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Crisis Redeployment: An Evidence-Based Plan for Nursing

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Crisis Redeployment: An Evidence-Based Plan for Nursing

by

Lauren M. Setzer

A project submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

Boiling Springs, North Carolina

2021

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I express gratitude to God who has given the ability to complete this project and to my husband who encouraged me throughout the endeavor. I could not have completed the project without your support, Jayson.

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CHAPTER I

Introduction

Problem Statement and Significance

The novel virus, SARS-CoV-2, known as COVID-19, emerged in December of 2019 in Wuhan, China (Centers for Disease Control and Prevention [CDC], 2020a). The virus manifested as a respiratory infection and induced pneumonia in severe cases. The highly contagious nature of the virus led to rapid human-to-human transmission across China, surrounding nations, and around the world. The outbreak was identified as a pandemic in March of 2020 (World Health Organization [WHO], 2021). As the pandemic progressed, millions of individuals contracted the virus worldwide. While most infected individuals recovered, millions died as a result of the COVID-19 virus.

The first case of COVID-19 in the United States (US) was identified on January 21, 2020, and due to community health concerns, the US government declared a state of emergency on February 3, 2020 (American Journal of Managed Care [AJMC], 2021). As seen in countries affected earlier in the pandemic, millions of Americans did contract the virus, and over 100,000 Americans died by May of 2020 (CDC, 2020b). Early in the US outbreak, public health officials at the national, state, and local levels recommended several protocols in an attempt to decrease viral spread. Infection prevention practices included restricting travel; closing businesses, restaurants, and schools; and implementing facemask use, handwashing education, and social distancing protocols. A downstream goal of these protocols was to bolster the preparation and perseverance of the healthcare system through the entirety of the outbreak.

Furthermore, the US healthcare community took steps to prepare for a surge of patients infected with COVID-19 as seen in other nations. Methods included alternative healthcare sites, such as mobile tents, to increase treatment capacity and closure of elective or non-essential healthcare departments. Limiting elective procedures reduced demand for hospital beds and resources, and the healthcare personnel from the elective areas were available to deploy to departments that were most impacted by the COVID-19 outbreak. Departments such as perioperative services scaled their schedules back to emergent cases only, and nurses were sent to assist in areas such as the emergency room and critical care units.

While large hospital facilities often have the infrastructure to effectively redeploy nursing staff as described, small facilities are frequently not equipped with robust resources and plans. This phenomenon was experienced in an acute care hospital in South Carolina (SC). While this hospital did use staff redeployment to increase support in overburdened areas during the COVID-19 outbreak, gaps were identified with the strategy.

The acute care facility is a community hospital within a large healthcare system. Prior to the COVID-19 pandemic, the hospital had no experience with the redeployment of nursing staff during a crisis, nor did the facility have a plan in the event redeployment was needed. As explained by Bourgeault et al. (2020), healthcare facilities, like the one described, certainly have disaster relief plans that outline operations, but a detailed plan for a sustainable workforce is not a primary feature of those plans. Therefore, as cases of COVID-19 increased and the staffing need grew precipitously at the hospital, nursing

leaders were forced to develop a redeployment plan with no prior research or planning. Due to the rapid increase in patient volumes, Keeley et al. (2020) noted that the redeployment strategy in New York hospitals had to be developed at “a speed and scale... never imagined possible” (para. 1). While the SC facility did not see the patient volume of New York hospitals, the redeployment plan was initiated in the midst of the COVID-19 surge in SC, and the lack of planning was the foundation for opportunities in the strategy.

Due to the closing of elective and non-essential areas at the SC hospital, many of the redeployed nursing personnel were from specialty departments. While some nurses had prior experience in areas such as critical care, the plan lacked effective re-education and psychological support. Therefore, nurses became anxious and concerned about providing quality, safe care. In their study of safety culture during the COVID-19 pandemic, Denning et al. (2020) found that a lack of support during redeployment led to a low perception of safe care. Based on baseline data, nurses historically reported a positive perception of safe care; however, during the COVID-19 pandemic, nursing appeared to have a poor perception of safety (Denning et al., 2020). The study linked this negative view to nurses’ opinions of their working environment and job fulfillment (Denning et al., 2020). Concern for safety, negative perceptions of the work environment, and low work satisfaction provide additional support for an effective redeployment plan.

As the COVID-19 pandemic continued, nursing associates at the SC facility also became infected with the virus. This impacted the number of nursing personnel available to redeploy. Numerous staffs call-outs occurred not only in areas in need of additional

staff but also within the staff scheduled to redeploy. The lack of staffing strategy became apparent as many staff members were out of work for extended periods of time, and staffing became increasingly thin. As mentioned by Bourgeault et al. (2020), the COVID-19 pandemic shed light on the need for a more “sustainable” plan for the healthcare workforce (para. 34). The pandemic caused an increase in the number and acuity of patients while the workforce trained to care for the patients dwindled (Bourgeault et al., 2020).

To ensure the nursing workforce is adequately prepared for future crises, equipped to sustain the duration of the impact, and able to provide safe and effective care, a strategic redeployment plan must be developed for the acute care facility. The plan must be clear and require limited effort to implement quickly. Therefore, the purpose of this project was to define an evidence-based plan to redeploy nursing personnel during a crisis, such as the COVID-19 pandemic.

Definition of Terms

As described by Merriam-Webster, the term redeploy means “to transfer from one area of activity to another” or “to relocate personnel or equipment” (Merriam-Webster, n.d.b). In the context of this project, the redeployment of nursing personnel refers to assigning staff from one area or department to an alternative, non-primary department. Danielis et al. (2020) described redeployment as “mandatory mobility” (p. 4). The term crisis, as defined by Merriam-Webster, refers to “an unstable or crucial time or state of affairs in which a decisive change is impending, especially one with a distinct possibility of a highly undesirable outcome” (Merriam-Webster, n.d.a). For the purpose of this

project, a crisis refers to a threat, such as a pandemic, that will negatively affect the sustainability of the nursing workforce.

Conceptual Framework

Crises often produce increased levels of stress. Stress can be related to an unfamiliar stimulus (i.e., COVID-19) or the lack of ability to appropriately handle the stimulus (i.e., significant increase in patient volumes). Most often, stress requires the ability to cope with the situation at hand, and the perception of the stressor is viewed through the lens of the coping capacity. Therefore, stress and coping are interrelated in terms of human ability. One cannot exist without the other. Lazarus and Folkman's Transactional Model of Stress and Coping, developed in 1984, illustrates the relationship between stress and coping as an exchange (Lazarus & Folkman, 1987; Stangor & Walinga, 2014). The ability to handle stress is dependent on coping mechanisms, and individuals determine coping ability through appraisal. As defined by Lazarus and Folkman (1987), appraisal is "the implication of...information for one's personal well-being" (p. 145). Appraisal of a stressor can be posed as such: what will the stimuli and the response to the stimuli do for the individual's personal welfare?

Lazarus and Folkman described two appraisal steps individuals employ when faced with a potential stressor (Lazarus & Folkman, 1987; Stangor & Walinga, 2014). The first assessment is completed when an individual is faced with a trigger and determines if that trigger will lead to stress. This initial step assesses the stressor based on previous encounters, determines the potential for new danger, and defines the intensity of effort to overcome the stimulus (Lazarus & Folkman, 1987). Every individual is different

in this assessment as each person varies in beliefs, experiences, cultural backgrounds, and cognitive abilities. What may threaten one person's wellbeing may not threaten another. Therefore, what is stressful for one individual may not be considered stressful for another individual.

The second assessment filters the potentially stress-inducing trigger through the lens of coping. The individual must determine if appropriate coping mechanisms exist. Lazarus and Folkman (1987) described this process in terms of what is at stake for the individual based on the ability to handle the trigger. If the individual assesses and determines that conquering the threat is highly likely, stress is perceived as non-existent or negligible. However, if the inability to conquer the threat is determined, stress is perceived as high (Lazarus & Folkman, 1987). Again, this step is highly dependent on the individual. Past experiences, cognitive abilities, support systems, and emotions all factor into this assessment.

The outcome, coping, depends on the alignment of the previously described assessments (Stangor & Walinga, 2014). Lazarus and Folkman (1987) explained that coping is a process, and often two primary functions of coping are employed: "problem-focused coping" and "emotion-focused or cognitive coping" (p. 147). Problem-focused coping centers on control over the situation at hand and the ability to manipulate the stressor (Lazarus & Folkman, 1987). Emotion-focused coping concentrates on the individual's response to the situation when there seems to be less manipulative control (Lazarus & Folkman, 1987). Often, both forms of coping are employed throughout the

experience, and what Lazarus and Folkman (1987) call adaptability is dependent on the use of both coping mechanisms.

The COVID-19 pandemic, surge of patient volume, and resulting redeployment of nurses presented a significant stress-inducing trigger at the acute care facility in SC. As described above, the lack of experience with redeployment and lack of planning resulted in difficulty coping and adapting to the situation at hand. Not only were individual nurses pressured to evaluate and cope with new stressors but also nursing as a discipline was forced to evaluate and adapt to the situation. In review of the patient surge and staffing crisis through the lens of Lazarus and Folkman's Transactional Model of Stress and Coping, primary and secondary appraisals of the situation were too late. The primary appraisal would have deemed the impending patient surge and staffing needs a crisis, and the secondary appraisal would have forced the development of a plan for adapting to the situation in a preemptive manner. Thus, Lazarus and Folkman's model serves as a viable framework for this evidence-based project for nurse staffing during crisis situations. The redeployment plan will serve as a problem-focused coping mechanism for future crises.

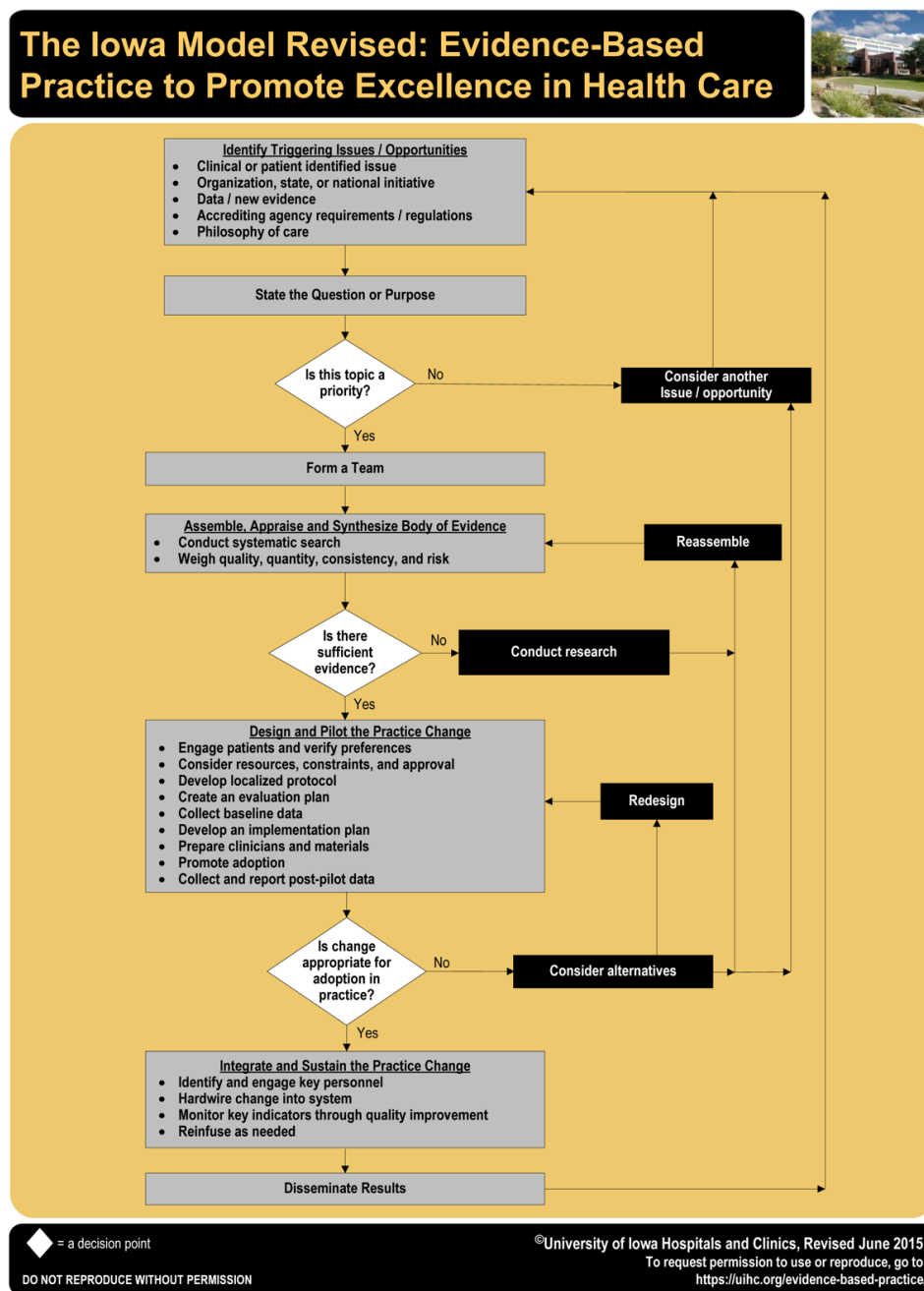
Evidence-Based Framework

Evidence-based practice (EBP) is "a clinical problem-solving strategy" that identifies the best research and combines this research with "clinical expertise, patient preferences, and local circumstances" to reach the best decision (Polit & Beck, 2017, p. 21). The evidence-based framework used in this project is the Iowa Model of Evidence-Based Practice. The model was developed in the 1990s by the hospitals and clinics at the University of Iowa and has been utilized by many to improve quality of care (Titler et al.,

1994). The model is user-friendly and has supported many evidence-based initiatives. A multidisciplinary perioperative team implemented guidelines for the care of patients deemed high risk for obstructive sleep apnea (OSA) by using the model (Lemus et al., 2018). The EBP project resulted in a decrease in patient complications from 27% at baseline to 14% after implementation of the OSA guidelines. In their research regarding EBP in the hospital setting, Speroni et al. (2020) found that the Iowa Model for Evidence-Based Practice was the number one model adopted and utilized by research leaders within the nursing discipline. To follow the progression of healthcare research, the model underwent revisions in 2001 and resulted in the most current framework depicted in Figure 1 (Buckwalter et al., 2017).

Figure 1

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health



Note. From the *Iowa Model Collaborative* (4(3), 175-182) by the University of Iowa Hospitals and Clinics, 2015. Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 1998.

As described by Buckwalter et al. (2017), the Iowa Model begins with identifying a catalyst problem. The problem can be a clinical practice concern, a gap in knowledge, an investigation as required by a certifying body, or a data-driven analysis. Once the catalyst problem is identified, the research question is defined. Next, the topic must be expressed as significant or insignificant to investigate. This is a pivotal step in the model as the significance of a project is often determined by organizational goals. If the topic is determined significant, a team is gathered for evidence collection and analysis. Once the evidence is synthesized, the team must determine if the evidence is robust enough to support change. Evidence may suggest a practice or policy modification or the evidence may not be strong enough to support the progression of the project. If evidence is lacking, the evidence-based model guides the team to conduct additional research. If the evidence supports moving forward, the team must trial the change. If the trial is successful, the final steps in the Iowa Model are to determine if the change is appropriate for adoption, hardwire the change, and implement continued evaluation of the change (Buckwalter et al., 2017).

The Iowa Model of Evidence-Based Practice was selected as the structure for this project as the COVID-19 pandemic and ensuing staffing dilemma revealed a problem in the SC facility's strategic planning for nurse staffing. The Iowa Model includes a decisive step by asking the following question: "Is this topic a priority?" (Buckwalter et al., 2017, p. 178). Development of a plan for nursing redeployment ties directly to the SC hospital's strategic imperatives. An effective redeployment plan ensures efficiency, effectiveness, and a positive experience for mobilized staff. As mentioned by Hanrahan et al. (2019) in

their use of the Iowa Model, EBP is best implemented when tied to organizational mission and values; therefore, strategic planning for redeployment is a priority for the SC facility as demonstrated by the link to the strategic plan.

CHAPTER II

Literature Review

Nursing Staff Redeployment

To address the problem of nursing staff redeployment during a crisis, an evidence-based plan must be developed. In line with the steps in the Iowa Model, a comprehensive literature review was performed in regard to the topic. The databases examined included PubMed, CINAHL, and Medline. Search terms included: redeployment of nurses, redeployment of nursing associates, mandatory mobility, redeployment of nurses during a crisis, COVID-19, Coronavirus, redeployment of nurses during H1N1, redeployment of nurses during MERS, and redeployment of nurses during SARS. The literature revealed a limited number of non-experimental studies related to the redeployment of staff; however, a significant amount of literature exhibiting expert opinion and practice guidelines between 2005-2021 was found. Of the non-experimental studies, the phenomenological approach was a reoccurring framework of the research. The Middle East Respiratory Syndrome (MERS), South Asia Respiratory Syndrome (SARS), and H1N1 outbreaks were repeated contexts for existing research. A moderate amount of emerging literature related to the COVID-19 pandemic was also found. However, high-level evidence including randomized controlled studies and systematic reviews is lacking on the topic of nursing staff redeployment during a crisis. Additionally, the literature is lacking in evidence regarding redeployment for facilities that are similar in size and capability to the SC acute care facility on which this project is centered.

Despite the barriers noted, a few reoccurring themes related to the topic of redeployment of nursing personnel appeared in the literature. The qualitative and descriptive studies found an increase in psychological pressure as a result of redeployment during previous viral outbreaks and the COVID-19 pandemic. Nurses felt called to respond to patient care during the crisis and even felt it was their “duty” to respond as nurses (Danielis et al. n.d.; Liu et al., 2020, p. 792). This same feeling was reflected in nurses responding to the SARS and MERS outbreaks (Kim, 2018; Chung et al., 2005). Kim (2018) and Liu et al. (2020) noted that nurses responding in the COVID-19 and MERS outbreaks used battle or war-related terminology to describe their call to action. However, the call to respond was met with a myriad of feelings including fear, uncertainty, stress, and exhaustion. In turn, the feelings led to significant psychological pressure.

To delve deeper into the concept of mandatory movement of staff, van Schingen et al. (2016) reported increased stress when nursing redeployment was unplanned and short-term. While the study by van Schingen et al. (2016) was not performed in a pandemic or crisis context, Danielis et al. (n.d.) reported analogous feelings of unpreparedness, disorganization, and stress when nurses were urgently redeployed during the COVID-19 pandemic. Fear and uncertainty related to providing care for patients with novel, highly communicable diseases, potential personal exposure to the infections, and concern for carrying the infections to family members were also common worries (Liu et al., 2020; Chung et al., 2005; Corley et al., 2010; Lam et al., 2013).

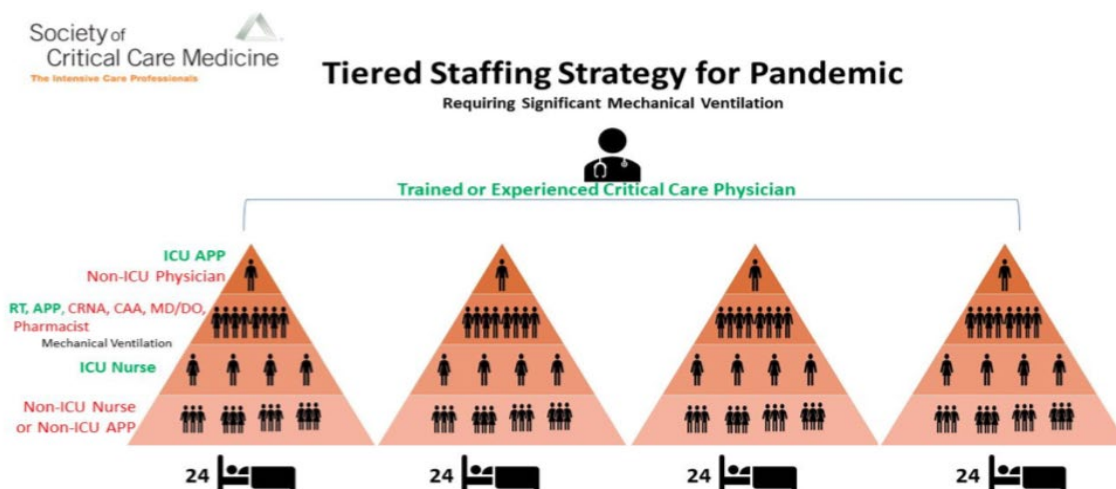
Personal protective equipment (PPE) was an additional source of stress and uncertainty. Nursing staff voiced confusion regarding which PPE items were necessary as the requirements changed repeatedly in the COVID-19 and H1N1 outbreaks (Corley et al., 2010; Liu et al., 2013). The duration of PPE use and the frequent donning and doffing of PPE were also identified as a source of exhaustion during outbreak response (Corley et al., 2010; Liu et al., 2013; Lam et al., 2013). Corley et al. (2010) reported concern for a sufficient supply of PPE during the H1N1 outbreak. In an effort to reduce stress during the COVID-19 pandemic, Retzlaff (2020) reported allowing staff to wear more PPE than necessary. Clarity regarding which PPE was required, consistent availability of PPE, and availability of a break from PPE wearing were highlighted as significant findings. Overall, the need for psychological support and clarity of protocols in an effort to reduce stress during prior crises were evident in the literature.

The importance of effective communication during staff redeployment was also a theme in the literature. Manuell et al. (2011) and Bourgeault et al. (2020) found compassionate and sincere communication was key to ensure staff felt supported. Effective communication also built trust between frontline associates and leaders (Wells et al., 2021). Wells et al. (2021) described two forms of effective communication employed during the COVID-19 pandemic: daily huddle and in-person leader rounding with employees. An acute care facility in Georgia also utilized daily, morning huddles as an effective communication method during the COVID-19 pandemic (M. Petersen, personal communication, March 21, 2021). An acute care facility in Indiana utilized system-wide email and local incident command centers as communication methods

during the COVID-19 pandemic (A. Tepner, personal communication, March 21, 2021).

As alluded to regarding stress management, communication was important due to frequent protocol changes. Nurses reported difficulty tracking the most recent information for practices such as PPE requirements (Lam et al., 2013).

An additional theme found in the literature outlined a specific staffing strategy used for redeployed personnel. While no experimental evidence was found on the topic, what is known as a tiered or buddy staffing model was well supported by expert opinion and guidelines from authoritative sources. The Society of Critical Care Medicine (Society of Critical Care Medicine [SCCM], 2020) described a tiered model in which critical care services may expand to care for up to 96 patients. A group of six critical care patients is cared for by three non-critical care nurses. Each of these non-critical care nursing groups is supervised by one critical care nurse (SCCM, 2020). The tier continues up through the supervision of advanced practice providers, non-critical care physicians, and ultimately a critical care physician who oversees the entire structure (SCCM, 2020). Figure 2 depicts the tiered model from the SCCM (SCCM, 2020).

Figure 2*Tiered Staffing Strategy for Pandemic*

Note. Reproduced with permission from the Society of Critical Care Medicine: *United States Resource Availability for COVID-19 (No.3)*. (2020, May 12). Copyright© 2020 the Society of Critical Care Medicine.

The American College of Chest Physicians, known as CHEST, released a consensus statement for pandemic response in which they described a tiered approach as well (Hick et al., 2014). The consensus outlined three levels of care: conventional, contingency, and crisis (Hick et al., 2014). Under the conventional level, nurse staffing is per usual, and additional staffing needs are addressed as they arise. At the contingency level, nurse-to-patient ratios increase, and responsibilities shift to accommodate the change. During crisis response, a team approach is applied and the scope of practice expands to allow for additional support in areas such as critical care (Hick et al., 2014).

The literature revealed several customized tiered or buddy staffing models. Following the recommendations from the SCCM, Schneider and Schneider (2020) described the expansion of critical care at New York-Presbyterian/ Weill Cornell Medical

Center during the COVID-19 pandemic. The critical care capacity expanded from 14-37 beds, and one non-critical care nurse was paired with one critical care nurse to oversee four patients (Schneider & Schneider, 2020). Wells et al. (2021) described how a 1,139-bed hospital in New York City expanded critical care services during the COVID-19 pandemic following the SCCM model. Staff deployed from areas such as perioperative services were paired with critical care nurses to allow one critical care nurse to oversee four to six patients. The critical care nurses focused on directing patient care and performed tasks such as care planning, task delegation, and rounding with the deployed staff working alongside them (Wells et al., 2021). The redeployed staff performed direct patient care and communicated each patient's status to the critical care nurse. As Wells et al. (2021) described, this structure supported the expansion of critical care services from 94-233 beds. The University of Pittsburgh Healthcare System also followed the SCCM and CHEST models to develop a tiered staffing structure for critical care during the COVID-19 outbreak (Harris et al., 2020). Their model focused on a staffing structure for physicians and advanced practice providers and included a telemedicine component. As the need to expand critical care services became apparent in each of the hospitals, critical care providers stepped away from direct patient care, stepped into a supervisory role at the top tier of staffing, and utilized telemedicine to provide oversight of non-critical care trained, redeployed providers (Harris et al., 2020). While their structure did not include defined nurse staffing, the provider model provides a valuable example of a tiered structure for the nursing discipline.

Mission Hospital developed a tiered approach following the CHEST consensus to expand critical care services during the COVID-19 pandemic (Bader et al., 2020). At the contingency level, one critical care nurse and one non-critical care nurse worked together to care for three patients. At the crisis level, one critical care nurse was paired with two non-critical care nurses to care for four patients. This crisis level could expand to six patients under the care of one critical care nurse and three non-critical care nurses (Bader et al., 2020).

The literature revealed additional accounts of tiered staffing structures designed similar to the SCCM and CHEST consensus models. Lee et al. (2020) described a tiered structure used in Singapore during the COVID-19 outbreak. Redeployed, non-critical care nurses managed direct patient care and were supervised by critical care nurses. A tertiary hospital in Wuhan, China used what they named echelon staffing to extend personnel during the COVID-19 outbreak (Liu et al., 2020). As the epidemic progressed, nursing leadership noted that the sustainability of the staff was declining. Therefore, all nursing staff was divided into groups and deployed in echelons. This approach ensured staff was always available as a backup in the event staff fell sick or the hospital became overwhelmed with a surge of patients (Liu et al., 2020). The Veteran Affairs Southern Nevada Healthcare System used a buddy system in which perioperative staff was paired with critical care staff for redeployment during the COVID-19 outbreak (Periop Briefing, 2020). A redeployed nurse, critical care nurse, licensed practical nurse, and technician partnered to provide care for one to five patients based on acuity. Redeployed

perioperative nurses provided care for less critical patients and reported up to a supervising critical care nurse (Periop Briefing, 2020).

A final theme noted in the literature was the provision of education in preparation for the redeployment of nursing personnel during crises such as the COVID-19 pandemic. The format of education varied within the literature. Locations provided in person, computer-based, or a combination of live and computer-based training (Brickman et al., 2020; Keeley et al., 2020; Liu et al., 2020; Wu et al., 2020). Harper et al. (2020) noted the benefit of virtual education platforms to support a variety of educational needs during a crisis. During the COVID-19 pandemic, Wolters-Kluwer offered a free online onboarding tool that supported redeploying staff (Joyal, 2020), and Mount Sinai Health System used an online educational tool called Project Florence to support education regarding COVID-19 (Cohen, 2021).

Other sites utilized on the job or unit-based orientation (Bader et al., 2020; E. Godwin, personal communication, March 21, 2021). Often, a skills assessment or “redeployment tool” was used to assess educational needs and determine the best location for reassignment (Bader et al., 2020; Retzlaff, 2020; Wells et al., 2021, para. 10). For example, during the COVID-19 pandemic, nurses with recent critical care experience at Mission Hospital in California were assigned complex tasks such as managing drips, ventilators, and documentation of the initial assessment, and nurses with no critical care experience performed tasks such as intake and output management, vital signs, and dressing changes (Bader et al., 2020). Role assignments were based on the completion of a skills assessment (Bader et al., 2020). Schneider and Schneider (2020) noted that the

rapid onset of the COVID-19 surge in the US impacted the ability to extensively train and prepare non-critical care nurses for redeployment to critical care. However, as mentioned in the tiered staffing models, partnering the redeployed staff with critical care nurses ensured all staff practiced within their skill set (Schneider & Schneider, 2020; M. Peterson, personal communication, March 21, 2021; A. Tepner, personal communication, March 21, 2021).

The most common education topics related to redeployment centered on PPE, infection prevention, and critical care education. Education on appropriate PPE use and donning and doffing PPE was noted in the literature (Liu et al., 2020; Wu et al., 2020). Critical care treatment and equipment were also common education themes for redeployed nursing personnel. For example, the critical care training at New York-Presbyterian/ Weill Cornell Medical Center consisted of a 3-hour course that included education on COVID-19 patient care, critical care equipment, medications, and hands-on skills lab (Brickman et al., 2020). As described by Lee et al. (2020), a 1,250-bed hospital in Singapore initiated a 4-week education program for staff redeployed to critical care during the COVID-19 pandemic. Staff learned about critical care equipment and assessments. A hospital in Wuhan, China covered three main topics in their education: psychological counseling, skills such as treatments for the COVID-19 infection, and self-protection knowledge including PPE education (Liu et al., 2020). An example from a previous outbreak included extracorporeal membrane oxygenation (ECMO) therapy which was used extensively during the H1N1 pandemic. Redeployed staff required an

introduction to ECMO and ongoing support as they managed the complex treatment (Corley et al., 2020).

While experimental evidence is lacking regarding the redeployment of nursing personnel during crises such as the COVID-19 pandemic, the literature does illuminate valuable themes and strategies for redeployment. Psychological pressure was noted as a common theme during crisis situations; therefore, psychological support and stress reduction are key. Effective communication, a tiered or buddy staffing model, and an education method were also themes in the literature. These four ideas provide a viable structure to create a plan for nurse staffing redeployment. The current literature emphasizes experiences at large hospital facilities; therefore, translation of the ideas to the small, acute care facility that serves as the context for this project is challenging. However, the themes of psychological support, communication, staffing structure, and appropriate education are applicable during any crisis and in any acute care hospital setting.

Conceptual Model

A literature review was also conducted in regard to Lazarus and Folkman's Transactional Model of Stress and Coping. The databases examined included PubMed, CINAHL, and Medline. Search terms included: Lazarus and Folkman, Lazarus and Folkman and COVID or Coronavirus, and transactional model. Numerous studies have used Lazarus and Folkman's Model as the conceptual framework. One randomized controlled trial was noted, and an additional number of experimental and non-experimental studies were found in the literature. The model was frequently used to study

individual or personal forms of stress and coping. In addition, examples of what could be described as largescale or widespread forms of stress and coping were noted, and emerging literature utilizing the transactional model in relation to the COVID-19 pandemic is discussed below.

An extensive amount of literature, supported by the transactional model, exists in regard to chronic or critical illness and individual coping mechanisms. Alizadeh et al. (2020) performed a randomized controlled trial to evaluate the effectiveness of stress appraisal training in patients with kidney disease on hemodialysis. The training was based on Lazarus and Folkman's Transactional Model and included an 8-week educational platform regarding stress analysis and management. The group that received the training had improved perception of their susceptibility to stress (Alizadeh et al., 2020) compared to the control group. The findings were valuable as the perception of stress susceptibility is often the step where pressure can be identified and mitigated.

In addition to this study, multiple non-experimental studies have been performed utilizing Lazarus and Folkman's Transactional Model of Stress and Coping. Studies regarding situational coping and susceptibility to depression or lack of well-being were noted. Avcioğlu et al. (2019) used the transactional model to study the coping of children with a sibling diagnosed with schizophrenia. The study identified effective coping methods utilized by the children. Singh et al. (2017) studied depression levels in mothers of children with autism by utilizing the transactional model. The study revealed burden levels related to caring for children with autism, and family support was identified as a mitigation strategy (Singh et al., 2017). The transactional model was also used to assess

the well-being of migrant children in China (Fang et al., 2020). The children were known to suffer from discrimination and financial stress as a result of their migratory lifestyle. The study investigated coping strategies to reduce depression and health issues (Fang et al., 2020). Cultural, meaning-focused coping was found to mediate discrimination and symptoms of depression (Fang et al., 2020).

A few studies utilized Lazarus and Folkman's Transactional Model to study coping during widespread crises. Three studies specifically focused on various aspects of the COVID-19 pandemic. Trougakos et al. (2020) used the model, in combination with the self-determination model, to study anxiety due to the COVID-19 pandemic, known as Cov-H anxiety, how this anxiety impacts functions of life, and the impact handwashing has to mitigate Cov-H anxiety. Concealing emotions was positively associated with Cov-H anxiety, and the problem-focused coping mechanism of handwashing was found to mitigate emotional response and anxiety levels (Trougakos et al., 2020).

In early 2020, Jean-Baptiste et al. (2020) began investigating stressful life events (SLE) and the effect of coping as defined by social support. Originally, the study was set to investigate SLEs and define the social support utilized by demographics; however, as the study was in full swing, the COVID-19 pandemic also rapidly spread. The study eventually turned to focus heavily on the pandemic as an SLE. Through surveys, focus groups, interviews, and the use of Lazarus and Folkman's Transactional Model, participants shared their primary and secondary appraisals of the COVID-19 pandemic and coping mechanisms employed. Ninety-five percent of the responses evaluating the pandemic as an SLE were classified as negative (Jean-Baptiste et al., 2020). In addition,

participants voiced problem and emotion coping methods employed to reduce pandemic-related stress. Some participants used problem-related coping mechanisms such as exercise and turning off media to mitigate stress while others used emotion-related coping such as denial or distraction (Jean-Baptiste et al., 2020).

The phenomenon of purchasing practical products (i.e., toilet paper) during the COVID-19 pandemic led Yang et al. (2020) to study the correlation between buying trends and largescale crises situations. The theory of awe, with its subthemes of “perceived vastness and need for accommodation,” defined how the perception of crisis situations leads to behavior modification (Yang et al., 2020, p. 2). Therefore, the study hypothesized that the COVID-19 pandemic would tend toward the generation of awe and use of problem-focused coping, and awe and problem-focused coping would be positively correlated (Yang et al., 2020). Through 512 surveys from Chinese individuals, the study found that the COVID-19 pandemic did in fact produce a sense of awe, and purchasing practical items was a frequent problem-focused coping mechanism used to mitigate the unmanageable feeling the pandemic generated (Yang et al., 2020).

Lazarus and Folkman’s Model has also supported research in non-pandemic yet widespread settings. Cognitive appraisal, in combination with the Conservation of Resources theory, was used as the framework to investigate the effect of the Iron Dome on Israeli psychological status during Operation Protective Edge. Operation Protective Edge was Israel’s military response to terrorist assaults in 2014 (Sivan-Donin et al., 2019), and the Iron Dome is a missile defense mechanism that was used to intercept a variety of assault weaponry (Raytheon Missiles and Defense, 2021). In combination with

personal coping mechanisms, Sivan-Donin et al. (2019) studied the effect the Iron Dome had on psychological distress (PD) and post-traumatic stress symptoms (PTSS). Personal resources such as education, economic status, and social support in combination with the Iron Dome were found to have a negative correlation to PD and PTSS (Sivan-Donin et al., 2019). Also, the Iron Dome alone, utilized as a coping or defense mechanism, was found to have a negative correlation with PD and PTSS (Sivan-Donin et al., 2019).

Lazarus and Folkman's Model was also used in two large-scale, weather disaster scenarios. The model served as the basis to study social media use as a coping mechanism after Hurricane Matthew (Zhang & Shay, 2018). Social media was found to be an effective coping mechanism to rebuild communities post-crisis (Zhang & Shay, 2018). Religiousness was studied as a coping mechanism in the immediate period following Hurricane Katrina (Park et al., 2019). In a survey of 132 individuals who were sheltering post-hurricane, religiousness was not associated with distress symptoms or the ability to function (Park et al., 2019). While the findings of this study were contradictory to existing literature regarding the impact of religion on crisis recovery, Lazarus and Folkman's Model served as a well-defined platform for the research.

One additional experimental study took the concept of Lazarus and Folkman's primary appraisal and tested problem-focused and emotion-focused responses. Considering an individual's determination that stress is either conquerable or threatening (primary assessment), the study hypothesized that stress determined to be conquerable elicits a problem-focused response, and stress determined to be threatening elicits an emotion-focused response (Palmwood & McBride, 2019). One hundred forty-five

participants were randomly assigned a task that was considered intellectually stressful, socially stressful, a combination of intellectually and socially stressful, or low stress (Palmwood & McBride, 2019), and the participants rated their experience as either stimulating or harmful. The study found that intellectually stimulating stress resulted in problem-focused coping while stress considered harmful elicited both problem-focused and emotion-focused coping (Palmwood & McBride, 2019). While this study had limitations, the findings mirror the concerns raised through the redeployment of nursing staff during the COVID-19 pandemic. A staffing method and educational preparation for redeployment are methods of problem-focused coping, and psychological support is a method of emotion-focused coping. The lack of these coping mechanisms explains the perception of redeployment as stressful and unmanageable.

Lazarus and Folkman's Transactional Model of Stress and Coping has served as the framework for numerous studies of stress and coping. The literature covers both individual and personal forms of stress as well as widespread, stress-inducing circumstances. Both experimental and non-experimental research exists. In addition, the model has been employed during research within the COVID-19 pandemic. Therefore, Lazarus and Folkman's Transactional Model of Stress and Coping serves as an exceptional conceptual framework within the context of this evidence-based project.

CHAPTER III

Needs Assessment

Population and Setting

The setting for the evidence-based project was the SC acute care hospital. The facility is one of five acute care hospitals within a large healthcare system and consists of 40 medical-surgical beds, a four-bed critical care unit, an emergency center (EC) with 18 patient exam rooms, and perioperative services including 12 preoperative and postoperative bays and four operating rooms. The facility specializes in orthopedic and spine surgery and has seen significant growth in EC visits year after year since the hospital opened in 2008. While the hospital did have a four-bed critical care unit, a portion of patients requiring consultant services are transferred to a higher level of care.

The target population for the project was the nurses at the SC hospital. The facility staffs approximately 350 nurses including full-time, part-time, and per diem nurses. A large portion of the nurses works in the EC and medical-surgical departments due to the volume of patients seen in those areas. Each department is structured in a similar organizational fashion. The frontline staff report to the nurse manager and nursing director, and each unit has a clinical unit educator that coordinates department education, new hire onboarding, and annual unit competencies.

All new hire nurses attend a nursing orientation which includes general nursing education such as activation of medical alerts and use of the minimal lift equipment. Once nursing orientation is complete, all nurses are oriented to the primary unit in which they are hired. Each area tailors orientation to meet the needs of the patient population

served by that department. Therefore, unit-based orientation is highly specialized to the type of service provided. While some nurses do work in multiple departments, floating between units is not a requirement for employment at the hospital.

In addition, each unit within the hospital determines appropriate staffing based on the standard of care and the nurse to patient ratio for the service provided. Due to the acute nature of patient care, the intensive care units (ICU) nurse to patient ratio is 1:2. The nurse to patient ratio on the medical-surgical units is 1:5, and the EC uses a 1:4 nurse to patient ratio. The patient load on the medical-surgical units and the EC fluctuates up and down as patient volumes change; however, the nurse to patient ratios described is the standard of care.

As mentioned, the nursing associates at the acute care hospital serve as the population of interest for the evidence-based project for the redeployment of nursing staff. In the midst of the COVID-19 pandemic, the nurses directly affected by redeployment were based in elective areas. As volumes in elective departments drastically decreased, nurses were deployed to the emergency center, critical care, and medical-surgical departments. The scope of this project was comprehensive to include any crisis situation that required staffing deployment. Therefore, the plan must meet the needs of nurses from all specialties in the event redeployment of other staff is required in the future.

Setting Culture

The mission and strategic plan of a facility are key foundations in any evidence-based project. Without alignment with organizational goals, a project may face barriers or

a lack of support upon execution. This evidence-based project for nursing staff redeployment aligns with the mission, vision, and operational strategy of the SC hospital serving as the project setting.

The SC hospital strives for excellence and quality in all endeavors. This mission was reflected through the strategic plan which includes tactics to improve community health, ensure operational efficiency, elevate the experience of patients and associates, and maximize the effectiveness of services. The actions and communication of executive leadership exude this strategy, and the culture extends to the frontline nurses.

The culture of excellence and quality care at the SC facility had been reflected in a variety of indicators. The hospital had been designated as a Pathway to Excellence facility by the American Nurses Credentialing Center (ANCC). The hospital maintains patient satisfaction scores consistently in the 80th and 90th percentile as reported by the Press Ganey organization. Employee satisfaction was also consistently high as defined by annual engagement scores and designation as one of Modern Healthcare's Best Places to Work for five consecutive years. Quality care is of utmost importance as the acute care facility's star rating is four out of five stars per the Center for Medicare and Medicaid Services (CMS) in 2021. The organization was deemed a center of excellence for hip, knee, and spine surgery through Det Norske Veritas (DNV) in 2021. In addition, the SC hospital is often the site to trial new processes, procedures, and equipment within the healthcare system due to leadership and staff engagement.

The culture at the SC facility provided a prime setting for this evidence-based project. The background of excellence and quality care demonstrates striving for

continual improvement on behalf of patients and associates. The development of a plan for nursing staff redeployment aligned seamlessly with the facility's previous endeavors for continual improvement.

Stakeholders

In addition to cultural alignment, stakeholders are key for project engagement. As described by Cheshmberah (2020), stakeholders are vital for project success and cannot be ignored. "Stakeholders are any individual or group that is influenced by or influences an organization in achieving its goals" (Cheshmberah, 2020, p. 140). Not only must stakeholders be named at the outset of the project but also guided throughout the duration of the project to align goals and interests with the group members (Cheshmberah, 2020).

The first stakeholder group for this evidence-based plan is the nursing associates at the SC acute care hospital. The nursing staff is the largest group of healthcare providers who are most likely to be mobilized to provide patient care during a crisis. Nurses are also invested in the project due to the desire for optimal personal and patient outcomes. As evidenced by the outcomes from staff redeployment during the COVID-19 pandemic, nurses are concerned about providing quality patient care and ensuring personal psychological wellbeing. Therefore, outcomes of the evidence-based plan are highly valuable to this group, and frontline nurse input is essential in project development.

An additional stakeholder for this evidence-based redeployment plan was the nurse leader team at the SC hospital. The nurse leaders are responsible for the daily operations of all nursing units and the provision of the necessary staffing, tools, and

training for associates. Nurse leaders are responsible for strategic planning for all patient care as well. This group includes the chief nursing officer (CNO) who is often able to remove barriers to the project, provide necessary resources, and have full authority and responsibility for nursing care in the SC acute care facility. To bolster plan effectiveness, all nurse leaders must be stakeholders in the development of the evidence-based plan for nursing staff redeployment.

As described earlier in this project, the lack of planning during the COVID-19 pandemic led to a staffing crisis and a lack of psychological and educational support as nurses were sent to new departments to provide care. However, the feelings of nurse leaders during crises such as the COVID-19 pandemic are often missed. White (2021) studied the experiences of 13 nurse managers and assistant nurse managers during the COVID-19 pandemic and found a few common themes in their reported experiences. The nurse leaders felt responsible for “carrying the burden” of the frontline nurses as they expressed apprehension and, at times, opposed patient assignments (White, 2021, p. 6). While supporting their staff, the nurse managers and assistant nurse managers also took on new assignments themselves, such as providing direct patient care, and the nurse leaders dealt with their own fear and burnout (White, 2021). A positive finding from White’s study included the nurse managers’ insight to take lessons from the first increase of COVID-19 patients and make necessary changes to plan for a potential second spike (2021). This planning ensured departments were in order and necessary staffing adjustments were made in advance.

The chief stakeholders in the evidence-based plan for nursing staff redeployment were patients. Nursing as a profession has committed itself to promote the safety and wellbeing of individuals as outlined by the Code of Ethics for Nurses. In return, patients, whether individual or collective, must expect that this commitment is upheld in all circumstances. Patients should presume that nurses utilize lessons learned, as in the context of the COVID-19 pandemic, to better prepare for future situations. Therefore, patients were vital participants in the discussion of nursing staff preparation for crises.

Frontline nurses, nurse leaders, and patients were the key stakeholders in the evidence-based plan for nursing staff redeployment in a crisis. Each of these groups had a vested interest in preparing for redeployment, and each had valuable insight for the development of an effective plan. Therefore, to reach a successful project outcome, all must be represented as the plan was developed, implemented, and reviewed.

Desired Outcomes

Defining project outcomes at the outset guides the project to attainable goals. Patients are the central focus of project outcomes, yet the outcomes should also bring value and fulfillment to the frontline nursing staff and nurse leaders. The problem that initiated this project was the lack of a redeployment plan during the COVID-19 pandemic. Therefore, the principal goal of the project was the development of a clear, sustainable redeployment plan, and the primary outcome of the project was the support of nursing staff through reduced psychological impact and improved staffing, communication, and education. The subsequent outcome of the project was the promotion of safe, quality patient care.

SWOT Analysis

Effective evaluation includes consideration of every aspect of an evidence-based plan. A SWOT analysis is a viable tool to define the internal strengths and weaknesses and the external opportunities and threats of a plan. Figure 3 depicts the SWOT analysis for this evidence-based plan, and the paragraphs following explain each section in detail.

Figure 3

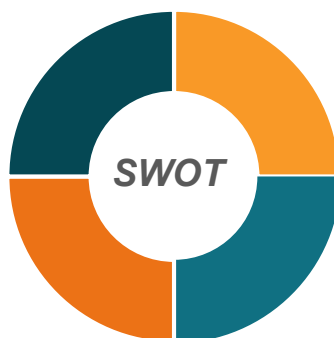
SWOT Analysis

STRENGTHS

- Alignment with hospital mission and strategy
- Hospital has reputation of excellence, continual improvement
- High associate engagement
- Collaboration among nursing departments in place
- Experienced nurse leaders with diverse backgrounds
- Low cost
- Insight from recent COVID-19 pandemic

OPPORTUNITIES

- Emerging research on best practices from the COVID-19 pandemic
- Det Norske Veritas (DNV) supports quality improvement
- Nursing duty to society to reflect on experiences and improve care



WEAKNESSES

- Competing projects
- Desire for normalcy
- Cost of staffing (compensation to educate staff to use the plan)
- Staffing fluctuations
- High cost if agency nurses are needed

THREATS

- New crisis requiring redeployment before plan is implemented

Internal Strengths

Multiple strengths support the implementation of the plan for redeployment of nursing staff during a crisis. The primary strength was alignment with the SC hospital's mission and operational strategy. As described, the acute care hospital strives for excellence and quality patient care. The development of a redeployment plan ensures the nursing staff will be prepared to provide the best patient care possible in difficult circumstances. The plan also aligns with the operational strategy of the acute care facility. The plan is a tactic to ensure exceptional community health, efficient provision of care, and the best experience for patients and associates. The SC acute care hospital has a reputation of excellence within the community and within the healthcare district. The facility has been defined by exceptional patient satisfaction ratings, high employee engagement, and a desire to continually improve processes for years. The redeployment plan would be an additional strategy to continue this excellent service.

Collaboration between nursing departments is a staple characteristic of the SC acute care facility and an integral strength for the redeployment plan. The annual employee engagement survey repeatedly reveals comments regarding the positive teamwork within the facility. Teamwork ensures that all areas of nursing have a voice and contribute to plan development. Also, the nursing leader team includes several nurses with many years of valuable experience from a variety of backgrounds. The nurse leaders provide insight from quality, regulatory, and administrative perspectives, and the frontline nurses add key input from direct patient care. Therefore, the facility's characteristic of collaboration provides an ideal platform for improvement.

The insight provided by the frontline associates and nurse leaders who were involved in redeployment during the COVID-19 pandemic is priceless. The staff members understand the culture, resources, and goals of the organization and will utilize that knowledge to analyze and improve the redeployment plan based on their lived experience. Raderstorf et al. (2020) stated that periods of crisis also produce an increased number of creative concepts. Crises challenge individuals to evaluate processes, keep methods that work, discard methods that are not functional, and develop new ways of doing. The insight will ensure the redeployment plan is not only evidence-based but also well adopted by the frontline individuals who would implement the plan.

Lastly, a significant internal strength of the plan was low cost. The plan for redeployment does not require the purchase of new equipment or supplies and does not require the construction of existing or new patient care space. The redeployment plan also does not require the hiring of multiple new staff members. The goal of the staffing model within the plan was to reallocate current human resources in the most efficient and safe format possible. The primary cost for the plan was monetary compensation for the time invested to educate nurses on plan purpose and implementation.

Internal Weaknesses

A SWOT analysis also included a review of the internal weaknesses of the redeployment plan. The primary weaknesses of the plan were competing projects and the desire for a return to normalcy. Often after a crisis, the mutual desire is to return to previous projects and priorities as quickly as possible. This reinstates a feeling of normalcy and comfort. However, the important step of reflection and learning from the

crisis is missed. Debriefing, identifying lessons learned, and preparing for future situations are value-added steps for any organization. As mentioned previously, nursing has a duty to the community to continuously improve and provide the most optimal care.

Lacey et al. (2020) discussed the importance of organizational learning (OL) after crises. Organizational learning entails a collaborative approach to reviewing crises, identifying holes in response, and developing a plan to better prepare for future crisis responses (Lacey et al., 2020). Lacey et al. (2020) stated that during organizational learning, facilities must review “talent, customers, operations, regulations, and finances” after any crisis (p. 264). The sustainability of these items was critical for crisis planning and response.

Additionally, staffing was a potential weakness of the redeployment plan. Plan preparation and implementation require time for staff to meet, discuss, develop, and review the plan. If the plan is not deemed a priority, sufficient time may not be dedicated to ensuring the plan is successful. Staffing fluctuations were also an internal weakness of the redeployment plan. Before the surge in patients with COVID-19 at the end of 2020, multiple staffing vacancies existed at the SC hospital. Therefore, when the patient volumes crept higher and higher, the staffing need became increasingly dire. The hospital leadership addressed the staffing crisis using two methods. Staff who cared for patients with the COVID-19 virus received a 40% incentive stipend on their hourly rate each shift. This tactic was used to retain current staff working in the crisis areas as well as incentivize the staff who were redeployed to those areas. The incentive investment amounted to approximately \$300,000 in a year.

Agency nurse contracts were utilized as the second tactic to address the staffing need during the COVID-19 pandemic. The SC acute care facility had zero agency contracts in the summer of 2020; however, by November 2020, the medical-surgical and critical care areas had a combined total of 17 agency contracts. The staffing contracts resulted in a monetary investment of \$685,016.55 from November 2020 until March 2021. As mentioned, the goal of the staffing model was to best manage the hospital's current human resources in an effort to eliminate the need for monetary investment in incentives and contract staffing.

External Opportunities

After reviewing internal strengths and weaknesses for the SWOT analysis, a review of external opportunities and threats was also necessary. External opportunities provide additional support and resources as the plan was developed and implemented. External threats impede the progress of the plan if they are not mitigated during plan development or if the threats outweigh the opportunities.

The primary external opportunity for the development of a plan for nursing staff redeployment during a crisis was the obligation the nursing profession had to the community. Nursing, as a discipline, is grounded on the contractual commitment to promoting the health and protection of society. The Code of Ethics for Nurses outlines the basics of nursing's relationship with humanity. Provision two of the code states "the nurse's primary commitment is to the patient" (American Nurses Association [ANA], 2015, p. 5). The provision goes on to state that nursing must always act in the best interest of patients and must foster an environment of collaboration in an effort to provide

the best care environment possible (ANA, 2015). In the context of crisis preparedness, nursing must reflect on crises and prepare for future experiences in a collaborative manner and commitment to effective patient care.

A second external opportunity for the redeployment plan was regulatory support. The SC acute care facility was accredited by Det Norske Veritas (DNV), a CMS deemed authority. DNV provides access to thousands of additional healthcare facilities accredited through their program. Therefore, the SC acute care facility had access to knowledge and lessons learned at peer facilities. In addition, quality management and continual improvement were chief emphases of DNV's regulatory requirements. DNV necessitates that accredited healthcare facilities have a quality program including defined roles, documents, and oversight. The platform for the development of the redeployment plan exists, and DNV could provide the necessary support and insight into the plan.

A final external opportunity for the redeployment plan for nursing associates was the support of emerging research related to the COVID-19 pandemic. Because the outbreak was novel, vast, and recent, emerging evidence and best practices can be anticipated. As research emerges and in an effort for continual improvement, the plan for redeployment was amended to reflect the best practices available.

External Threats

A review of external threats concludes the SWOT analysis. External threats are elements that pose opposition to the evidence-based plan for redeployment. The single external threat to this plan was an impending crisis prior to plan development and implementation. A crisis can take on many forms and occur at any time. If the SC acute

care facility did not debrief from the COVID-19 pandemic in a timely fashion and utilize information gleaned to plan for the future, a new crisis could impact the organization before being prepared.

In summary, the SWOT analysis depicts the internal strengths and weaknesses and the external opportunities and threats of a plan. A prudent organization will capitalize on the strengths and opportunities to mitigate the weaknesses and threats. In the context of this evidence-based plan for nursing staff redeployment during a crisis, the internal strengths and external opportunities provide abundant support to move forward with the plan.

Resources

The plan for nursing staff redeployment during a crisis requires limited resources. The primary resources necessary for plan development, review, implementation, and evaluation are personnel, time, physical facility space, computer and internet use, and financial compensation for staff involved. Personnel was necessary from a couple of different perspectives. Staff was needed to develop and educate others on plan use. Staff were also needed to implement and evaluate the plan as needed. Sufficient time was necessary to adequately follow the steps in the Iowa Model for Evidence-Based Practice. The dedication of personnel and time required financial compensation. The financial support required for the redeployment plan was discussed in depth in the cost-benefit analysis. Physical facility space, computer, and internet services were pre-existing resources within the healthcare facility.

Team Members

Because the redeployment plan was comprehensive yet generic enough to be implemented by any type of nursing staff, a variety of nursing areas at the SC acute care hospital must be represented within the project. Frontline associates from the emergency center, perioperative services, the medical-surgical department, and critical care must be represented on the team and within the focus groups. Nurse leaders from each of these areas must also provide input. To offer support from an educational perspective, the hospital education department must participate, and the regulatory manager would need to provide input as a resource for regulatory requirements. Lastly, the chief nursing officer from the SC acute care hospital was a highly valuable team member and held ultimate authority for the delivery of nursing care.

Cost-Benefit Analysis

To complete the needs assessment for the evidence-based plan for nursing staff redeployment, a cost-benefit analysis was performed. The goal of the analysis was to determine if the project was worth the financial venture. As mentioned by Hayes (2021), costs of a project may include direct impacts such as monetary investment or indirect impact such as missed opportunities for new employees. This same concept applies to project benefits. Direct benefits include concepts such as revenue and increased employee engagement, and examples of indirect benefits include decreased expenditures (Hayes, 2021).

A limited number of costs exists with the plan for redeployment of nursing staff during a crisis. No additional salary cost would accrue for nurse leaders during plan

development, review, and rollout as the leaders were already within their working hours. The primary cost was financial compensation for the frontline nursing staff as they were educated about the purpose and implementation of the plan. If education for the redeployment plan was approximately 2 hours, training for 350 registered nurses (RN) would cost \$11,298 in salary compensation.

Indirect costs are also a valuable consideration for any project. Every aspect including development, roll out, and implementation of the plan requires time, physical space, computer use, and internet services. These resources were already in use at the SC facility, and the plan would not accrue significant additional costs related to their use. Therefore, the indirect costs related to these resources were negligible.

The benefits of implementing the plan for nursing staff redeployment during a crisis are primarily indirect. The key benefits included financial savings, decreased nurse turnover, and decreased psychological impact. As mentioned in the SWOT analysis, staffing fluctuations have historically required the use of incentive pay and agency nurse contracts. However, with the implementation of the tiered or buddy staffing model, the goal was to eliminate alternative staffing methods. At 40% incentive for an average bedside nurse hourly rate of \$32.28, one RN shift (12 hours) with the incentive stipend pays approximately \$542.40. Based on the amount invested in staff incentives during the COVID-19 pandemic, the organization could anticipate a cost as high as \$50,000 in incentive for 1 month during a crisis. In addition, if the staffing needs justified use of travel agency contracts, based on the financial investment made during the COVID-19 pandemic, the hospital could anticipate investing as much as \$137,000.31 in 1 month.

Therefore, if the SC acute care hospital was forced to invest in staff incentives and travel contracts for a future crisis, the financial impact will equal an anticipated amount of \$187,003.31 in 1 month. Again, an indirect benefit of the plan was a drastic reduction, if not elimination, of the financial expenditures.

An additional indirect benefit of the plan was the prevention of staff turnover due to improved preparation for crisis situations. According to the 2021 NSI National Healthcare Retention and RN Staffing Report, the average RN turnover rate for 2020 was 18.7% which is an increase of 4.1% from 2016 (NSI Nursing Solutions Incorporated [NSI], 2021). In the Southeastern U.S., RN turnover is significantly higher than the national average at 24.9% in 2020 (NSI, 2021). Specifically, within the healthcare organization of the SC acute care hospital, the RN turnover rate increased almost 3% between March 2020-March 2021 from 18.75%-21.57%.

The relationship between the RN turnover rate and hospital financial loss was astounding. The average dollar amount a hospital lost per bedside RN turnover was \$40,038 (NSI, 2021). This amounts to \$3.6 – \$6.5 million in annual losses for the average hospital (NSI, 2021). The financial injury could be recouped through expedited hiring and onboarding of new nurses; however, the average hospital waits approximately 89 days to fill a vacant bedside RN position (NSI, 2021). Therefore, overtime, incentive pay, and agency staff are often used in the waiting period and provide valuable data points to further explain the financial expenditures related to nursing staffing. The NSI report identified that these alternative staffing methods are on the rise across the nation, similar to what was used at the SC acute care facility. The COVID-19 pandemic only increased

alternative staffing methods, and travel agency contracts grew by 200% during the outbreak (NSI, 2021). While hospitals are desperate to staff appropriately, the average hospital could save \$3,084,000 by a reduction in 20 agency contracts (NSI, 2021).

Lastly, a critical indirect benefit of the redeployment plan is a reduction in psychological impact. While the psychological impact is challenging to quantify, the COVID-19 pandemic and lack of redeployment plan increased levels of fear, anxiety, and stress among frontline RNs. This psychological phenomenon was noted on an international, national, and local level at the SC acute care facility. Negative mental impact in nurses can lead to decreased job satisfaction and increased turnover as seen in previous pandemics and the COVID-19 outbreak. Monitoring employee engagement and turnover rates will be key to monitor psychological impact reduction.

Pappa et al. (2020) performed a systematic review related to anxiety, depression, and insomnia in healthcare professionals during the COVID-19 pandemic. Thirteen studies based in China and Singapore were included in the review, and 33,062 individuals participated in the studies (Pappa et al., 2020). Healthcare worker anxiety had a 23.21% prevalence rate, depression had a 22.8% prevalence rate, and insomnia had a 34.32% prevalence rate across the studies (Pappa et al., 2020). Not all of the studies included anxiety, depression, and insomnia as assessed factors, and the rates accounted for this adjustment. The review subdivided physicians and nurses and found that anxiety was approximately 4% higher in nurses, and depression rates were approximately 5% higher in nurses than physicians (Pappa et al., 2020).

Labrague and de los Santos (2020a) studied the impact of mediating factors on anxiety levels in nurses in the Philippines during the COVID-19 pandemic. Within the 325 nurses who participated in the study, 37.8% (123 participants) reported dysfunctional levels of anxiety (Labrague & de los Santos, 2020a). Social support, structural support, and resilience were negatively correlated with reported anxiety levels (Labrague & de los Santos, 2020a). Labrague and de los Santos (2020b) also studied the correlation between fear of COVID-19 and work stress, work fulfillment, and intent to leave in 261 nurses in the Philippines. Fear of COVID-19 was positively correlated with work-related stress and RN turnover and negatively correlated with work fulfillment (Labrague & de los Santos, 2020b). While limitations of the studies include generalizability and the cross-sectional design, the findings indicate the importance of investigating psychological wellbeing among nurses in the midst of crises.

A cost-benefit analysis for the redeployment plan provides a picture of support to move forward with the investment. The costs include compensation for salaries as the plan is developed, implemented, and reviewed. The benefits of the plan include a reduction in financial investment, agency contracts, RN turnover, and psychological impact. Table 1 depicts the cost-benefit analysis.

Table 1*Cost-Benefit Analysis*

Costs	Value	Benefits (monetary investment saved)	Value
Compensation for frontline associate education	\$11,298	Incentive stipend for nurse staffing, 1-month period	\$50,000
		Travel RN contracts for 1 month	\$187,003.31
	Estimated total = \$11,298		Estimated total = \$237,041.31 (additional \$40,038 per RN in turnover cost)

Note. This table outlines the cost-benefit analysis for staffing within the redeployment plan.

CHAPTER IV

Project Design

Goals and Objectives

The COVID-19 pandemic shed light on multiple opportunities for improvement in the operation of nursing services during a crisis at the SC acute care hospital. Therefore, the overarching goals of the evidence-based project were enhanced preparedness for patient care and sustainability of nursing services amidst a crisis. Following the Iowa Model for Evidence-Based Practice, the method in which this goal will be met was through a defined plan for nursing staff redeployment. The plan must have essential characteristics to be effective and to meet the needs of the stakeholders. Clarity and ease of implementation must be primary features. There was often little time to prepare in a crisis; therefore, the plan must be general enough to use in a variety of crises, clearly outlined, and require limited time to implement. Also, the plan must address the trends that were known to be lacking in previous crises. As discovered in the literature review, four main themes have been opportunities during the COVID-19, MERS, SARS, and H1N1 outbreaks. The themes include a staffing model, an effective communication method, psychological support, and appropriate educational preparation. The objectives for this project were based upon the key themes identified in the literature review.

The first objective in the redeployment plan was the immediate implementation of effective communication via a centralized redeployment command center and daily, unit-based huddles. Prior crises shed light on the need for frequent and clear communication. The redeployment command center provides one central location for the distribution of

redeployment information. The redeployment command center would open immediately after the crisis was identified and operated in a similar manner to the Hospital Incident Command System (HICS) methodology. However, the redeployment command center focused on the primary objectives within this plan and did not function as robustly as a full multidisciplinary implementation of HICS. During the COVID-19 pandemic, CentraCare Healthcare System in Minnesota found that operating a command center provided an ideal, central place for staff to pose questions directly to leaders coordinating the redeployment (Retzlaff, 2020).

Unit-based huddles were utilized as the second method of communication. Daily huddles were currently a hardwired practice at the SC acute care facility and provided a platform for staff to discuss concerns with safety, staffing, workflow, supplies, and equipment. Each day, the frontline associates from all departments huddled for approximately 10-15 minutes to discuss these items. During a crisis scenario, the daily unit-based huddle would be the platform to share the most current information distributed from the redeployment command center. The huddle would also provide a daily opportunity to pass information and questions up to the command center. Therefore, the two-way communication between the redeployment command center and unit-based huddles would ensure all nursing staff, redeployed or in their primary work location, had clear, current information, and the command center had a constant feed of concerns from the frontlines. The unit-based huddle would also function as a constant evaluation of the redeployment plan.

Safety huddles were a vital component in situational awareness and the development of high-reliability organizations (Stapley et al., 2018). Modeling after alternative industries, healthcare teams used huddles to break down barriers within healthcare silos, increase communication across teams, identify and mitigate errors, and reduce risk (Stapley et al., 2018). Stapley et al. (2018) studied the response to safety huddle implementation, known as situational awareness for everyone (SAFE), in three pediatric care units and one progressive or step-down unit in England. The study was conducted via interviews that occurred at three time periods throughout huddle implementation (4 months, 10 months, and 16 months after implementation) and was designed to investigate the benefits, challenges, and catalysts for safety huddles (Stapley et al., 2018). The benefits described by the interviewees included a defined time and space to share key information, improved teamwork, and a reduction in lost information. The challenges included difficulty attending the huddle due to timing and patient care demands and the feeling that young staff was not on an equal playing field to share information as senior staff (Stapley et al., 2018). The participants voiced the importance of leadership constantly encouraging hardwiring of the huddle (Stapley et al., 2018).

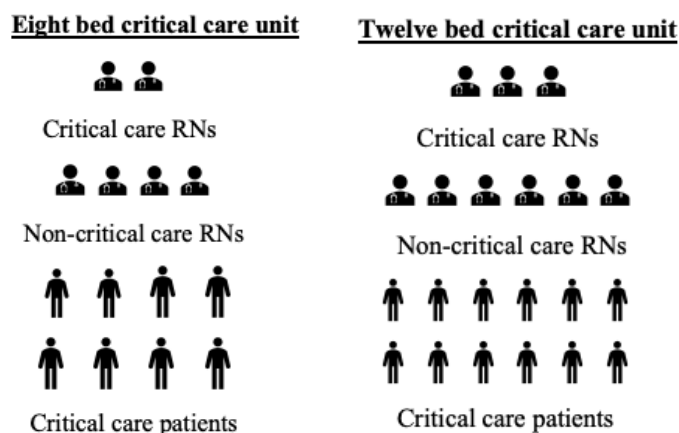
In their letter to the editor, Carenzo et al. (2020) described the implementation of safety huddles and a specific huddle tool targeting COVID-19 information. Due to the surge in COVID-19 patients, the opening of temporary nursing units, and the reallocation of staff to varying departments, the safety huddle was implemented as a platform to increase communication and promote patient safety (Carenzo et al., 2020). The tool was

developed to guide the huddle and addresses resources, staffing, new or changing protocols, and patient safety concerns (Carenzo et al., 2020).

The second objective in the redeployment plan was the immediate implementation of an eight-bed or twelve-bed critical care expansion via a tiered staffing model. The SCCM and CHEST models provide excellent blueprints to develop a tiered model for the SC acute care hospital. The hospital's current intensive care unit (ICU) houses four critical care patients. However, through the buddy or tiered staffing structure, the ICU can expand to eight or 12 beds. With a capacity of eight patients, four non-critical care RNs will be supervised by two critical care RNs. With a capacity of 12 beds, three groups of two non-critical care RNs will be supervised by three critical care RNs. The tiered models depicted in Figure 4 demonstrate these tiered staffing models.

Figure 4

Tiered Staffing Model for the South Carolina Acute Care Facility



Note. Eight and 12 bed tiered staffing models for the South Carolina acute care hospital.

The third objective in the redeployment plan was the immediate implementation of redeployment education via a skills assessment checklist. The need for effective education was a common theme identified in previous crises. Competency validation will provide an assessment of current capability for staff redeploying and identify areas where education is needed. The validation covers general orientation to the department such as the location of medication and supply rooms and training on items that are critical, crisis-specific tools (i.e. ventilator operation, ECMO training). This process will be accomplished via a skills assessment checklist. The literature repeatedly stated that psychological pressure increased due to the feeling of disorganization and unpreparedness in crisis situations; therefore, the use of a skills assessment checklist will be an effort to offer structured education prior to redeployment.

The final objective in the redeployment plan was the immediate implementation of psychological support through the personal, team, and hospital-based means. On a personal level, frontline nurses and nurse leaders must continually remind themselves of the basics of daily living during crisis times. These tactics include adequate rest breaks, food and water consumption, and sleep (Maben & Bridges, 2020). The communication from the redeployment command center and the unit-based huddles will include daily reminders for personal basic care.

An additional method to encourage personal care was through a buddy system. Each shift nursing staff was paired in groups to check in with their partner(s) regarding breaks, food, water, and general wellbeing needs (Maben & Bridges, 2020). Evidence suggests that team efforts for psychological support are relevant. During crises, the

redeployed staff is often working in unfamiliar environments, and buddy systems were a method to encourage a team approach to psychological support.

The buddy system was also employed at the nurse leader level. As seen during the COVID-19 pandemic, nurse leaders often dealt with added stress due to balancing their personal workload and the stressors of their staff. The nurse leader role is vital to support frontline associates including communicating frequently and clearly, being present, and managing the staff's wellbeing; however, each nurse leader employs methods to boost his or her own wellbeing (Maben & Bridges, 2020). The comradery of a nurse leader buddy system ensures leaders refuel themselves to support frontline associates (Maben & Bridges, 2020).

Lastly, additional hospital-based efforts for psychological support will be encouraged through the redeployment command center. The specific facility-provided means of support included collaboration with the SC hospital's employee assistance program (EAP) and chaplain services. The EAP provides free access to trained counselors for six sessions per event. If the nursing associate needs immediate support, the chaplain on call will also provide psychological support. The chaplain was available in-house during business hours and on-call after business hours.

Implementation and Materials

The first implementation step for the redeployment plan for nursing services during a crisis was the opening of the redeployment command center. After a review of a current or impending crisis, the chief nursing officer (CNO), in collaboration with the SC hospital's nurse leaders, provided the directive to open the command center. Leaders at

Beth Israel Deaconess Medical Center in Massachusetts found that the chief nursing officer provided the best consistency in leading the command center during the COVID-19 pandemic (Retzlaff, 2020). This same structure was appropriate for the command center at the SC acute care facility as the nurse leaders collaborated with and report up to the CNO. The redeployment command center was located in a central, physical location and was the point of contact for redeployment communication, staffing, education, and psychological support.

Each nurse leader was responsible to fill a vital role in the operation of the redeployment command center. The nurse leader for critical care was responsible for coordinating the staffing expansion for the critical care unit. The additional nurse leaders from the medical-surgical, emergency center, and perioperative departments coordinated with the critical care nurse leader to redeploy their staff. A nurse leader was assigned to the communication methods and was responsible for communicating clear, current information out of the redeployment command center. The communication avenues included the online platform called Microsoft SharePoint (currently in use at the SC hospital) and a weekly email to nursing personnel. The nurse leader was responsible for communication and to field questions coming into the redeployment command center from the daily huddles and individual staff.

An additional nurse leader was responsible for coordinating psychological support. This leader would field incoming requests for EAP or chaplain services and connect employees with the appropriate resource. This nurse leader would also address feedback related to the psychological impact of the situation and provide this information

to the leader coordinating communication. Therefore, the communication coming out of the command center addressed the most current feedback from frontline nurses and leaders.

Appendix A depicts a tool to guide the opening and closing of the redeployment command center. The tool outlines the roles and responsibilities of the nurse leaders who were facilitating the redeployment command center. The tool also served as a record of the event and would be retained for documentation and process improvement. Lastly, the tool illustrates the tiered staffing model for critical care as depicted in Figure 4.

Once the redeployment command center was open, the second priority was establishing communication regarding the crisis event. Opening of the redeployment command center was communicated via email, the Microsoft SharePoint site, and department-based huddles to all nursing personnel. The command center required a dedicated phone number as well as an email address for ease of communicating. Initial communication explained the reason for opening the command center, described who would be staffing the command center, and directed nursing personnel to the command center for all questions regarding redeployment. All communication related to crisis redeployment would flow out of the command center, and the command center would be the location nursing staff contact for questions related to redeployment. The hours of operation were crisis-dependent. Some crises require command center operation 24 hours per day. However, other crises require operation only during business hours.

Staffing coordination was the third priority during implementation. The type and degree of crisis dictated the extent of the staffing expansion. During the COVID-19

pandemic, perioperative staff members were deployed to the emergency room, critical care, and medical-surgical departments for multiple weeks. The critical care department expanded to eight beds; however, 12 critical care beds would have been beneficial during the COVID-19 crisis at the SC hospital. In the event of a similar, extended crisis, the nurse leaders from redeploying departments would collaborate with one another to assign available staff for the expansion. In the event of a brief crisis, a similar expansion approach would be beneficial; however, the redeployment may last a shorter period of time. Each department's nurse manager was responsible for communicating with his or her frontline nursing staff regarding specific staffing assignments. Each department's nursing leader was also responsible to determine what method of scheduling, electronic or paper, was best for his or her department. As mentioned, clear and frequent communication was key, and the daily, unit huddle provided the optimal platform for communication.

Once communication and the degree of staffing expansion were established, the next step to implement the redeployment plan for nursing services during a crisis at the SC acute care facility was competency validation. The hospital educator would oversee this process, and the primary means for competency validation was via the skills assessment checklist. The skills checklist (Appendix B) assessed current knowledge and provided guidance on which educational areas required emphasis. Some redeployed staff may have had prior experience in the department in which they were deployed and required limited education. However, others may have had limited experience and required extended education and supervision.

As found in the literature, several avenues to facilitate the skills assessment were viable. To ensure all learners were provided the best opportunity for learning, a mixture of live and online education was best. A review of pre-existing procedures, equipment, and processes was appropriate to review virtually. The SC acute care facility utilized the online learning tool known as HealthStream. HealthStream allows for the upload of a variety of learning methods such as videos, PowerPoint slides, and tests. HealthStream also allowed for proof of education completion and review of the material at any point in the future.

New disease processes that require emerging therapies required live training. Live training allowed for discussion, questions, and mock scenario training. Live discussion encouraged brainstorming and critical thinking as well. For example, proning was used in the treatment of COVID-19 patients. As proning is not a common practice for all nursing personnel, training was required to provide this therapy, and a team approach to proning was vital.

The skills assessment checklist included a few additional checklists to support redeploying nurses. A competency validation was needed for donning and doffing PPE. Each crisis dictates which type of PPE is needed, and donning and doffing is an important skill for every nurse. The skills checklist also included an outline of the critical care and non-critical care nurse responsibilities. Within the tiered staffing structure, deployed, non-critical care nurses work alongside critical care nurses to provide appropriate patient care within the nurse's scope and training. The checklist provides a clear outline of which

nurse is responsible for specific tasks. During a crisis, efficient, safe patient care is imperative as resources, both human and material, are often tight.

The final step was the implementation of the redeployment command center and clear communication regarding the importance and means of psychological wellbeing. The command center and the nurse leader coordinating the psychological support efforts communicated with the personal, team, and hospital-based avenues available to support psychological wellbeing. Communication was provided through the command center's email, Microsoft SharePoint site, and the unit-based huddle. Mental wellness was also promoted via a brochure that outlines all available resources (Appendix C).

Timeline

The redeployment plan for nursing staff during a crisis was a unique project from the perspective of a timeline. The project was based on problems identified by stakeholders during redeployment within the COVID-19 pandemic. The investigation of the problems led to a conglomeration of research and a proposal of an evidence-based plan. Successful implementation of the plan was contingent on buy-in from stakeholders; therefore, the plan must be presented to the stakeholders in a method that encourages full adoption. The project timeline followed the following process: proposal to stakeholders, review and modification of the plan, and education and adoption of the plan for use. Full adoption and training support the successful use of the plan in the event of a crisis.

The first step in the project timeline was a formal proposal of the redeployment plan to the stakeholders at the SC acute care facility. The primary stakeholders for the project were the frontline nurses who were deployed during a crisis. The frontline

nursing staff provided direct patient care and must feel as though the plan supports them as best as possible in the midst of a crisis. The secondary stakeholders for the project were the nurse leaders. The nurse leaders were responsible for coordinating the redeployment of staff and were often the key cheerleaders to support the frontline nurses. Their buy-in was vital as the nurse leaders must also have tools to manage their own stress related to the crisis. The nurse leaders were often able to remove barriers and provide necessary resources to support plan success as well. The project lead would present the plan to each of these stakeholder groups to ensure engagement at the outset. The plan presentation included a definition of the problem, a synopsis of the evidence, a proposal of the evidence-based plan, and a time for questions and discussion.

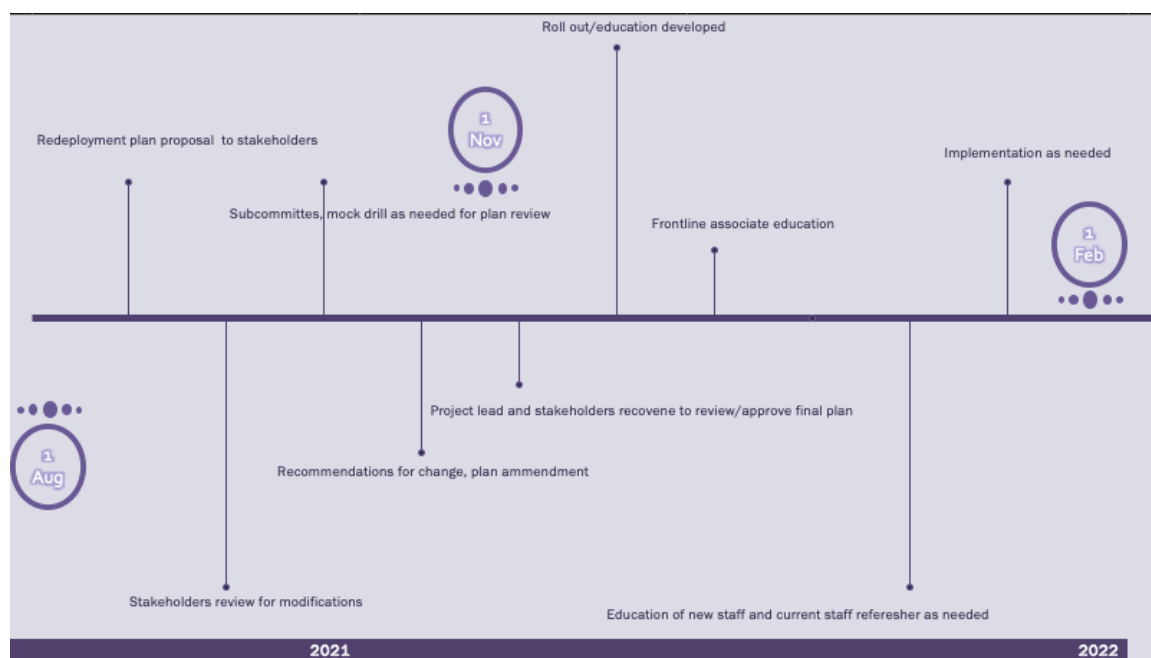
The second step in the project timeline was a modification of the redeployment plan. Often a plan is not flawless from the outset. Therefore, the timeline must allow for modification as necessary. Again, this step encouraged full adoption by the stakeholders as they further contributed their input and experience. Modification required the convening of subcommittees to review specific aspects of the plan. For example, a question regarding staff may entail collaboration with a human resource representative to ensure the plan follows facility protocols. A mock drill was also valuable to test the plan as it may not be used in a timely fashion after rollout. Examples of a mock drill included a pandemic or natural disaster scenario that required the use of the redeployment plan. The drill would allow for discussion of plan implementation and discovery of gaps. Considering the time and research investment, the modification step would require 4-8 weeks. Once the plan modifications were determined, the stakeholders would reconvene

to discuss and approve amendments. An additional 4 weeks was necessary for plan edits and finalization.

The final step in the project timeline for the redeployment plan was adoption of the plan. Plan adoption began with the development of a rollout plan to educate staff. Education included all nursing leaders and frontline nurses who implemented the plan. The education was presented very similarly to the initial proposal to the stakeholders and included an explanation of the problem and existing research. The primary portion of the education focused on a detailed description of the plan elements and plan implementation. While the frequency of plan implementation was unknown, the goal of adoption was plan acceptance and staff preparation for any scenario in which the plan was beneficial. Both the nurse leaders and frontline nursing personnel must feel the redeployment plan was clear and easily implemented. Four weeks were allowed for education development, and an additional 4 weeks was required to educate the staff. Once the existing staff were educated and have fully adopted the plan, ongoing education of new staff and refreshment for existing staff will be necessary. Figure 5 provides a visual example of the timeline for the plan development and rollout.

Figure 5

Project Timeline for the Redeployment Plan Development, Review, and Roll Out



Budget

As described in the cost-benefit analysis, the direct financial investment of the redeployment plan for nursing associates was low. The project did not require refurbishing of old equipment, purchase of new equipment, construction of space, or hiring of numerous new staff members. The cost heavily revolved around salary compensation for staff during education about the plan. This value amounted to approximately \$11,298.

To sustain the plan in the future, new hire nurses will need education on the redeployment plan, and existing staff will need re-education annually. The cost of this education included the salaries of staff providing the education and the staff receiving education. This amount was similar to the salary cost at the initial plan rollout.

Indirect costs were also an important factor in any project. The indirect costs associated with the plan for nursing staff redeployment include time investment, physical workspace, computers, and internet use. Each phase of the project, including development, modification, rollout, and implementation, required these investments. Considering each of these items was already in use at the SC hospital and the dollar value associated with the resources was negligible, their cost was not a major factor in this project.

Evaluation

Following the Iowa Model for Evidence-Based Practice, an evaluation method must be determined. Because meeting the needs of stakeholders was a primary outcome of the plan, the evaluation method determines if the redeployment plan was effective. The chief means to evaluate the effectiveness of the redeployment plan was through focus groups with frontline nurses and nurse leaders. Each of these groups had firsthand experience with redeployment during the COVID-19 pandemic, yet their perspectives and experiences differed. Focus groups allowed for interviewing and brainstorming among individuals directly involved in hospital operations. Focus groups also provided a collection of qualitative data in regard to the redeployment plan. Each time the redeployment plan was implemented, the focus groups would reconvene for feedback and improvement.

A focus group of nurse managers, nursing directors, and the chief nursing officer from the SC acute care hospital discussed the redeployment response from the COVID-19 pandemic. Various nursing areas were represented by the nurse leader group, and all

the leaders worked for the SC hospital during the COVID-19 redeployment. Two primary themes came to light. The first topic centered on the general need for a redeployment plan. The leaders voiced that preparation would have been advantageous in anticipation of a spike in patient volume and increased staffing burden. Staffing vacancies existed before the COVID-19 surge; therefore, the increase in patient volume and the resulting need for additional staff further increased the gap between the census and appropriate staffing. A plan would have lessened the impact of the staffing burden. The second topic discussed by the nurse leaders included the need for an orientation validation tool (OVT) or a skills checklist for staff deployed to new areas. One of the primary themes of feedback regarding redeployment during the COVID-19 pandemic was the lack of educational preparation. For example, the perioperative nursing staff was unfamiliar with the most current treatments for the COVID-19 virus as that patient population was not seen in surgery, yet during deployment, they were required to assess patients with COVID-19. The leaders voiced that the nursing staff experienced increased stress due to a lack of orientation and education in the new care areas.

A focus group of frontline nurses also met to discuss redeployment within the COVID-19 pandemic. The group represented multiple departments including the recovery room, emergency center, operating room, and critical care unit, and the average years of experience among the nurses were 13 years. Each nurse in the group worked at the SC facility during the COVID-19 redeployment. Appendix D depicts the tool utilized to collect data during the focus group, and several themes were identified within the conversation among the group members.

First, redeployment was deemed necessary by the focus group. The group voiced that redeployment had to occur for two primary reasons: to provide appropriate care for patients and to allow the nurses whose areas were closed to continue to work. The deployed nurses were able to provide support to departments in need. No alternative methods to address the patient volume or staffing crisis were offered by the group members.

Second, a primary theme within the focus group's discussion was the importance of education. Multiple nurses commented on the difficulty in moving nurses between departments. Nursing has become highly specialized between service areas and training is required to travel between departments. While the nurses discussed the importance of deploying staff to the areas of need, they emphasized the importance of training to ensure safety. The primary feedback regarding training centered on the electronic medical record (EMR). Lack of access and training to use the EMR created a significant barrier to the effectiveness of the deployed staff.

Third, communication was lacking during the COVID-19 redeployment. Group members mentioned that a weekly email was generated from the hospital system level, and the intranet site was also a source of information. However, these methods of communication did not impact the nurses' daily work. The group discussed the importance of clear communication at the department level on a daily basis to ensure nurses know their staffing assignment, protocol changes, and any updates that impact daily operations.

Lastly, the focus group identified that no defined psychological support was provided during the redeployment period. One nurse noted that understanding the reason for redeployment would have been helpful for psychological support. Another nurse identified that administrative leadership encouraged time away from work; however, knowing that colleagues would be short-staffed made time away challenging. An additional nurse noted that her background in hospice care provided the mental strength needed for her psychological wellbeing. The group did identify the importance of teamwork and reliance on one another to provide effective care. Teamwork was not only identified as psychological support but also a positive outcome of redeployment during the COVID-19 pandemic.

Additional metrics that were used to evaluate the plan's effectiveness include patient satisfaction scores, the registered nurse (RN) turnover rate, and annual employee engagement score. The SC hospital monitors patient satisfaction via the Press Ganey survey. Patients were asked a variety of questions related to communication, care management, and the environment of care during their hospital visit. Patient satisfaction scores before, during, and after redeployment provided a valuable evaluation of the redeployment plan. For example, the overall rating of hospital care at the SC hospital in November of 2020 was 88.7% for the top box score (nine or 10 out of 10). The hospital saw a drop in rating to 86.7% in December of 2020 and an increase in January and February of 2021 to 89.2% and 89.4% respectively for the top box rating for overall care. These scores were reflective of overall patient satisfaction. Delving into the specific

nursing-related questions from the survey will provide insight into the nursing care provided during the COVID-19 redeployment and future uses of the proposed plan.

The RN turnover rate and employee engagement rate were additional quantitative metrics that were used to evaluate the implementation of the redeployment plan from the perspective of nursing staff. The RN turnover rate within the healthcare system of the SC hospital was 21.57% as of March 2021, and this data was constantly monitored and reported through the recruitment department. The turnover rate saw a 3% increase from March 2020-March 2021. Digging deeper into the reason behind the increased turnover provided valuable insight to improve the redeployment plan. Employee engagement was measured annually through an online survey, and the SC healthcare system's engagement score for 2020 was 4.34 on a five-point scale. The employee engagement survey also provided staff feedback in the form of anonymous comments included with the survey. The comments were a source of evaluation of redeployment as well. The 2021 employee engagement results were targeted to release in the fall of 2021. A comparison of the 2020 and 2021 scores provided a glimpse into employee experiences through the COVID-19 pandemic.

CHAPTER V

Dissemination

The COVID-19 pandemic led to a significant increase in infected individuals and hospitalizations worldwide. Hospitals were forced to deploy nursing personnel from their primary departments to areas most burdened by the surge in patients diagnosed with the COVID-19 virus. The SC acute care hospital was no stranger to this phenomenon. The SC hospital saw an unanticipated increase in patient volume, was forced to close elective areas, and urgently deployed specialty nurses to sites in need of additional staff. Due to the lack of a redeployment plan, feelings of fear, anxiety, and unsafe care were common among nurses, the sustainability of nursing staff dwindled, and nurse leaders experienced high levels of stress while managing operations.

The purpose of this project was to develop an evidence-based plan for nursing redeployment during a crisis. Following the primary themes identified in the literature review, a plan for the SC hospital was built upon a staffing model, effective communication methods, appropriate education, and psychological support. Supporting documents were also developed and include a redeployment command center checklist (Appendix A), nurse skills assessment checklist (Appendix B), and a brochure promoting psychological support methods (Appendix C).

The plan was presented to the SC hospital's chief nursing officer (CNO), manager of the critical care unit, and two hospital educators. Participants attended the presentation in person and via the Microsoft Teams meeting platform. The project background, problem, evidence, plan for the SC facility, and implementation methods were presented

via PowerPoint. In addition, the PowerPoint and all supporting documents were shared with the attendees via email. The PowerPoint presentation is included in Appendix E.

Feedback was requested from the attendees after the redeployment plan was presented. The CNO offered positive feedback and requested to discuss the plan's use outside of crisis scenarios. The CNO verbalized the challenges of the nursing shortage, increased hospital census, high patient acuity, and the need for alternative staffing models. She expressed interest in the tiered staffing model and would like to incorporate unlicensed personnel in a staffing structure. The goal was to mitigate barriers to staffing through support from unlicensed personnel and limit the financial investment of nurse onboarding and nurse turnover.

Additionally, the nurse manager for critical care expressed feedback regarding the skills assessment checklist. She offered several additional skills, program accesses, assessments, and pieces of equipment that were necessary for the redeploying staff. Additional skills included the ability to perform setup for procedures such as a bronchoscopy, paracentesis, and thoracentesis, the ability to prone a patient, and the ability to complete an electrocardiogram. Program accesses included the glucose management system (Endotool), code stroke telemedicine computer, and communication devices including the Rover and Vocera systems. The nurse manager's feedback regarding assessments included knowledge of normal blood gas results and neurological assessment of a patient who is paralyzed due to ventilator management. Each of these elements was added to the skills assessment checklist document.

Limitations

A few limitations impacted the development of the plan for nursing staff redeployment during a crisis. The first limitation was the lack of experimental evidence regarding the topic. Multiple non-experimental and descriptive studies based on previous infectious crises, such as the SARS and MERS outbreaks, exist; however, high-level evidence was lacking. Specifically, within the context of the COVID-19 pandemic, current literature was primarily based upon descriptive studies, expert opinion, and lived experiences reported through phenomenological studies. As further evidence emerges, the plan for nursing staff redeployment will require an amendment to reflect the most current research.

The second limitation to the redeployment plan was the lack of patient input during plan development. Patients are a primary stakeholder in the redeployment plan and would provide valuable insight regarding their experience during the COVID-19 nursing redeployment. However, due to constraints on time and access to patient contacts, no patient feedback, specifically related to care during the COVID-19 redeployment, was integrated into this plan. The plan did include patient satisfaction scores and comments via the Press Ganey survey and patient focus groups as evaluation methods after future implementation of the redeployment plan.

The final limitation to the redeployment plan was the versatility of the staffing model. While communication methods, education, and psychological support were necessary in any type of crisis scenario, the redeployment staffing models discovered in the literature were based on critical care. Future crises may require redeployment to areas

outside of critical care such as surgical services or medical-surgical services. Further literature review and research were of value to ensure the tiered staffing structure was functional in other nursing services lines.

Implications for Nursing

The implications of the redeployment plan affect the three stakeholder groups mentioned at the outset of the plan: patients, frontline nurses, and nurse leaders. As defined in the Code of Ethics for Nurses, the nursing profession has a contractual agreement with the community to ensure quality care. Debriefing from circumstances such as the COVID-19 redeployment is an excellent method to discover opportunities for improvement and strive to advance care for the community.

The redeployment plan also has positive implications for frontline nurses. During the COVID-19 redeployment, nurses expressed concern for safe patient care as they were deployed from their primary work location to new areas. Fear and anxiety were common expressions. As described by Hofmeyer and Taylor (2020), how nurses feel about their work affects patient care, and this concept was exacerbated by the intensity of the COVID-19 pandemic. Therefore, as nurses feel supported, effective patient care is also reinforced. The development of the redeployment plan, specifically the involvement of the frontline nurses through focus groups, is a strategy to ensure nurses are heard and supported for future crises (Hofmeyer and Taylor, 2020).

The redeployment plan was an effort to bolster employee satisfaction. One of the primary roles of healthcare leaders is to provide the most optimal tools and processes to support frontline associates. As demonstrated, the literature provides excellent trends

regarding lessons learned in previous outbreaks, and the nurses at the SC hospital have also provided feedback via the focus group. Employee satisfaction scores and turnover rates will provide a glimpse into the staff's view of the redeployment method used during the COVID-19 outbreak and the new plan developed in this project.

Lastly, the redeployment plan had positive implications for nurse leaders at the SC acute care hospital. During the focus group of nurse leaders, one of the primary discussions regarding redeployment during the COVID-19 surge centered on the importance of a plan. The high patient census and dwindling staff forced the nurse leaders at the SC facility to urgently develop a redeployment structure with no prior research. This led to increased stress for the nurse leaders as they carried the burden of the frontline associates' fear and anxiety in addition to their own worries. The redeployment plan provides a framework to not only support frontline nurses but also nurse leaders as they manage services during the crisis.

Recommendations

As evidence is continually evolving in nursing, the primary recommendation for the redeployment plan is to continually modify the plan based on the best research available. While some literature regarding redeployment does exist in regard to previous infectious outbreaks, the COVID-19 pandemic remains a fairly recent outbreak. Therefore, the anticipation of new and evolving evidence is expected.

In addition, as mentioned by the CNO during the dissemination presentation, considering the use of the plan for alternative purposes may prove beneficial. The growing nursing shortage and nursing turnover rates have been conversations within the

nurse leader world for numerous years. In the post-COVID-19 pandemic period, hospitals are more concerned about cost savings than in previous times; therefore, healthcare leaders will most likely be required to do more with less. Therefore, leaders must investigate alternative staffing methods and attempt innovative techniques to ensure adequate staffing while remaining cost-conscious.

Conclusion

The COVID-19 pandemic seemed to take the world by surprise. Presumably overnight, the virus progressed from a controlled outbreak in China to a worldwide pandemic. The United States was no stranger to the virus as millions were infected, hundreds of thousands of Americans died, and hospitals experienced overwhelming patient volumes. The SC acute care hospital initially experienced a lull in patient census in the spring and summer of 2020 but experienced an unexpected spike in patients infected with COVID-19 in the winter of 2020 and into 2021. The surge of patients combined with open staffing positions and staff absences led to a substantial need for nurses in the areas burdened with patients. Additionally, as the pandemic progressed, the nursing staff also became infected with the virus which led to an increased staffing demand as nurses were absent for extended periods of time.

To fill the need for additional staff, departments that provided elective services, such as the operating room, decreased or stopped their services entirely. The staff were deployed to areas with high volumes of patients and increased nurse staffing demands. As the deployed nurses worked in specialty areas and had limited experience in the newly assigned departments, they expressed concern for their wellbeing and concern for

providing safe care. Due to the rapid call for redeployment, there was limited time to educate and prepare nurses for the new assignment. Therefore, the lack of a strategic plan for nursing staff redeployment during the COVID-19 pandemic was the foundational problem for this project, and the purpose of the project was to develop an evidence-based plan for nursing staff redeployment within a crisis.

A literature review was conducted regarding the redeployment of nurses during crises. Multiple outbreaks were reviewed including H1N1, SARS, MERS, and the COVID-19 pandemic. The primary themes identified from the literature included a tiered or buddy staffing model, appropriate education, an effective communication method, and psychological support. The two chief staffing models were expert consensus models from the Society of Critical Care Medicine and the CHEST consensus, and the models paired non-critical care nurses with critical care nurses to expand care. In regard to education, multiple formats were utilized throughout the literature including in-person training, virtual education, on-the-job training, and orientation tools such as skills assessments or checklists. Education centered on infection prevention protocols, PPE protocols, and critical care skills. The need for clear, frequent, and effective communication was also a primary theme. Several methods were used such as daily department huddles, command centers, and leader rounding. Lastly, the pertinence of psychological support was exposed in all previous outbreaks. Nursing staff expressed the duty to respond to outbreaks, but the call to action was met with fear, uncertainty, exhaustion, and anxiety. Also, frequent PPE protocol changes, fear of a lack of available PPE, and fear of ineffective PPE leading to infection transmission were primary concerns across all outbreaks.

A literature review was also conducted regarding Lazarus and Folkman's Transactional Model of Stress and Coping. The model is based on the correlation between stress and coping through a primary and secondary assessment. The primary assessment appraises the trigger for the potential for stress production. The secondary assessment appraises the ability to handle the stress. The model has been used to elucidate personal stress, stress during crises, and even stress within the COVID-19 pandemic. Therefore, Lazarus and Folkman's Transactional Model of Stress and Coping provides an exceptional framework for this evidence-based project as an effective coping mechanism. The unanticipated surge in patients with the COVID-19 virus and the increased staffing needs produced significant stress, and the goal of the strategic redeployment plan is to serve as a form of coping for future stressful crisis scenarios.

With the four themes from prior outbreaks, Lazarus and Folkman's Transactional Model as the support, and the Iowa Model of Evidence-Based Practice as the guide, a redeployment plan for the SC acute care hospital was developed. The tiered staffing model will expand the current four-bed critical care unit to accommodate eight or 12 beds through the layering of non-critical care and critical care nurses. Effective communication was provided through the redeployment command center and daily, department-based huddles. The command center provided one centralized location for all nursing associates to seek information, and the opening and closing will be guided by the command center checklist (Appendix A). The department huddles provided a platform for information to feed from the command center directly to staff. Education was provided through collaboration between hospital educators and clinical unit educators and

include a mixture of computer-based and live education. Education was guided by the skills checklist (Appendix B). The skills checklist also provided guidance on the roles of the non-critical care and critical care nurse. The outline ensured care was efficient and effective as each nurse knew their role in care provision. Psychological support was provided through personal, team, and hospital-based means. Personal means include adequate sleep, food and water intake, and rest breaks. Team support was provided through pairing nurses each shift. The pair was responsible for encouraging each other in personal wellness throughout the duration of patient care. Hospital-based means of psychological support included chaplain services and the employee assistance program. Each of these support methods was encouraged through the redeployment command center. Implementation of the redeployment plan required education for nurse leaders and frontline associates and evaluation of the plan was conducted through focus groups and monitoring of patient satisfaction, employee engagement, and RN turnover rates.

The cost-benefit analysis supported the implementation of the redeployment plan. The primary financial investment was salary compensation for staff involved in plan development, rollout, and implementation. This cost was significantly lower than utilizing alternative staffing solutions such as incentive stipends and travel agency contracts.

As demonstrated through multiple previous outbreaks, the nursing world will most likely experience future needs for the redeployment of nurses. The literature provided trends on which the foundation of this plan was laid, and the aim was to mitigate the problems identified in previous outbreaks before a future crisis arises. Hence,

the evidence-based redeployment plan developed in this project will serve the nurses in the SC acute care hospital now and into the future.

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Appendix A

Redeployment Command Center Checklist

Redeployment Command Center Checklist

Mission: Efficiently organize, direct, and support the redeployment of nursing personnel and provision of safe patient care during a crisis.

Command Center location:		Command Center Phone number:	
		Email address:	
Date and time of opening:		Date and time of closing:	
Nurse Leader-Staffing:		Nurse Leader-Education:	
Nurse Leader-Communication:		Nurse Leader-Psychological Support:	

Redeployment Command Center Opening and Closing:

Opening:

1. Chief nursing officer provides directive to open the command center. All roles filled by nurse leaders in the command center report up to the chief nursing officer.
2. Nurse leaders gather in command center to initiate command center services.
Discussion includes the following:
 - a. Type and extent of crisis
 - b. Extent of staffing redeployment need
 - c. Opportunities or needs to operationalize redeployment
 - d. Barriers or challenges to operationalize redeployment

3. Nurse leaders assign responsibility of staffing, command center communications (Microsoft SharePoint site and weekly email), education, and psychological support.
4. Nurse leaders begin process per role as outlined below.
5. Command center leaders brief each other daily on operations.

Closing:

1. As crisis de-escalates, including manageable patient volumes and appropriate staffing available, command center leaders determine deployed staff may return to primary unit.
2. Nurse leaders follow roles outlined below to facilitate de-escalation.
3. All documents used to facilitate the redeployment retained for documentation and process improvement.

Nurse Leader Responsibilities: Opening/Operations

Nurse Leader-Staffing	Nurse Leader-Communication	Nurse Leader-Education	Nurse Leader-Psychological Support
1. Evaluate current critical care staffing and determine extent of staffing expansion need (expansion to eight or twelve beds)	1. Global email to nursing personnel regarding opening of redeployment command center	1. Collaborate with nurse leaders regarding educational needs and skills checklist for redeploying staff	1. Communicate with chaplain and EAP regarding opening of command center and offering services
2. Collaborate with nurse leaders regarding redeploying staff, including the number of staff members and hours	2. Weekly email updates and current information available via Microsoft SharePoint site	2. Develop crisis specific education as needed. Education can be internet based or live as appropriate	2. Collaborate with nurse leader overseeing communication to encourage psychological wellbeing

Nurse Leader-Staffing	Nurse Leader-Communication	Nurse Leader-Education	Nurse Leader-Psychological Support
available to redeploy			
3. Ensure nurse leaders communicate with frontline associates regarding redeployment assignment	3. Communicate effectively with nurse leaders to share current information in unit based daily huddles	3. Coordinate with clinical unit educators to arrange live educational sessions and distribute virtual training	3. Collaborate with EAP to assist staff members as needed
4. Communicate with facilities team to facilitate readiness of patient care rooms for expansion	4. Direct nursing personnel to the appropriate nurse leader based on question regarding redeployment	4. Field additional educational needs as they arise during redeployment	4. Continually evaluate psychological wellbeing of nursing personnel through EAP, chaplain services, and daily huddle
5. Review staffing, patient acuity, and volume daily. Report this to the command center leaders	5. Effectively report off when role is transitioned to a different nurse leader	5. Effectively report off when role is transitioned to a different nurse leader	5. Effectively report off when role is transitioned to a different nurse leader
6. Effectively report off when/if role is transitioned to a different nurse leader			

Nurse Leader Roles/Responsibilities: Closing

Nurse Leader-Staffing	Nurse Leader-Communication	Nurse Leader-Education	Nurse Leader-Psychological Support
1. Communicate with command center and nurse	1. Notify nursing personnel via email and Microsoft	Debrief on redeployment education for	1. Collaborate with EAP and chaplain services for

Nurse Leader-Staffing	Nurse Leader-Communication	Nurse Leader-Education	Nurse Leader-Psychological Support
leaders when appropriate to consider de-escalation	SharePoint site plan to de-escalate from redeployment	process improvement once redeployment has de-escalated	ongoing psychological support after crisis and redeployment
2. Collaborate with nurse leaders regarding how to deploy staff to original unit	2. Notify nursing personnel how to seek crisis information after redeployment		2. Communicate ongoing psychological support services via email, Microsoft SharePoint site, and unit huddles

Critical Care Tiered Staffing Model

Eight bed critical care unit



Critical care RNs



Non-critical care RNs



Critical care patients

Twelve bed critical care unit



Critical care RNs



Non-critical care RNs



Critical care patients

Appendix B

Redeployment Skills Checklist

Redeployment Skills Checklist

RN name: _____ Educator name: _____

Date: _____

Competency	Education Needed	Experience but need refresher	Competent
Location			
Medication room			
Supply room			
Crash carts, Glidescope			
Evacuation route, fire extinguisher, fire pull			
Access			
Epic EMR			
Medication cabinet			
Badge access			
Glucose management system (Endotool)			
Telestroke program/cart			
Communication devices (Vocera, Rover)			
Call schedule (which provider to call when)			
Assessment			
Neurological system			
Respiratory system			
Cardiovascular system			
Integumentary system			
Genitourinary system			
Gastrointestinal system			
Pain management			

Lab results (specifically blood gas)			
Skills and Procedures			
Bedside shift report			
Hourly rounding (including the 4 p's: pain, potty, possessions, position)			
Patient education			
IV access			
Medication administration (including process of obtaining medications)			
Titratable drips (specifically fentanyl, versed, propofol)			
Point of care blood glucose			
Telemetry/ strip reading and sign off			
Electrocardiogram (12, 18 lead)			
Dressings/dressing changes			
Intubation set up			
Chest tube insertion set up			
Arterial line set up			
Central line set up			
Thoracentesis			
Bronchoscopy set up/procedure			
ECMO			
Dialysis/continuous renal replacement therapy			
Core measure/quality indicator management			
Proning			
Sedation vacation/ventilator weaning			
Code blue and rapid response criteria, how to activate these medical alerts			
Equipment			
Ventilator			
Chest tube			
Train of four			
BIPAP/CPAP			
Vapotherm			

Arterial line			
Lumbar drain			
Alaris pump			
Lift equipment			
Crisis Specific Education			
Required PPE			
New equipment			
New therapies			

Personal Protective Equipment

RN name: _____ Educator name: _____

Date: _____

	Additional Education Needed	Competent
Knowledge of appropriate PPE		
Donning PPE (before entering isolation room):		
1. Gather necessary PPE		
2. Perform hand hygiene		
3. Don gown		
4. Don N-95 or facemask as requirement		
5. Don face shield or goggles as required		
6. Don gloves (gloves should cover gown at wrists)		
7. Enter patient care room		
Doffing PPE		
1. Remove gloves and dispose in trash can		

	Additional Education Needed	Competent
2. Remove isolation gown (may be removed with gloves).		
3. Exit isolation room		
4. Perform hand hygiene		
5. Remove face shield or goggles		
6. Remove N-95 or mask		
7. Perform hand hygiene		

(CDC, 2020)

Roles of Critical Care RN and Non-Critical Care RN

Critical Care RN: _____ Non-critical Care RN:

Critical Care RN	Completion	Non-critical care RN	Completion
Initial physical assessment and documentation; review of following physical assessments		Daily physical assessments and documentation	
Review and management of vital signs (including pain management) and hemodynamic management		Vital sign documentation (temperature, blood pressure, heart rate, oxygen saturation, pain)	
Oversee IV site management		IV insertion and site management	
Oversee medication administration; Manage and document titratable drips		Medication administration (all medications except titratable drips and high risk medication such as Alteplase and Heparin)	
Monitor progression of nutrition		Meals/feedings	
Monitor and document respiratory management including ventilator,		Hygiene care (including bathing, oral care, CHG bath if needed)	

Critical Care RN	Completion	Non-critical care RN	Completion
Vapotherm, high flow oxygen, etc.			
Monitor and document chest tube management		Intake and output measurement (intake including enteral or peripheral nutrition; output including urinary, GI, chest tube, and drains)	
Monitor progression of mobility		Mobility assessment and range of motion	
Management and documentation of critical care events including rapid response, code blue, code stroke		Assistance with critical care events including rapid response, code blue, code stroke	
Collaborate with non-critical care RN for effective patient education		Collaborate with critical care RN for effective patient education	

(Wells et al., 2021; Bader et al., 2020)

Appendix C

Psychological Support Brochure

	<p>REDEPLOYMENT COMMAND CENTER</p> <p>Contact the Redeployment Command Center for additional information on mental wellness:</p> <p>Phone Number: 777-7777 Email address: ***@srhs.com Microsoft Sharepoint site</p>	 <p>MENTAL WELLNESS</p>
		

	<p>Chaplain Services</p> <ul style="list-style-type: none"> - Available 0800-1700 - On call after hours - Offers prayer, mental wellness support - Call 777-7777 to speak with a chaplain 	<p>REMEMBER THE BASICS:</p> <ul style="list-style-type: none"> -Get adequate sleep -Eat healthy food -Drink plenty of water -Take adequate rest breaks
<p>UTILIZE THE BUDDY SYSTEM</p> <ul style="list-style-type: none"> -Pair with another nurse each shift -Offer periodic check in and assistance -Offer reminders for rest breaks and adequate food and water intake -Encourage use of the additional mental wellness services 	 <div data-bbox="721 1564 1002 1747"> <p>EMPLOYEE ASSISTANCE PROGRAM</p> <ul style="list-style-type: none"> -Six free visits by a trained counseling professional -Contact 777-7777 for more information </div> 	

Appendix D

Redeployment During a Crisis: How can we Improve?

Redeployment During a Crisis: How can we Improve?

Focus Group Agenda:

Introduction of project leader

Explanation of the project

Introduction of focus group process and goals

Explanation of confidentiality

Introduction of group members

Completion of demographic information

Focus Group Questions:

1. Please complete the following items:

Title:

Department:

How long you have been a nurse?

How long you have worked at your current facility?

What is your background/what areas of nursing have you worked previously?

2. What is your general feedback about nursing staff redeployment during the COVID-19 pandemic?

3. What were the opportunities for improvement during redeployment in the COVID-19 pandemic?

Research demonstrates four important themes regarding crisis redeployment that need to be addressed: communication, educational support, psychological support, and a staffing model.

4. During the COVID-19 pandemic redeployment, what were the communication methods used and how did you feel about those communication methods?

5. During the COVID-19 pandemic redeployment, what types of education were provided (i.e., training on COVID-19 care, PPE donning/doffing) and what were the formats used (i.e., virtual training, live training)? How did you feel about the educational support?

6. During the COVID-19 pandemic redeployment, what types of psychological support were provided and how did you feel about the psychological support?

7. During the COVID-19 pandemic redeployment, what staffing format was used (i.e., tasking, full patient load) and how did you feel about the staffing model?

8. Questions/feedback

(Titler, 2002)

Appendix E

Crisis Redeployment: An Evidence-Based Plan for Nursing

HUNT SCHOOL OF NURSING
GARDNER-WEBB UNIVERSITY



Crisis Redeployment: An Evidence-Based Plan for Nursing

Lauren M. Setzer

Objectives

BACKGROUND
PROBLEM
PURPOSE
EVIDENCE
PLAN
IMPLEMENTATION

Background

COVID-19 VIRUS WORLDWIDE

- Emerged in December 2019 in Wuhan, China
- WHO declared pandemic in March 2020

COVID-19 IN THE U.S.

- First case in January 2020
- U.S. declared state of emergency February 3, 2020
- Over 100,000 Americans died by May 2020
- U.S. hospitals endured significant patient volumes

COVID-19 AT HOME

- Patient volumes declined initially, staff furloughed in April 2020
- Surge in patient volumes Dec 2020-Feb 2021

Problem

STAFF FEEDBACK

- Lack of education
- Feelings of fear, anxiety, and unsafe care
- Lack of sustainable staff
- Lack of reliable plan for nurse leaders

URGENT REDEPLOYMENT

- Specialty staff (i.e. perioperative staff) were deployed to areas most impacted by volumes
- No defined plan for redeployment in place
- Process seemed to happen suddenly

UNANTICIPATED SURGE IN COVID-19 PATIENT VOLUMES

- Inpatient staff burdened with increased volumes and dwindling staff
- Procedural areas closed to decrease resource utilization and free staff to help in burdened areas

Project Purpose and Framework

DEVELOP AN EVIDENCE-BASED PLAN FOR
NURSING STAFF REDEPLOYMENT
DURING A CRISIS

Conceptual Framework: Lazarus and Folkman's
Transactional Model of Stress and Coping

Evidence Based Model: Iowa Model of Evidence-Based
Practice



"Considering the global pandemic crisis, I do believe that the leadership at Spartanburg Regional delivered their best... The leadership now has a responsibility to look back in detail and ask hard questions to improve for the future."

Employee



Tiered/buddy staffing
model



Effective communication



Appropriate education



Psychological support

EVIDENCE
Based on Literature Review

TIERED OR BUDDY STAFFING MODEL Society of Critical Care Medicine

-EXPANSION TO ACCOMMODATE 96 CRITICAL CARE PATIENTS



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TIERED OR BUDDY STAFFING MODEL

Tiered Model by CHEST Consensus

- **CONVENTIONAL** - USE RESOURCES CURRENTLY AVAILABLE
- **CONTINGENCY**- STAFF EXTENSION (LARGER PATIENT LOAD, CHANGE IN RESPONSIBILITIES)
- **CRISIS** - TEAM APPROACH TO CARE, SCOPE OF PRACTICE EXPANDS

Hick, J. L., Einav, S., Hanfling, D., Kissoon, N., Dichter, J. R., Devereaux, A. V., & Christian, M. D. (2014). Surge capacity principles. *Chest*, 146(4), e1S-e16S. <https://doi.org/10.1378/chest.14-0733>

Staffing model: focus group

NURSE TO PATIENT RATIO

-Changing ratio from 5:1 to 3:1 nurse to patient ratio was helpful

CHALLENGES FOR REDEPLOYED STAFF

-EMR access
-Orientation to department
-Burdensome to inpatient staff initially

ASSIGNMENTS AND ROLES

-Some staff did not know assignment until arriving to work
-Unclear roles/job responsibilities

Communication

WHY?

Literature shows that compassionate, sincere communication is important to build trust

WHAT?

-All protocol changes, specifically PPE protocol
-Frequent, defined communication method

HOW?

Command center
Daily email
Unit huddles
Leader rounding

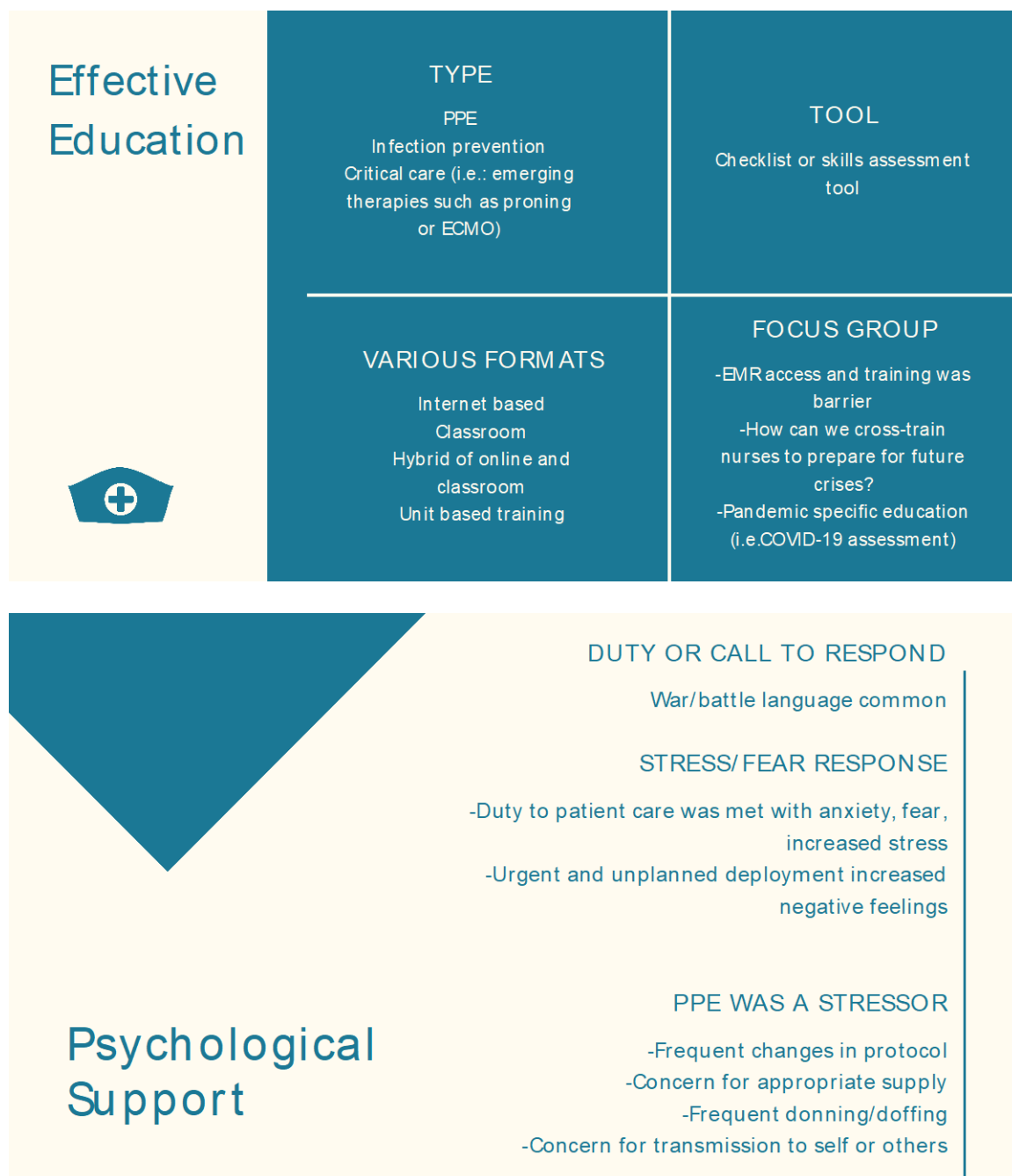
COMMUNICATION DESCRIBED AS INFORMAL

-Communication described as unclear or inconsistent
-System level email and HUB updates were good; Department level communication lacking.
-Needed defined communication methods
-Needed clear information on PPE protocol changes

"As always, communication is the main thing."



DIDN'T UNDERSTAND THE "WHY" BEHIND REDEPLOYMENT



Psychological support:

FOCUS GROUP

VAIRETY OF METHODS NAMED

- Teamwork among employees brought support
- Rounding from leaders
- Food
- Nursing background

TIME OFF WORK

- Encouraged to take time away from work but know peers work short staffed

"The effects the pandemic has left on the staff are real. It was a stressful, painful, sad, lonely time. The staff still talks about it at times almost with the fear of it happening again. The most support seemed to come from each other, those who were in the trenches with you. They knew what you were feeling even if you did not say a word."

Employee



Tiered/buddy staffing
model



Communication method



Education plan



Psychological support

Evidence-Based Plan for the SC hospital

TIERED STAFFING MODEL- SC HOSPITAL

Eight bed critical care unit



Critical care RNs



Non-critical care RNs



Critical care patients

Twelve bed critical care unit



Critical care RNs



Non-critical care RNs



Critical care patients

Communication Methods

REDEPLOYMENT COMMAND CENTER

- Central, physical location for all redeployment information/questions
- Open based on collaboration among nurse leaders and through directive from CNO
- Each nurse leader would fill a responsibility: education, psychological support, communication, staffing
- Operations guided by command center tool

Communication Methods

MICROSOFT SHAREPOINT

Provide the latest information regarding redeployment

WEEKLY EMAIL FROM THE COMMAND CENTER

UNIT BASED HUDDLE

- Feed information from command center to the departments
- Feed questions from huddle to the command center
- Crisis huddle tool
- Huddle would serve as an evaluation tool

Education



SUPPORT FROM HOSPITAL EDUCATION

- Assistance in coordinating live and/or internet based education
- Collaborate with clinical coordinators

SKILLS CHECKLIST

Competency assessment
Includes PPE check off

METHODS

- New equipment or treatments - live training
- Refresher of equipment or treatments- internet based
- Mock drills

DEFINED ROLES

Skills checklist includes critical care and non-critical care nurse responsibilities

Psychological Support

PERSONAL

- Encourage adequate rest breaks, sleep, food/water intake
- Communicate importance through command center unit based huddles

TEAM

Buddy system- pair nurses for the shift

HOSPITAL BASED

- Chaplain services
- Employee Assistance Program (EAP)

Cost-Benefit Analysis

Table 1

Cost-Benefit Analysis

Costs	Value	Benefits (monetary investment saved)	Value
Compensation for frontline associate education	\$11,298	Incentive stipend for nurse staffing, 1 month period	\$50,000
		Travel RN contracts for 1 month	\$187,003.31
	Estimated total= \$11,298		Estimated total = \$237,041.31 (additional \$40,038 per RN in turnover cost)

Note: Cost-benefit analysis for staffing within the redeployment plan.



"You either pay now or pay later
if you're looking at it from a
fiscal and turnover perspective."
- Employee

Implementation

ONGOING REFRESHER

- Annual review
- Review after implementation
- Training of new employees
- Constant tab on pending implementation

EDUCATION ABOUT PLAN

- Nurse leaders
- Frontline associates

BUY IN FROM STAKEHOLDERS

- Nurse leaders, frontline nurses (patients after implementation)
- Including recommendations, modifications

Evaluation

- Staff turnover- SRHS nurse turnover increased 3% from March 2020 to March 2021 (18.75% to 21.57%)
- Employee engagement score/comments
 - Focus groups
- Patient satisfaction scores