williams et al., 2013	Ahsan et al., 2021	Emich, 2018	Adjei, 2022	Fitzpatrick, et al., 2021	Krivanek, et. al, 2020	Gaston, et. al 2016	Vertino, 2014	Obenrader et.al, 2019	Mohsen et. al, 2021
Perception of Teamwork	↑				↑	↑	↑	↑	↑	↑	↑
Perception of improved communication	↑		↔		↑	↑		↑	↑	↑	
Perception of collaboration	↑										
Safety Culture				↑							
Knowledge		↑									
Independently observed teamwork behavior		↑									
Teamwork attitudes		↔							↑	↑	
Self-assessed teamwork behavior		↑									
HCAHPS Patient Satisfaction Scores					↑						↑
Retention							↑				
Incivility							↔				
Mutual Support									↑		
Patient Adverse Events											↓

Evidence-based Recommendations

Critical appraisal of the evidence overwhelmingly supported the implementation of the components of TeamSTEPPS to increase the perception of teamwork, improve communication, and increase perception of collaboration on nursing teams. TeamSTEPPS is an evidence-based set of teamwork tools, aimed at optimizing patient outcomes by improving communication and teamwork skills among health care professionals (Agency for Healthcare Research and Quality, 2019). Additional outcomes of the TeamSTEPPS intervention that were identified in the body of evidence included an improvement in the culture of safety, teamwork attitudes, retention, mutual support, and patient satisfaction scores and a decrease in adverse patient safety events.

The TeamSTEPPS intervention takes place in three phases: phase one assesses the readiness for changing the patient safety culture, practices associated, and organizational commitment to dedicate the necessary time and resources. Phase two addresses action planning, training, and implementation and phase three includes the sustainment and integration of teamwork behaviors into daily practice (Mohsen et al., 2021). The goal of TeamSTEPPS is to produce highly effective clinical teams who optimize the use of information, people, and resources to achieve the best outcomes. Teams of individuals who communicate effectively and support each other dramatically reduce the consequences of human error (Agency for Healthcare Research and Quality, 2019). Based on the cumulative body of literature for increasing teamwork and communication, the following assumptions are made to address the identified clinical problem is the implementation of TeamSTEPPS.

Project Planning

Project Purpose Statement

The purpose of this initiative was to evaluate the effectiveness of TeamSTEPPS on teamwork and communication among nurses on two medical surgical units.

Project Objectives

The project objective was to increase RN-to-RN interactions for acute care nurses on a medical-surgical unit using the TeamSTEPPS evidenced based teamwork system. SMART (Specific, Measurable, Attainable, Relevant, Timely) goals were used for project planning, timeline and measurement (Table 4).

Table 4

Smart Goals

Goal	Participants	Purpose
Complete AHRQ's Organizational Readiness Assessment Checklist within the 4-6 weeks prior to Team STEPPS implementation.	Project Lead	Determine organizational readiness
Develop content delivery for escape room sessions within 4 weeks prior to Team STEPPS implementation.	Project lead and TeamSTEPPS champions	Provide TeamSTEPPS education
Perform rounding on TeamSTEPPS observations weekly throughout the implementation phase.	Project lead, Med-Surg Unit leadership	Observation/feedback to assess progress of the interventions

The TeamSTEPPS Organizational Readiness Assessment Checklist score of nine to twelve indicated this to be a good time to implement TeamSTEPPS within an institution. See Appendix C. The score for this organization was an eleven. There was a four-week timeframe to provide the education with a goal of eighty percent attendance of day shift nurses on the identified medical-surgical unit. The project lead and TeamSTEPPS facilitators engaged in activities to promote continuous involvement in teamwork by measuring satisfaction with training, learning, the effective use of tools and strategies on the job utilizing the TeamSTEPPS team performance observation tool. See Appendix D.

Framework/Models to Drive Process

The theoretical framework for this proposed project was Bolman and Deal's Four Frames. The Four Frames Model may be helpful in facilitating communication, managing conflict, and broadening perspectives (Utley et al., 2018). This model seeks to avoid the temptation for individuals to become stuck, viewing and acting on conditions through one lens or Frame by itself (Four-frame Model - Bolman and Deal, 2018).

The theory presents four frames, or lenses, through which the mechanism of change can be viewed: structural, human resource, political, and symbolic (Utley et al., 2018). The structural frame is essentially the nuts and bolts of the organization. It defines and establishes goals, direction, and purpose of the organization (Utley et al., 2018). The human resource frame places more emphasis on people's needs by giving them the power and opportunity to do their jobs well. It addresses the need for human contact, job satisfaction and personal growth (Bolman and Deal's Four-frame Model, 2021). The political frame addresses authority, power and coemption for limited resources (Utley et al., 2018). It has been known to help addresses the problem of individuals prone to conflict and hidden agendas. This frame supports conflict resolution and coalition building to support initiatives (Bolman and Deal's Four-frame Model, 2021). Lastly, the symbolic frame addresses an individual's purpose and meaning. It depicts the soul and passion of the organization as it relates to the organizational culture by creating a vision and recognizing performance through celebrations (Utley et al., 2018).

Population/Setting/Participants

The hospital System Chief Nursing Executive (CNE) and Chief Nursing Officer (CNO) of the proposed project site identified RN-to-RN interaction as an opportunity for improvement based on national benchmarking for the NDNQI RN Satisfaction Survey. The population identified for the proposed project were acute care nurses on a high acuity medical-surgical inpatient unit. The organization embraces research and innovation and evidenced based decision making. The organization has a Magnet Program Director, shared governance council structure, access to university library resources, and an executive leadership team with a shared focus, resolve and commitment to improve nursing practice and the workplace environment.

Key Stakeholders

The key stakeholders include the system CNE, CNO, Vice President (VP) of Nursing Operations, Director of Nursing Services for med-surg, pulmonary, and transplant services and the Associate Director of Nursing Services. Nurses on the unit were critical stakeholders as the end users who were most impacted by this proposed change. They needed to have buy in and commitment to the project to make it successful. Other key stakeholders included the volunteers/champions of the TeamSTEPPS escape room sessions and the project lead implementing and evaluating the planned evidenced-based intervention.

Outcome Measures and Data Analysis Plan

The outcomes data was collected through a re-survey of the NDNQI RN satisfaction survey questions for RN-to-RN interaction on a medical-surgical unit post implementation of TeamSTEPPS. A three-item questionnaire was administered via a Microsoft Teams link five weeks after the escape room sessions. The following questions were asked on the survey to indicate the participant's perception of RN-to-RN teamwork:

<u>Nurse-Nurse Interaction</u>

1. RNs I work with count on each other to pitch in and help when things get busy
2. There is a good deal of teamwork among the RNs I work with
3. RNs I work with support each other

HCAHPS Communication with Nurses scores for this unit were collected six weeks after the implementation of this project. The following questions were asked on the survey to indicate effective communication from RN's:

1. Communication with Nurses Overall
2. Nurses Treat with Courtesy and Respect
3. Nurses Listen Carefully to You

4. Nurses Explain in A Way You Can Understand

Additional outcomes measured included the participation rate and completion rate of the TeamSTEPPS training. Rounding observations were collected using the TeamSTEPPS standardized Team Performance Observation Tool. The components of this tool included team structure, communication, leadership, situation monitoring and mutual support. See Appendix F.

The owners of all three sets of data were the CNO and Magnet Program Director and the project lead. Responses were shared once survey questions were completed and collated. Descriptive statistics were calculated with the aggregate pre and post NDNQI three question survey responses. Means and standard deviations were calculated and trended for each survey item and summed survey scores for the pre-intervention and post-intervention periods. Effect sizes to establish magnitude of differences between Mean pre and post scores were calculated.

Potential Financial Implications

A 2015 study by Moffatt-Bruce et al., (2015) showed hospital systems that employed teamwork strategies to improve patient safety demonstrated a twenty-five percent reduction in observed to expected adverse events resulting in a cost savings of estimated $12–$28 million in savings, yielding at least a $9 million return on investment over three years. Approximately, 3000 health system employees across 12 areas were trained, costing $3.6 million. The costs included training, programmatic fixed costs, time away from work, and leadership time. Additionally, the Centers for Medicare and Medicaid Services (CMS) Hospital Value Based Purchasing Program rewards acute care hospitals with incentive payments for the quality of care provided in the inpatient hospital setting. CMS withholds participating hospitals' Medicare payments by a monetary percentage specified by law. It uses the estimated total amount of those reductions to fund value-based incentive payments to hospitals based on their performance in the

program (Centers for Medicare and Medicaid Services, 2021). Therefore, implementation of TeamSTEPPS at this organization had the potential to save the organization millions of dollars in cost avoidance if there was a similar decrease of twenty-five percent in number of adverse events, and higher payout of funds related to the value-based purchasing (VBP) incentive payment plan.

The TeamSTEPPS 2.0 modules were in the public domain for noncommercial use within the United States. AHRQ offers ready-to-use curricula, including the core curriculum, as well as specialty modules housed on their website (Agency for Healthcare Research and Quality, 2019). Training of staff occurred during normal work hours over a twenty to thirty-minute time session and TeamSTEPPS champions for a two-hour timeframe.

Table 5:

Projected staff Cost of Training:

Role	# Of Staff	Hourly Rate	Hours of Training	Cost
Registered Nurse	75	38	0.5	$14,250.00
Tech	10	18	0.5	$900.00
Nurse Leaders	6	55	11	$3,630.00
				$18,780.00

Resources Needed

The resources that were needed for this project implementation was the TeamSTEPPS 2.0 core curriculum which includes an instructor manual, short case studies, and videos illustrating teamwork opportunities and successes. Supporting materials included a pocket guide and evaluation tools. Space located on the medical-surgical units to hold the simulation escape

room sessions was obtained. The sessions were held in the unit conference room, which contained a digital timer, puzzles, and clues. Visual flyers were created on the unit advertising the escape room sessions. Attendance was encouraged during daily huddles. The content of these sessions was developed by this project lead and the TeamSTEPPS champions after attending an immersive escape room experience, which is an effective method to expose learners to teamwork and communication concepts (Kutzin, 2019). Additional resources needed included the time of the escape room champions to attend and plan escape room sessions during work time. Registered nurses and ancillary staff (patient care technicians and unit clerks) who attended a fifteen-to-twenty-minute escape room session required coverage for their patients during this time. If supplemental training was needed, staff were to be assigned the self-paced multimedia interactive course of the TeamSTEPPS 2.0 curriculum. Office supplies that were used consisted of markers, pens, paper, poster board, etc. Escape room supplies included puzzles, cards for clues, colored paper, and a stopwatch. These supplies were secured in the manager's office between sessions.

Review Approvals Needed

This project did not include any intervention with human subjects or include any access to identifiable private information, so therefore IRB review was not be required. The Ohio State College of Nursing received the DNP agency agreement supporting project implementation from the organization on April 5, 2022. Approval was garnered for this EBP project from the health system's CNE.

Implementation Plan

The Fuld Institute Implementation & Sustainability toolkit guided this project. Then ERIC strategies that are included in the toolkit were selected for each phase of project

implementation. The toolkit includes several evidenced based strategies for the multiple phases of implementation. These phases are comprised of pre-initiative, building the case, implementation and evaluation, and sustainability and re-evaluation. Several introductory checkpoints included within the tool guided both the EBP mentor and organizational leader to raise awareness, build knowledge and influence beliefs. The implementation and evaluation phases guided the EBP mentor and the leader in the art of persuasion to garner engagement and support (Helene Fuld Health Trust National Institute for Evidence-based Practice in Nursing and Healthcare, 2020). See Appendix G.

Pre-Implementation and Planning

A total of five nurse leader champions were identified as essential stakeholders to assist in the TeamSTEPPS education and training of the staff nurses. The champions completed the online TeamSTEPPS Fundamental Instructional Modules. The eight module topics included: an introduction, team structure, communication, leading teams, situation monitoring, mutual support, and summary module-pitting it all together (Agency for Healthcare Research and Quality, 2012). Five additional Trainer/Coach Instructional Modules were completed which consisted of: change management, a coaching workshop, measurement, implementation workshop and a practice teaching session. This project lead and project champions attended a local, immersive escape room session to inspire ideas to build and develop the delivery of the evidence-based content that best aligns with TeamSTEPPS in a game-based learning environment. Once this was completed, the group attended a ninety-minute planning session on content development for the TeamSTEPPS escape room which included creating riddles, puzzles, and clues.

Education/Training

The escape room experience was created by Takao Kato in 2007, to integrate adult learning principles utilizing the concepts of game-based learning ("gamification") to promote critical thinking and teamwork and to utilize communication skills into an active learning strategy through the active learning environment (Adams et al., 2018). Using gamification as part of nursing education increases creative thinking, satisfaction, and control with little or negative experiential effects (García-Viola et al., 2019). The integration of TeamSTEPPS concepts, tools and strategies in an escape room setting will provide an engaging way to learn while providing an effective team building activity. Escape rooms promote a dynamic, interactive way to promote teamwork education and training (Fitzpatrick, 2021).

Communication

Communication was disseminated using a multimodal approach including; audio, visual, and written strategies so employees could learn about the plan in the way that is most effective for them. In person huddles, email communication, and flyers for the escape room sessions were posted for the frontline staff. Five in-person meetings and Microsoft Teams, ranging, from thirty to ninety minutes in length were held for the planning/implementation stage with unit leadership and TeamSTEPPS champions to engage them in the process.

Possible Anticipated Barriers and Management Plan

The success of the implementation phase could have failed if barriers and gaps were unplanned for. Six potential barriers to successful project implementation with mitigation strategies were identified for effective planning (table 6).

Table 6

Barriers and Strategies

Barriers	Mitigation Strategies	Who/When

Resistance to Change	Address people's needs for a sense of purpose and meaning in their work. Engage staff in an inclusive manner, promote creativity and engagement, and maintaining a flexible plan.	Project Lead and Unit leadership prior to and during escape room sessions
Staffing, Workload, Patient Volume	Unit leadership coverage; collaborate with staffing office for coverage.	Unit leadership during escape room sessions
Confusion around priorities and responsibilities	Focus on setting measurable goals; clarifying tasks, responsibilities, and reporting lines; agreeing on metrics and deadlines and creating systems and procedures.	Unit leadership during escape room sessions
Ineffective Communication	Define target audience. Learn what motivates them. Utilize a variety of communication forums.	Project Lead and Unit leadership prior to escape room sessions
Failure of planning team to make decisions based on feelings and intuition - overlooking how people feel	Make the direction of the organization’s feel significant and distinctive. Create a motivating vision and recognize success.	Project Lead and escape room champions prior to escape room sessions
Participants may not like participating in an Escape Room	Offer supplemental training was needed, staff were to be assigned the self-paced multimedia interactive course of the TeamSTEPPS 2.0 curriculum.	Project Lead and escape room champions coinciding with escape room sessions

Listening to staff by engaging staff in an inclusive manner, promoting creativity and engagement, and maintaining a flexible plan are guiding principles of strategic planning (Uzarski & Broome, 2019). By adopting Bolman and Deal's Four-frame model, the project leaders were successful in mitigating any potential barriers for successful project implementation.

Results and Discussion

Project Implementation Description

The intended units for this project were two high-acuity pulmonary medical surgical step-down sister units. Organizational changes coupled with an unplanned extension of the timeframe for contract negotiations mandated a shift in both the timeline and setting of this project. As a result, the setting was changed to one high-acuity cardiac medical-surgical step-down unit focusing on day shift nurses Monday through Friday. Additionally, this project lead and champions pivoted from the intended plan from whole training of TeamSTEPPS to a dosing strategy as the best intervention tactic. This allowed for the direct linking of tools and strategies with specific opportunities for improvement to minimize training fatigue (Agency for Healthcare Research and Quality, 2019).

Four escape room scenarios were created aligning with the TeamSTEPPS concepts of mutual support and paired with a riddle/puzzle to solve before moving on to the next clue. Mutual support involves members in assisting others, providing, and receiving feedback and exerting advocacy behaviors (Agency for Healthcare Research and Quality, 2019). According to the AHRQ (2019), mutual support is the essence of teamwork. In a health care environment, one team member's work overload may result in fatal consequences. Mutual support provides a safety net to help prevent errors, increase effectiveness, and minimize strain caused by work overload (Agency for Healthcare Research and Quality, 2019). Over time, continuous mutual support fosters team adaptability, mutual trust, and team orientation. Additionally, an opening scenario was developed by the champions to explain the mission of the team. The team had

twenty minutes to escape the room by searching the room looking for patterns or connections while communicating as teammates. They needed to work together to find solutions to solve puzzles, uncover clues, and crack codes to progress through the game. Scenarios included solving a clue that would give the participants a TeamSTEPPS specific mutual support communication technique (Table 4).

Table 4:

Mutual Support communication techniques

Communication Technique	Purpose	Technique Elements
CUS	Using the CUS technique provides another tool for advocacy, assertion, and mutual support.	First State your **C**oncern. Then state why you are **U**ncomfortable. If the conflict is not resolved, state that there is a **S**afety issue.
Two Challenge Rule	Two-Challenge Rule can serve as a method to advocate and assert for patient safety; but it can also be used as a conflict resolution strategy.	Invoked when an initial assertion is ignored... It is your responsibility to assertively voice your concern at least ***two times*** to ensure that is has been heard. The member being challenged must acknowledge. If the outcome is still not acceptable use chain of command.

DESC Script	The DESC script can be used for both informational and interpersonal conflict but is most effective when conflict is of a personal nature.	DESC is a mnemonic for: **D**= Describe the specific situation. **E**= Express your concerns about the action. **S**= Suggest other alternatives. **C** = Consequences should be stated. Ultimately consensus should be reached.
Five-Step Process	The Five - Step Process is invoked when team members' viewpoints don't coincide with that of a decision maker.	Five-Step Process: **1.** Open the discussion. **2.** State the concern. **3.** State the problem-real or perceived. **4.** Offer a solution. **5.** Obtain an agreement.

A practice session with the champions was held to evaluate the flow of the escape room the day prior to holding the in-unit sessions. Subsequently three two-hour escape room sessions were held on the unit. The sessions were held as follows:

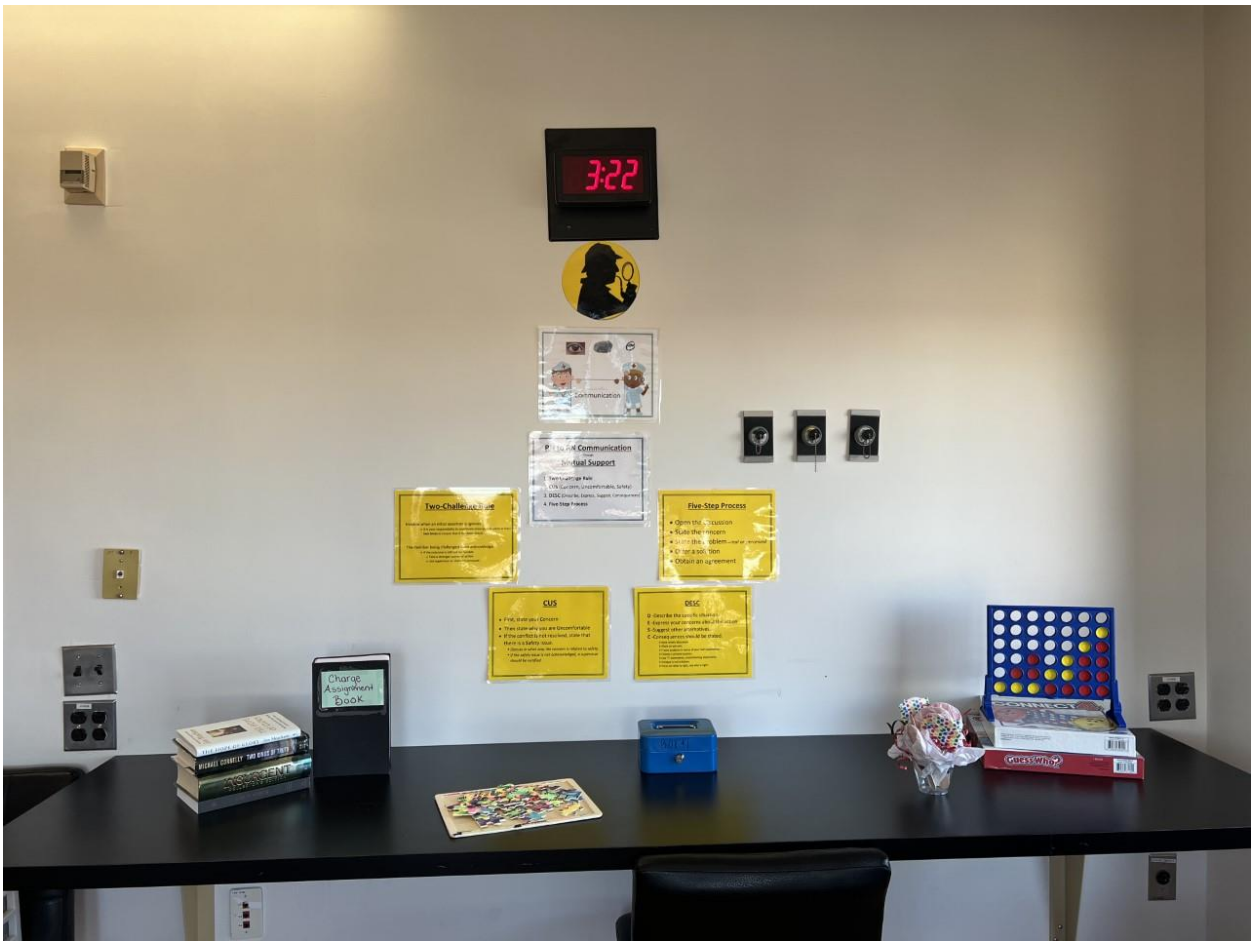
1. The escape room included an opening scenario for participants to read and four additional scenarios to work through to be able to escape the room. The puzzles and clues that were disseminated throughout the room.
2. Maximum/minimum participants per room were three.
3. Prior to entering the room, the facilitator walked through the rules and explained the concept.
4. Learners were encouraged to communicate their findings to each other by working together to solve the clues.
5. Hints could be given to the participants if the team asked for support.
6. The concept was to have learners to work together as a team to solve the clues about within the twenty-minute time frame.
7. There were four puzzles to solve which focused on TeamSTEPPS techniques.
8. A short debriefing session was held at the end of the session to review feedback from participants. The participants were asked:

   a. What worked well?
   b. What did not work well?
   c. What was their preferred preference for content delivery of education i.e., interactive learning versus more traditional on-line learning.

9. Team photos were taken and posted on Visual Management Board and Staff Recognition Board. Snacks were provided once participants completed the escape room session. The team with the fastest times were given a small gift. See Appendix E. Visual Management Board and Celebrated Successes.
10. Concepts taught in escape room sessions were printed out as a reference for staff were located on a bulletin board near the nurse's station for review.
11. Staff was asked to utilize communication techniques in day-to-day scenarios over the course of four weeks.
12. TeamSTEPPS rounding observations were conducted using the Team Performance Observation Tool twice a week for three weeks by this project lead.
13. Resurvey of NDNQI RN-to-RN interaction questions collected at week five from registered nurse escape room participants. Post escape room survey questions collected from all participants.
14. HCAHPS Nurse Communication scores were collected six weeks post implementation. See Figure 1: TeamSTEPPS Escape Room:

Figure 1

TeamSTEPPS Escape Room



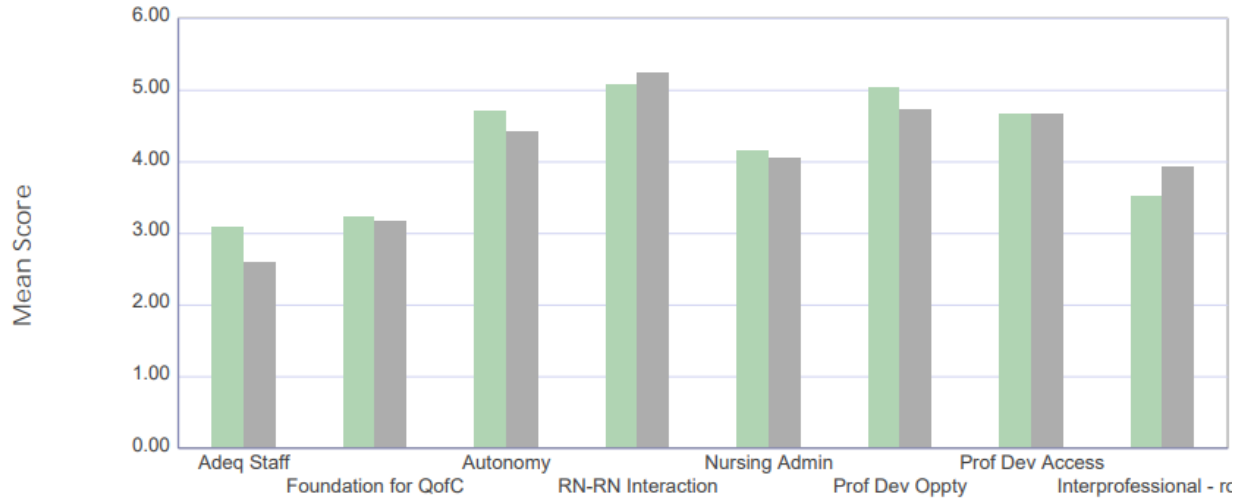
Unexpected barriers that occurred included 2022 contract negotiations with both the nurse's and allied health professional's union for this hospital. The contract ratification was postponed when the organization and the union could not agree on a final contract. This extended negotiation lasted approximately six weeks past the contract deadline. Negotiations occurred on average three times per week over a total of thirteen weeks during late summer, fall and early winter of 2022 and as a result, the timeline for the implementation of this project was delayed until January 2023. This led to the postponement of project implementation and a subsequent compressed rollout. Additionally, there was an unanticipated leadership change with the two original intended locations and was managed by selecting another setting in the organization with a very engaged leadership team.

Results/Findings

The NDNQI RN engagement survey is, under normal circumstances, administered annually by the organization. The baseline data collected pre-implementation was from the survey administered in 2018 prior to their Magnet designation which was attained in 2019. Shortly thereafter, the chief nurse officer left the organization. During the time a national search was held for a replacement candidate, the coronavirus pandemic hit the United States in January 2020 with the role being replaced in March of that same year. The organization chose not to resurvey nurses during the pandemic and as an alternative incorporated selected NDNQI questions into the annual employee engagement survey which had a very low response rate. The NDNQI was then re-administered in 2022. The unit for this project had too low of a response rate (less than five responses) to be included in the results. This unit's mean score for nurse-to-nurse interaction was below the national benchmark in 2018. See Figure 2: Baseline 2018 NDNQI RN-to-RN Interaction Survey Scores:

Figure 2

Baseline 2018 NDNQI RN-to-RN Interaction Survey Scores



Measure	Adeq Staff	Foundation for QofC	Autonomy	RN-RN Interaction	Nursing Admin	Prof Dev Oppty	Prof Dev Access	Interprofessional - rollup
Unit	3.08	3.25	4.71	5.08	4.17	5.02	4.68	3.53
NDNQI-All Hospitals-Mean	2.59	3.16	4.41	5.25	4.07	4.72	4.68	3.92

A total of 24 staff who worked day shift participated in the escape room sessions consisting of sixteen registered nurses and eight ancillary staff (patient care techs and unit clerks). Of the sixteen registered nurses who attended the escape room (eighty percent of the total day shift nurses), two left the organization for travel assignments prior to the post implementation survey. The remaining four who did not participate included two weekenders and two who opted not to participate in this project. All fourteen nurses who were survey eligible submitted survey responses.

The NDNQI RN satisfaction survey questions for Nurse-Nurse interaction were recreated in Microsoft Teams Forms using a six-point Likert scale: strongly agree, agree, tend to agree, tend to disagree, disagree, and strongly disagree. Eligible staff were provided a link to the survey as well as a QR code. A paper survey was also available for those who may have had difficulty accessing the survey electronically. The information in Figure 3 represents the registered nurse's survey responses both pre- and post-intervention

Figure 3

Pre-Post-Mean Intervention NDNQI RN-to-RN Interaction Survey Scores

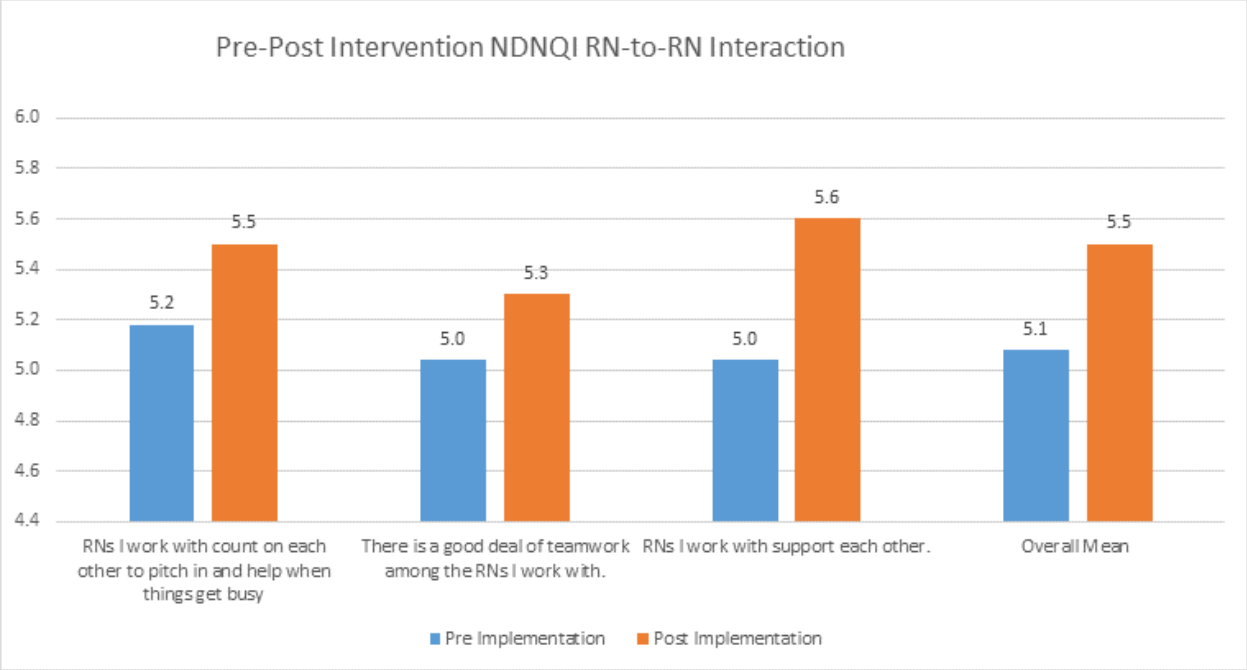


Figure 3 displays that each RN-to-RN interaction stem question shows an overall increase from the baseline data.

Standard deviations were calculated for each survey question and are displayed in Table 5.

Table 5

Standard Deviations

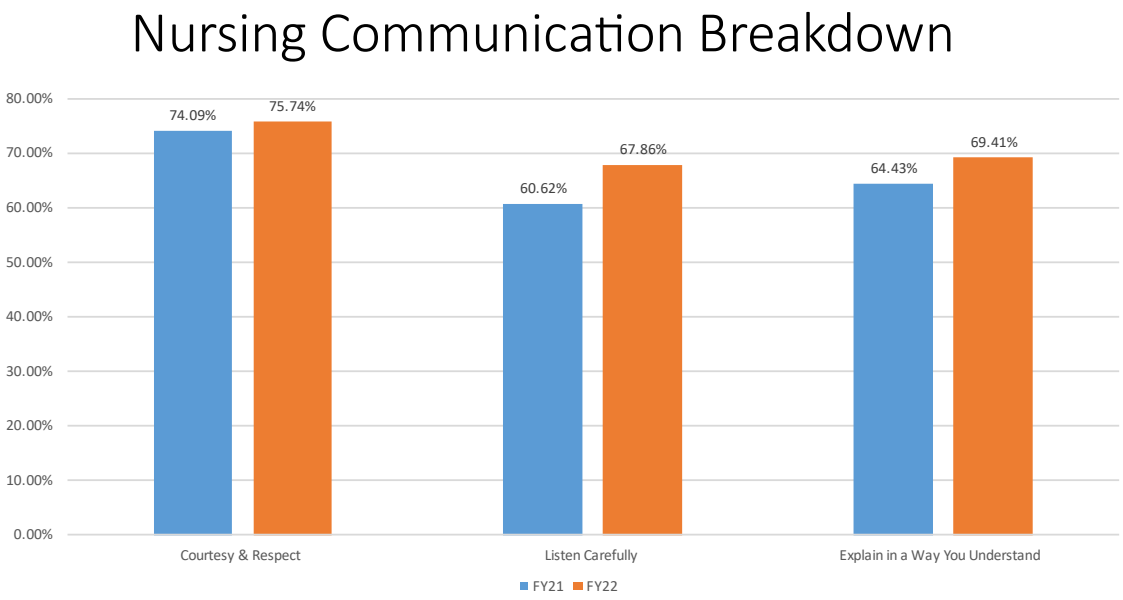
Questions	Pre Intervention (NDNQI)		Post Intervention (TeamSTEPPS)		
	N (Mean)	SD	N (mean)	SD	Effect size
Q1: RNs I work with count on each other to pitch in and help when things get busy.	28 (5.2)	0.29	14 (5.5)	0.52	0.77
Q2: There is a good deal of teamwork among the RNs I work with.	28 (5)	0.31	14 (5.3)	0.61	0.68
Q3: RNs I work with support each other.	28 (5)	0.29	14 (5.6)	0.51	1.57
Overall: RN-to-RN Interaction	28 (5.1)	0.29	14 (5.5)	0.29	1.35

As displayed in table 5, the TEAMSTEPPS program had a moderate or large effect size across all of the outcomes measured, with questions three and four reflecting the largest effect. This indicates that the TeamSTEPPS intervention had overall practical significance on the impact of RN-to-RN communication.

HCAHPS Communication with Nurses baseline scores for this unit were collected from fiscal years 2021 and 2022 to ascertain if there was an impact on communication with nurses from patients. Baseline results are displayed in Figure 4.

Figure 4

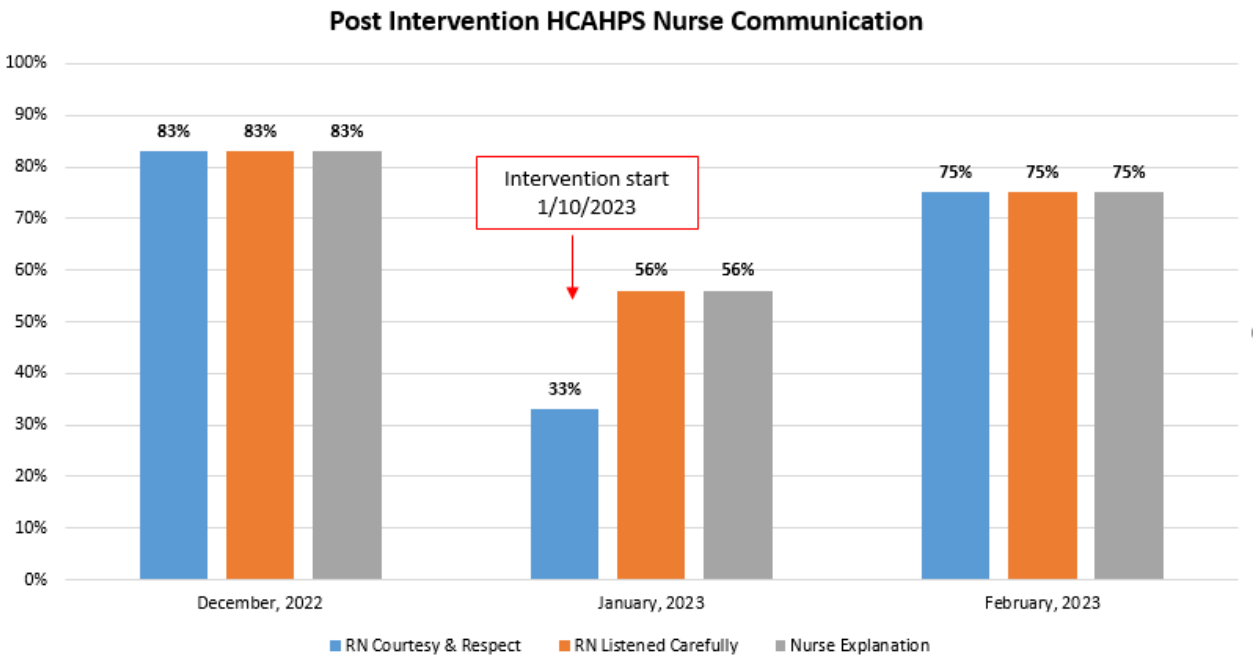
Baseline HCAHPS Communication with Nurses Scores



The baseline for this unit trended positively in all three questions from fiscal year (FY) 2021 to FY 2022. Courtesy and respect had the highest score at 75.4% while the lowest score was nurses listen carefully at 67.86%. A summary of FY 2023 scores post-intervention is presented in Figure 5

Figure 5

Post intervention HCAHPS nurse communication:



Communication with nurse's scores were collected six weeks post implementation. Overall, there was a decrease in scores during the month of project implementation with a positive rebound in the month post implementation. This rebound brought scores in line from prior scores in FY 2021 and 2022 for *courtesy and respect* and above the line for *listen carefully* and *explain in a way you understand* from prior scores FY 2021 and 2022.

An additional three question survey was created in Microsoft Teams Forms using a five-point Likert scale (strongly agree, agree, neither agree nor disagree, disagree, strongly disagree) to evaluate the effectiveness of the escape room method on learning. All staff who participated in the escape rooms were given three access points to the survey: a link, a QR code and paper survey if needed. Of all twenty-two participants who were eligible, based on escape room attendance, twenty responses were received.

Figure 6

Escape Room Experience Survey Scores

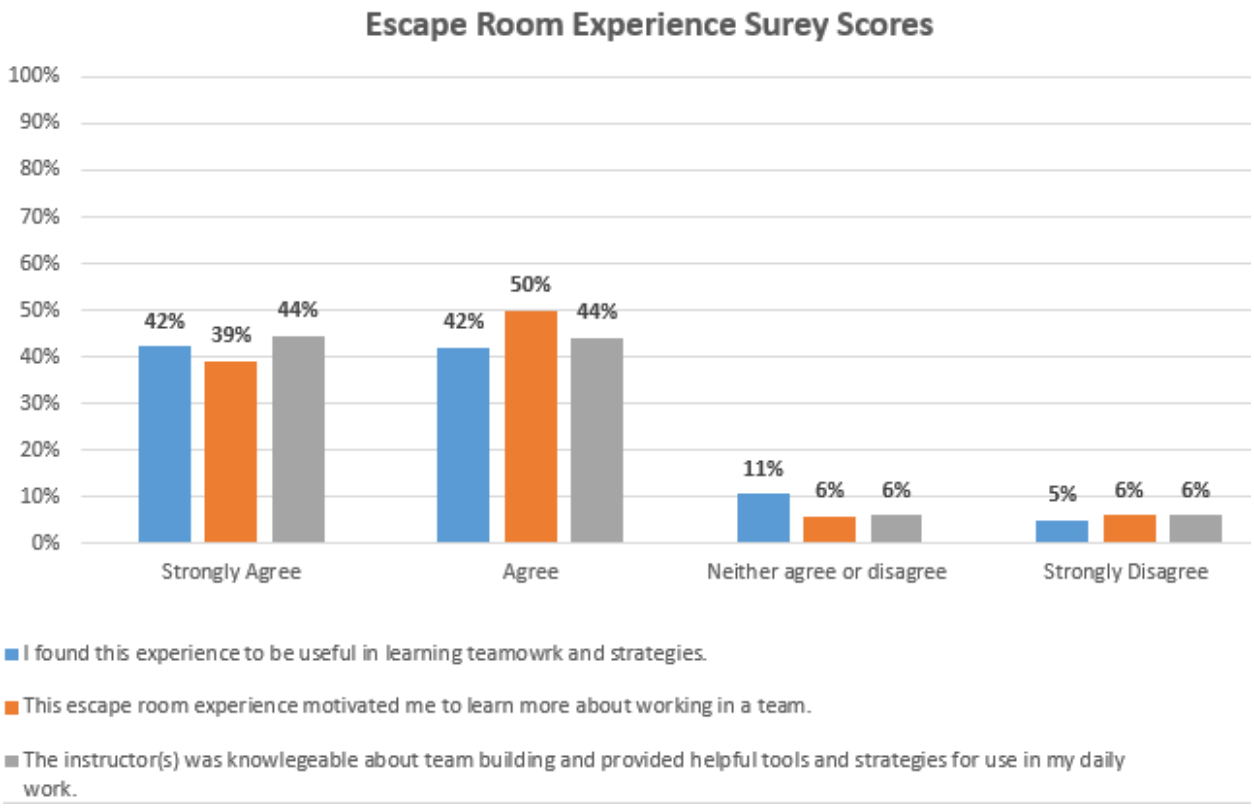
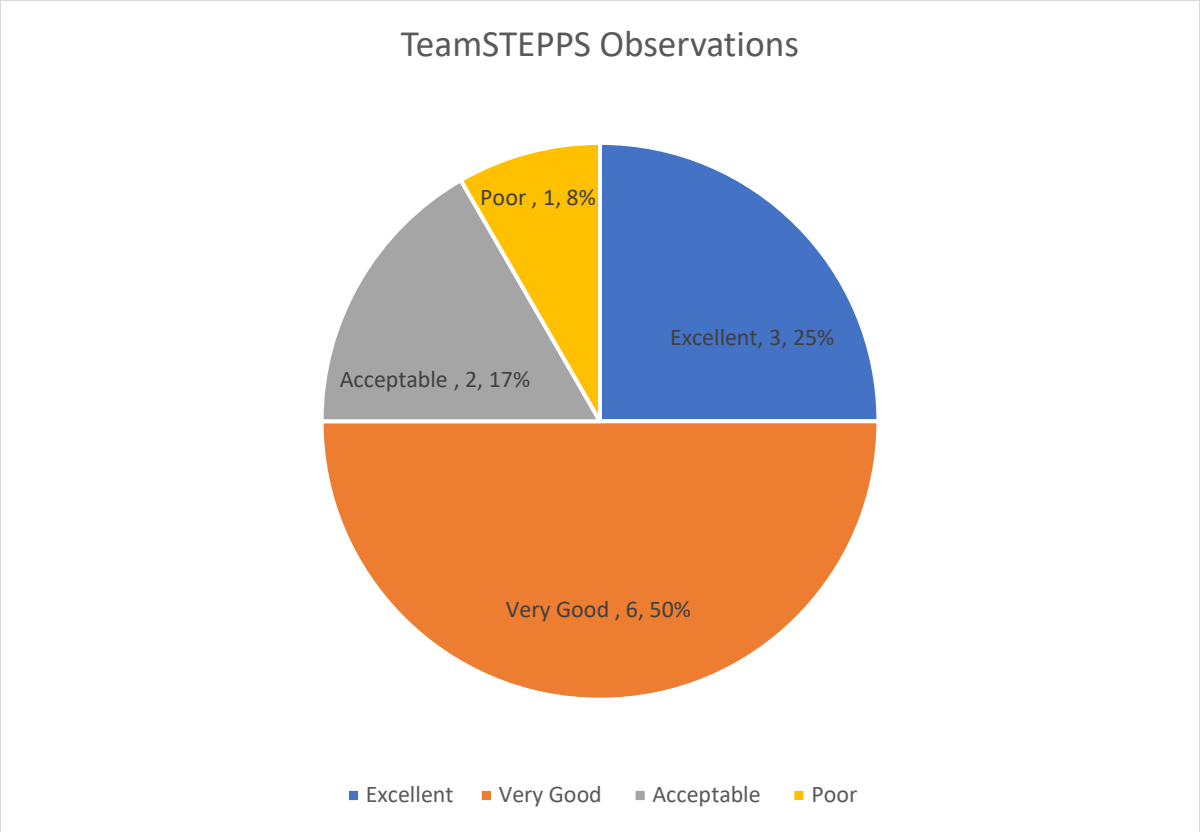


Figure 7 displays that most participants found the escape room experience to be an effective learning strategy.

TeamSTEPPS rounding observations were conducted using the Team Performance Observation Tool twice a week for three weeks. Twelve observations were completed. Of the twelve observations, seventy-five percent reflected a very good to excellent understanding and skill on how to apply the appropriate learned techniques.

Figure 7

TeamSTEPPS Observations



Interpretation/Discussion/Implications

Collaboration among the nursing team is essential to providing quality care, and respect for each other is vital in promoting a healthy environment including improved job satisfaction, better work environments, increased retention rates, and greater work productivity (Kowalski et al., 2020). This project demonstrated a positive influence of TEAMSTEPPS on nurses' perceptions of teamwork, collaboration, and support, along with a positive influence on HCAHPS nurse communication scores. The results align with the evidence related to the initial inquiry; that the integration of TeamSTEPPS tools and strategies in an escape room session is a fun, interactive way to learn while providing an effective team-building activity. Recommendations include further expansion of this intervention to other hospital in-patient units.

Sustainability Plan

The project lead will elicit additional project champions (unit leaders) to develop a train the trainer model to continue the implementation of TeamSTEPPS training in an Escape Room setting to other inpatient nursing units and other shifts. The champions, with support of the project lead, will develop a sequential approach for expansion to other areas focusing on two sister units at a time. Once this occurs, this project lead will hand off the implementation plan to the Nurse Practice Council as a standing agenda item to report out on progress of implementation and on-going orientation with new staff. A three-question resurvey on RN-to-RN Interaction, coupled with a three-question escape room survey will be administered to each unit four weeks post implementation. The results will be reviewed by this project lead and shared with the Magnet Program Director and CNO. The hospital acquired harm prevention committees will continue to meet and review patient quality indicators: Falls, CLABSI, CAUTI, and Pressure Injuries. The Patient Experience Committee meets monthly to review HCAHPS patient experience scores.

Actual Financial Implications (ROI)

Although no direct return on investment financial data was obtained for this project, an estimated ROI could be calculated on cost avoidance of one hospital acquired condition. According to AHRQ (2017), the median average cost of one patient fall is $6,694.00, allowing the organization to recoup $2,236.00 from the cost of training by the avoidance of one inpatient fall. Additionally, if the organization sustains an improvement of HCAHPS scores above benchmark for twelve-month period, a two percent value-based incentive payment will be applied by CMS to the base operating payment amount for each discharge occurring in the fiscal

year, on a per claim basis which could amount to an estimated $4,418.00 annually. Actual financial implications for this project included the cost of staff and leaders who planned and attend escape room sessions.

Table 7:

Actual Cost of Staff Training:

Role	# Of Staff	Hourly Rate	Hours of Training	Cost
Registered Nurse	16	38	0.5	$684.00
Tech	8	18	0.5	$144.00
Nurse Leaders	6	55	11	$3,630.00
				$4,458.00

Dissemination

An internal communication plan will be developed together with the Magnet Program Director, CNO and marketing team. Venues for dissemination will include: Magnet councils, nurse leaders monthly operations meeting, system nurse executive meeting, and patient experience meeting. It will also be added to the nursing newsletter, organizational Facebook group and Linked In. A poster presentation will be developed and shared at the organization's evidenced based practice and research conference along with seeking an opportunity to present at a local and possible national conference. A journal manuscript publication will be considered for a nursing leader journal and The American Organization for Nursing Leadership (AONL).

Incorporation of AACN Essentials

This DNP project incorporated the 2021 AACN Essentials Core Competencies for Professional Nursing Education (AACN, 2021). Relevant competencies include Domain 2: Person-Centered Care was met by investing in the nursing team to teach them tools and strategies to help create an environment that promotes teamwork and collaboration while fostering support for a high-caliber professional practice. Domain 4: Scholarship for Nursing Practice was incorporated with a robust literature search and evaluation of the quality of evidence, design of the escape room and concepts to be taught and data analysis. Domain 5: Quality and Safety was fulfilled with evidenced based concepts set forth by the AHRQ and TeamSTEPPS which is linked to improving teamwork and communication whereby failures of such are often the main causes of medical errors and detrimental impacts. Domain 7: Systems-Based Practice was met by the development of interactive learning, escape room sessions to teach the TeamSTEPPS concepts of mutual support. Teamwork skills were developed in the escape room sessions which led to improvement in the perceptions on teamwork and support and nurse communication form patients. Domain 10: Personal, Professional, and Leadership Development was strengthened throughout the last two years in this program through and learning and remaining flexible and focused as unanticipated barriers came up.

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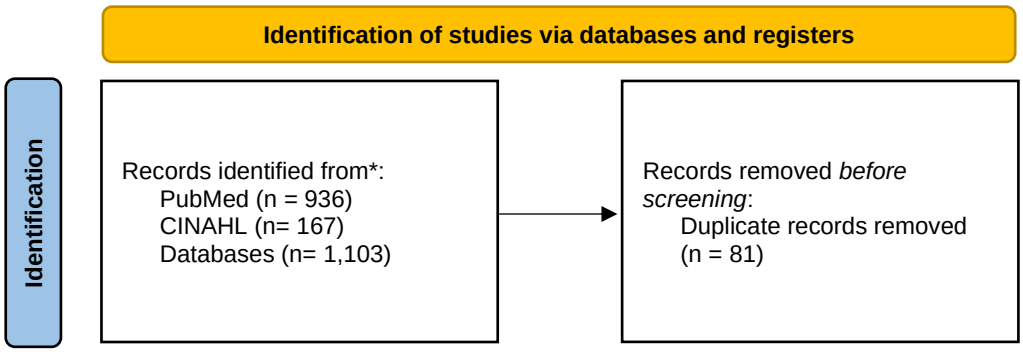
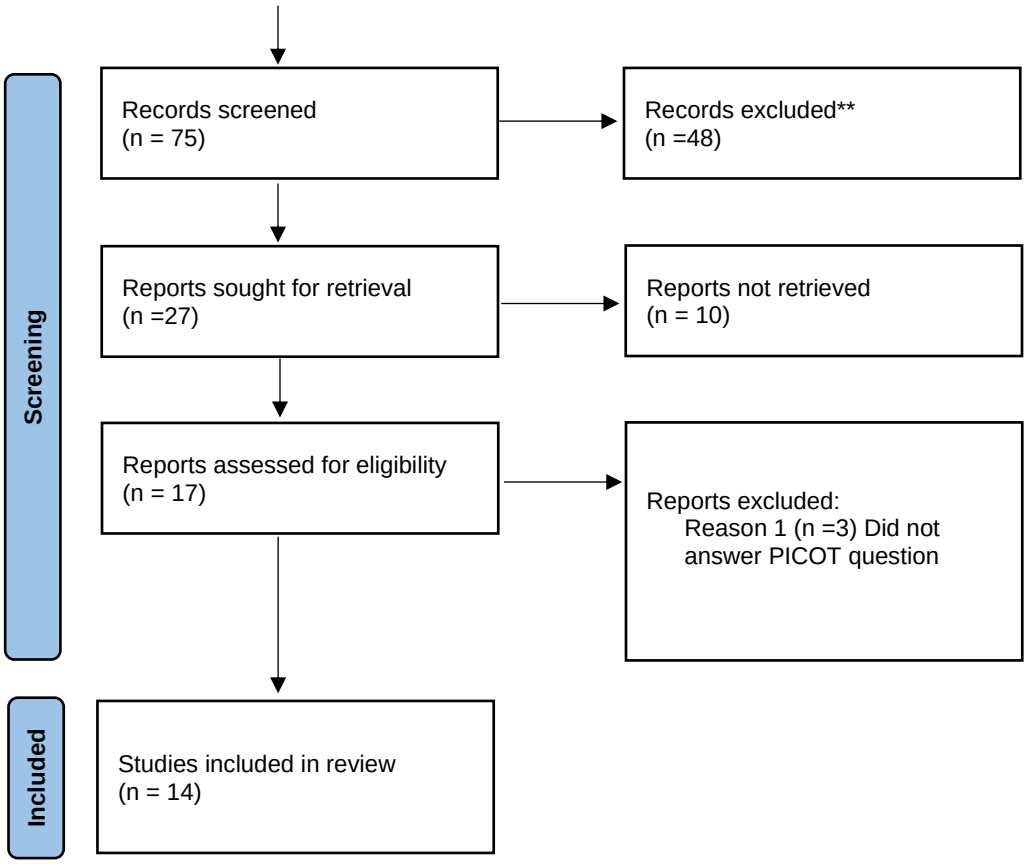
Appendix A:

Domains	Questions	Current n	Previous Period (2021)	Current Period (2022)	Change	Percentile Rank
Comm w/ Nurses		170	66.38%	71.00%	4.62%	14
	Nurses treat with courtesy/respect	169	74.09%	75.74%	1.65%	10
	Nurses listen carefully to you	168	60.62%	67.86%	7.24%	14
	Nurses expl in way you understand	170	64.43%	69.41%	4.98%	24

Appendix B:

Zhang, X., Lee, H., Rodriguez, C., Rudner, J., Chan, T. M., & Papanagnou, D. (2018b). Trapped as a group, escape as a team: Applying gamification to incorporate team-building skills through an 'escape room' experience. *Cureus*, 1–9. https://doi.org/10.7759/cureus.2256





From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

For more information, visit: http://www.prisma-statement.org/

Appendix C:

Team Performance Observation Tool

Date: _____

Unit/Department: _____

Team: _____

Shift: _____

Rating Scale (circle 1) ***Please comment if 1 or 2***

1 = Very Poor
2 = Poor
3 = Acceptable
4 = Good
5 = Excellent

1. Team Structure	**Rating**
a. Assembles a team	
b. Assigns or identifies team members' roles and responsibilities	
c. Holds team members accountable	
d. Includes patients and families as part of the team	
Comments: **Overall Rating – Team Structure**	
2. Communication	**Rating**
a. Provides brief, clear, specific and timely information to team members	
b. Seeks information from all available sources	
c. Uses check-backs to verify information that is communicated	
d. Uses SBAR, call-outs, and handoff techniques to communicate effectively with team members	
Comments: **Overall Rating – Communication**	
3. Leadership	**Rating**
a, Identifies team goals and vision	
b. Utilizes resources efficiently to maximize team performance	

c. Balances workload within the team	
d. Delegates tasks or assignments, as appropriate	
e. Conducts briefs, huddles, and debriefs	
f. Role models teamwork behaviors	
Comments: **Overall Rating – Leadership**	
4. Situation Monitoring	**Rating**
a. Monitors the status of the patient	
b. Monitors fellow team members to ensure safety and prevent errors	
c. Monitors the environment for safety and availability of resources (e.g., equipment)	
d. Monitors progress toward the goal and identifies changes that could alter the plan of care	
e. Fosters communication to ensure team members have a shared mental model	
Comments: **Overall Rating – Situation Monitoring**	
5. Mutual Support	**Rating**
a. Provides task-related support and assistance	
b. Provides timely and constructive feedback to team members	
c. Effectively advocates for patient safety using the Assertive Statement, Two-Challenge Rule, or CUS	
d. Uses the Two-Challenge Rule or DESC Script to resolve conflict	
Comments: **Overall Rating – Mutual Support**	
Team Performance Rating	

Appendix D:

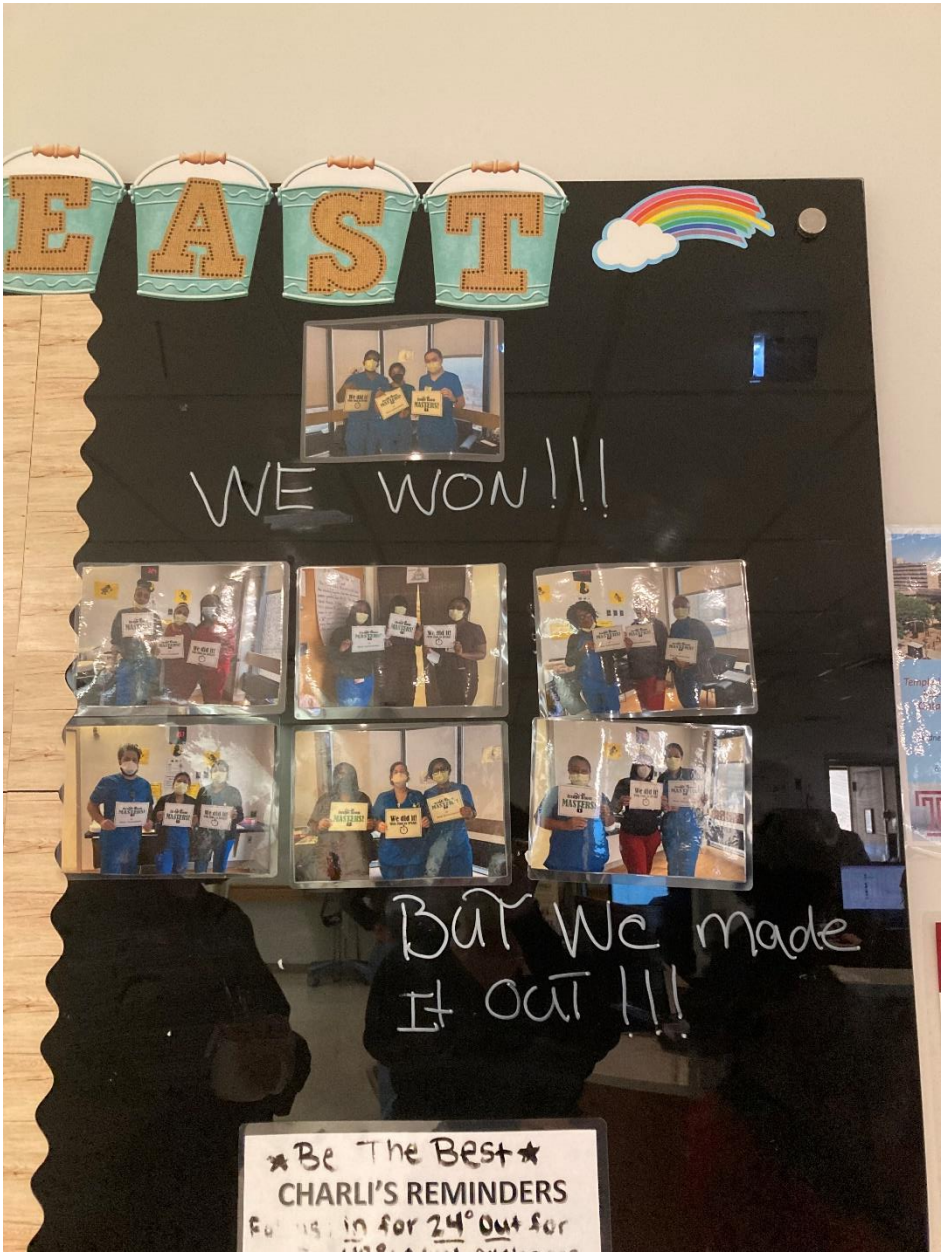
Fuld ARCC EBP Implementation and Sustainability Toolkit

<u>Pre-Initiative:</u> -Garner leadership support -Identify interprofessional collaborators -Develop initiative strategy

-Provide introductory information to those impacted by initiative -Incremental rollout
Building the Case: - Engage staff, stakeholders, opinion leaders - Identify potential barriers and plan for them - Obtain formal commitment -Organize implementation team meetings -Influence development of favorable attitudes -Identify potential resistance -Leverage aspects of the initiative that can promote adoption -Initiate education -Develop informational and education materials -Conduct informational and educational sessions -Distribute initiative information - Leverage unit communications -Visual triggers -Deliver education and information to the individuals on the frontline of the initiative -Engage leadership -Manage resistance -Educate staff on EBP recommendations -Assemble diverse and talented implementation team
Implementation and Evaluation: -Provide updates in a timely fashion -Provide updates/information in a relevant, user-friendly manner -Build competence -Implement the formal implementation plan -Develop/refine workflow processes -Integrate initiative into operations -Collect data/measure outcomes -Share evaluation results -Continue to promote engagement and participation -Celebrate initiative progress -Update senior leadership -Present to required committees/councils -Promote networking
Sustainability: -Provide meaningful, authentic recognition - Provide meaningful, authentic appreciation -Make a plan for unit or organizational sustainability -Report to senior leadership-send summary report for senior leaders -Mentor team for dissemination -Set timeline for ongoing (cyclical) reassessment

Appendix E:

Visual Management Board and Celebrated Successes



Appendix F:

Letter of Support

Cottrell, Barbara

From: Venditti, Angelo C
Sent: Friday, May 27, 2022 9:32 AM
To: Cottrell, Barbara
Subject: RE: DNP Project Approval Request

Hi Barb,

We are here to support you however we can. We are excited for you to complete this journey and so I wholeheartedly support this project. Please let me know how I can help.

Sincerely,
Angelo

Angelo C. Venditti DNP
Executive Vice President, Patient care Services
Chief Nurse Executive &
Chief Patient Experience Officer
Temple University Health System

Distinguished Clinical Scholar
College of Public Health
Temple University

Office: 215-707-8311
Cell: 570-336-7435
tuhsencryptedmessage

Follow Temple Health Nursing Services on Social Media

From: Cottrell, Barbara
Sent: Friday, May 27, 2022 9:31 AM
To: Venditti, Angelo C <Angelo.Venditti@tuhs.temple.edu>
Subject: DNP Project Approval Request

Good Morning Angelo,
I would like to circle back to our early discussion regarding my DNP project to evaluate the effect of TeamSTEPPS on RN-to-RN interaction among acute care nurses on two medical surgical units at temple Main. Seeking the approval to move forward as discussed.
Thanks so much!
Barbara

Appendix G:

Human Subject Research Determination Form

Human Subject Research Determination Form

It is important to ensure the protection of human subjects in research and quality projects. Please complete the survey below.

Thank you!

Response was added on 09/07/2022 12:18pm.

Instructions:
1. Please complete the requested project information, as this form may be used for documentation that neither IRB review nor an exemption is required.

2. Please select the appropriate answers to each question in order as they appear. If all of the questions are answered without receiving an error message, the form must be printed AND signed as certification that the project is "not human subjects research," and does not require IRB review or exemption.

If you are unsure how to answer any of the questions, please contact ORRP for additional guidance at ORRPDeterminations@osu.edu.

PROJECT INFORMATION	
Name of PI, advisor, or mentor	Molly McNett
Advisor Email	mcnett.21@osu.edu
Student Name:	Barbara Cottrell
Project Title	Impact of TEAM STEPPS on RN to RN Interaction
Brief Description of Project/Goals:	The purpose of this project is to increase teamwork on two medical surgical units after the implementation of TEAM STEPPS. (This information is important and provides the necessary information to determine if the project requires IRB review.)

QUESTIONS	
1. Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?	◯ Yes ⊗ No (This question determines if additional federal regulations, like FDA regulations, apply to the project. This information is based on the Common Rule (45 CFR 46.102(d)) that states "Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge." If the answer to this question is 'YES' - IRB review is likely required.)

2. Has the project received funding (e.g. federal, industry) to be conducted as a human subjects research study?	◯ Yes ⊗ No (This question is to determine if the project received funding to be conducted as a research study, quality improvement, or program evaluation. If the funding source requires a specific level of IRB review and oversight or considers the project to constitute human subjects research, you may be required to submit an IRB application.)
3. In addition to any other purposes, is the project intended to develop or contribute to generalizable knowledge (e.g. testing a hypothesis) AND/OR has the project been designed in such a way that the findings will be generalizable (e.g. randomization of subjects; comparison of case vs. control)?	◯ Yes ⊗ No (This question is to evaluate project intent and design. The project design plays a key role in determining intent. If the project uses standardized research methods like testing a hypothesis or randomization to determine results, then it is research. If the intended outcome is simply to report on what happened at the institution/program, even if another site does something similar and sees benefit, this does not indicate research design or intent.)
4. Will the results of the project be published, presented or disseminated outside of the institution conducting it?	⊗ Yes ◯ No (The purpose of this question is to determine if and how project results will be disseminated. Note that program evaluation and QI projects can be published or presented without being considered research projects; not all information that is published or presented represents generalizable knowledge. Lack of intent to disseminate the information is generally a strong indicator that a project does not constitute research.)
5. Will the project occur exactly as proposed regardless of whether individuals conducting it may benefit professionally from it?	⊗ Yes ◯ No (This question is not focusing solely on whether an individual will professionally benefit, but rather whether they would conduct the project (or conduct it in the exact same way) regardless of the potential for professional benefit (e.g. adding it to a CV or getting funding based on the results).)
6. Is the project intended to improve or evaluate the practice or process within a particular institution or a specific program?	⊗ Yes ◯ No (If the intention upon designing and conducting the project is not to improve or evaluate a specific practice/program, then the answer should be "No" indicating research intent and IRB review is likely required. If the project is intended to create knowledge or draw conclusions applicable beyond the particular institution or specific program, then the project is likely research as defined by the federal regulations and IRB review or exemption is required.)

required.)

If no message appears above indicating the certification is not valid, IRB Review is not required because, in accordance with federal regulations, the project does not constitute human subjects research as defined under 45 CFR 46.102(d).

Student: Sign this form below attesting to the accuracy. Download and save a copy of the completed form, print or email the form to your advisor for signature. This serves as record that IRB review is not required for this project.

Are you using data collected or procured from the institution your project is being implemented?	⊗ Yes ○ No
Has written approval been received by authorized personnel from the institution?	⊗ Yes ○ No

Student: I certify that the information provided is accurate.

Student Signature date: 09-07-2022

The following information is to be completed by the student's advisor once the student has completed and submitted the form.
Please note -
* If the student and advisor are completing the form together, the advisor can digitally sign the document
* If the student and advisor are not completing the form together, the student should formally 'Submit' the survey, save a PDF copy of the form and, forward the PDF to their advisor for review and signature.

A copy of the final fully executed form (both student and advisor signatures visible) should be retained for addition to the final project.

Advisor: I have reviewed the student project and agree to the information provided.

(Please note - this field is for Advisor completion)

Advisor Signature date: 09-07-2022