Improving Outpatient Clinic Staff Engagement and Teamwork

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Date of Submission	October 10, 2017

Abstract

In recent years, there has been a dramatic decline in staff engagement especially in the healthcare industry. Engaging staff can be problematic and challenging for healthcare organizations and leadership. Therefore, it is essential to provide employees with creative and consistent opportunities for staff engagement and teambuilding. An in-depth literature search provided support that there is a direct correlation between engaged staff, improved quality of patient care, and organizational outcomes. Furthermore, the literature supported Code Blue training as a team increases staff engagement, competency and confidence in the event of a patient suffering a cardiac arrest. The DNP project intervention goal was to show the direct correlation between increased staff engagement and the use of mock code exercises in an outpatient clinic setting. The practice change project was guided by Bandura's Self-efficacy theory (1994). The use of mock code exercises data revealed staff had increased confidence, competency and preparedness related to cardiopulmonary resuscitative (CPR) measures. The staff was recruited from a small women's health clinic in South Texas and participation was voluntary. Staff were asked to review the American Heart Association (AHA) Basic Life Support (BLS) video prior to participating in the intervention. After, reviewing information staff engaged in weekly mock code exercises to increase engagement, BLS recall, and performance. Employees' perception of staff engagement was evaluated by pre- and post-questionnaires developed by the DNP student specifically for this target group. The mock code evaluation sheets evaluated the employee's performance and teamwork during simulated mock code exercises. Project qualitative data provided evidence that staff perception of engagement, collaboration, improved BLS skills did improve during the second session of the mock code exercises. Project lead implemented the use of Clinic Training Champions (CTC)'s to facilitate and sustain the employees' future training and staff engagement opportunities.

Keywords: staff engagement, teamwork, outpatient clinics, collaboration, train the trainer, communication, job satisfaction, team building, BLS, emergency preparedness, patient care, and mock code

Improving Outpatient Clinical Staff Engagement

Introduction

Employees who are enthusiastically participating in their work and workplace are engaged employees (Gallup, 2017). Creating a positive work environment also builds employees' productivity and improves patient and organizational outcomes (Day, 2014). However, increasing staff engagement and performance is an on-going challenge for all industries, including healthcare organizations.

Improving staff engagement, teamwork, performance, and collaboration takes creativity and consistency from both organization and leadership. This creativity could be demonstrated in the form of conducting a staff needs assessment and increasing opportunities to participate in team building activities. Healthcare organizations have used various strategies to engage healthcare providers including surveys, workshops, motivational speakers, TeamSTEPPS, and monetary incentive. Still, only 70% of U.S. workers are engaged with their jobs (Gallup, 2017).

Background

In the United States over 500,000 cardiac arrests happen every year in both the outpatient and inpatient setting (Grif, 2015). One activity designed to for this practice change project assisted in increasing staff engagement and team building by incorporating mock code exercises. Emergency preparedness exercises and training are essential to building staff confidence, competency, and by extension improve clinical outcomes as a result of proficiency in performing CPR effectively (Day, 2014). Of note, outpatient clinics are not mandated by The Joint Commission (TJC) to conduct mock code training and therefore, do not routinely engage in this type of training for staff. Additional certified healthcare providers only attend BLS re-certification training every two years. Due to, inconsistencies of CPR practice and the length of time between BLS re-certification in an outpatient setting, the skills of healthcare staff are likely

to deteriorate as quickly as 12 weeks post training (Clarke, Apesoa-Varano, & Barton, 2016). These two critical factors contributed to the need for this project intervention (mock code exercises) in an outpatient setting. Improving clinical skills through intermittent BLS mock code simulation among these healthcare employees should also reduce the future risk of ineffective, CPR performance during true emergencies. Data results from this project using mock code exercises has shown to engage staff, improve staff collaboration, and CPR performance in the event of a true cardiac arrest event (See figure 2). The post-intervention scores between groups for questions 3 and 5 related to increased comradery and happiness yielded a 100% response from staff.

Despite the low probability of a cardiac arrest in the outpatient setting, staff should maintain competency in the performance of BLS skills (Hill, Dickter & Van Daalen, 2010). The infrequent of use of skills needed to treat patients in cardiac arrest, in an environment that does not routinely address this issue makes it imperative that outpatient clinic staff be engaged in ongoing staff development specific, to preparation to perform these services.

Furthermore, with the number of cardiac arrests being so high, it is probable even in a low acuity setting compared to an acute care environment, the potential risk of a cardiac arrest is still a reality. Staff readiness and willingness to be engaged in this infrequently used skill is important. The attitudes and behaviors of the staff along with the organizational climate and culture correlate and predict the effectiveness of the actions of health care providers (Day, 2014). Staff that is competent in their BLS skills and vested in practice change are beneficial in an outpatient clinic setting specific, these skills are needed in the event a patient has a cardiac arrest in this setting (Herbers & Heaser, 2016).

Significance: Engaging Staff and Organizational Outcomes

Engaging staff in team building activities can assist in creating an enthusiastic and productive work environment. Using a team approach to training can be a useful tool in engaging and empowering staff to improve customer service. In order to, increase staff engagement, it is important that staff members understand their level of engagement as an employee, and how it impacts the organization. Whether the staff is engaged, non-engaged, or actively disengaged each level of engagement or disengagement impacts an organization (Gallup, 2017). When leaders of an organization have a knowledge of the levels of employee engagement, facilitating a change in culture can be realized (Day, 2016).

In recent years, the American health care system has seen a surge in the number of outpatient clinics. By 2019, it is estimated that the healthcare industry will see demand for outpatient services increase by nearly 22% while demand for inpatient services remains flat (News-Medical, 2010). Due to this increase, healthcare organizations will also need to find ways to retain and engage staff to continue to provide quality care. Managers will need to ensure staff is provided with time and opportunities to pursue higher education, improve clinical skills and team dynamics. Staff that practice as a team should have an increased confidence in responding to catastrophic event, such as cardiac arrest, is an important step in assuring quality patient outcomes (Tillott, Walsh & Moxham, 2013).

Benefits of Staff Engagement with Mock Code Training

Staff engagement and teamwork improves delivery of healthcare, motivates performance, and increases commitment in collaboration as a team (Al Sayah, Szafran, Robertson, Bell, & Williams, 2014). One of the intended goals of this doctoral project is to demonstrate that staff engagement specific to the use of mock code exercises will increase staff preparedness to deliver

appropriate care in the event of an emergency. Staff engagement through teambuilding activities builds collegial relationships. Staff that feel valued and a part of a team can positively impact retention, and job commitment (Day, 2014). Consequently, retention and job commitment is anticipated to translate into improved patient outcomes.

The engagement and team building activities build trust and confidence when working as a team. The use of mock code exercises also increases teamwork, staff engagement activities, team performance, and readiness. Literature supports mock code exercises should be done consistently to reinforce BLS skills knowledge recall, and motor skills related to CPR. As stated by The Joint Commission Standards (2007), The use of an evidenced-based training exercise should be used to train staff to recognize the need for and use designated equipment and techniques for rescue efforts (Resuscitative Central, 2010).

Inconsistency in Staff Engagement and the Effects on Patient Care

Lack of consistent staff engagement and training exercises can lead to reduced staff morale, productivity, collaboration, and communication. Inconsistency creates these behaviors that may lead to the decline in work engagement and negatively impact the staff in the workplace (Tillott, Walsh, & Moxham, 2013). Other factors that may contribute to the lack of staff engagement are feeling unappreciated and unhappy with the work environment (Gallup, 2017).

Factors that may negatively impact staff engagement specific to CPR may be lack of confidence and/or difficulty recalling BLS steps which may have devastating effects on patient survival and care (Prince et al., 2014). Also, inconsistencies in training can impact staff performance and delivery of patient care in the event of a sudden cardiac arrest. Therefore, engaging staff in emergency preparedness training should decrease the probability of negatively impacting the delivery of patient care. Additionally, the use of mock code exercises should

increase confidence in BLS skills and the staff should demonstrate a higher level of improvement in performance in the event of a real code (Herbers, 2016).

Problem Statement

The lack of staff engagement and teamwork can have a detrimental impact on patient care, staff, and organizational outcomes. One activity designed for this project was to implement the use of mock code exercises to improve staff engagement and teamwork. Additionally, an in-depth literature search yielded limited data on increasing staff engagement using mock code training in the outpatient setting. In the United States over 500,00 cardiac arrests happen every year in both the outpatient and inpatient setting (Grif, 2015). Despite the low probability of a cardiac arrest in the outpatient setting, staff should maintain competency in the performance of BLS skills (Hill, Dickter & Van Daalen, 2010). Of note, outpatient clinics are not mandated by The Joint Commission (TJC) to conduct mock code training and therefore, do not routinely engage in this type of training for staff.

Furthermore, certified healthcare providers only attend BLS re-certification training every two years. As hands on practice of BLS skills are not as common in an outpatient setting, the skills of health care staff are likely to deteriorate as quickly as 12 weeks post training (Clarke, Apesoa-Varano, & Barton, 2016). These critical factors attributed to the need for this project intervention in an outpatient setting. The clinical staff in this small women's healthcare clinic setting have foundational training in basic life support by maintaining a BLS certification, but have limited experiences in addressing a cardiac arrest event. The goal of clinical emergency response training in the ambulatory setting is to provide rapid and effective stabilization of patients. Clinical data has shown that for every minute CPR and defibrillation are delayed in

cardiovascular emergencies, the survival rate of the patient is reduced 7-10% (American Academy of Ambulatory Care Nursing ([AAACN], 2003, AHA, 2002).

Therefore, this project intervention addressed the above-mentioned issues in the outpatient clinic setting. The intervention provided staff with clear and concise instructions in accordance with the AHA (2015) guidelines and the organization's protocol, procedure, and leadership expectations of staff regarding care in the event of an emergency.

Purpose Statement

The purpose of this DNP project was to improve staff engagement and performance with teambuilding activities, which include simulated mock codes. After initial implementation of intervention, the staff did show a marked improvement in staff perception of engagement, teamwork, performance, peer collaboration, communication, and increase in the delivery of care (Figure 2).

Education and training sessions did contribute to staff engagement and empowering staff to confidently and competently deliver care to patients. Fundamental elements in creating a successful workplace environment (and improved patient outcomes) are effective teamwork and staff engagement demonstrated by using mock code training (Fulmer, 2016).

Project Objectives

The objectives for this project:

1) To implement mock code exercises to improve staff engagement and performance in an outpatient clinic.
2) To evaluate employees' perception of staff engagement, competency, and teamwork prior to and following mock code exercises in an outpatient clinic.

Project Question

Will the implementation of mock code exercises specific to staff engagement and team building improve the employees' perceptions of teamwork compared, to perceptions prior to this intervention? The intervention for this work environment was based on evidenced-base practice and a literature review conducted with the following key terms: staff engagement, teamwork, team building strategies, mock code, code blue, job satisfaction, outpatient clinics, and communication.

Literature Review

Terms and key words were used to identify existing literature on this issue. Search strategies were limited to studies completed from 2010–2017. Data extraction was conducted through CINAHL, EBSCO, Med Pub, Ovid, and Cochrane database. The military library was used in this literature search and included access to more databases, such as McGraw-Hill for MyAthens, Scopus, and Up-To-Date for scholarly articles. The majority of literature was found using EBSCO and CINAHL and was published between 2010 and 2017. The search yielded a limited number of articles on the use of staff engagement and mock code training in outpatient care settings.

The literature supported a direct correlation between staff engagement and improved performance and patient outcomes. Nurses' retained knowledge and ability to perform competent skills contributes to better patient outcomes (Herbers & Heaser, 2011). Also, ongoing practical emergency training leads to a decrease in anxiety and promotes a satisfactory work performance. Future implications also focus on the use of a multidisciplinary team approach to training might be effective in providing positive benefits for engaging staff in the practice of mock codes in outpatient facilities (Barrett et al., 2007; Jacobson, 2012).

Mock Code Literature Review

Deterioration of CPR Competency

Mokhtari, Saghafinia, Motamedi, and Khademol (2012), examined the competency level of nursing staff related to CPR skills. CPR is the gold standard for addressing emergent life-threatening situations (cardiac arrest, drowning, traumatic injury, and stroke). CPR training is an essential key to providing effective emergency care. A nurse's ability to perform these skills effectively and competently is crucial to patients' survival rates. Yet, research provided evidence that healthcare staff specifically nurses CPR competency is low globally. The most basic skill to perform is chest compression which is rated the lowest in retained skill related to BLS training. The study's focus was aimed at determining the extent of CPR knowledge and skills recall overtime. The quasi-experimental study used 20 multi-choice questions to evaluate CPR knowledge retained after several training sessions conducted prior to and at two years after initial training. Study questions were validated by a panel of expert and followed the Irish Heart Association guidelines. The results from this study which consisted of 112 participants concluded more than 50% score below average. After, initial training there was a marked increase from 18% to 93% in retained knowledge and skills. The P value was < 000.1 which is statistical higher in significance and results can be generalized. The authors did not provide detailed information on the tools for assessment or the expert panel that validated questions. Yet, the study provided additional support and reinforces the need for more BLS and CPR training on a routine basis.

Scaramuzzo, Wong, Voitle, and Gordils-Perez (2014), examined the preparedness of outpatient staff in the event of a cardiopulmonary arrest in the outpatient setting need to be examined. The authors explained that outpatient staff members are not regularly exposed to

emergent life- threatening issues on a daily basis. The goal of the study was to introduce Mock Code training with the use of simulation in order to better prepare staff during a Code Blue event. The survey contained four questions assessing comfort in performing basic life support (BLS) (e.g., compressions, airway, breathing [CAB]), automated external defibrillator (AED) operation, code cart knowledge, and emergency situation delegation. Seven sessions were conducted and 23 staff participated. During the training sessions, several factors contributed to inconsistencies in performance. The staff showed a marked improvement in performance and knowledge of the Code Blue process.

Lack of Confidence with CPR Skills

Staff reluctance to initiate CPR measures is supported in a study by Herbes and Heaser (2016), the focus was on how implementing the use of simulated mock code training and debriefing sessions could decrease anxiety levels, difficulty in remembering CPR knowledge, and fear of executing skills during medical emergencies. The major issue in this study was nursing staff had verbalized their lack of confidence and training related to performing CPR skills during code blue events. In accordance with the American Heart Association 2015 standards it is imperative CPR be started quickly and efficiently within 5-minutes order to increase the patients' survival rates. Every minute lost in any delay in initiation of CPR can results in a 7 to 10 % reduction in the survival chances. Evidence provides supports two contributing factors have been identified. The first is that there is a substantial deterioration of CPR knowledge and skills within two weeks to six months after initial training. The AHA requires BLS certification be done every two-year. These critical factors make it imperative that healthcare organizations provide refresher training regularly to maintain employees' level of ACLS/BLS competency. Mock code training provides a safe learning environment for staff to

become proficient in the use of their CPR skills. Mock code training programs have been proven to increase staff confidence and lessen hesitation with initiating CPR in a medical emergency. The study was conducted over a two-year timeframe and included two-progressive care units at Mayo clinics in Minnesota. The objective of this study was to enhance performance and increase confidence levels of nursing staff during a code blue events. Data results showed a marked improvement in confidence and competency related to CPR knowledge after initial intervention was implemented.

Inconsistent Mock Code Training

Lastly, many outpatient facilities do not provide consistent Code Blue training. In a study by Prince et al., (2014) the authors emphasized the important key elements of building code team performance and patient outcomes with the use of mock code training. The quality improvement program focused on improving team performance and confidence of team members during code blue events. The education and team restructure was done over a 3-month period. Teamwork evaluation surveys were sent electronically and focused on teamwork, CPR skills, roles, and code team positions. Participants were expected to engage in random and unannounced mock codes in various locations, shifts, and times. As in the previous study by Herbers and Heaser, training and questionnaires were based on AHA guidelines. This goal was to improve code team structure and performance as a team. Staff should demonstrate structured, efficient CPR skills and knowledge, and be effective communicators during code blue events. In comparison, to the previous study reviewed the authors only focused on nursing staff. This study used an interdisciplinary team approach to training which consisted of doctors, nurses, lab and X-ray technicians, respiratory therapist, and pastoral support.

Additionally, the authors provided several months of CPR education prior, to participating in mock code training. The data results did not show a significance statistically difference in performance related to CPR techniques (early defibrillation and chest compressions), after initiation of education and training. Yet, there was a marked improvement in staff confidence, teamwork, and communication. The results have a high probability of being correct and can be generalized. Providing staff with training and learning opportunities can also be used as an effective method to keep staff engaged in the work place.

Staff Engagement Literature Review

Strategies for Improving Staff Engagement

What are organizations doing to increase staff engagement? The study by Bringes and Brinza (2014) examined the relationship between culture, staff commitment, and staff engagement in the workplace. The authors used various projects over a three-year period to increase staff engagement and job satisfaction. The goal of the study was to improve the workplace culture and job satisfaction. The two tools used in the study were the National Database of Nursing Quality Indicators (NDNQI) for RN job satisfaction and Morehead for staff engagement. The survey questions where aimed to identify nurses' perception of the workplace strengths and deficits among staff, immediate supervisors, and administrators. All staff was highly encouraged to be a part of the performance improves teams (PIT). PIT teams were developed as a result of survey responses. Staff was informed that participation was voluntary and recruitment was done electronically. Participants received weekly reminders to complete electronic surveys at their convenience without interruption in a secure location. Participants were given anonymity. The authors indicated there was an increase in job satisfaction, engagement, and teamwork after initiatives were implemented. Some of the initiatives

implemented: serenity areas, fun activities, training, education, rewards, patient ambassadors, and a unit practice council to promote a healthy work environment. The study did not provide any statistical data on percentage of improvement for each initiative. When staff feels valued and a part of a team the work environment is happier, productive, and there is an increase in the sense of job satisfaction.

Leadership Role with Staff Engagement

In a study by Jeffs et al. (2016) the manager's role was highlighted as key in improving staff engagement and the quality of patient care. Providing opportunities for staff engagement is crucial to accommodating the increasing healthcare needs. Goal/Purpose: The overall goal of the collaborative QI intervention was to enhance competencies for staff and unit managers that participated in an interactive learning strategy. The study intervention was conducted over a nine-month period. Managers drive the change in work environment to ensure staff is provided opportunities for engagement. The authors used previous works resources to develop an interview guide, which consisted of open ended questions. A total of 47 employees participated in the study and where placed in recorded semi-structure interviews or focuses groups. All interviews and focus groups were audio recorded to ensure accuracy. As with the previous studies staff engaged improved significantly. Managers were given the tools to increase staff engagement opportunities. Funding source listed and study did not pose any conflict of interest. Results can be generalized for future studies related to manager lead staff engagement.

Saul-Carasco, Kim, and Kim (2015) examined how leadership influences staff engagement by conducting an in-depth literature review for relevant articles starting in 2013. The authors summarized and synthesized 20 out of 81 articles. The authors provided a brief summary of each article decided on for this study and appropriate citations to substantiate. The results

confirm that transformational leadership does have a positive impact on staff engagement and organizational outcomes. The UWES tool was mentioned and is a validate tool to measure engagement but was not used for this study. The multi-approach used comprised the external validity and finding could not be generalized. Each element was examined individually. Recommendations to for future research include more empirical research and frameworks used to synthesize findings need more testing. Additionally, more empirical research is needed to examine how leadership and leadership styles influences staff engagement.

Workplace Culture and Staff Engagement

Tillott, Walsh, and Moxham (2013) discuss several terms (e.g. shared governance, role clarification, open communication, and teamwork) necessary to develop a culture of effective staff engagement successfully. The results of the study provided evidence that culture plays a major part in recruitment, retention, and staff engagement. The study examined how workplace cultures can impact staff engagement and retention. Previous literature by Ghadi et al. (2010) characterized engagement as involvement, positive interaction, and energy in the workplace. Engaged employees are beneficial to improved organizational outcomes. Engagement is regarded as an important concept for enhancing staff recruitment and retention. However, nurses' ability to maintain high levels of engagement is too often hampered by increased workload, increased overtime and other factors that negatively affect workplace culture.

What drives staff engagement and creates a positive work environment? In the study by Strumwasser and Virkstis (2015) drivers that influence staff engagement among employees and healthcare organizations were examined. Engaged nursing staff is a key component in providing quality care and improving organizational outcomes. The authors analyzed over 300,000 responses from employee and of that number at least 87,000 (1/3) were registered nurses (RN's).

The tool used was developed by the Advisory Board Survey Solutions and consisted of three sets of six-point Likert style questions. The intervention was given to 50 focus groups and 20 healthcare facilities. The results revealed that nursing staff is less engaged than other healthcare disciplines. No other additional statistical data, funding source, or obtained consent form was proved. The information from the study further supports the DNP project in that staff engagement is needed to drive practice change, improve patient care, and organizational outcomes.

Nurse Engagement and Job Satisfaction

Lastly, in a study by Dempsey and Reilly (2016) the focus was on nurse engagement and the contributing factors for success. The concept of nurse engagement is often used to describe nurses' commitment to and satisfaction with their jobs. Additional considerations include nurses' level of commitment to the organization that employs them, and their commitment to the nursing profession itself (p. 4). Nurse engagement correlates directly with crucial safety of patients, patient outcomes from their experiences, and engagement of nursing staff are essential to understanding the current situation of decreased staff engagement. The authors explained, "Such insight is integral to the profession's sustainability of strategies to improve healthcare delivery outcomes across the continuum of care" (p. 2). Results concluded that further research is needed to find ways to improve engagement, staffing, and staff work hours to decrease low retention rates. Also, the intervention used several methods such as relaxing room as a way to reduce stress and worker burnout within the organization.

Tillott, Walsh, and Moxham (2013), study examined workplace culture and encouraging engagement to improve retention. Engagement can be characterized by energy, involvement and positive interaction in the workplace, and researchers have found that engaged employees help

organizations perform better. Engagement is regarded as an important concept for enhancing staff recruitment and retention. However, nurses' ability to maintain high levels of engagement is too often hampered by increased workload, increased overtime and other factors that negatively affect workplace culture (Ghadi et al., 2010).

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Summary of Literature

Specific literature searches yielded several studies that stressed the importance of staff engagement and performance as a team. In addition, relevant data supported the need for frequent and consistent mock code training and with practice of high-quality CPR.as a team. Engaging staff, leadership roles in engaging staff, and teamwork were major themes found throughout this search for literature to support this project. Again, as emphasized evidence has shown a direct correlation between improving staff engagement, skills such as BLS, communication, and collaboration among staff can improved patient care. Furthermore, the literature addressed the importance of leadership in creating a culture of engaged staff and promoting a positive work environment. Disengaged leadership can negatively impact staff engagement, productivity, and performance.

Research has not fully addressed staff preparedness in outpatient clinics in the event of an emergency; but it has addressed this issue in acute care facilities. There is ongoing support for the training that directly affects patient care, clinical practice, and staff confidence during Code Blue situations (The Joint Commission, 2007).

Theoretical Model and Nursing Theory

A theoretical framework provided a structure and foundation to support the process of applying evidence to practice in this practice change project. Bandura's (1977) Social Learning Theory, provided insight on how individuals learn and succeed in a group when approaching specific goals and tasks. Individuals can learn from each other through observation, imitation, and modeling behavior. This DNP student implemented an intervention that engaged the staff to approach teambuilding activities as a group. The intervention also applied the Self-efficacy theory which originated from the Social Cognitive theory by Bandura in 1994. Self-efficacy is defined as the belief that one can execute needed steps to achieve a goal and speaks to the premise of this particular project (Clinical Simulation in Nursing, 2013).

The essence of the self-efficacy is how one's belief, confidence, approach, and success of effectively completing a task or goal. The terms self-confidence, confidence, and self-efficacy are frequently used interchangeably in this theory. Indeed, researchers routinely demonstrate health professions learners' inabilities to perform psychomotor and/or higher order cognitive skills even though learners are very confident that they are performing well. Staff engagement and teamwork building specific to mock codes, the staff foundation was based on the Bandura's theory that strategies did lead to validated competency and self-efficacy. This theory critically analyzed the principles, which are based on observational learning and modeling. Bandura's Self-Efficacy theory guided the mock code evaluation for this project. The focus was on the components of processes that evaluated, observed behaviors, reinforcement of behaviors such as attention, retention, motor reproduction, and motivation (Clinical Simulation in Nursing, 2013). Self-efficacy is a predictor of individual behavior in adverse situations, including learning how to

implement new clinical nursing skills (Oether-Black, Kreye, Underwood, Price, & DeMetro, 2014).

The process of this project is based on the Clinical Learning Improvement Program Staff Engagement (CLIPSE) Model (O'Neill, 2013). The CLIPSE Model focuses on stages of change in the work environment. The change or movement stage involves a process of change in thoughts, feelings, and behavior. Continuous performance improvement fosters the refinement of knowledge, skills, and clinical decision-making processes to enhance individual competencies and enterprise capabilities. Using peer feedback to promote engagement and patient safety reduces the possibility of errors and highlights the human factor in the delivery of patient care. Critical gaps in knowledge of practice can lead to medical errors in care variability (Nursing World, 2017).

Also, the CLIPSE model allowed for a new paradigm that incorporates best practice information, care standardization, professional accountability and staff engagement. The process improvement model uses four key concepts: Staff engagement; targeted clinical learning; non-punitive peer review; and real-time process observation for continuous daily improvements (Nursing Standard, 2017).

Description of Project Plan

The processes of this practice change project were based on mixed methodology data gathered from both pre-and-post questionnaires. These questionnaires are elements of the intervention that addressed staff engagement, performance, and teamwork incorporated in the mock code exercises. A base line mock code was conducted to assess staff education and training needs. The data was collected, analyzed, and a correlation was done between pre-engagement

questionnaires. The post-mock code evaluation questionnaires were analyzed separately with a non-parametric paired t-tests.

The project consisted of marketing, recruiting staff, running a pre-and post-mock code exercises, review BLS video, and debriefing sessions. Clinic Training Champions (CTC) are staff assigned, to assist with sustainment of staff engagement activities by the clinic manager. CTC's were also given instructions on how to evaluate a mock code training provided by the project lead. Additionally, the clinic staff watched the American Heart Association (AHA) video during a time that did not interfere with patient care. The staff was informed that the AHA video information was strictly intended for review and this project intervention and not for certification. The AHA permits the review of BLS guidelines on the website. The project lead did not reproduce, alter, or teach any sections of the AHA guidelines without written approval.

After, the staff viewed the current version of the BLS video, the project lead engaged staff in interactive mock code exercises to, include hands-on demonstration of chest compressions and AED operation in various locations of clinic. The staff used equipment owned by the project lead during this project intervention to conduct training.

Neither TJC nor the AHA mandate how, when, or who teaches how to conduct a mock code training outpatient setting. The CTC's and clinic leadership can facilitate and organize staff training which can be done weekly, quarterly, or monthly. Training schedule is at the discretion of CTC and should be guided by clinic and staff needs.

This team building activity mirrored an interdisciplinary approach to practicing CPR skills and provided opportunities to assess the learning environment (Prince, Hines, Po- Huang, & Heegeman, 2014). Project inclusions: The clinical staff agreement to participate in the mock

code exercises, held BLS certification approved by the American Heart Association; were employed at this specific location; and did not participated in any mock code training or code blue event within the last six-months. Also, participants were at least 18 years of age and each were physically able to perform chest compressions. Exclusion criteria: Included clinical staff with expired BLS card, inability to conduct CPR, and staff that did not review the video.

Non-clinical personnel watched the AHA video for hands-only CPR. For the purpose of this project non-certified staff were responsible for support, such as calling 9-1-1, gathering patient's chart and equipment, taking care of children, and crowd control. The rationale for this action ensured non-clinical staff did not perform BLS measures without the proper training and certification. Clinical staff did follow the correct steps, for AHA guidelines nd steps. The total number of anticipated clinical staff eligible to participate in this project was 30. Yet, due to staff limitations and clinic staff timeframe availability only 20 staff participated in the project intervention.

Pre-and post-engagement and mock code questionnaires were developed by the project lead and a mix method methodology to gather data needed for analysis. The questionnaires are explicitly tied to this project's question, objectives, and activities. The Delphi technique offered guidance on how to select the panel of the seven subject matter experts (SME's) chosen for this project (Meskell, P., Murphy, Shaw & Casey, 2014). Each SME was given a copy of the project objectives, goals, intervention, and project question. Each SME was instructed on how to review and rate each question in questionnaires as *relevant or not relevant* to project or content validity.

The SME panel consisted of three-clinical nursing research staff, three-mastered-prepared nurse educators, and one-vocational nurse program director that is also a BLS instructor; all agreed the questions are relevant to project objectives. The mock code evaluation forms reflected

the emergency equipment used specifically in this outpatient clinic. Furthermore, construction of mock code questionnaires was based on preliminary data on staff engagement and literature searches prior to conducting this project.

In accordance to the Belmont Report (HHS, 1979), staff participation is highly encouraged but not mandatory. All staff agreed to participate and engaged in weekly mock codes exercises that conducted over a two-week period. The mock code activities were 30 minutes in length. Information retrieved from evaluation questions and observation were used for debriefing sessions. The debriefing sessions were led by the project lead and provided constructive feedback for staff on their performance and teamwork. Also, the debriefing sessions provided staff with an opportunity to reflect and discuss their perception of the training (Streeton et al., 2016). Information retrieved from evaluation questions and observation were used for debriefing sessions.

Methods

The project lead collaborated with a statistician to run non-parametric Chi-squared and paired *t-tests* guided by the Statistical Package for Social Science (SPSS) 5th edition of the survival manual by Pallant (2013). The Chi-squared test examined the correlation between pre- and post-questionnaires responses between group OBS1 and OBS 2 on staff engagement, performance, and teamwork. The pre-engagement questionnaire focused on the employees' perception of how engaged the staff is as a team (Appendix B). The mock code evaluation form documented the date, time, response to code, performance, credentials, engagement, and validated that training was conducted. The post-engagement and mock code questionnaires focused on the employees' perception of whether staff engagement and teamwork improved after intervention (Appendix D).

Population of Interest and Stakeholders

The buy-in of clinic leadership is imperative to the success of implementing and sustaining the project intervention (Moran, Burson, and Conrad, 2014). Both the clinic owners and manager expressed a desired to continue this type of training for staff engagement. The population of interest for this project were clinical and non-clinical staff members employed at a physician owned outpatient OB/GYN clinic located in the Southwest United States.

The stakeholders consisted of four-OB/GYN physicians and two-nurse practitioners, three-registered nurses, four-license vocational nurses, seven-medical assistants, and two-lab technicians. Non-clinical staff consists of four-medical records clerks, three-front desk staff, two-billing and coding staff, and one-office manager. Services provided for patients range from pre-pregnancy, maternal, and post menstrual stages and ethnicity of patients is predominantly African-American and Hispanic. Socioeconomic levels of patients vary from government funding assistance to private pay and education from high-school to post-graduate levels.

Recruitment Methods

Recruitment of participants for this project was conducted at a small Women's Health clinic in South Texas. Participants were recruited via face-to-face invitations or e-mails. Also, flyers advertising this practice change project were posted at key staff areas of the clinic. The evaluator met with clinic staff to provide information on project requirements, objectives, and goals prior to implementing the project. During this time, the clinic manager was asked to assign staff members to be the clinic training champions (CTC) to continue and sustain future training. One of the post mock code questions was, "Would you be interested in becoming a clinic training champions?" More than 30% of staff responded "yes" to this question (see Appendix H). CTCs' are not required to be BLS instructors but, were encouraged to obtain BLS certification

and be knowledgeable on AHA (2015) standards, to effectively evaluate staff skills during mock code exercises. The clinic manager did assign the CTC's for clinic. The manager had the best personal knowledge of which staff members best suited this responsibility. The CTC's provide staff with low-cost and effective opportunities, to obtain information and continue staff engagement, sustain staff training, and reinforce knowledge and skills (Yarber et al., 2015). Implementing creative ways to maintain staff preparedness and engagement are crucial to the goal of practice change, improving teamwork, and organizational outcomes. The use of simulated mock codes mimic real-life cardiac arrest events and provide a non-threatening learning environment.

Ethics and Human Subject Protection

Confidentiality of participants was maintained and no personal identifying criteria was collected. The randomly coded participants information was numbered. The project lead did not request any type of funding/grant for this project. The project was submitted for approval from the Touro Nevada University Institutional Review Board (IRB); and per the IRB guidelines, the project met "Exempt Status" due to, the activity did not pose no more than a minimal risk to the participants. The clinic staff voluntarily participated in this DNP project. Participants did not receive any compensation or incentives for their participation in the project, regardless of whether reviewing the project information or participating in the project. This process improvement proposal was vetted through the LTC Kristal C. Melvin, Ph.D., NP-C Chief, of the Center for Nursing Science and Clinical Inquiry as well as the Regional Consultant Nursing Science (CNSRC) for review, guidance, and feedback throughout the process.

Organizational Analysis

The small outpatient women's health clinic (WHC) in the South-Central USA is physician owned facility and provides services to female patients from adolescents to late adults. The patient population this clinic services is predominantly African-American and Hispanic. The patients' seen daily can be around 30-45 each week. The clinic is centrally located between several major hospitals and within one to two miles from the nearest emergency rooms. The staff ages range from early 20's to late 50's, various educational backgrounds, credentials, and years of experience. The participants (N=20) were predominately Hispanic and female.

Questionnaires/Implementation

The three-questionnaires were developed specifically for the needs of this organization and the clinical staff to gather the data. The pre-engagement questionnaire used an interval level of measurement with answers ranging from 1 to 5. The use of the "Likert-style" scale provided the opinion and reflections of participants and included an amount of declarative statements that are numbered after each statement (Grove, Burns, and Grays, 2013). Questions evaluated staff perception of staff engagement, communication, and teamwork in the workplace. The Likert-style pre-engagement assessment questionnaire contained 10-questions, both open and closed-ended questions and space for recommendations to, improve staff engagement and teambuilding. The pre-engagement assessment questionnaire consisted of 4-questions on perception of organizations support; 2-questions on communications, 2-questions on engagement, and 2-on teamwork (Appendix B).

Post-engagement questionnaires also followed the nominal level of measurement with responses 1=NO and 2=Yes. The Post-engagement questionnaire questions consist of 2-questions teambuilding after exercises, 1-teamwork, 1-job happiness, and 1-comradery

(Appendix D). Post-mock code assessment questionnaire focused on employees BLS competency, confidence, and performance which consisted of 1-question on confidence, 2-preparedeness, 1-performance, and 1-for presenter. Additional post-mock code assessment questions included closed-ended such as credentials (Physician, RN, LVN, MA's, or other), BLS certification, and staff interested in becoming CTC's (see Appendix D). The findings of the project were based on the comparison with conducting pre-and post-mock code exercises before and after reviewing the BLS video. Mock code evaluation forms were completed and secured by project lead at the end of intervention. The questionnaires were placed in a large sealed envelope and store in a secured locked office desk by the project lead. The envelopes were not opened again, until the data was analyzed by statistician and project lead.

Data Collection

A correlation design and goal of this project was to gather from 28 pre-and post-questionnaires data on whether perception of staff engagement, teamwork, and performance improved and/or increased after intervention was implemented in an OB outpatient clinic setting. The pre-and post-engagement questionnaires included data collected over a two-week period starting in August 2017. The employees (n=20) that volunteered were randomly assigned to two groups of five by clinic manager. Each group was given a brief scenario and instructed to initiate BLS measures. The unannounced mock code exercises were conducted weekly in different locations within the clinic in order to add to realism of exercises. All questionnaires developed by the DNP student were specific for this clinic, project question and objectives. The approved questionnaires were pilot tested on fellow-nurse educators and content validity was validated by a panel of seven-subject matter experts (SME)'s using an evaluation tool created by DNP student (Appendix H). The overall reliability of questionnaires was measured using the ***test-re-test***

reliability. This test is used to measure such items as paper and pencil scales with the assumption the items being measured remain the same (Groves et al., 2013).

The total number of participants (n=20) engaged in the DNP project intervention. The project lead collected primary data for comparison was collected from the pre-questionnaires and post-intervention was obtained from post-engagement/mock code questionnaires both group OBS1 and OBS 2. The questionnaires data was input into a Microsoft Excel electronic spreadsheet with numeric responses ranging from 1-5(*1=strongly disagree to 5= strongly agree*), and numeric responses 1 and 2 (*1=NO and 2= YES*). Also, qualitative data was gather from verbal and written responses in the comment section of questionnaires. The post-engagement assessment questions focused on staff perception of increased engagement and teamwork after intervention. Post-mock code assessment questionnaire focused on employees BLS competency, confidence, and performance. The post-mock code assessment provided data on participants credentials, BLS certification and CTC responses. The questionnaires yielded data of staff perception of overall satisfaction with the quality of intervention (figure 4).

Each staff was given time to read and sign informed consents prior to starting exercises. Signed consent forms were in a large envelope then sealed and placed in a locked container. While staff completed pre-and post-assessment questionnaires the project lead waited outside the conference room. Participants were asked to place papers face down in a single pile on the table prior to, leaving the conference room. The questionnaires were placed in large brown envelopes labeled pre, post, and mock code. All project forms were secured prior to leaving the clinic. Data was stored in a secure and locked office type setting to, ensure data was not tampered with nor any breach of confidentiality or autonomy during the data collection process. Statistician and project lead meet to analyze data and he created the charts and tables for this project. Additional,

meetings were held to ensure the project lead had a good understanding of data results and how data related to project question and objectives.

Intervention/Project Timeline

This quality improvement project was conducted weekly for a period of two weeks.

The following outline guided this intervention project:

Weeks 1-2

Weeks 1: Recruited staff engaged in both the mock code exercises and debriefing sessions. Staff signed a consent forms in order to participate in this DNP project during this time. (Appendix A) Also, the clinic manager assigned staff to be clinic teambuilding champions. The staff was provided with the DNP project purpose, objectives, and goals prior to beginning this project. The project intervention had a 100% engagement rate from the staff that participated. The first session started with staff completing pre-engagement questionnaires and participating in mock code exercises. Two sessions were conducted during this time in ordered for project lead to observe and document performance. The debriefing sessions started immediately after completion of mock code exercises for each session. The staff then completed another mock code exercise to compare engagement, performance, and teamwork to baseline exercise.

Furthermore, the selected CTC's were also asked to watch PowerPoint presentation on how to conduct a mock code evaluation. The assigned CTC's from Group 1 demonstrated an understanding of evaluating and facilitating a mock code training exercise without complication. In order to continue to engage staff and increase staff participation in clinic training activities (PPT) (Appendix F).

Weeks 2-3

The project lead administered and evaluated group 2 mock code exercises sessions. The staff again was expected to collectively execute CPR without instruction or prompting from project lead. Again, staff was randomly selected and assigned to groups of five. Group 2 staff also conducted mock code exercises twice in order to compare baseline performance. The CTC's selected from this group were also asked to review the mock code evaluation PPT. Exercises were approximately 30-minutes including 10-minute debriefing sessions. The debriefing method has been used a tool for experiential learning and commonly used in the military (Tannenbaum & Cerasoli, 2013). Lastly, questionnaires were collected and placed in a sealed and secure desk.

Data Analysis/Results

The correlational analysis was used for this project tested the assumptions of the variables (Pallant, 2013). The data analyzed from the questionnaires using non-parametric tests with the electronic version of SPSS 24.0 statistical analysis software system. The staff was divided into two groups and each participant was given a number identification from 1-10 for this project. Group 1 was named as OBS1 and Group 2 was OBS2. The staff groups were named due to, the majority of patients seen are obstetric patients. The following non-parametric tests data results were found significant, and data results answered the project question efficiently.

Demographics

The simulated mock code exercises were implemented in a small OB clinic with a staff. The anticipated staff to participate was 30 but the final number was 20. The staff that participated were predominately female, over 98% Hispanic, 1% African-American, 1% Caucasian, ages from early 20's to late 50's, various credentials, and educational backgrounds.

All clinical staff was BLS certified. This demographic data had no statistically impact on analysis results.

OBS1: Pre-test

Six separate Pearson Chi-square tests for association were conducted between group (clinical vs. non-clinical) and six variables that assessed staff engagement and teamwork.

A chi-square goodness-of-fit statistical test indicated no significant difference found in association between group 1 and questions 1, 2, 3, 5, and 6. Question 1 (part of a team) with a *p value*- .264. Question 2 (organization mission) with a *p*=.264. Question 3 (asking for help) had a *p*=.582. Question 5 (staff communication) with a *p*=.060. Question 6 (teambuilding activities) with a *p* = 303. To correct for cell counts less than 5, a Fisher's Exact test was further conducted. Statistically significance association ranges from .060 to .582 which are greater than standard *p*. <050. (Pallant, 2013) (see figure 2 below).

Figure 2

Variable	***Chi-square***	***DF***	***P***	***Fisher's Test***
1	1.250	1	.264	.582
3	1.250	1	.264	.582
5	3.529	1	.060	.211
6	2.400	1	.121	.303

2 Variables with constants were omitted

The chi-square tests were run and provided a positive correlation between mock code exercises, increased staff engagement, and BLS recall among in an outpatient clinic. A positive collaboration was noted in the post-intervention responses most evidenced by 90-100% in learning knowledge scores. Descriptive statistics were conducted to illustrate the change in gradual learning from baseline to post-intervention across five questions measuring staff engagement and teamwork.

OBS2: Post-test

Five separate Pearson Chi-square tests for association were conducted between groups, (clinical vs. non-clinical) and five variables that assessed staff engagement and teamwork. Three variables were omitted due both groups responses were the same. (See figure 3 below). Group 1 (OB 1) majority consisted of non-clinical staff. The nursing staff of 1 RN's, 1 LVN's, and 2 MA's took charge of the mock code exercise while non-clinical staff of 3-billing and coding staff, 2-medical records, and 1-office assistant gathered equipment and called 9-1-1. Whereas, group 2 (OBS) consisted of 1- RN, 6-MA's, 1-LVN, and 1-front desk staff which also functioned as a MA, and 1-other.

There was not a statistically significant association between group 2 (OBS) and questions 3 and 5. Question 3 focused on (increased comradery), $\chi 2(1) = 1.053$, $p = .305$. Question 5 inquired on whether staff felt happier after intervention (are you happier at work) with a p= .305. To correct for cell counts less than 5, a Fisher's Exact test was further conducted which yielded a p value of 1.000. Which concluded that there was not a significance differences in the responses between group 1 and group 2. Both groups agreed that staff engagement and teamwork increased after the intervention (see figure 5 below).

Variable	***Chi-square***	***DF***	***P***	***Fisher's Test***
3	1.053	1	.305	1.000
5	1.053	1	.305	1.000

3 variables omitted (questions 1, 2, & 4) there was not a difference is staff answers

Secondly, descriptive statistics were conducted to illustrate the change in gradual learning from baseline to post-intervention across five questions measuring BLS performance, engagement, and teamwork. Group 2 consisted of mainly clinical staff (96% of MA's, 2% LVN's, and 1% other with a 100% in participation. The participants responses data demonstrated

the differences in responses between clinic groups in relationship to being clinical or non-clinical staff. The clinical staff produced slightly higher scores than the non-clinical staff. The significance difference scores ranged from -10% to 40%. The assumption would be that the BLS certified clinical group 2 would have significantly higher responses than group 1 (figure 1).

Five questions were asked to assess overall satisfaction of the intervention. Descriptive statistics were used to underscore both groups' responses as seen in the table (figure 4).

Data revealed staff overall were satisfied with the project intervention and their engagement and collaboration during mock code exercises. Also, staff verbalized their feelings on their improved performance and teamwork after second sessions. Data from questionnaires yielded no difference in staff responses in overall satisfaction with intervention, post-engagement, and post-intervention increased in teamwork and performance. However, there was an increase in staff learning and performance as evidenced by post-mock code responses among both groups.

Interview Data

Themes from Interview Data

In analyzing interview data, three themes emerged. These themes were: lack of opportunities for staff engagement, lack of consistent BLS training, and the need to improved teamwork and staff engagement. Examples of employee comments are as followed:

a. "The mock code exercises were educational and fun".

b. "We need more opportunities to do staff engagement activities".

c. "I can honestly say I feel more comfortable initiating CPR than before the exercise".

d. "I wish we could do more training and education".

e. "I feel we work better as a team during the second mock code exercise".

f. "I do feel we have improved our staff interaction and teamwork since participating in the project".

g. "This project intervention was a win/win for the staff, owners, and the DNP student".

The mix methodology data which was both verbal and written, revealed a 100% response in scores among all clinic staff. The verbal feedback provided support that staff desired to increase staff engagement opportunities, build teamwork, and improve BLS confidence in this OB clinic. Direct observation provided evidence that both groups on two different dates, times, and locations in the clinic showed a marked increase in staff engagement, collaboration, and BLS knowledge and skill recall.

In a conversation, with two of the clinic owners' statements included were:

> OB physician 1: "You have given us a lot to think about in relationship to giving the staff more opportunities for staff engagement, and especially being prepared if one of our patients or family members goes into cardiac arrest. We definitely feel more confident our staff has learned and will be better prepared" (personal communication, August 24, 2017).
>
> OB physician 2: We would like to continue this type of training and engaging our staff. Would you return after you are done with your program and assist us in creating an emergency plan and training for our clinic?" (personal communication, August 31, 2017)

All staff to include clinic owners' comments obtained through personal communication, re-enforced that this target group has gained a better knowledge and understanding of the importance of this type of intervention. The goal is to someday make this type of staff engagement and BLS training a standard for all outpatient clinics. Furthermore, a greater

understanding of how this type of improved engagement will ultimately continue to, increase staff satisfaction and commitment to delivering quality patient care (Sabatino, 2016).

Lastly, the Chi-square tests explored the overall relationship between questionnaires responses from group 1 and group 2 related to staff engagement and teamwork. The results of the Sig. value (2-sided) is higher than P value > .05 which is not considered statistically significant (Pallant, 2013). For the purposes of this project the data did not revealed a statistical difference between group responses in the pre-engagement and post-engagement questionnaires. However, quantitative data did show a marked improvement in both groups in gradual BLS knowledge, performance, recall, and staff engagement (figure 1).

The Asymp Sig. revealed a *P* value greater than .05 with a 95% confidence level (based on the number of responses). Pre-test scores ranged from 60-100% and post test scores ranged from 90-100%. Post-test-intervention scores improved in comparison to the pre-intervention scores 60% to over 90%. Furthermore, the overall, qualitative data supported that both clinical and non-clinical staff agreed the use of mock code exercises did increase staff engagement and teamwork in an outpatient setting (figure 1).

The project question was answered from results analyzed over a two-week timeframe. The project objectives were met evidenced with an over 95% response score in the staff gradual learning chart. The chart did show a marked increase in staff learning from 63%.

Discussion

This project intervention used simulated mock code exercises to increase staff engagement and BLS skills performance in an outpatient clinic setting. The pre-and post-questionnaires were valid, reliable, and utilized to obtain the needed statistical information to support this DNP project intervention. The statistical data from this project provided evidence

that staff engagement and performance did improve in both groups OBS1 and OBS 2 per responses scores from post-engagement question 3 & 5 (figure 5). Comparison between groups and their performance concluded staff performed better during the second set of mock code exercises. Initial groups mock code exercises demonstrated a decreased staff engagement, staff being unprepared, incorrect AHA CPR steps, slow in their reactions times, lacked communication, and ineffective collaboration skills. Observation of staff performance also revealed staff lack of confidence and competence in initiating BLS measures. Also, the two groups participated in debriefing sessions for each week. During these debriefing sessions staff verbalized their perceptions on the strengths and weaknesses in engagement and performance during exercises. The information from continued and repeated mock code practice as a team, will assist the staff in increasing their competency levels with mock code exercises, AHA steps, and improved practices in the event of emergency events (Herbers & Heaser, 2016).

The mock code exercises for this work environment were created based on previous evidenced-based data, preliminary discussions with clinic manager, literature searches, and reviews conducted for a period of 12-months. Literature reviews provided data that supported the direct relationship between increased staff engagement, leadership buy-in, and improved patient care (Prince et al., 2014).

Barriers found during the review of literature were that 10 out of 30 studies reviewed focused on inpatient staff, acute care, or emergency type clinics. Also, searches yielded limited data on staff engagement in specialty outpatient clinics and mock code exercises.

Despite the barriers this project data revealed the clinic staff had a strong desire to be more competent in their BLS skills and recall. Also, the data from this project also revealed there was not a statistical significance difference pre-engagement and post-engagement responses

between Group OBS1 and Group OBS 2. A major contributing factor may have been the small participants size. A similar study by Scaramuzzo, Wong, Voitle, and Gordils-Perez (2014), examined strategies to improve staff comfort, competency and emergency readiness in the event of a cardia arrest in an outpatient setting. The study also had a small number of participants in a specialty cancer infusion outpatient clinic. A SWOT analysis used revealed a 99% in the overall improvement after implementing additional mock code training.

Although, this project focused on improving staff engagement with mock code exercises, the ultimate outcome of engaging staff is to reduce harm and improve patient care. Emergency training is crucial in saving minutes during a cardiac arrest in an outpatient clinic. Again, re-emphasizing the need for staff training on a consistent and routine schedule is essential to improve the speed of delivery of care. A staff that trains as a team consistently will execute CPR skills more effectively (Prince et. Al., 2014).

The data results provided evidence that even a brief review of BLS knowledge and skills did improve their BLS recall and performance (figure 1). Also, essential to the success of this project was the clinic manager secured a time when staff could watch the BLS video. Two mock code sessions were held on different dates and times where each group participated in a pre- and post-mock code exercises. The first mock code session was held in a large room with 10 staff of various years of experience and credentials and divided into groups of five. While one group of five participated in the exercises, the other group waited their turn to participate. OBS2 group were given the same scenario and executed the BLS measures without instruction from the project lead.

During week 2 the second mock code exercises were held in an empty patient exam room. Also, the group OBS2 of 10 which was predominately medical assistants were divided

into groups of five. Group 2 did perform slight better than Group 1 which consisted of less clinical staff. Again, each group was given a brief scenario and expected to execute BLS steps. The mock code exercises were structured as the previous sessions. Each group was asked to complete the pre-engagement and post mock code questionnaires.

Furthermore, qualitative data from observation and verbal feedback provided positive re-enforced that this type of training is not only needed but desired by the majority of staff in this outpatient setting. Quantitative data provided evidence in the post mock code results that staff did have an increase in their confidence to initiate BLS measures among staff members.

Additionally, staff also vocalized their desire to continue this type of engagement activities and BLS refresher training. In continuing engagement activities staff must also buy-in to this change improvement process as well as leadership to be successful. The project data revealed that more than 30% of staff both clinical and non-clinical staff responded “Yes” to becoming CTC’s for the clinic (figure 2).

Significance and Implications for Nursing

The project is significant to nursing practice in that it provided both quantitative and qualitative evidence this type of training is necessary to, improve staff engagement and performance in outpatient setting. It is essential for outpatient nursing staff to be prepared in the event of an emergency. The project results can be used as an evidenced-base intervention to guide training of clinic nursing staff mock code exercises. Consistent training is one method of increasing staff engagement in patient care, clinical skills, and performance (Prince et al., 2014). Nursing leaders are essential in creating opportunities to empower and engage staff in all healthcare settings. Previous and current studies have shown a staff that is vested and committed will provide a higher level of quality patient care (Prince et.al., 2014).

This type of training may be useful in nursing program to incorporate the use of mock code training into nursing curricula. According to Oermann, Kardong-Edgren, Odom-Maryon, Hallmark, Hurd, Rogers and ... Smart (2011), "Guided or self-directed practice enables learners to continue to develop their proficiency in the skill and eventually perform it automatically without thinking about each step and how to carry it out (p. 311). There is a high probability the graduate nurse will be involved in a Code Blue event in his/her work environment. Nursing students are taught how to care for critically ill patients but may not be adequately prepared to participate Code Blue events. Due to, lack of exposure to cardiac arrests incidents and education training further evaluation is needed, to assess the effectiveness of this type of training with nursing students. Many studies have assessed and documented the need for CPR training but there is limited data on practice and retention of skills in a nursing program (Oermann et al., 2011).

As nursing leaders, it is important to address these behaviors to effectively implement a change in clinical practices. The project intervention provided evidence that the use of mock code exercises can improve staff engagement and has opened the door for further investigation to close the gap in knowledge. Healthcare organization and leadership must be dedicated to improving patient and staff outcomes and creating new ways (e.g. Facebook pages, Kudos electronic or poster board, recognition certificates, monetary awards) to keep staff engaged (Gallup, 2017). When using social media platforms always be cognizant of the information being presented on this type of platforms. Ensure the information placed on social media is accurate, correct, legally appropriate, and should be monitored regularly.

In addition, the use of mock code exercises is a low-cost method such as in this DNP project, to keep staff prepared and engaged. Our society is in the age of new technology and

advancement in equipment such as voice prompting AED's, defibrillators, and manikins can be very useful in staff education and training. Simulated training can be a low-cost way to improve staff training (Spauding & Ohsfeldt, 2014). Code Blue events required staff to be focused, organized, and demonstrate effective collaboration and deliver effective high-quality CPR and rapid defibrillation to increase patients' survival (Prince et. Al., 2014).

Limitations

Some obstacles found during the implementing of the DNP project were related to a small number of staff did not participate due, to workload shifting and time for administrative review being eliminated. During the time the project was implemented, as was typical. This was a direct result of schedules being shifted to accommodate vacations, and this shift two clinic doctors decided to see patients during staff administrative time. Therefore, a small percentage of the clinical staff had to assist with patient care.

The number of participants and locations for this DNP project were also limited. The project was offered at one clinic in South Texas. This clinic sees OB/GYN patients on an outpatient basis, and there are between 25- 35 staff who operate this clinic. In the future, it is recommended that additional types of sites and more clinics are included so that the findings can be considered on a larger scale.

It wasn't noted at the clinic where the DNP Project was implemented (and evaluated) that Code Blue training is done inconsistently, and there is not an emergency preparedness program in place. Even though this may not be a typical site where CPR is needed, one is never sure when an arrest may occur. In addition to those being seen at the clinic, there are also those who accompany them. The clinic staff would not be aware of these individual's cardiac history. For these reasons, it is important that staff be aware of what is needed if a Code Blue event would

occur. Inconsistency of this emergency training may be attributed to the clinic not owning CPR training equipment. However, it is important that the impact of such for best practices was brought forth to the clinic administration. Thus, in addition to the teambuilding outcomes noted in this project, some insight regarding Code Blue preparedness was also offered.

Lastly, non-clinical staff were confined to specific roles while participating in mock code exercises due to their lack of BLS certification. BLS certification is not mandatory for non-clinical staff. However, non-clinical staff did participate in the project by assisting clinical staff in roles such as runners for equipment, calling 9-1-1, counting chest compressions, and directing EMS to exact location (Scaramuzzo et al., 2014). Because of the number of clinical staff who are BLS certified, this is not a necessary requirement for non-clinical staff. However, some non-clinical staff may want to pursue their certification for their own knowledge and BLS skills confidence. If the clinic buys CPR training equipment, training non-clinical staff to be BLS certified could be another benefit for this clinic

Future Sustainability/Dissemination

To assure that the plans for long-term and effective staff engagement endures over time and the changes in clinical practice, an on-going training process must be put into place. A single training session in isolation may assist those that attend that one event, but will not satisfy the needs of long-term consistency in staff engagement and performance. The DNP student, as project lead, implemented the TTT method to train clinic champions to continue staff training (see figure 2). The train the trainer (TTT) method has been effective in sustaining on-going training needs (Tobias, Downes, Eddens & Ruiz, 2012). After viewing the PPT on how to evaluate a mock code (see Appendix F) clinic trainers are considered capable of independently providing training and facilitating staff engagement activities. This system assures staff is

provided with future guidance on practice processes and assures the long-term use of engagement to improve outcomes needed. Also, clinic training champions facilitate opportunities for staff to complete assigned tasks according to the company's mission, policies, and procedures (Tobias et. al., 2012).

Dissemination

As a DNP-prepared nurse, it is essential to be able to share one's knowledge gained through evidenced-based practice projects. One of the best ways to share knowledge of new clinical practices and improvements in patient care is dissemination of nursing knowledge. Being able to effectively articulate the DNP project findings in order to, use effectively, and collaborate and communicate the knowledge to fellow nurses, policy makers, community leaders, and interdisciplinary colleagues. The DNP project data will be disseminated via a poster board presentation. Areas of interested, where a poster on the topic may be considered include, public local, and national nursing conferences.

In addition to, journal clubs, presenting to new nurses in various nursing residency programs, and nursing councils. Conferences that meet this criterion of interest for displaying the project would be the American Academy of Ambulatory Care Nursing Annual Conference May 2018, The San Antonio Military Health System & Universities Research Forum (SURF) June 2018, and The American Heart Association ECC Educational Conference November 2017.

The statistician provided valuable charts and graphs to assist in providing a clear picture of the project outcomes these visual disseminations' will be useful when presenting the poster board information.

Conclusion

Promoting and increasing staff engagement should be a priority for all healthcare settings and community leaders. Evidenced-based projects such as this DNP intervention provides avenues to increase staff engagement and teamwork. Staff needs to feel valued and engaged in their work environment on a consistent basis Prince et al., 2014). The role of the DNP is crucial in healthcare in order to stay current in clinical practice and continue to improve patient are. The DNP leader will drive policy change at all political levels and work effectively with community leaders (Houghton, Casal, Fortuna & Larsen, 2015). The project was successfully conducted and implement over a 12-month timeframe. Ultimately, the questionnaires data results concluded staff perception of engagement, and performance did increase with the use of mock code exercises in a OB/GYN outpatient clinic.

Bemker and Schreiner (2016) reported, "Within the context of these guidelines, the hallmark of a DNP-prepared nurse centers on the ability to take empirical evidence and provide reasonable critique and translation of this evidence to determine reliance and applicability to the practice change" (p. 142). A change in clinical practices and staff behavior can take time yet, with encourage and leadership support it can be done. When staff is engaged it will ultimately improve patient care. It is always a rewarding feeling to know that one's small idea did make a difference. To observe the increase in confidence, collaboration, and BLS skills at the completion of the DNP project is what truly being a DNP-prepared nurse encompasses. As DNP leaders, we must facilitate and guide change in clinical practices, facilitate teambuilding activities in the workplace, encourage cultural awareness, engage in nursing council activities, and work to effectively make improvements in healthcare organizations and nursing practices (Swanson & Stanton, 2013).

Lastly, since this type of training has not been limited to inpatient and/or acute care facility. The goal is to see this type of training to increase staff engagement become the standard for all local outpatient and/or specialty care facilities. Engaging in activities that build communication, collaboration, and performance are essential in staff development as a team (Day, 2014).

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Appendix A: Consent to Participation

"No Risk" Informed Consent

Consent to participate in the DNP Project **(STAFF ENGAGEMENT AND TEAMWORK USING** MOCK **CODE TEAM EXERCISES)**

You are being asked to participate in a project which will be conducted by Audrey A. Sutton, DNP Student in the DNP program in the School of Nursing at Touro University Nevada.

Purpose of Project: The purpose of the project is to implement team-building activities such as mock code team training as a way to enhance staff engagement, performance, communication, and to respond appropriately in the event of cardiopulmonary arrest in an outpatient clinic. This intervention is important due to staff engagement being important in organizational success and increasing the quality of delivery of patient care.

You will be required to review the American Heart Association's (2015) guidelines for Basic Life Saver (BLS) and will be given brief educational sessions on how to conduct a mock code. **This mock code training is not the equivalent of BLS training or re-certification.** You will also be asked to participate in team-building activities, questionnaires, and conduct a hands-on mini-mock code exercise with all participants. You will also be asked to complete a mock code evaluation and post-training questionnaire regarding the team's engagement and training.

Benefits: The benefits of training include contributing to the staff engagement, and teamwork of participants. Secondly, an increased in team performance, communication, and collaboration in the delivery of patient care during a code blue event.

Risks: There are minimal risks; risk associated with this project are no more than typically encountered during daily patient care. You may choose to withdraw or not to participate at any time.

Confidentiality: The results of this intervention project may be shared with the scientific community and may be published in a nursing journal. You will not be asked for any identifying personal information or confidential patient information. You will be asked for your credentials (e.g. RN, LVN, CNA, administrative, Physician, or MA) and years of experience. You will be asked to remove name badges or identifying personal items.

Compensation: You will **not** receive any compensation for your participation in this quality improvement project.

Contact Information. If you have any questions about this project, you may contact: Audrey A. Sutton directly at (210) 833-4560 or Email: dnp17b.audrey.sutton@nv.touro.edu

Your signature below indicates that you have read this consent to participate form, and agree to participate in the research study. You may choose not to participate in this project if that is your decision and should you decide to participate and change your mind during the process, you may withdraw at any time without any consequences.

Signature of Participant_____ Date_____

Appendix B: Staff Engagement Questionnaire

Purpose/Goals of Activity: Improve staff engagement and teamwork with various teambuilding activities to include mock code exercises in an outpatient setting.

Listed below are the activity objectives. Please rate how strongly you agree or disagree with questions/statement using the scale below:

(1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly Agree

1. Do you feel like a part of the team and satisfied with in the work environment?	1	2	3	4	5
2. The organization has clearly explained its mission, purpose, and expectations of staff	1	2	3	4	5
3. Do you feel comfortable asking your team members for help if a problem occurs in the office	1	2	3	4	5
4. As an employee I feel supported and a part of the team in your workplace	1	2	3	4	5
5. The staff communicates and collaborates well during patient care	1	2	3	4	5
6. Management has provided opportunities for staff to do teambuilding activities in the last 12 months	1	2	3	4	5
7. Do you feel teamwork can have a positive impact patient care and staff?	1	2	3	4	5
8. Would you actively engage in team-building activities that included mock code exercises?	1	2	3	4	5
9. Do you feel the staff is engaged and work well as a team currently?	1	2	3	4	5
10. Do you feel your opinion or feedback matters related to improving patient care and your work environment?					

Provide 3 recommendations to improve staff engagement in your clinic setting.

Appendix C: Mock Code Evaluation Sheet

SECTION I

1. Mock Code location_____
2. DATE: _____

3. Who many staff participated in the training? _____

4. Number of Physicians_____ Registered Nurses_____ Licensed Vocational Nurses ____Medical Assistants_____ Certified Nurse Assistant_____ Non-clinical staff_____

SECTION II

Did staff receive a report of Simulated Code Blue event? Yes or No

Mock Code exercise start time: _____ Exercise ended time: _____

CPR was initiated at what time? _____

5. Staff call 9-1-1 immediately? Yes or No

6. Staff quickly initiated BLS protocol? Yes or No

7. How long did it take for staff to get AED? _____

8. Staff demonstrate correct operation of AED equipment? Yes or No

9. AED voice prompts followed correctly? Yes or No

10. AED pads placed correctly? Yes or No

11. Staff performance correct depth and rate of chest compressions? Yes or No

12. Team roles and responsibilities clearly assigned? Yes or No

13. All staff were actively engaged in this exercise? Yes or No

14. Staff performed well as a team Yes or No

Strengths noted in staff performance_____

Deficits noted in staff performance: _____

Future Training Recommendations:

_____

_____

OVERALL EVALUATION: (circle one)

SATISFACTORY UNSATISFACTORY

Project Lead Signature: _____

Appendix D: Post Engagement Questions

Responses: 1- NO and 2= YES

1. Do you feel more engaged since participating in teambuilding activities? 1 or 2
2. Do you feel teamwork and performance has improved among staff? 1or 2
3. Has comradery increased among staff since start of project? 1 or 2
4. Did teambuilding activities increase comradery among the staff? 1 or 2
5. Do you feel communication has increased at work? 1 or 2

Post Mock Code Question

6. Did BLS refresher adequately prepare you for the mock code exercises? 1 or 2

7. Do feel your competency level related to CPR knowledge and skills has increased since participating in mock code exercises? 1 or 2

8. Do you feel you have leadership buy-in to continue this type of team training? 1 or 2

9. Did presenter for BLS refresher provide clear and concise instructions? 1 or 2

10. Do you feel the mock code exercises have increased your confidence related to initiate CPR techniques if needed? 1 or 2

Credential Information

1. Are you BLS certified? 1 or 2

2. Please circle your credentials:

NP	Physician	Other
RN	CNA	
LVN	Medical Assistant	

3. Would you be interested in becoming a Clinic Training Champion for your clinic?

1 or 2

APPENDIX E: HOW TO EVALUATE A MOCK CODE

Strive for clinical excellent in providing competent and safe patient care

PATIENTS, FAMILY MEMBERS, AND STAFF WHEN EVERY SECOND COUNTS. PRACTICE DOES NOT ALWAYS MAKE PERFECT BUT IT CAN SAVE A LIFE!!!

Every minute counts!!	1. Allow clinical staff time to review AHA 2015 standards for BLS. Provide clinical staff the opportunity to practice skills on BLS techniques. Ensure clinical staff is current with BLS certifications.
Ensure equipment is in good working condition.	2. Make time for staff to do the training. Plan training during times when least likely to interrupt patient care. 3. Gather staff and explain which teambuilding activity will be conducted (e.g. mock code, scavenger hunt, AED usage, or chest compression competition). 4. Give a brief simulated cardiac arrest scenario to staff. Provide non-clinical staff with assistive roles such as calling 9-1-1, keeping scene safe, watching out for EMS.
	5. Document staff response to mock code in order to provide constructive feedback during debriefing. 6. Mock code exercises should not last longer than 20 minutes 7. Debrief staff 8. Use feedback for future teambuilding activities, training, and education
Schedule:	Mock Code Exercises every 3-months with debriefing sessions
Various teambuilding activities within and outside of the organization. Allow time for teambuilding activities	In facility and away from work such as bowling, sports leagues, lunch and dinner gatherings. Worktime: scavenger hunts, CPR competitions, pop-quizzes related to emergency plan and BLS steps. Be creative and keep staff engaged!!!

ADDITIONAL INFORMATION

IMPLEMENT MOCK CODE TRAINING AND USE FEEDBACK FROM STAFF DEBRIEFING SESSIONS ON A QUARTERLY BASIS. ENGAGE STAFF IN TEAMBUILDING EXERCISES TO BUILD AND INCREASE TRUST, COMFORT LEVELS, COLLABORATION AND PERFORMANCE LEVEL AS A TEAM. ASSIGN A MOCK CODE CHAMPION TO MAINTAIN AND SUSTAIN TRAINING RECORD AND FACILITATE FUTURE EDUCATION AND TRAINING. Recommended that A Teambuilding Champion to continue and sustain staff engagement and teamwork activities. Frequently review AHA website for any new changes with all staff and post guidelines throughout facility

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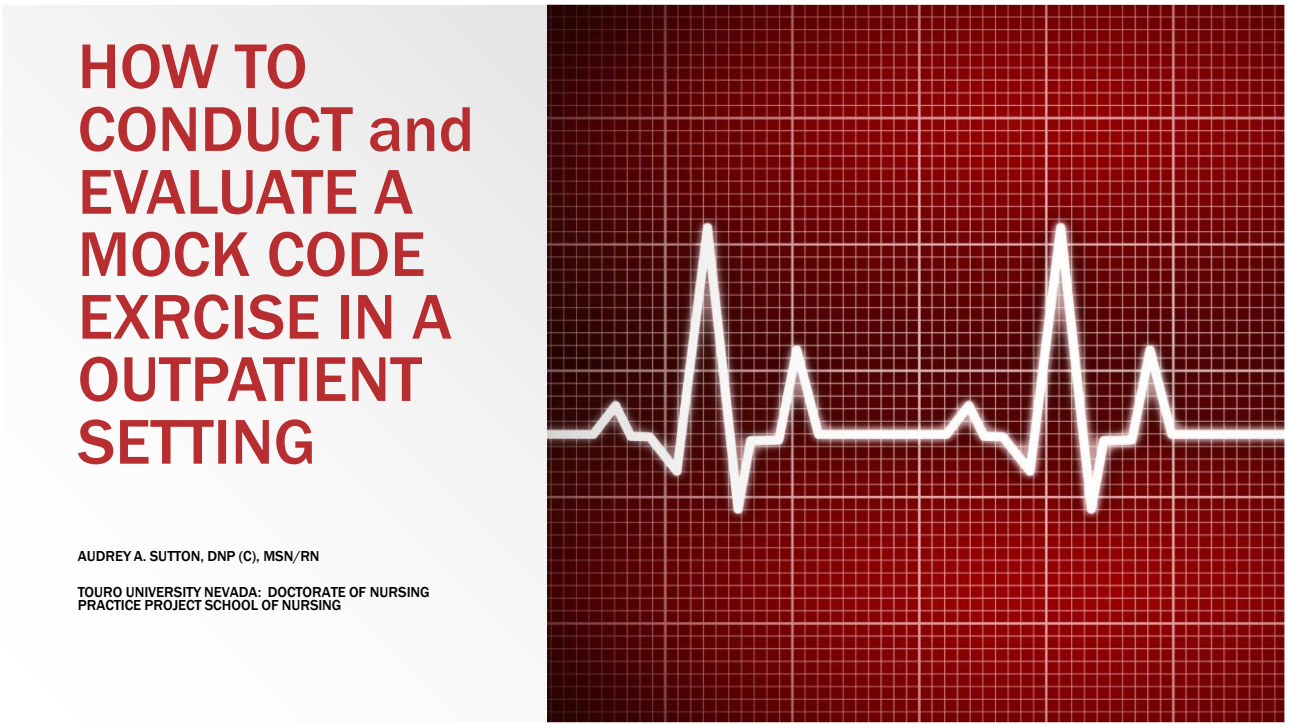
APPENDIX F: Mock Code Instruction



Created by: A Sutton 08/2017

Double Click to open presentation

APPENDIX G: Training Advertisement

DNP STUDENT PROJECT

PARTICPATION IS VOLUNTARY AND PARTICPATES WILL HAVE AUTOMNITY.
NO MONETARY COMPENSATION WILL BE OFFERED FOR PARTICIPATING IN THE PROJECT
BLS REFRESHER SESSIONS WILL NOT COUNT TOWARD CPR CERTIFICATION RENEWAL
BLS REFRESHER SESSIONS WILL START IN AUGUST 2017

PLEASE SEMD AN EMAIL TO: *dnp17b.audrey.sutton@nv.touro.edu or call (210) 833-4560* to receive more information on participating in the project

Brief Educational BLS Refresher Sessions

Build your confidence and competence related to CPR skills and knowledge recall

Every second counts and increases patients' survival rates

Improve Staff Engagement, PATIENT CARE, and Teamwork!!!!

DATES, TIMES, AND LOCATIONS TO BE ANNOUNCED

Appendix H
Subject Matter Expert Questionnaire Evaluation

Name: _____
Credentials: _____
Job Title: _____
Date: _____

Staff Engagement Questionnaire

Purpose/Goals of Activity: Improve staff engagement and teamwork with various teambuilding activities to include mock code exercises in an outpatient setting.

Please rate questions on whether questions are relevant or not relevant to project objectives, goals, PICOT, and intervention.

(1) Relevant (2) Not Relevant

1. Do you feel like a part of the team and satisfied with in the work environment? 1 2
2. The organization has clearly explained its mission, purpose, and expectations of staff 1 2

3. Do you feel comfortable asking your team members for help if a problem occurs in the office 1 2
4. As an employee I feel supported and a part of the team in your workplace 1 2

5. The staff communicates and collaborates well during patient care 1 2
6. Management has provided opportunities for staff to do teambuilding activities in the last 12 months. 1 2
7. Do you feel teamwork can have a positive impact patient care and staff? 1 2
8. Would you actively engage in team-building activities that included mock code exercises? 1 2
9. Do you feel the staff is engaged and work well as a team currently? 1 2
10. Do you feel your opinion or feedback matters related to improving patient care and your work environment? 1 2

Provide 3 recommendations to improve staff engagement in your clinic setting. 1 2

Section II: Questionnaire Evaluation

Name: _____
Credentials: _____
Job Title: _____
Date: _____

Appendix I: Mock Code Evaluation Sheet

Section I

1. Mock Code location_____ 1 2
2. DATE: _____ 1 2
3. Who many staff participated in the training? _____ 1 2
4. Number of Physicians_____ Registered Nurses_____ Licensed Vocational Nurses ____Medical Assistants_____ Certified Nurse Assistant_____ Non-clinical staff_____ 1 2

SECTION II

Did staff receive a report of Simulated Code Blue event? Yes or No 1 2
Mock Code exercise start time: _____ Exercise ended time: _____ 1 2
CPR was initiated at what time? _____ 1 2
5. Staff call 9-1-1 immediately? Yes or No 1 2

6. Staff quickly initiated BLS protocol? Yes or No 1 2
7. How long did it take for staff to get AED? _____ 1 2
8. Staff demonstrate correct operation of AED equipment? Yes or No 1 2
9. AED voice prompts followed correctly? Yes or No 1 2
10. AED pads placed correctly? 1 2
11. Staff performance correct depth and rate of chest compressions? Yes or No 1 2
12. Team roles and responsibilities clearly assigned? Yes or No 1 2
13. All staff were actively engaged in this exercise? Yes or No 1 2
14. Staff performed well as a team Yes or No 1 2

Strengths noted in staff performance_____ 1 2

Deficits noted in staff performance: _____ 1 2

Future Training Recommendations:

_____ 1 2

_____

OVERALL EVALUATION: (circle one)

SATISFACTORY UNSATISFACTORY 1 2

Project Lead Signature: _____

Section III

Name: _____

Credentials: _____

Job Title: _____

Date: _____

Post Engagement Questions

1. Do you feel more engaged since participating in teambuilding activities? Yes or No 1 2
2. Do you feel teamwork and performance has improved among staff? Yes or No 1 2
3. Has comradery increased among staff since start of project? Yes or No 1 2
4. Did teambuilding activities increase comradery among the staff? Yes or No 1 2

5. Do you feel communication has increased? Yes or No 1 2

Post Mock Code Questions

6. Did BLS refresher adequately prepare you for the mock code exercises? Yes or No 1 2

7. Do feel your competency level related to CPR knowledge and skills has increased since participating in mock code exercises? Yes or No 1 2

8. Do you feel you have leadership buy-in to continue this type of team training? Yes or No 1 2

9. Did presenter for BLS refresher provide clear and concise instructions? Yes or No 1 2

10. Do you feel the mock code exercises have increased your confidence related to initiate CPR techniques if needed? Yes or No

1 2

NO and YES

Credential Information 1 2

1. Are you BLS certified? 1 2

2. Please circle your credentials: 1 2

NP RN

LVN Other

Physician

Medical Assistant

CTC

3. Would you be interested in becoming a Clinic Training Champion for your clinic?

YES or NO 1 2

Figure 1
Post-Intervention Gradual Learning Chart and Graph

Descriptive statistics were conducted to illustrate the change in gradual learning from baseline to post-intervention across five questions measuring staff engagement and teamwork.

Group	***Question***	***Pre-test Favorable Response %***	***Post-test Favorable Response %***	***% Difference***
Non-clinical	1	90	90	0
Non-clinical	2	80	100	+20
Non-clinical	3	90	100	+10
Non-clinical	4	90	100	+10
Non-clinical	5	100	90	-10
Clinical	1	70	90	+20
Clinical	2	80	100	+20
Clinical	3	70	90	+20
Clinical	4	60	100	+40
Clinical	5	70	100	+30

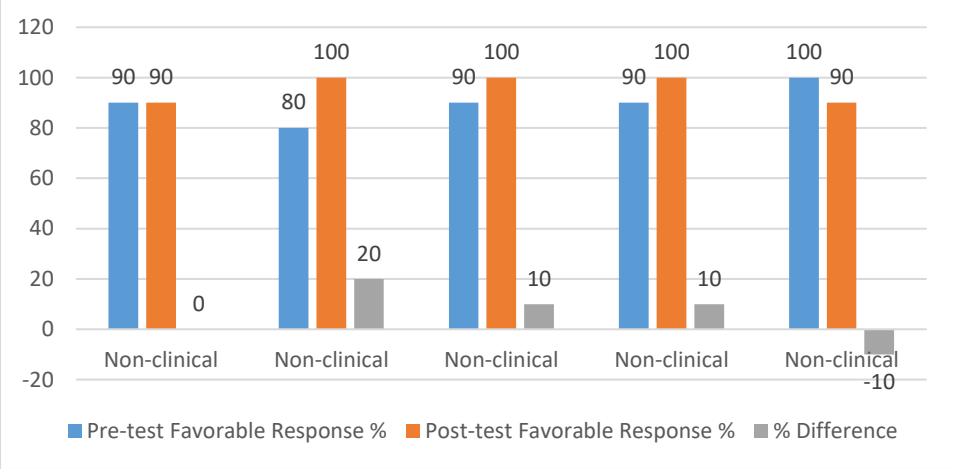


Figure 2
Staff Responses to Clinic Training Champion Question

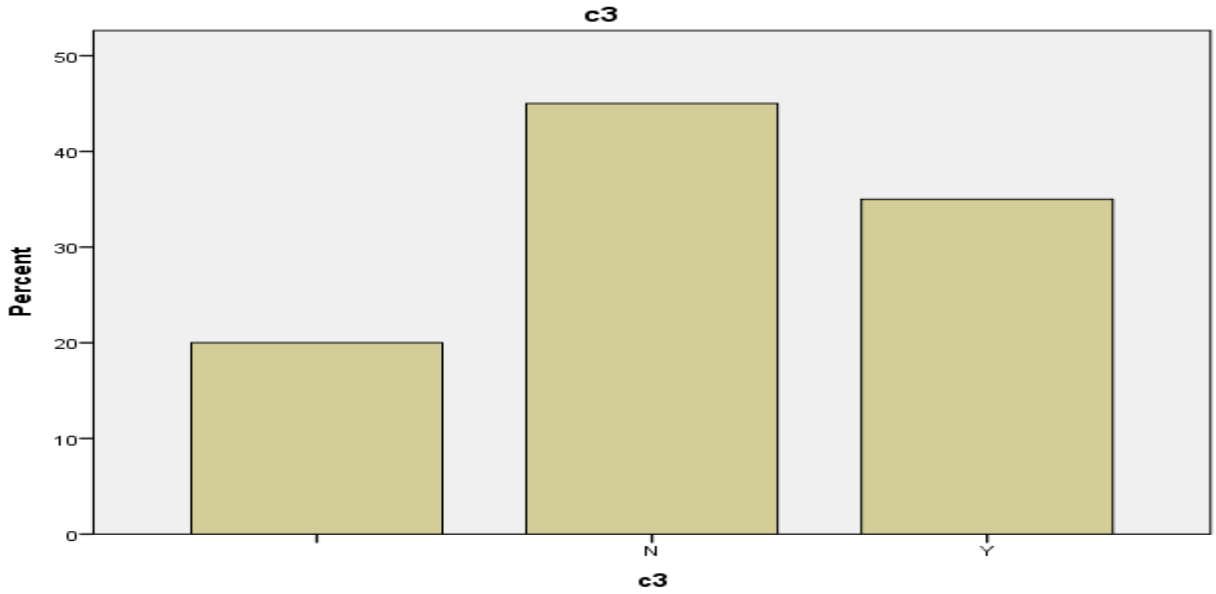


Figure 4

Overall Staff Satisfaction with Intervention

Five questions were asked to assess over satisfaction of the intervention. Descriptive statistics were used to underscore both groups' responses.

Group	***Question***	***Favorable Response %***	***Group***	***Favorable Response %***	***Group Response Difference %***
Non-clinical	6	90	Clinical	90	0
Non-clinical	7	90	Clinical	100	10
Non-clinical	8	90	Clinical	70	20
Non-clinical	9	100	Clinical	100	0
Non-clinical	10	90	Clinical	100	10

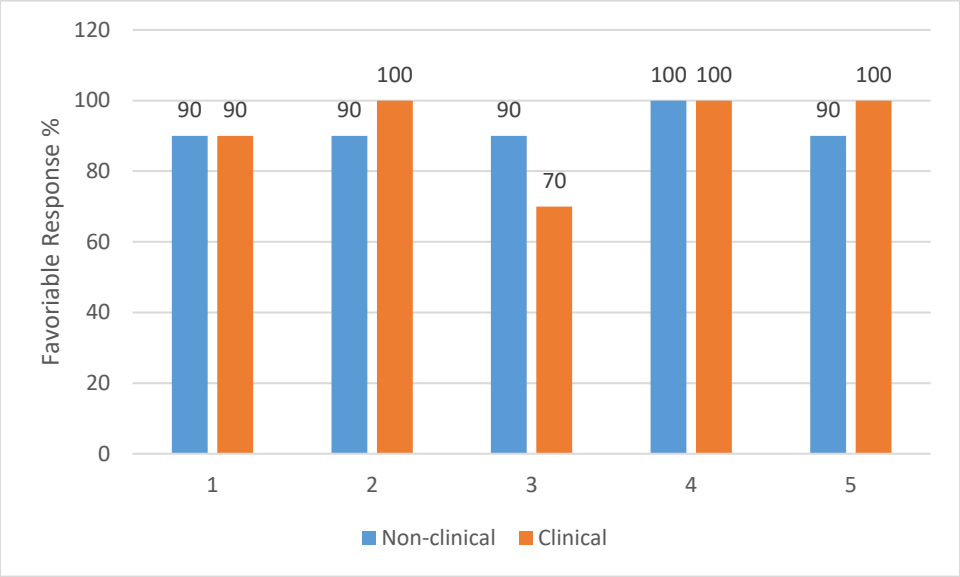


Figure 5
Post Mock Code Questions

Variable	*Chi-square*	*DF*	*P*	*Fisher's Test*
3	1.053	1	.305	1.000
5	1.053	1	.305	1.000