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Education on the use of Code Lavender for ICU Nurses to Decrease Turnover and
Increase Engagement

Andréa G. Narvaez

Submitted as Partial Fulfillment for the Doctor of Nursing Practice Degree

Regis University

April 12, 2021

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Executive Summary

Project Title: Education on the use of Code Lavender for ICU Nurses to Decrease Turnover and Increase Engagement

Problem: ICU Nurses working on the frontline today are under stress that we in healthcare have never seen in our lifetime related to the COVID-19 pandemic. The problem today is that healthcare organizations are being challenged with how to support nurses, provide compassion, and combat nursing turnover while increasing engagement.

Purpose: The purpose of this DNP quality improvement project was to determine if education on the use of Code Lavender for ICU Nurses improves nursing turnover, decreases time to fill for open RN positions, and increases engagement.

Goals: The most critical patients in hospitals are taken care of by skilled intensive care unit (ICU) nurses that provide physical and emotional care of both patients and families, which is not easy and can take a toll on ICU nurses. The goal was to decrease ICU RN turnover, increase engagement, and decrease the time to fill open RN positions.

Objectives: The objectives of the project were to educate ICU nurses on Code Lavender and to provide an evidence-based tool offering support to nurses in real time.

Plan: This quality improvement project utilized pre-intervention data, a baseline of two months of turnover and time to fill open RN positions, along with baseline associate engagement scores. The data was then compared to post-intervention data, two months of turnover data, time to fill open RN positions and repeated associate engagement scores to determine the overall impact of Code Lavender.

Outcomes and Results: The results show that Code Lavender positively impacted the dependent variables of turnover, time to fill open RN positions, and associate engagement scores. Turnover improved with 0 additional ICU nurses leaving their position. Time to fill open RN positions decreased by 53 days and associate engagement improved 10%. Education on the use of Code Lavender demonstrated positive results and is recommended for use for nurses working in all areas of nursing.

Acknowledgments

I want to take the time to express my profound gratitude for all that have supported me through my DNP journey and project. Thank you to the Regis DNP faculty for their tremendous compassion, guidance, and expertise through my courses and project. Thank you to my DNP project chair, Dr. Lora Claywell whose wisdom and encouragement truly kept me focused on my project from beginning to end. I am also grateful to Ms. Sara Sweetser, for offering her time and support through my entire project and was the calm voice when I was struggling with my project. I never imagined I would work to complete my DNP through a global pandemic, but it offered incredible learning and validation for my project that I am grateful for. Finally, I want to express my incredible appreciation for my husband who knew when to push and when to lend me support. His unconditional love and strength grounds me, allowing me to be the very best version of myself.

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Project Written Proposal: Code Lavender for ICU Nurses

The journey of the Doctorate of Nursing Practice (DNP) program includes a project that is determined by the student as the reason for action. Many of these projects are quality improvement projects, which aligns and supports the focus of this DNP project. This DNP project reason for action is the ICU Nurses working on the frontline today, that give so much of themselves and often have little to anything leftover to care for themselves. This DNP project will detail and discuss the problem recognition and definition, review of the evidence, project plan and evaluation, project findings and results, and project limitations, recommendations, and implications for change.

Problem Recognition and Definition

Nursing turnover increases the demand on ICU nurses leading to emotional distress, decreased coping ability, medical errors, disengagement and decrease in nursing satisfaction. According to Hinson and Spatz, (2011) “nursing turnover and retention is a global issue that affects patient mortality and outcomes, nursing satisfaction, burnout, and intentions to remain in the nursing profession” (p. 103). Further complicating the problem is the added financial strain and cost that is placed on the hospital with rising nurse turnover rates. The current 2019 national average of total turnover for a hospital bed size of < 200 beds is equal to 19.1% (Nursing Solutions Inc., 2019, p. 4). Parker Adventist Hospital is licensed for 170 beds and has a projected turnover in ICU of 31.73% (Centura, PowerBI, 2021) for fiscal year 2021. This is roughly 39.8% higher than the national average, which is not sustainable. “The average cost of turnover for a bedside RN is estimated at \$49,500 but costs can range from \$38,000 to \$61,100 depending on hospital and location” (Wells, 2019, para. 7). Ongoing and increasing nursing turnover has a negative affect for both nurses and hospitals and must be addressed.

Statement of Purpose

The project focus was the education offering on the use of Code Lavender to ICU nurses. Intensive care nurses are expected to be at the top of their game every day due to the nature of the patient population that they take care. Often though the nurses working in the ICU can become so busy in taking care of their patients, families, and each other that they can forget to care for themselves. Not being able to pause long enough to care for themselves can lead to stress, burnout, exhaustion both physically and emotionally, and ultimately drive the nurse to leave the position. The ICU is a fast paced, high demand area that requires skill and knowledge of those that dedicate their lives to the profession. “The current demands and increased complexities of hospital organizations have resulted in stress felt among nurses at an all-time high” (Hines, 2019, p. 8). There is a need to have a safe place for nurses to speak freely and without judgement about the emotions that come from patient care. “One of the most basic techniques to defuse a tense situation is to be fully present in that situation. Being present in the moment allows you to listen actively to the person with whom you are interacting” (Priddy, 2019, p. 286).

Vulnerability affects everyone, and nurses are no exception. Caring for those that are sick and injured with advancing medical technology is not easy. It is important to consider that nurses are a unique population that experience both physical and emotional responses from the situations they are exposed to. The result is often seen as stress, exhaustion, tears, burnout, fear, lack of empathy, lack of connection, and general unhappiness. The global pandemic of COVID-19 has only magnified the challenges that nurses face. “Nurses struggle with risk exposure to the virus, worries about infecting their families, shortages or personal protective equipment (PPE), longer work hours, and moral distress related to resource allocation” (Odom-Forren, 2020, p.

555). These additional struggles add to anxiety and stress that goes along with working in a busy and high-paced environment such as the ICU.

Code Lavender was invented in 2004 at North Hawaii Community Hospital (NHCH) in Waimea, Hawaii (Nakayama, 2016). Service Excellence and Team Leader Arielle Faith Michael, “A Code Lavender serves as a holistic intervention of sorts to rejuvenate and support patients and caregivers during those stressful times” (2016, p.). Since the invention of Code Lavender at NHCH it has been adopted and adapted for use at large hospitals all over the United States and other parts of the world (Nakayama, 2016).

The Cleveland Clinic began working on a holistic rapid response in 2008. Through partnership and collaboration with the Spiritual Care team and the healing services holistic care nurses, which now make up the office of Patient Experience at Cleveland Clinic. “In any hospital, “CODE” means something needs urgent attention. In an attempt to signal both urgency and calm, Cleveland Clinic uses the term “Code Lavender” to signal the need is urgent, but the point of the code is to try to bring some calming influence to a painful or stressful situation” (Greene, 2014, para. 1).

Code Lavender has received national recognition by Healthcare Business insights for innovation and positive impact on patient satisfaction. Rev. Amy Greene, Director of Spiritual Care at the Cleveland Clinic (2016), “Caregivers who work so hard at the hospital caring for others often forget to care for themselves, Code Lavenders provide spiritual and emotional support to our caregivers when they need it the most” (Nakayama, 2016, para. 22). “Discovering ways to decrease stress felt among nurse by increasing self-care habits may lead to reduction of stress as well as lower turnover rates” (Hines, 2019, p. 8).

Problem Statement

The continuing changes in health care challenge ICU nurses to retain their professional resiliency and remain in their position. Professional resilience is defined as “individual capacity to thrive in situations of high demand and ongoing pressure. It involves being able to recover from significant challenges, difficulties and setbacks and then use these for learning and personal growth in the workplace” (The Spoke, 2015). Intentional compassionate care shown to ICU nurses is a practical method of supporting staff well-being. Code Lavender is an evidenced-based intervention aimed at the goal to improve immediate emotional support, which could further reduce nurse turnover and increase engagement. Code Lavender is a tool for support in real time to help nurses achieve emotional stability and feel supported, so they can provide the best possible clinical care and outcomes for patients. “Healthcare leaders who implement effective strategies to improve nurse retention and engagement can reduce the risk of adverse patient outcomes and retain a highly satisfied and engaged clinical staff” (Hinson & Spatz, 2011, p. 103).

Population-Intervention-Comparison-Outcome (PICO) Question

The PICO question for this DNP quality improvement project was “do ICU Nurses who have had education on the use of Code Lavender have increased engagement and decreased turnover?” The population was ICU nurses working in the ICU at Parker Adventist Hospital. The intervention included education on the use of Code Lavender. The comparison included the baseline data to the post-intervention data for turnover and engagement scores. The desired outcome was to offer a tool for ICU nurses to use that offered real time support, while further reducing nurse turnover and increasing engagement scores.

Project Significance, Scope, and Rationale

Working in the role of Chief Nursing Officer and Vice President of Patient Care Services at Parker Adventist Hospital allows opportunity to transition into a DNP graduate and help to implement evidence-based practice “with an aggregate focus” (Terry, 2018). As the Chief Nursing Officer and Vice President of Patient Care Services, the role is charged to lead nursing across all patient care areas at Parker Adventist Hospital to deliver high quality and safe care. The DNP graduate is well prepared to integrate nursing science with “knowledge from the organizational, biophysical, psychological, and analytical sciences, as well as ethics, as the basis for highest level of nursing practice” (Chism, 2016, p. 15). DNP preparation is diverse with incredible span and depth and is well positioned to guide, drive, and translate research into practice.

This evidence-based quality improvement project was significant because turnover and staffing are a problem in the intensive care unit (ICU) at Parker Adventist Hospital (PKR). Turnover in fiscal year (FY) 2019 in the ICU was 17.82% and then increased again in FY20 to 20.13% and is projected to increase in FY21 to 31.73% (Centura, PowerBI, 2021). Adding to the problem is the increasing number of days to fill an open nurse position in the ICU. Current average days to fill an ICU nurse position at PKR is 118.50 days (Centura, PowerBI, 2021) which is equal to roughly 4 months, thus increasing demand on the current ICU nurses. Turnover and not being able to fill staffing positions is a risk to the hospital not only financially and operationally, but also in the ability to care for the people in the community when it is needed. In addition to growing turnover rates, associate engagement decreased to an employee satisfaction (eSAT) score of 64% in November 2020 (GLINT, Parker, 2020). The eSAT score is a measure

that indicates how “happy” an associate is and correlates with how likely the associate is to stay in their position. The eSAT is measured in a percentage out of a total of 100%.

The project was completed at Parker Adventist Hospital. The hospital is a 170 bed, faith-based community non-profit hospital which is part of Centura Health. The ICU functions as a 16-bed unit but has the ability to flex to a 30 ICU beds if needed. The unit’s design is combined with a sister Cardiac-Stroke unit, which has 14 beds, giving the ability to increase ICU capacity if needed. Each of these units operate under different cost centers, staffing standards, and immediate unit leadership. For the purpose of this project, ICU was the only unit included. The ICU has an average daily census of 15. All ICU nurses were invited in person to receive education on Code Lavender. All nurses also were provided with written education in addition to communication through daily unit huddles. Baseline data was compared to post-intervention data. Implementation of Code Lavender supports positive socialization in the ICU nursing work environment by encouraging awareness, kindness, intentionality, and support in real time. The project was significant in determining the impact of Code Lavender on nursing turnover and engagement scores.

Theoretical Foundation for Project and Change

Two theories were utilized in this quality improvement project. The first theory was the middle range theory of resilience defined by Laura Polk (1997) which provides solid support and evidence to help underpin the exploration of use of Code Lavender with this DNP project. The theory provides concepts that are broad enough yet focused to nursing resilience to allow freedom to explore the problem, diagnose root causes of the problem, and further support use of Code Lavender as a possible solution to increase nursing resiliency. Nursing makes up large groups and cultures in health care settings and provides an opportunity to observe characteristics

in attitude, values, beliefs, and principles that make up the culture. The ability to bend without breaking can be attributed to resilience.

Nurses' individual ability to respond in varying situations has direct impact and influence on nursing team culture. "The ability to transform disaster into a growth experience and move forward defines the concept of resilience. Nursing is concerned with individuals in the process of moving through adversity and with its own contribution to that process" (Polk, 1997, p. 1). There are four main constructs of resilience patterns; dispositional pattern, relational pattern, situational pattern, and philosophical pattern and these four constructs provide the description for the theory. Learning to understand and recognize resilience patterns lends itself to greater meaning for both the individual nurse and the meaning to the greater culture. The theory of resilience has great congruence with nursing due to the nature of what nurses are both exposed to and expected to handle in their daily roles and responsibilities. "Individuals experience an adversity as impetus for change. The individual field covers the chaos of this experience into greater diversity as evidenced by a deepened differentiation of this his or her pattern of resilience" (Polk, 1997, p. 7).

The second foundational theory for this quality improvement project that guided change was Deming's (1950's) Plan-Do-Study-Act model.

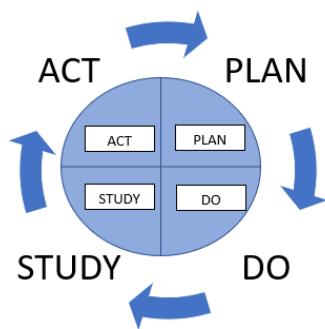


Figure 1. PDSA Model adapted from Deming's 1950 original model

Deming's change model leads the change process, step by step through planning, doing, studying, and acting. The model in *Figure 1* ("PDSA Cycle) shows the model that works in a continuous improvement cycle. Deming's model integrated well into this Code Lavender evidence-based quality improvement project because it allowed for each stage to be explained and then implemented. According to Deming, it is important to emphasize the third step in the process, "study" (2021). "His focus was on predicting the results of an improvement effort, studying the actual results, and comparing them to possibly revise the theory" (The W. Edwards Deming Institute, 2021), thus giving importance to the spirit of continual improvement. Continual improvement is important in the sustainability of the change being made with Code Lavender.

Literature Selection and Process

An appraisal of the literature was completed using CINAHL and MEDLINE databases including key search terms: code lavender, burnout, compassion fatigue, nursing self-care, resilience, and nurse retention. These terms resulted in 17,488 articles, of which 15,106 resulted from the term nurse retention alone. To narrow the search key terms were combined: burnout/compassion fatigue; nursing self-care/resilience; and nursing self-care/burnout. The search term code lavender was left independent and resulted in 29 articles. Initially 33 articles were reviewed for relevance and support using the combined key terms. Ultimately, a full review was conducted on ten pertinent articles for this DNP project. The literature indicates that there is both empirical and theoretical application spanning the years 2011 – 2019. See Appendix A for complete literature table of the final 10 articles of support for this DNP project.

Review of Evidence

Utilizing the seven-tiered levels of evidence as described by Houser and Oman (2011, p. 141) and adapted by Melnyk and Fineout-Overholt (2005). The levels are depicted in figure 2 and include the definition of each level.

Level	Description
Level I	Systematic review or meta-analysis of randomized controlled trials
Level II	From at least one randomized controlled trial
Level III	From well-designed control trial without randomization
Level IV	From well-designed case control and cohort studies
Level V	From systematic reviews of descriptive and qualitative studies
Level VI	From single descriptive or qualitative study
Level VII	From expert opinion, regulatory opinion and/or expert committees

Figure 2. Seven tiered levels of evidence (Houser & Oman, 2011, p. 141)

The ten articles reviewed were evaluated using this method. The full systematic review of the literature table can be reviewed in detail in Appendix A. There were two articles at level IV, two articles at level V, two articles at level VI, and 4 articles at level VIII. In review of the literature there is theme that compassionate care is not just important for patients but is equally important for health care professionals. Emerging interest in nursing self-care and resiliency continues to appear in nursing research and literature. “Decades of research has shown that if a person does not “refill his or her own cup” that person has little energy available to give to those in his or her care” (Priddy, 2019, p. 289). Nursing leaders, executives, and educators must sit up and take note of how important this information is for sustainability of nurses working in critical areas. The evidence suggests that there is a need to fuel the spirit of the caregiver. There are

major themes that were identified in review of the literature: stress that nurses experience, compassion for healthcare providers, nursing self-care and resiliency, and burnout.

The stress that nurses experience can be broken down into themes, that include direct patient care, decisions that have to be made, responsibility, and change. Menzies who is credited for identifying the “work stress in nursing” further defined these themes into the personal toll that nurses experience from the work they do (Davey et. al., 2014).

Research by Sinclair, Torres, Raffin-Bouchal, Hack, McClement, Hagen, & Chochinov (2016), titled *Compassion training in healthcare: what are patient’s perspectives on training healthcare providers?* the empirical definition given for compassion is “a virtuous response that seeks to address the suffering of a person through relational understanding and action” (p. 1). This definition though not specifically stated in each article or research reviewed is a thread that can be found in each review, speaking to the need for compassionate care for the healthcare providers that provide care to others.

Spence Laschinger, Wong, Cummings, & Grau (2014) integrated four recognized theories; Boyatzis and McKee Resonant Leadership Theory, Kanter’s theory of organizational empowerment, Anderson, and Pearson’s workplace incivility theory, and Maslach and Leiter’s burnout theory to develop a hypothesized model to complete a national study of nurses’ work lives. A total sample of 36,000 nurses were surveyed on questions categorized into global empowerment, resonant leadership, coworker incivility, and emotional exhaustion. The results support the need for positive leadership involvement in building positive work environments for nurses to help reduce burnout.

In review of compassionate care specific to healthcare providers, code lavender is increasingly evident as a potential tool or action to offer. In original research a pilot project was

completed “to shift the unit-based culture toward encouraging recognition of stressful workplace events and acknowledging colleagues through stressful events with intentional acts of kindness” (Davidson, Graham, Montross-Thomas, Norcross, & Zerbi, 2017, p. 182). The pilot introduced and used code lavender as the intentional act of kindness and the results were that 100% of the participants found it helpful and 84% of the participants would recommend use of code lavender to a co-worker.

A cross-sectional study completed by Gracia-Gracia and Olivan-Blazquez (2017) have shown “that mindfulness interventions increase the participant’s self-care, self-confidence, compassion, and self-learning, as well as the spiritual dimension” and in conclusion the results indicate a correlation “between burnout and the ability of mindfulness self-compassion in nursing staff in ICUs” (Gracia-Gracia & Olivan-Blazquez, 2017, p. 231). Burnout has to be addressed, in a secondary analysis of cross-sectional data collected by the National Sample Survey of Registered Nurses in the United States published in the Journal of American Medical Association (2021), there is significant concern for nurse burnout. The analysis reviewed survey data collected in 2018 and included “N = 50,273 representing 3,957,661 nurses nationally” (Shah, Gandrakota, Cimiotti, Ghose, Moore, and Ali, 2021, p. 3). Among the survey respondents that “reported leaving their job in 2018” 31.5% reported burnout as a reason. “With increasing demands placed on frontline nurses during the coronavirus disease 2019 pandemic, these findings suggest an urgent need for solutions to address burnout among nurses” (Shah et. al., 2021, p. 1).

Though there is a lack of current evidence specific to Code Lavender and the potential impact on nursing burnout and resiliency. Code Lavender is certainly a support that can be

offered to nurses but may need to be used in conjunction with other evidence-based tools to have greater affect and impact on nursing turnover and engagement.

Project Plan and Evaluation

Parker Adventist Hospital was the 170-bed community faith-based non-profit hospital where the quality improvement project was conducted. Parker Adventist Hospital is part of Centura Health, a faith based non-profit healthcare organizations that employs 21,000 associates that include both clinical and non-clinical staff. Centura Health is the largest health care network in Colorado and Western Kansas and is a joint sponsored venture by Common Spirit Health and Advent Health. The total headcount of ICU nurses at Parker Adventist Hospital is equal to 51. Based on the total number being small the entire sample was included in the scope of this project. The quality improvement project compared baseline data (without education on Code Lavender) to post-intervention data. The project was important to associate well-being and hospital financial operations. In addition, this project was important in understanding if education on Code Lavender as an evidence-based tool has impact on ICU nursing turnover and associate engagement. The complete timeline for this project can be reviewed in Appendix B. The completion of this project included final analysis of all data collection, preparing for the final DNP presentation, and communicating the results in April 2021.

Market/Risk Analysis

An important component of any project is understanding the market where the project will occur and analysis of potential risks to the project. Often used in business and project management is an analysis tool that reviews the strengthens, weaknesses, opportunities, and threats (SWOT). The next portion of this paper will present a SWOT analysis, driving and

restraining forces, needs/resources and sustainability, the stakeholders and project team, along with the cost-benefit analysis for this DNP quality improvement project.

Project Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

In a SWOT analysis both internal and external factors are included. The strengths and weaknesses are internal factors. The opportunities and threats are external factors. The strength for this project is included offering Code Lavender as an evidence-based tool to ICU nurses that provides immediate and real time support, building a positive work environment, decreasing ICU RN turnover, and small cost to implement. The weaknesses included lack of understanding or use of Code Lavender. ICU nurses have significant workloads and assignments and if nurses do not see a potential benefit in using Code Lavender then their adoption of the tool may not occur. Nurses need to see value in Code Lavender. Other weaknesses included negative effects on unit productivity along with orientation of new RNs to ICU, and not believing there is enough time for a Code Lavender.

Opportunities and threats are both external forces. One of the opportunities that could have positive effects on other opportunities is the retention of ICU nurses. Nurses that remain in their positions by feeling cared for and support has the opportunity to positively influence both patient satisfaction and quality outcomes, specifically nursing sensitive indicators. Future opportunities exist in the expected growth in Douglas County of 39% from 2015 to 2065 and total population of 153,136 by 2065 (Coordinated Population Forecast Douglas County, 2015). This increase could not only result in further hospital growth with patient care but also potential ICU nurses moving into the area. Threats for this project include competition from other hospitals in the market offering higher rates of pay for ICU nurses, resurgence of COVID-19 or variants, violence in the community, and union activity in the area specifically working to attract

nurses. Each of the threats are real and hard to mitigate completely. A complete SWOT analysis for this project can be reviewed in Appendix C.

Driving and Restraining Forces

With every project there are both driving and restraining forces. Identifying them before or at the beginning of the project, helps to bring awareness to barriers that may be encountered. One of the biggest driving forces for this quality improvement project was the executive support and desire to improve nurse retention and engagement. Implementation of Code Lavender provided an opportunity for improvement. Another driving force was to improve a sense of professional resiliency for ICU nurses and improved work culture, which was fully supported by hospital nursing practice committee. There is a strong desire to help support nurse well-being, so they desire to stay in their role. Helping to improve to perception of professional resiliency and giving a tool for nurses to use that offers intentional and immediate support create a win for nurses.

The biggest restraining force with this project was nurses desire to use Code Lavender. Nurses were educated and offered the use of Code Lavender, but that did not guarantee participation. Nurses are very busy and often have competing priorities that come up during their shift, so to take time for self-care can be challenging. Nurses had to see value in Code Lavender. Another restraining force was the time and space to educate on the use of Code Lavender. To help remove this restraint communication about Code Lavender was offered in multiple staff meetings, email communication, Code Lavender unit notebook, and communicated by the unit leadership in the daily unit huddles.

Need, Resources and Sustainability

The full support of executive leadership and the hospital nursing practice committee have helped with sustainability and the success of this quality improvement project. Based on the success of the project, Code Lavender will spread to other nursing units in the hospital. The hospital nursing practice committee took an active role in helping to determine the order of units to roll out Code Lavender based on greatest perceived need. Code Lavender will be introduced to all units through staff meetings, unit-based councils, and championed fully by members of the hospital nursing practice committee. Each unit will be provided Code Lavender kits on an ongoing basis and have a Code Lavender reference notebook for each nurse's station. Another big sustainment factor is the executive leadership support for this project now and moving forward.

Stakeholders and Project Team

Identifying stakeholders ahead of time with any project is critical to the overall success and sustainability in the future. For this quality improvement project there were multiple stakeholders that included hospital executive leadership team, ICU nursing leadership, ICU nurses, ICU unit clerk, ICU physicians, members of the hospital practice committee, and Director of Spiritual Care & Mission. Each of these stakeholders had a vested interest in the project implementation and success. The project team included this DNP student, Chief Nursing Officer (CNO), pilot unit nurse manager, pilot assistant nurse managers, acute care nursing director and ICU nurse specialist.

Cost-Benefit Analysis

A cost-benefit analysis was completed for this quality improvement project. Actual project costs were minimal for education and supplies. Costs included nursing time to attend

staff meetings on the education and use of Code Lavender, cost of Code Lavender kits, and cost of putting together Code Lavender resource toolkit for the nurse's station. The project benefits far outweigh the costs associated with this quality improvement project. The benefit of retaining nurses by decreasing RN turnover, minimizing the use of expensive contract labor to fill staff vacancies, and decreasing the need to pay overtime to nurses to fill open shifts has significant positive benefits to both nurses working in ICU and to the overall finances of the hospital. The other significant benefit is the increase in associate engagement for ICU nurses. "Nurses who are engaged, especially new graduates, are more likely to stay with an organization longer than two years" (Nursing Center, 2019, p. 2).

Budget Considerations

The budget considerations for this quality improvement project included nursing leadership time to attend prep meeting, nurses time to attend staff meetings, code lavender kit, and code lavender resource notebook. The code lavender kit included: bottled water, granola bar, piece of chocolate, lavender hand lotion, individual tea bag, prayer card, list of ideas for immediate care, and a list of resources enclosed in a lavender colored organza bag. The total cost for each Code Lavender kit was \$4.55. The cost for the Code Lavender kits were provided by the Hospital Foundation. The materials included the cost of the notebook, and copies of pages for the one resource notebook, which was \$10.00. The project includes nursing leadership time. Nursing leaders are exempt associates therefore there was no added cost for nursing leadership time. Direct bedside nurse time also needs to be considered. The average hourly rate of an ICU bedside nurse is \$35.00 per hour. The cost to attend the one-hour staff meeting per nurse was \$35.00. The total cost for all 51 ICU RNs to attend the staff meeting was \$1,785.00. The budget and resources for this quality improvement project included the total costs of \$1,799.55. To help

ensure sustainability and future replication of Code Lavender to other nursing units in the hospital, the Hospital Foundation has agreed to continue to cover all expenses to provide Code Lavender kits. The complete budget summary can be reviewed in Appendix D.

Mission, Vision and Goals

The mission statement for this quality improvement project was to build a positive culture and make lives better for associates, physicians, and patients. The vision for this quality improvement project was to provide a positive culture that attracts highly engaged workforce that is here today, tomorrow, and into the future to care for the community. The overarching goal for this project was to provide immediate “psychological first aid” (Stone, 2018, p. 15) for ICU nurses through the use of Code Lavender, with the desired outcomes of reducing turnover, increasing engagement, and decreasing time to fill for open ICU RN positions.

Project Processes and Outcome Objectives

Code Lavender organizes resource support in real time to help nurses achieve emotional stability and feel supported, so they can provide the best possible clinical care and outcomes for patients. “Healthcare leaders who implement effective strategies to improve nurse retention and engagement can reduce the risk of adverse patient outcomes and retain a highly satisfied and engaged clinical staff” (Hinson & Spatz, 2011, p. 103). The project intervention included the education on the use of Code Lavender to all ICU nurses. Education was done through unit staff meetings and included the background on the use of evidence-based tool Code Lavender. Key points covered how to initiate a Code Lavender, when and how a Code Lavender can be used, and the introduction of the Code Lavender kit. Included in the education for staff was the description of the problem with nursing turnover and engagement specific to the ICU. Significant time was spent on why to use a Code Lavender and how to initiate. By asking the nurses

collectively in the staff meeting if they had ever experienced a difficult situation at work that elicited an emotional response but ignored their feelings and just kept pushing through their shift, the response was an overwhelming “yes”. This immediately helped to get the nurses attention and buy-in for explaining that Code Lavender is for these moments. When a Code Lavender is initiated there is an intentional response that provides, “purposeful presence; individual or team support; debriefing and follow-up; prayer and other affectively based interventions” (Stone, 2018, p. 16).

Recognition of a nurse in need is the first step in a Code Lavender, think of it as a gift of compassion from one nurse to another. Presenting a Code Lavender kit to a nurse begins the Code Lavender. The nurse initiating the Code Lavender, let both the charge nurse of the shift and the unit clerk know that a Code Lavender was being initiated. This was a trigger for the unit clerk to send a text message to all of the nurses Cisco phones. The message sent out to the nurse’s phones, stated Code Lavender followed by a room number. By using a room number and not a name allowed for more privacy, which was preferred by nurses. This message is sent out to all of the nurses working that shift indicating that everyone needed to be alerted to watch the patient in or around this room. The charge nurse who was already made aware that a Code Lavender was being initiated had the Code Lavender toolkit and resource notebook available as a reference and was then able to watch the nurse’s patient. The nurse offered the Code Lavender is then provided immediate support through a “menu” of real-time ideas: prayer; take a walk; go outside and get fresh air; have something warm to drink; sit in a calm place (chapel, break room, outside on a bench); listen to music or calming app on phone; talk to a friend or family member; talk with a chaplain; journal; meditate; color, breathe; get something to eat; chocolate or something sweet; or simply go to the bathroom. Code Lavender is an intentional pause letting

nurses know that it is okay to take a moment and feel what they are feeling and to further know that they are cared about.

The short-term outcomes for this project included increased awareness for ICU nurses that taking an intentional pause during difficult situations is supported and encouraged. The other short-term outcome was to help ICU nurses feel cared for. The longer-term outcomes measured in the quality improvement project included decreased ICU nurse turnover and time to fill open RN positions, and associate engagement. Turnover and time to fill open RN positions were measured through an internal organization Microsoft office application known as Power BI and are reported monthly. The second outcome was increased associate engagement, specifically the eSAT score on the ICU unit. This was measured as a percentage through the GLINT associate engagement survey from a baseline score in November 2020 compared to the score in March 2021. The eSAT score is referred to as the “happiness” score according to GLINT (2019). This is considered the most comprehensive score and is also the score used as a measurement for individual nursing units in the entire hospital.

Logic Model

“A logic model is a picture of how the project developer believes the program will work. It is a series of diagrams to indicate how parts of the program are linked together or sequenced (Zaccagnini & White, 2017, p.478). The model provides an illustration of the identified project, problem identification, resources/inputs, activities, outputs, outcomes, and impact. Previously in this paper the project and problem identification have been discussed. The resources and inputs in this model included the necessary factors for the quality improvement project to ensure the project moved forward. These factors included ICU nurses, ICU nursing leadership, executive leadership support, hospital foundation support, and Code Lavender kits. The activities in the

logic model included education of the ICU nurses on the use of Code Lavender, including when to use and how to initiate a Code Lavender. The primary output for this quality improvement project was the use of Code Lavender by ICU nurses. Outcomes included ICU nurses taking an intentional pause for Code Lavender during difficult situations and support to help nurses feeling cared for. The impact of this quality improvement project included decreased ICU RN turnover, decrease time to fill open RN positions, and increased associate engagement. The complete illustration of the logic model used for this quality improvement project can be seen in figure 3.



Figure 3. Education on the use of Code Lavender logic model

Project Design

This was a quantitative evidence-based quality improvement project. The independent variable for this project was the education on the use of Code Lavender. The dependent variables were ICU RN turnover, open ICU RN positions and associate engagement. Ongoing ICU RN turnover and increasing time to fill open ICU RN positions is difficult for hospitals and nurses. The rapid continual changes in health care are stressing ICU nurses, resulting in higher turnover and increased time to fill open positions. Therefore, the need to provide real-time support to nurses is becoming increasingly more important and Code Lavender could potentially have a positive impact. The other dependent variable for this project was associate engagement. Code Lavender could also have an impact on associate engagement.

This quality improvement project employed a pre- and post-implementation design that included the entire sample of nurses working in the ICU. The project evaluated the three previously mentioned outcome variables impacted by the education on the use of Code Lavender. The project reviewed baseline data (pre-implementation) compared with post-implementation data, to determine the impact of the education and use of Code Lavender. The instruments for data collection were already available and in place internally at the facility. The measurement of RN turnover and time to fill open RN positions are tracked and reported through the use of an internal Microsoft application, known as Power BI. This data can be drilled down by individual nursing units, and then exported into an excel spreadsheet. The second instrument that was used was the GLINT associate engagement survey. This survey is utilized across Centura Health and across a variety of healthcare organizations. The survey measures associate engagement and has proven validity and reliability.

Population and Sampling

This project took place on the ICU unit, which is a 16-bed ICU with the ability to flex up to a total of 30 bed ICU. The sample included all 51 nurses working in the ICU. Using total population sampling made the most amount of sense for this project. Recruitment was not necessary, as this was a quality improvement project and informed consent was not required. All nurses working in the ICU were provided education on the use of Code Lavender and made aware that ICU would serve as the pilot unit. The ICU was the only unit for the study of this project. All participation for nurses was completely voluntary.

Project Setting

Parker Adventist Hospital served as the setting of this quality improvement project. Parker Adventist Hospital is a faith-based non-profit community hospital that is licensed for 170-beds. Parker Adventist Hospital is located in Parker, Colorado and offers level 2 trauma care to both the immediate and surrounding communities.

Protection of Human Rights

Federal regulations for human subject's research exist to protect vulnerable populations (Office for Human Research Protections, 2016). Special considerations are given to particularly vulnerable subjects, such as children, prisoners, pregnant women, mentally disabled persons, or educationally disadvantaged persons. "Though there are no federal regulations that provide explicit protections for students and employees, the involvement of students and employees may present special concerns" (Swarthmore College, 2021). Understanding this information, Code Lavender is not a field study and not considered to be a human research study. All ICU nurses and including ICU nursing leaders were made aware that all participation in Code Lavender is voluntary and not required as a condition of employment. All data collected was deidentified and

only reviewed as aggregate by this DNP student. There were no risks to any of the nurses or nursing leaders in this quality improvement project

This quality improvement project was internal to the organization and did not meet the institutional review board's definition of research. The Institutional Review Board (IRB) letters from both Catholic Health Initiatives (CHI) which is the IRB for Centura Health and Regis University can be reviewed in Appendices F and G. This DNP student successfully completed the Social-Behavioral-Educational modules in the Collaborative Institutional Training Initiative (CITI) training as shown in Appendix H.

Reliability and Validity

There were two measurement instruments used in this quality improvement project. The first instrument of measurement is an internal business analytics dashboard published utilizing a Microsoft Power BI application. This is an existing instrument unique to the organization and does not have any published reliability or validity data. This instrument was used for the collection of ICU RN turnover and time to fill open ICU RN positions. Through this application both ICU RN turnover and time to fill open ICU RN positions data is deidentified and able to be exported into an excel spreadsheet.

The second measurement instrument was the GLINT associate engagement survey. GLINT is an associate engagement firm that continues to do research on associate engagement. GLINT's framework for engagement is, "operationalized primarily as a cognitive, and emotional state that overlaps with job satisfaction, commitment, involvement, and motivation" (GLINT, 2019). GLINT participated in a study of 500 commonly used engagement survey items that spanned 50 years of research and academia in the field of psychometrics to determine what engagement questions are most relevant in assessing associate engagement (GLINT, 2019). In

2018 GLINT's research database included over 4 million unique employees and 10 million surveys. This instrument was used for the collection of ICU associate engagement.

One of the potential threats to validity and reliability in this quality improvement project included nurses having too many initiatives going on at the same time. Nurses can be overwhelmed with ongoing quality work, staffing, and project initiatives so to mitigate this risk during the pilot phase Code Lavender was the only new education introduced to ICU nurses. A second threat to validity and reliability in this quality improvement project was the GLINT associate engagement survey. There must be a minimum of 15 survey's completed from a unit in order for there to be associate engagement results provided by GLINT back to the hospital. To help mitigate this risk each nursing unit had a dedicated computer where the survey could be taken. This provided easy accessibility and encouraged nurses to take the survey at work.

Data Collection and Treatment Procedure

Data was collected for this quality improvement project through previously established and discussed methods. ICU RN turnover and time to fill for open ICU RN positions was collected monthly. The number of Code Lavenders initiated during the pilot period was manually collected monthly through use of an excel spreadsheet. The GLINT associate engagement survey results were collected quarterly through established survey periods for the hospital.

Plan for Data Analysis

Analysis of the data was an important step in this quality improvement project, to answer the question for this project "do ICU Nurses who have had education on the use of Code Lavender have decreased turnover and increased engagement"? The project included the data for the independent variable, education on the use of Code Lavender tracked by total number of Code Lavender's initiated during the pilot period. The data for the dependent variables included

ICU RN turnover, time to fill open ICU RN positions, and associate engagement. Turnover data was measured by counting total of numbers of ICU RN's that left the organization on a monthly basis. The dependent variable of time to fill open ICU RN positions was measured in number of days. Associate engagement was measured as overall percentage scores. Each of the measurements began with baseline pre-intervention data that was then measured against the post-intervention data.

To run the data a paired t-test was used on the overall percentage scores for each domain of the GLINT associate engagement survey. The domains of the survey include culture; engagement; engagement/eSAT; engagement/recommend; feedback; involvement; and recognition (GLINT, 2019). The paired t-test determined the mean scores pre-intervention and post-intervention, difference between the means, *p* value, and statistical significance. "In statistics, significant means that the results are probably not attributable to chance (i.e., attributable to random fluctuations and sampling error), at a specified probability level" (Polit, 2010, p. 101).

Project Findings and Results

A paired t-test was completed for this quality improvement project using SPSS statistical software, for overall percentage scores of the GLINT associate engagement survey scores pre-test (November 2020) and post-test (March 2021). The result was a pre-test mean score equal to 70.43 and post-test mean score equal to 78.29. The difference between the mean scores is considered statistically significant based off a *p* value of .003 which can be reviewed in Table 1 and is noted by the (Sig) score in the table.

Table 1

		Paired Samples Test							
		Paired Differences		Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Std. Deviation		Lower	Upper			
Pair 1	November2020 - March2021	-7.857	4.259	1.610	-11.796	-3.918	-4.880	6	.003

Frequency statistics were then completed on the percentage scores of each domain from the GLINT associate engagement survey scores on pre-test (November 2020) and post-test (March 2021), which can be reviewed in Table 2. In March 2021 there were no percentage scores below 70 and the three highest percentage scores were 79, 82, and 87 which was higher than any of the November 2020 percentage scores. This shows the increase in percentage scores in post-test (March 2021), after education on the use of Code Lavender.

Table 2

November2020						March2021										
	Frequency	Percent	Valid Percent	Cumulative Percent		Frequency	Percent	Valid Percent	Cumulative Percent		Frequency	Percent	Valid Percent	Cumulative Percent		
Valid	64	1	14.3	14.3	14.3	71	1	14.3	14.3	14.3	75	2	28.6	28.6	42.9	
	67	1	14.3	14.3	28.6		79	2	28.6	28.6	71.4	82	1	14.3	14.3	85.7
	68	1	14.3	14.3	42.9		87	1	14.3	14.3	100.0					
	71	1	14.3	14.3	57.1											
	72	1	14.3	14.3	71.4											
	73	1	14.3	14.3	85.7											
	78	1	14.3	14.3	100.0											
Total	7	100.0	100.0			Total	7	100.0	100.0							

The number of Code Lavender's tracked pre-intervention was 0, and post-intervention was a total of 5 Code Lavender's that were initiated during the pilot period. Turnover measured in total number of ICU RN's who left the organization pre-intervention was equal to 4 nurses compared to post-intervention that was equal to 0 nurses that left the organization. Time to fill open ICU RN positions decreased from pre-intervention of 118.5 days to post-intervention of 65.5 days resulting in a decrease of 53 days to fill open ICU RN positions.

Limitations, Recommendations, and Implications for Change

The biggest limitation for this quality improvement project was implementation time of only 2 months for the pilot period. This only allowed for collection of 2 months of baseline data to compare 2 months of post-implementation data. Increased time with increased data collection has the potential to create more data points and opportunity for the use of Code Lavender.

The analysis of the data for this quality improvement project helps support recommendations. The first recommendation is that Code Lavender should spread to all nursing units at Parker Adventist Hospital. This is based off the positive use of Code Lavender, decreased RN turnover, decreased time to fill open RN positions, and increase in associate engagement scores. The next recommendation is to increase the pilot period to increase data collection, allowing for further statistical testing to be completed.

Code Lavender had a positive impact on nurses working in the ICU at Parker Adventist Hospital. The success of this quality improvement project helps to support the implication for change and use of Code Lavender. Unsolicited comments made by nurses who were a part of or experienced a Code Lavender include the following comments: one nurse stated they, “appreciate the permission to take time”, “I have never really had anyone notice me, like this”, and another nurse stated, “I would highly recommend the use of Code Lavender to a peer”. ICU nurses are faced with incredibly complex clinical situations that demand they be at the top of their performance. The global pandemic of COVID-19 has forced nurses to face unimagined stressors and placing them at higher risk for emotional and moral distress. Code Lavender offers intentional and personal care for ICU nurses during a time of need.

Conclusion

This paper discussed the quality improvement project for this DNP student and the implementation of Code Lavender in the ICU at Parker Adventist Hospital. The PICO question for this project, “do ICU nurses who have had education on the use of Code Lavender have decreased turnover and increased engagement”? The answer based on this quality improvement project is yes. The education and use of Code Lavender decreased ICU RN turnover, decreased time to fill open ICU RN positions, and increased associate engagement scores. The detail and discussion were provided through the problem recognition, review of the evidence, project plan and evaluation, project findings and results, project limitations, recommendation, and implications for change. Use of Code Lavender made a positive difference on this ICU.

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Appendix A

Systematic review of the literature

Authors/Year of Citation	Research Design	Data Collection Methods	Leveling Model	Sample Characteristics	Key Findings
Davidson et. al, 2017	Single Site Pilot research to understand feasibility and use of Code Lavender	Survey collection – pre and post intervention and Analysis	Level VI	Obtain in depth understanding of positive effects of Code Lavender for those included in the pilot	Peer to peer support successful and more helpful than offerings such as EAP. Emotional support in the form of intentional kindness is helpful
Stone, 2018	Commentary	Collection of outcomes	Level VIII	Descriptive of what Code Lavender is and is not. Code Lavender adds to the healing environment of a hospital.	Benefits of Code Lavender, further research suggested such as longitudinal study comparing a control group
Phillips et. al, 2018	Philosophical Review	Expert Opinion	Level VIII	Suggestions for Code Lavender kit, room, and implementation	Critical need for the nursing profession to self-care as urgent. Nurses are at risk for negative effects related to what they experience
Hinson & Spatz, 2011	Replication of Institute for Healthcare	Quality improvement based off	Level IV	Focus on the NICU team in focused retention concepts: onboarding,	Voluntary turnover reduced in the NICU

	Improvement retention strategies at Children's Hospital of Philadelphia	model for process improvement, review of turnover data provided by the hospital		employee rounding, social networking, employee recognition, stretch assignments	by 91% surpassing the goal set of 50%
Paneell et. al, 2017	Descriptive Cross-sectional correlational design using a convenience sample	Stress Resiliency Profile questionnaire given to 48 bedside nurses	Level IV	Convenience sampling of 48 nurses, compared to total number of 200 Variation in perceptions of resiliency based on age of nurse	Clinical skill may not be the only thing needed to address stress resiliency for nurses working in critically demanding areas
Badu et. al, 2019	Comprehensive integrative review	Review of previous published research, synthesized	Level V	Varying levels of stress have causative factors and impacts on workplace nurses	Individual attributes help build resilience in the workplace
Graham et. al, 2018	Single Site Pilot research on testing feasibility of caregiver support team	Survey collection – pre and post intervention and Analysis	Level VI	Post implementation of a Caregiver support team, 40% of respondents stated 100% that team was helpful, 100% would recommend	Caregiver support team can be positively received as an associate response intervention
Cline, 2015	Commentary	Expert Opinion	Level VIII	Connection between resilience and nurse leadership	Importance of resilience and

					strategies for development
Perlo & Feeley, 2018	Institute for Healthcare Improvement Framework for Joy in Work	Shared Information	Level VIII	Framework provided	4 key steps to create joy in work provided: Ask staff what matters, identify impediments, shared responsibility, improvement science to test approaches
Khan et. al, 2018	Systematic mixed-method literature review, using Joanna Brigg's guidelines for mixed-methods (2014)	Review of previous published research, synthesized	Level V	Studies were critically appraised, and data extracted into an evidence table	Themes emerged that quality of work environment is critical to nurse's intention to leave position

Appendix C

SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Increase perception of resiliency • Offers a tool for nurses to use • Provides immediate support • Increase teamwork • Builds positive working environment • Decrease turnover • Little cost related to supplies 	<ul style="list-style-type: none"> • Negative effect on productivity • Engagement and participation in Code Lavender • Management of change process • Lack of understanding of use of Code Lavender • Nursing expertise working in ICU • Nursing residents
Threats	Opportunities
<ul style="list-style-type: none"> • Competitor Healthcare systems in immediate area offering higher pay for ICU Nurses • Resurgence of COVID-19 or variants • Flu Season patterns changing • Natural disasters impacting emergency preparedness • Violence in the community – rioting, social protesting • Shift in Payor Mix due to rising life expectancy • Union Activity in the Denver Metro Area 	<ul style="list-style-type: none"> • Douglas County Population expected to grow by 39% from 2015 to 2065 = total population of 153,136 in 2065 • Increasing life expectancy for Douglas County residents: 78 years in 2010 to 85 in 2060 • Nurse Retention • Improved HCAHPS & Patient Satisfaction • Improved Quality Indicator Outcomes (specific Nursing Sensitive Indicators)

Appendix D Budget Summary

Code Lavender				
Wage Information				
Description of Role	Hourly Rate	Number per role	Workgroup Hours (prep meeting and 1 hour staff meeting time)	Total Cost of Wage
Nurse Leadership	\$0.00	3	3	\$0.00
Bedside RN	\$35.00	51	51	\$1,785.00
		51	Total for Attendees	\$1,785.00
Material Information				
Description of Material	Cost of material	Number of pages per resource notebook		Total Cost per Handout
Type of Paper				
Printing Stock	\$0.15	25		\$3.75
Printing				
Color	\$0.25	25		\$6.25
			Cost for Notebook	\$10.00
				1
*prices based off Kinkos Services - FedEx Services			Total for Resource Notebook	\$10.00
Code Lavender Kit Information				
Description of Food	(price per item)		Total number of kits	Total Cost of Kit
Water	\$0.25		1	\$0.25
Kind Bars	\$0.50		1	\$0.50
Tea Bags	\$0.50		1	\$0.50
Prayer Cards	\$0.15		1	\$0.15
hand lotion	\$1.00		1	\$1.00
list of ideas and resources	\$0.15		1	\$0.15
Organza bag		2	1	\$2.00
			Total cost for Kits	\$4.55
			Grand Total for Code Lavender	\$1,799.55

Appendix E

Logic Model/Conceptual Diagram



Appendix F

Regis IRB Approval Letter



REGIS.EDU

Institutional Review Board

DATE: October 5, 2020

TO: Andrea Narvaez, BSN, RN, MHA, NE-BC
FROM: Regis University Human Subjects IRB

PROJECT TITLE: [1640651-1] Code Lavender
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF NOT RESEARCH
DECISION DATE: October 5, 2020

Thank you for your submission of New Project materials for this project. The Regis University Human Subjects IRB has determined this project does not meet the definition of human subject research under the purview of the IRB according to federal regulations.

This quality improvement project may proceed as written.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the Institutional Review Board at irb@regis.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Regis University Human Subjects IRB's records.

Appendix G

CHI IRB Approval Letter



FWA Number: FWA 00019514
OHRP IRB Number: IRB00009715

DATE: September 11, 2020
TO: Andrea Narvaez
PROJECT TITLE: [1632173-1] Code Lavender for ICU Nurses
SUBMISSION TYPE: New Project
ACTION: DETERMINATION OF NOT HUMAN SUBJECT RESEARCH
DECISION DATE: September 11, 2020
REVIEW TYPE: Administrative Review

Thank you for your submission to the Catholic Health Initiatives Institute for Research and Innovation Institutional Review Board (CHIRB). An individual designated by the CHIRB has determined this project does not meet the criteria for human subject research under the purview of the IRB according to federal regulations.

As defined by federal regulations, research is systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. 45 CFR 46.102(f)

A human subject, as defined by federal regulations, means a living individual about whom an investigator (whether professional or student) conducting research obtains (1) Information or biospecimens through intervention or interaction with the individual and uses, studies, or analyzes the information or biospecimens; or (2) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens. 45 CFR 46.102(e)

The CHIRB determined that this project does not meet the regulatory definition of research involving human subjects as defined by 45 CFR 46.

Please note that any publications regarding this project should not describe this body of work as "research" or as a "study" involving human subjects.

If you do not believe this determination is accurate, or should you wish to amend this project in any way that might impact this determination, please contact the CHIRB.

Please note that it is your responsibility to obtain any additional local institutional or departmental required approvals prior to initiating your project.

The following documents have been reviewed in making this determination:

- CHI - Research Application - CHI - Research Application (UPLOADED: 08/18/2020)
- Other - Code Lavender Flyer.docx (UPLOADED: 08/9/2020)
- Protocol - NarvaezA_Final Project Proposal Edited.IRB submission.docx (UPLOADED: 08/26/2020)

If you have any questions at any time, please feel free to contact the CHIRB at 1-844-626-2299 or CHIRB@CatholicHealth.net. Please include your project title and reference number in all correspondence with the CHIRB so that we can best assist you.

Thank you.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Catholic Health Initiatives Institute for Research and Innovation Institutional Review Board (CHIRB)'s records.

Appendix H

CITI Training Certificate

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- **Name:** Andrea Narvaez (ID: 8910787)
- **Institution Affiliation:** Regis University (ID: 745)
- **Institution Email:** anarvaez@regis.edu
- **Institution Unit:** Nursing

- **Curriculum Group:** Human Research
- **Course Learner Group:** Social Behavioral Research Investigators
- **Stage:** Stage 1 - Basic Course

- **Record ID:** 35326125
- **Completion Date:** 16-Feb-2020
- **Expiration Date:** 15-Feb-2023
- **Minimum Passing:** 80
- **Reported Score*:** 92

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14928)	09-Feb-2020	5/5 (100%)
Populations in Research Requiring Additional Considerations and/or Protections (ID: 16680)	13-Feb-2020	4/5 (80%)
Conflicts of Interest in Human Subjects Research (ID: 17464)	15-Feb-2020	4/5 (80%)
History and Ethical Principles - SBE (ID: 490)	16-Feb-2020	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	16-Feb-2020	5/5 (100%)
Assessing Risk - SBE (ID: 503)	16-Feb-2020	5/5 (100%)
Informed Consent - SBE (ID: 504)	16-Feb-2020	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	16-Feb-2020	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	16-Feb-2020	4/5 (80%)
Students in Research (ID: 1321)	16-Feb-2020	4/5 (80%)
Belmont Report and Its Principles (ID: 1127)	16-Feb-2020	3/3 (100%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: www.citiprogram.org/verify/?k4156652a4-2977-4950-8a85-8a5287953b7d-35326125

Collaborative Institutional Training Initiative (CITI Program)

Email: support@citiprogram.org

Phone: 888-529-5929

Web: <https://www.citiprogram.org>

Appendix I
Letter of Agreement



July 16, 2020

RE: Letter of Agreement

To Regis University Institutional Review Board (IRB):

I am familiar with Andréa Narvaez's quality improvement project entitled Code Lavender. I understand Centura Health, Parker Adventist Hospital's involvement to be the specific facility where the quality improvement project will be implemented. The project is scoped for implementation at Parker Adventist Hospital in the Intensive Care Unit (ICU) and will only include nursing staff that works in the ICU. Participation is voluntary including participation in the Professional Quality of Life (ProQOL) survey that will be used pre and post project implementation. All surveys collected will be deidentified and not linked to any specific nurse.

I understand that this quality improvement project will be carried out following sound ethical principles and provides confidentiality of project data, as described in the proposal.

Therefore, as a representative of Centura Health, Parker Adventist Hospital, I agree that Andréa Narvaez's quality improvement project may be conducted at our agency/institution.

Sincerely,

A handwritten signature in black ink that reads "Rhonda Ward" with a stylized flourish at the end.

Rhonda Ward, MSN, RN
Denver Metro Group VP & Chief Nursing Officer