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The Nursing Leader's Role in Decreasing Implicit Rationing by Improving the Nursing Work Environment

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THE NURSING LEADER'S ROLE IN DECREASING IMPLICIT RATIONING BY IMPROVING THE NURSING WORK ENVIRONMENT

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Abstract

Despite all the literature about missed care and its contributing factors, it is prevalent in most hospitals worldwide. Missed care is the result of care that is implicitly rationed. For this paper, implicit rationing is defined as how nurses decide what care is delivered based on the present work environment. Many factors influence implicit rationing. One such factor is the work environment. The association between the nursing work environment and implicit rationing is well described in the literature. The nursing leader is in a formal position responsible for patient outcomes and the nursing practice environment. Therefore, it is important to understand the relationship between the nursing practice environment and implicit rationing. This Doctor of Nursing practice project aimed to examine the awareness of nursing leaders regarding the influence of a positive work environment on implicit rationing. Online surveys were used to assess the work environment and presence of implicit rationing. Statistical tests were conducted to evaluate the relationship between work environments and implicit rationing. An assessment among nursing leaders was performed to examine knowledge concerning healthy work environments and implicit rationing before and after receiving education. This project contributes value to the nursing profession, specifically leaders, regarding the influence of a healthy work environment on implicit rationing.

Keywords: healthy work environment, implicit rationing, Perceived Implicit Rationing Nursing Care Assessment (PIRNCA).

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Chapter 1

Phenomenon of Interest

Over the past 20 years, several articles have described the phenomena of missed care, rationed care, and unfinished nursing care. Beatrice Kalisch (2006) identified a phenomenon missed care, in which the nurse makes a conscious decision to miss delivering specific care interventions in response to the healthcare environment. Kalisch's model was developed in the United States and implies that missed care occurs at the micro-level and is left to the decision-making capabilities of the nurse in the environment. Kalánková et al. (2019) noted that, in 2007, Schubert et al. identified this same phenomenon in Swiss hospitals and coined the term "implicit rationing" to describe this missed care, which Kalisch discussed a year earlier. This phenomenon described the deliberate act of the nurse deciding to limit or withhold care due to unavailable resources in the healthcare environment. Many factors directly and indirectly influence a nurse's ability to make decisions related to daily nursing care, including time, resources, leadership, safety culture, and teamwork. Implicit rationing is defined as "the withholding of or failure to carry out necessary nursing measures for patients due to a lack of nursing resources, staffing, time, and work environment" (Kalánková et al., 2019, p. 1012). The result of this rationing can result in delayed or missed nursing care. Missed care is associated with poor patient outcomes (Jones, 2015).

This project set out to identify the presence or absence of implicit rationing, identify the unit work environment quality for nurses in one acute care hospital; and evaluate the knowledge of nursing leaders regarding implicit rationing and healthy work environments before and after receiving an educational seminar. Results from this project demonstrate the presence of a positive work environment, and the presence of implicit rationing of nursing care. A strong

inverse relationship exists between work environment and implicit rationing, as described in the literature. Nurse leaders demonstrated an increased awareness after receiving education on the importance of work environment and implicit rationing, as evidenced by their post scores. Recommendations for this project include having organizations prioritize the health of their work environment as a key performance indicator to routinely measure, along with understanding if implicit rationing is occurring in their hospitals and the impact this is having on patient outcomes. It will be important for hospitals to consider adopting the evidenced based recommendation for a healthy work environment.

Significance

Despite all the literature on implicit rationing and its contributing factors, variation continues to occur among departments in nurse-sensitive outcomes, such as falls, pressure injuries, central-line-associated bloodstream infections, and catheter-associated urinary tract infections in acute care hospitals across the United States (Griffiths et al., 2018).

Variation in practice environments affects patient outcomes. Grimley et al. (2021) recently described the significant influence of the coronavirus disease 2019 (COVID-19) on nursing-sensitive outcomes, affecting staffing, resource allocation, and attention to basic care protocols and standard practice. Nursing leadership is driven by factors that influence the nursing practice environment, such as teamwork, staffing, and resources. It is the responsibility of the nursing leader to evaluate the presence of a positive work environment, especially when variation occurs among nursing units in patient outcomes. If nursing leaders address these factors, then implicit rationing could be eliminated or significantly reduced, improving patient outcomes (Swiger et al., 2017).

One such contributing factor of implicit rationing is the work environment. Research has demonstrated that a positive work environment significantly influences patient outcomes. Mihdawi et al. demonstrated that positive work environment factors, such as "staffing and resource adequacy, professional communication style, and nurses' participation in hospital quality improvement activities, were associated with higher levels of perceived patient safety" (2020, p. 387). Several articles have been written about the influence nursing practice environments have on missed care (Carthon et al., 2015; Hessels et al., 2015; Smith et al., 2018; Swiger et al., 2017; Winsett et al., 2016).

Hessels and colleagues found that "good nursing practice environments, adequate staffing, and sufficient resources for the provision of nursing are crucial as they have a strong influence on the delivery of quality care" (2015, p. 6). This study examined the nursing practice environment, which was statistically significant, related to missed nursing care. Specifically, a positive nursing practice environment was related to less missed care.

Implicit rationing, which results in missed care, is associated with nursing work environment factors, such as teamwork, staffing, and safety climate (Dhaini et al., 2019; Schubert, 2020). Zhao et al. (2020), Bachnick et al. (2018), and Zúñiga et al. (2015) described the significance of the work environment and implicit rationing, supporting organizational and system factors that can be modified to improve patient outcomes.

Nurses are responsible for patient care, and nursing care and interventions improve patient outcomes, such as falls, pressure injuries, catheter-associated urinary infections, central-line infections, and other outcomes. When a nurse rations care, patient outcomes suffer as a direct result of the missed care (Kalánková, Kirwan, et al., 2020). Leaders must examine the factors contributing to implicit rationing in the work environment to improve patient outcomes.

Numerous articles have been published over the past 10 years about missed care (Jones et al., 2015; Kalánková et al., 2019). Many factors influence implicit rationing, and the quality of the work environment is one such factor addressed in the scope of this project (Zhao et al., 2020; Zúñiga et al., 2015).

The mission of this project is to promote safe, healthy work environments for the nurses and patients, in order to allow the delivery of safe patient care. Quality of care and patient outcomes depend on the nurse's ability to deliver care in a healthy work environment. Healthy work environments have less implicit rationing. Therefore, nursing leaders must understand the factors in their work environment that influence implicit rationing. The goals and objectives of the project include the following:

1. identify the presence or absence of implicit rationing among nurses in identified hospital units in one acute care hospital;
2. identify the unit work environment quality for nurses in one acute care hospital; and
3. evaluate the knowledge of nursing leaders regarding implicit rationing and healthy work environments before and after receiving an educational seminar.

PICOT Question

In acute care hospitals, do nursing leaders with a positive nursing practice environment perform less implicit rationing in their units than those with a negative practice environment?

Background

Several factors influence the complex healthcare environment (e.g., time, culture, leadership, management, organization, and nursing work environment), resources (e.g., tools, technology, staffing, policy, and practice), the role of the nurse (e.g., autonomy and control over practice), and the responsibilities the nurse has accepted. This complex healthcare environment

creates the mentioned problems facing nurses, including prioritizing what care is to be completed in the unit for a particular patient based on the currently available factors in the work environment. The result of this is implicit rationing.

When implicit rationing of care occurs, standard nursing care is not delivered, compromising patient outcomes. When standardized and expected care is not delivered, the influence on patient outcomes can result in a decline in the quality of delivered care. Specific factors in the nursing work environment that contribute to this healthy work environment are adequate resources (e.g., tools, staffing, skill mix, interdisciplinary collaboration, and teamwork), nursing leadership and management, and autonomy and control over nursing practice. Nursing leaders are responsible for creating the nursing practice environment, developing and maintaining a healthy work environment at the facility overall, and overseeing individual unit work environments. Therefore, it is important to understand the elements of a healthy work environment in the facility, identify the quality of a work environment, and determine whether and to what degree implicit rationing occurs at the unit and facility levels.

Purpose Statement

This doctor of nursing (DNP) practice project aimed to examine the awareness of nursing leaders regarding the influence of the work environment on implicit rationing.

Chapter 2

Review of the Literature

Several databases were accessed, including the Cumulative Index of Nursing and Allied Health (CINAHL), PubMed, Psych Info, Medline, and 293 articles were identified and reviewed related to positive work environments and implicit rationing. The keywords used to search were "implicit rationing" and "positive nursing environment" (262), "implicit rationing" and "nursing environment" (12), and "implicit rationing" and "healthy nursing work environment" (293). The majority of these articles were published between 2012 and 2022.

Implicit Rationing/Rationed Care

Several articles have been published describing the state of the science regarding missed care, unfinished nursing care, and implicit rationing. Kalánková et al. (2019) and Jones et al. (2015) discussed the summary of research conducted over the years related to such concepts as *implicit rationing* and *missed care* that illustrate an urgent need to improve patient outcomes. Jones et al. (2015) reviewed the literature, identifying 42 quantitative reports, 7 qualitative reports, 1 mixed method, and 4 scientific reviews related to unfinished care, missed care, and implicit rationing. The conclusion of this review validated that implicit rationing is a real phenomenon that exists in acute care hospitals internationally. All nursing leaders must be aware of and understand that implicit rationing exists in their work environment to address it to improve patient outcomes.

Another study was conducted by Jones et al. (2015), who aimed to examine the phenomenon of implicit rationing among nurses in Texas. This cross-sectional survey examined the frequency and pattern of implicit rationing in a stratified random sample of 3,529 medical-surgical nurses. Jones et al. (2015) measured implicit rationing using a 31-item survey

instrument called the Perceived Implicit Rationing Nursing Care Assessment (PIRNCA) adapted from the parent instrument originating in Switzerland. This study demonstrated rationing of at least one nursing care activity as reported by almost all respondents, and most rationed multiple activities.

The findings by Jones et al. (2015) were significant and demonstrated a need for organizational nursing leaders to understand what implicit rationing is and whether it is present in their units. Implicit rationing is routinely practiced among hospital nurses and occurs across all categories of nursing care (e.g., physical care, coordination of care, documentation of care, and emotional care). Moreover, implicit rationing is associated with multiple negative patient outcomes (e.g., mortality, patient falls, decubitus ulcers, nosocomial infections, and patient satisfaction), even at low thresholds, and is a stronger predictor of patient outcomes than nurse-staffing indices (Jones et al., 2015). Time scarcity is a primary condition for implicit rationing, which is a byproduct of organizational and system decisions related to resource allocation. Therefore, the volume/frequency of rationed care is an outcome of administrative decision-making and reflects the need to address rationing by nursing leaders.

Healthy Work Environment

A healthy work environment has been described by the American Association of Critical-Care Nursing (AACN) as comprising skilled communication, true collaboration, effective decision-making, appropriate staffing, recognition, and authentic leadership (Ulrich et al., 2019). Swiger et al. (2017) described a positive practice environment as including factors that enhance a nurse's ability to practice nursing skillfully and deliver high-quality care. Such factors include nurse participation in hospital affairs (engagement), nurses' foundation for the quality of care,

nurse manager ability, leadership and support of nurses, staffing, resource adequacy, and collegial nurse-physician relationships.

Shirley (2017) described four themes present in a healthy work environment: quality leadership, relational changes (e.g., teamwork, doctor of medicine (MD)/registered nurse (RN) communication, and collaboration), environmental factors (e.g., staffing and supportive structures), and contextual factors (e.g., organizational culture). A literature review was conducted, and a synthesis of the top 10 research articles described the factors contributing most to healthy work environments. One limitation to this review was the lack of interventional methodologies or longitudinal studies. Most were also conducted in the United States and Canada. Wei et al. (2018) conducted a systematic review of the work environment, and one of the conclusions was that nursing leadership is a key factor in building and sustaining a healthy work environment.

In 2001, the AACN committed to focusing efforts on promoting healthy work environments for nurses. Therefore, in 2005, the AACN published the standards for establishing healthy work environments: *Sustaining Healthy Work Environments: A Journey to Excellence*. (Ulrich et al., 2019). The six essential standards developed include skilled communication, true collaboration, effective decision-making, staffing, meaningful recognition, and authentic leadership. These standards must be in place to create and ensure a healthy work environment and provide an evidence-based framework for any organization committed to excellence and improving patient outcomes (AACN, 2016). The second edition of these standards was published in 2016, to incorporate additional evidence to support the relationship between a healthy work environment and improved outcomes for patients and nurses (Ulrich et al., 2019, p. 168).

Burns et al. (2018) and Nayback-Beebe et al. (2018) defined a healthy work environment as “a safe, empowering, environment that supports optimal safety and health” (Burns et al., p. 3). Both articles used the AACN synergy model for patient care as the framework for a healthy work environment and described the six essential standards. (Hardin, S. and Kaplow, R. (2017).

Implicit Rationing and the Nursing Work Environment

Implicit rationing in an unhealthy work environment is a worldwide problem, as described by Jones et al. (2015), Schubert et al. (2013), Zúñiga et al. (2015), Bachnick et al. (2018), Zhao et al. (2020), and Dhaini et al. (2019), who all examined the relationship between a positive nursing work environment and implicit rationing. Dhaini et al. (2019) conducted a longitudinal study exploring the trends and variability of rationing of care rationing of care per shift among individual nurses and its relationship with work environment factors in the acute hospital setting of nurses in Beirut, Lebanon. A total of 1,317 surveys from 90 RNs were included in the study analysis: 1,042 responses from 64 RNs who worked day shifts and 275 responses from 34 RNs who worked night shifts. Of the 90 RNs included in the sample, eight RNs overlapped because they worked both day and night shifts. This study suggests that implicit rationing of nursing care is prevalent in both the day and night shifts. Dhaini et al. (2019) found that implicit rationing is positively associated with factors in the work environment. The most frequently rationed care included patient care plans, attending to call lights, and emotional and psychological support. Other rationed care included skin care, oral care, positioning, and frequent monitoring. Because the care nurses provide, such as skin care, monitoring (assessment), and positioning, prevents poor outcomes, when rationing such care occurs, it becomes a significant quality of care issue that must be addressed. This study also identified specific factors that influence the nurses’ decision-making, such as hospital culture, leadership,

and characteristics of the nursing work environment, including nurse autonomy and responsibility, time, available staff, and equipment.

A systematic review was conducted by Zhao et al. (2020) to examine the association of the work environment and implicit rationing. Several databases were reviewed between 2000 and 2019 for evidence of a negative correlation of implicit rationing with the work environment, where 15 studies were identified, and only one was not. The reviewed articles provided evidence of a negative correlation between the working environment and implicit rationing in 15 studies, and one of the studies demonstrated that the correlation was not strong. After reviewing the literature, it was determined that the degree of influence of various factors in the working environment on implicit rationing are different. The authors support the conclusion that the working environment is only one of the factors affecting implicit rationing. Nursing leaders must improve the work environments, including such initiatives as staffing and resources, and improve teamwork to decrease nursing care left undone to improve outcomes and the quality of care.

Supporting this concept, Zhao et al. (2020) described several studies demonstrating the significance of the association between hospitals with positive nursing work environments and the reduction in implicit rationing. Specifically, Dhaini et al. (2019) conducted a study in acute care organizations that demonstrated the various factors influencing a nurse's decision-making, including hospital culture, leadership, and work environment characteristics. Such characteristics included nurse autonomy and responsibility, time, and available staff and equipment.

Jaworski et al. (2020) and Młynarska et al. (2020) conducted studies that support the work environment and its influence on implicit rationing. Specifically, Jaworski et al. (2020) conducted a cross-sectional multisite research study of 1,000 nurses in Poland. The Basal Extent of Rationing of Nursing Care tool measured implicit rationing and nurses' job satisfaction. A

two-way analysis of variance analyzed the differences between nurses, indicating positive satisfaction with their life and environment and the level of implicit rationing of nursing care. This study demonstrated a statistical significance between nurses' job satisfaction, optimism, and the level of implicit rationing of nursing care.

In 2020, Młynarska et al. conducted a cross-sectional survey among 150 anesthesia nurses in Poland. This study demonstrated with statistical significance that the main reason for implicit rationing was low job satisfaction, fatigue, and a sense of professional failure. Grimley et al. (2021) surveyed chief nursing officers across the country. First, an electronic survey was sent out to 195 chief nurses within the Vizient Academic Medical Center list serve, asking questions about the influence COVID-19 has had on specific nurse-sensitive patient outcomes. Only 21 out of 195 initially responded. However, another 49-question survey was designed and sent out to 487 chief nursing officers across the United States, including 20 academic medical centers, 18 community hospitals, and 13 health systems. Of this group of 487 chief nursing officers, 127 responded (26% response rate), and only 51 of those fully completed the survey (an 11% final response rate). After completing this survey, this information was shared with 272 chief nurses across the United States through a series of discussion calls. Strategies, solutions, and tactics to address these challenges were shared from these discussion calls. The importance of evidence-based practice and ensuring consistent standard care delivery was a theme throughout the findings (Grimley, 2021, p. 374).

These articles are just a few examples of why there is a need to understand how leaders can affect the work environment to decrease any opportunity for implicit rationing to occur.

Chapter 3

Description of the Project

As part of this project, the goal was to use evidence to validate the presence of healthy work environments and evaluate the presence of implicit rationing within these units. After this validation, the intention was to demonstrate the inverse relationship between implicit rationing and a healthy work environment, which has been established in the literature. As part of a quality improvement study, an additional assessment of the knowledge of nursing leaders related to implicit rationing and healthy work environments was conducted before and after receiving an educational session. This education included sharing the collected data as part of this project and the evidence concerning the nursing leader role in creating healthy work environments. Information about implicit rationing was also shared with the nursing leaders.

Needs Assessment

The chief nursing officer is accountable and responsible for nursing practice and is aware of the organization's quality and patient outcomes. In a review of past-year engagement surveys among units, much variation existed related to factors that influence healthy work environments, including safety culture, leadership, and resources. Variation related to nursing quality outcomes occurred within one medical center's units, in Northern California. The current chief nursing officer was willing and supportive of examining the work environments in this hospital facility in terms of implicit rationing.

Population Identification

The populations of interest were (a) nursing leaders who met the inclusion criteria in adult medical-surgical and critical-care units and (b) RNs working in those units who also met the inclusion criteria. These units were selected based on the design of the AACN work

environment tool and the PIRNCA. Nurse leaders were selected as part of the inclusion criteria for the nurse leader portion of this project. Those nurse leaders that met the inclusion criteria, held the following titles: nurse shift manager, nurse manager, nursing director, and senior director of nursing.

Key Stakeholders

Several key stakeholders were part of this implementation plan. The chief executive officer (CEO) was a critical stakeholder in addition to the directors of nursing in the identified units. The entire senior leadership team, chief operating officer (COO), chief medical officer (CMO), chief financial officer (CFO), director of human resources, senior director of nursing, and vice president (VP) of mission integration, were also key stakeholders whom this work was initially presented to before submitting to the hospital/CommonSpirit Health (CSH) Institutional Review Board (IRB). The CSH IRB and nursing research team were also involved as essential stakeholders in this project at the very beginning of this process.

Cost-Benefit Analysis

The cost-benefit analysis for this project was simple. The time requested of the nurses was approximately 30 min to complete the PIRNCA survey and Healthy Work Environment Assessment Tool (HWEAT). The time requested of the nursing leaders was approximately 2 hours which included an educational session that was about 45 minutes in length. The additional hour included completing both the pretest and posttest knowledge awareness survey. Because the survey was voluntary, nursing leaders in those units needed to support the time necessary to allow the nurses to complete the survey. This occurred by asking nurses to voluntarily complete this survey either during their shift if they had time, during a break or after their shift. The unit with the highest response rate identified by the unit leader received a pizza party on both shifts

(approximately 10 pizzas for both shifts, totaling about $400.00). All nursing leaders who participated in the project also received pizza as a thank you for participating. Approximately 32 leaders participated, including directors, nurse managers, and nursing shift managers. The estimated cost was $200 or less for a pizza party for approximately 32 leaders. The total cost of this project is estimated at approximately $600.00.

Scope of the Project

An assessment of the current work environments in one Northern Californian hospital was conducted to validate the presence of a healthy work environment and implicit rationing. A correlation was performed to validate the evidence-based literature that demonstrates an inverse relationship between the presence of healthy work environments and implicit rationing as a part of this pilot project.

A pre-assessment of the nursing leaders' awareness of work environments and implicit rationing was conducted using a self-developed tool by the chief nursing officer using evidence-based literature regarding work environments and implicit rationing. After conducting this pre-assessment, an oral educational presentation was offered to the nursing leaders in select units with certain job titles. This educational session was offered twice to allow for all leaders to participate. After providing the oral education sessions, a post-assessment was also conducted among the nursing leaders at the hospital to evaluate their awareness of healthy work environments and implicit rationing.

Project Goals and Objectives

The goals and objectives of the project include the following:

1. identify the presence or absence of implicit rationing among nurses in identified hospital units in one acute care hospital;

2. identify the unit work environment quality for nurses in one acute care hospital; and

3. evaluate the knowledge of nursing leaders regarding implicit rationing and healthy work environments before and after receiving an educational class.

In summary, a positive work environment influences implicit rationing of nursing care, which has been thoroughly described in the literature. This project validated this evidence: the quality of the unit work environments affected the degree of rationed care in the work environment in one hospital as part of a pilot project.

Theoretical Underpinnings of the Project and Change Theory

Change Theory

Because change is difficult, Lippitt's seven-step change theory (1958) was used. This theory expands Lewin's theory to place additional emphasis on the role of the change agent. In the case of this study, the change agent was the nursing leader of the involved unit/organization. This theory has seven stages of change: 1) diagnose the problem, 2) assess the motivation and capacity for change, 3) assess the sources and motivation of the change agent, 4) choose the progressive change, 5) clearly define the role of the change agents, 6) maintain the change, and 7) gradually terminate from the helping relationship. For this project, the change will occur after the project is completed.

Stage 1: Diagnose the Problem

Variation in patient outcomes and leader engagement were identified as a concern. A need to evaluate the quality of the work environment and presence of implicit rationing was identified. As described, evidence has supported the existence of an inverse relationship between healthy work environment and implicit rationing. Because nurse leaders play a significant role in

being able to influence both the work environment and patient outcomes, it was important to better understand the current state.

Stage 2: Assess the Motivation and Capacity for Change

After this project is completed, the change will occur, including assessing the organization's and leaders' readiness to address the need to improve the work environment and reduce implicit rationing. Resources such as an investment in meaningful recognition programs, possibly additional unlicensed personnel, formal leadership programs for nurse leaders and physician leaders to build collaboration, and enhance communication, would potentially be needed for this change, and depending on their cost, this could be a limitation for the success of implementing the needed changes.

Stage 3: Assess the Sources and Motivation of the Change Agent

After conducting a survey of the nurses and nurse leaders, using evidenced based tools such as PIRNCA and HWEAT, both implicit rationing and the work environment were examined. Nurse leaders were also surveyed before and after receiving education on the importance of healthy work environment and the concept of implicit rationing. The results of the survey were conducted using statistical methods including Pearson's correlation, independent and paired t test. Based on the survey results, it will be important to assess the readiness of the stakeholders to make recommended changes in the work environment, at the unit and senior levels of administration, where many of the resources will need to be approved. The presence of implicit rationing can be a sensitive topic but is necessary. The timing of this communication is critical. Addressing implicit rationing and the many factors that influence these changes takes time.

Stage 4: Choose Progressive Change

After initially evaluating the survey results, it is important to determine which factors in the work environment could be addressed with the least resources. Staffing was the most commonly reported factor but also the most costly. Recognition of all employees from the bedside to the boardroom, was the second-most significant factor in the work environment that could be enhanced and is the least expensive. Determining the best strategies for improving the quality of the work environment using the AACN recommended strategies for each factor is important.

Stage 5: Clearly Define the Role of the Change Agents

The change agents are the nursing leaders in these units who must embrace the changes and address the improvements that must be made. Their role is to champion the strategies for improving the health of the work environment. The chief nursing officer is the sponsor of this change and will use this as part of the nursing strategic plan to drive change.

Stage 6: Maintain the Change

The ability to maintain the changes is based on building these factors into the culture within the organization. Creating the infrastructure to support the ongoing health of the work environment is critical to the maintenance of these changes. Evaluating the quality of the work environment and implicit rationing on an annual basis allows for the ability to measure change.

Stage 7: Gradually Terminate from the Helping Relationship

When the routine assessment of the health of the work environment becomes part of the organizational culture, as described by the AACN, in addition to strategies for improvement, it should be evident that the team can continue maintaining these changes independently. This project validated the presence of healthy work environments and implicit rationing and the

inverse relationship between these among units in this hospital. The project began by assessing the nursing leaders' awareness of this phenomenon before and after sharing the data and evidence-based information. Validation and awareness must occur before any changes can occur, which the project scope entailed. The change agents in this project were the nursing leaders and chief nursing officer, who will continue to support this work, as it is an organizational and unit-based change. The HWEAT and PIRNCA must be conducted annually to evaluate the ability of such changes to be sustained to maintain the change regarding the work environment and presence of implicit rationing in the practice environment. Over time, if these changes and a positive work environment exist in all units, this would become part of the organizational culture and would no longer be a formality but a way of operating for all organizational leaders and employees.

McHugh's Organizational Model

McHugh's organizational model is a visual diagram of an organizational framework, describing factors that influence the complex healthcare environment in which nurses deliver care (see Appendix K). Based on such factors in the work environment, the nurse may decide which care to ration or not complete because of limited resources. This rationing results in missed care, negatively influencing patient outcomes. This framework can function as an easy method for leaders to understand the factors from a conceptual perspective to establish strategies to improve the health of the work environment and ultimately reduce implicit rationing while improving patient outcomes.

Chapter 4

Project Plan

Setting

The project took place in one licensed 267-bed Northern Californian hospital, part of the large nonprofit Catholic health system CSH, after receiving approval from the IRB from the University of Nevada Las Vegas (UNLV) and CSH. This hospital is a unionized community Level 2 trauma hospital. All RNs in the adult acute care, inpatient medical-surgical, and critical-care units within this hospital were asked to complete an online survey, and their nurse leaders were asked to complete a pretest followed by a 2-hour educational offering and a posttest.

Description of Subjects

The populations of interest were 1) nursing leaders in adult medical-surgical and critical-care units in a Northern Californian hospital with 276 licensed inpatient beds and 2) the RNs working in these units. The units in this project were all inpatient acute care adult units within the hospital of interest. In addition, 368 nurses met the inclusion criteria to participate in the HWEAT and PIRNCA; however, only 84 nurses responded to this survey. Of the 84 nurses, only 70 completed the entire survey, which was a 19% response rate. Moreover, 14 only completed the demographics section and did not complete the rest of the survey. Furthermore, 45 nursing leaders met the title inclusion criterion. Of the 45 nursing leaders, 29 participated in the survey, which was a 64% response rate. Only complete surveys were used for the data and statistical analysis in this project. For example there were 32 surveys completed but using the unique ID code, there were 2 duplicates that were removed for the total sample and data collection.

Measurements, Instruments, and Activities

This section includes the description of the measuring tools used to evaluate the change in nursing leader knowledge and the quality of the unit healthcare environment. The two psychometrically tested instruments include the HWEAT and PIRNCA survey. This section also includes participant recruitment and consent activities.

Recruitment and Consent Procedures

The project leader received approval from the UNLV and CSH IRBs to complete this project. The IRB determined that this project was considered exempt. After IRB approval, recruitment and consent were completed.

Registered Nurse Group Recruitment

All RNs who met the inclusion and exclusion criteria in the hospital units, as identified through the hospital's public global address list for each nursing unit, were sent a letter via employee email describing the risks and benefits of the project, the time frame and purpose, and the time required to participate in the online survey. All eligible participants were emailed a web link to the two surveys, which were open for 2 weeks. All nurses on these lists were emailed the nurse recruitment letter and a link to the two surveys via their employee email address. The two validated survey instruments, the PIRNCA survey and HWEAT, were used to assess the work environment and presence of implicit rationing. Recruitment of the nurses in each unit was voluntary, and consent was implied if the nurse chose to complete and return the survey. Identifying information was blinded through coding, and only aggregated data were reported, not individual-level data. Opportunities existed for potential subjects to ask questions about the survey or decline to participate at any time during the research data collection period. Participation was voluntary. If the participant chose to complete the surveys, the participant was

asked to follow the instructions, provide honest answers, and notify the researcher of any questions or concerns. Nurses were given the option to withdraw from the study at any time. If they withdrew from the study, their data were not included in the research. Each survey was estimated to take 15 minutes to complete, for a total of 30 minutes.

Nursing Leader Group Recruitment

All nursing leaders who met the inclusion criteria (i.e., those with the title nurse shift manager, nurse manager, nursing director, or nursing senior director) working in the hospital units were recruited using the hospital public global address list. The request for participation was sent via employee email using the nurse leader recruitment letter describing the risks and benefits of the project, the time frame and purpose, the time required, and the training components involved if the employee chose to participate in the project. Recruitment of the nursing leaders was voluntary, and consent was implied if the nursing leader chose to complete and return the pretest and posttest. Identifying information was blinded through coding, and reported data include only aggregated data, not individual-level data. Opportunities were provided for potential participants to ask questions about the pretest or the study. The participants chose to complete the pretest and posttest, which were estimated to take 15 min each. Nurse leaders were asked to follow the instructions, provide honest answers, and notify the researcher of any questions or concerns. They had the option to withdraw from the project at any time. If they withdrew from the project, the data were not included in the data collection and reporting of the final results. All eligible participants were also emailed a web link to the pretest survey and the time and date of the 1-hr educational training. This survey link was open for 2 weeks. Those who participated were also sent a web link for a posttest survey after the educational offering.

Healthy Work Environment Assessment Tool

The first tool used was the HWEAT. This tool assessed the health of the work environment by hospital unit. This survey was available to all medical-surgical and intensive care nurses at this hospital. The work environment significantly affects the degree of implicit rationing (Zhao et al., 2020). This project was intended to identify whether or not implicit rationing was occurring and whether the work environments were positive or negative using the AACN HWEAT.

Several articles describe the use of the HWEAT, including articles by Ulrich et al. (2019), Huddleston and Gray (2016), and Samoya et al. (2015). Samoya et al. (2015) described a pilot study using the HWEAT and provided evidence-based recommendations for leaders based on the survey results. Nurse leaders are accountable and responsible for nursing practice environments; therefore, it is critical to understand the staff perceptions of nursing leadership as part of the health of a work environment. Authentic leadership is measured using this tool based on the AACN standards of a healthy work environment.

In a three-part pilot study conducted in Texas, Huddleston and Gray (2016) described and measured the nurses' and nursing leader's perceptions of the healthy work environment using the HWEAT. These articles provided reliability and validity data for the tool; however, the study was not generalizable, as it was only conducted in one magnet organization within one state.

The demographics of the nurses and nursing leaders for each unit at the pilot hospital were collected to identify other factors that may influence the health of the work environment. In addition to assessing the work environment, implicit rationing was also assessed using a reliable and valid tool called the PIRNCA. This survey was distributed to acute care nurses in the pilot hospital.

The method of measuring the work environment in this project was the HWEAT. The HWEAT is an evidence-based tool developed by the AACN in 2006. (https://www.aacn.org/nursing-excellence/healthy-work-environments/aacn-healthy-work-environment-assessment-tool). It is an 18-question survey that asks questions regarding six standards. The survey measures the work environment using a five-point Likert scale evaluating the unit responses using strongly disagree, disagree, agree, and strongly agree. The health of the work environment is defined by the mean score of the questions associated with the subscale to determine a number for each subscale (standard; Appendix G). This method allows each unit to understand which subscale contributes to the health of the work environment or needs improvement. Each subscale is associated with a specific question on the survey with a rating scale of 1 to 5, where 4 to 5 is excellent, 3 to 3.99 is good, and 1 to 2.99 needs improvement (Ulrich et al., 2019). The HWEAT tool can be accessed through the AACN website. For this project, permission was received to use this tool as described above for a series of units calculating the mean for each subscale of the work environment, by unit.

The validity and reliability of the HWEAT were assessed in 2006, 2013, and 2018 with over 8,000 critical-care nurses in all states within the United States, Puerto Rico, Virgin Islands, District of Columbia, and American Samoa. All surveys have remained consistent in the use of the scale. Ulrich et al. (2019) compared the health of work environments from all prior studies to evaluate the improvement over the last decade or so. The findings demonstrated a continued concern and opportunities for improvement in the health of work environments. This study further validated the importance and significance of using this tool for leaders and organizations to improve patient and nurse outcomes.

The AACN offers the HWEAT online for organizations to assess and measure progress in the health of their work environments. It is an assessment tool that uses the six evidence-based healthy work environment standards by unit and subscale. The survey is 18 questions, takes about 10 minutes to complete, and is anonymous and confidential. The AACN approved permission to use this tool. After receiving this approval, an online survey was developed using Survey Monkey that included 18 AACN questions and the demographic questions developed by the author of this project.

Implicit Rationing

The second tool used for this project among nurses was the PIRNCA survey. Permission was approved from the author of this tool, Terry Jones, to use this survey as part of this project. After this approval was received, the tool was added to the online survey that included the healthy work environment survey. Nurses only had to complete one survey that included both the AACN survey about healthy work environments, HWEAT, and the PIRNCA to assess the presence of implicit rationing.

Several tools have been used to measure implicit rationing (Kalánková et al., 2019); however, the PIRNCA was used for this project. The PIRNCA is a valid and reliable instrument to measure implicit rationing in adult acute care units as tested and validated as described by Kalánková et al. (2019) and Jones (2014).

The PIRNCA is the American version of the Basal Extent of Rationing of Nursing Care and was adapted for use among medical/surgical nurses in their work environment. The instrument contains 31 items representing care activities focused on nursing interventions, such as nursing assessment, problem identification, care planning, realization of interventions, and evaluation of provided care. The PIRNCA survey was deployed to the nurses at this hospital to

measure the occurrence of implicit rationing by organizational unit. This tool includes questions from direct-care nurses and asks them to rate how often they were unable to perform specific nursing activities during their last seven shifts (Jones, 2014). Implicit rationing was present if a nurse selected any answer other than never. In addition, 31 items were included on the survey in categories by task, and the nurses were asked to rate the frequency of being unable to complete any task over the last seven shifts. The survey options to choose from were: never (meaning they were never unable to complete the task), sometimes, often, and always. If the nurse selected anything other than never, it implied the task could not be completed or was rationed, according to Jones (2014). This result was reported as the percentage of rationing that occurred more often than never.

In a cross-sectional survey, Jones (2014) validated the adapted PIRNCA Survey, evaluating the relationship between implicit rationing and patient outcomes among 226 medical and surgical nurses in Texas. This study validated the use of this tool for measurement in the English and demonstrated a relationship between the work environment and patient outcomes.

Nursing Leader Survey and Education

The author of this project designed the nursing leader survey as a 14-question qualitative questionnaire using evidence-based literature on the healthy work environment. This survey for the nursing leaders was intended to gather a baseline knowledge assessment of a healthy work environment and implicit rationing prior to and after receiving an educational session on these topics.

After the pretest was completed, two educational sessions were scheduled on different dates and times, and each participating nursing leader was scheduled in advance to attend one of the two sessions. A routine educational series with the Chief Nurse was scheduled in advance for

December in which two sessions are always offered to allow for a morning session and an evening session to accommodate the evening shift leaders. This education was added as part of this agenda on both sessions. Participants were registered in advance. After attending the session, the posttest survey link was opened to complete either at the end of the class or later online. Pizza was provided during the educational session as an incentive to subject participation.

Two weeks post educational session, both surveys were closed, and an email thanking all participants was sent along with an acknowledgement of the unit with the highest response rate to the Nurse Group of participants' survey. This group of nurses were provided a pizza as promised for their high response rate as an incentive. All participants were also informed of the next steps regarding learning about the project results.

Timeline

After presenting the proposal defense in April 2021, this project was presented to the senior management team composed of the hospital CEO, COO, CMO, CFO, director of human resources, senior director of nursing, and VP of mission integration, in mid to late July 2021. Although this hospital is a union hospital, a meeting with the union did not occur prior to this project. Submission to the IRB at both the hospital and UNLV was completed and approval obtained in late November 2021 and the project was completed by May 2022.

Figure 1 Project Tasks and timeline

Task	Date
Gained approval from both authors of AACN and PIRNCA for use of their instruments.	August 2021
Developed Survey Monkey version of both AACN and PIRNCA for nurse's including demographics.	March 2022
Developed the pretest awareness survey for nursing leaders Developed the posttest awareness survey for nursing leaders Developed the educational presentation content, timeline, and duration	May 2022
Developed the project communication/marketing plan for nurses for PIRNCA and nursing leaders to participate in the series	May 2022
Developed the consent form for nurses and nursing leaders	May 2022
Submitted to the IRB for UNLV and CSH approval, including all tools, consent to participate, educational content, and the pretest and posttest	Sept 2022
Wrote an email describing the project and sent it to the nursing leadership team at MMCR seeking participation from nurse leaders (managers, directors, and nurse shift managers)	November 2022
Conducted PIRNCA Conducted the HWEAT	November 29, 2021- 2 weeks

Conducted a pretest assessment of the leaders' knowledge regarding implicit rationing and the work environment	
Conducted an educational series for leaders Conducted a posttest assessment of leaders' knowledge regarding implicit rationing and the work environment	December 9 and 13, 2021.
Analyzed the collected data	Jan 2022-March 2022
Reviewed the demographic data by unit Evaluated the relationship between the healthy work environment scores from the HWEAT and PIRNCA results (implicit rationing)	Jan –March 2022

Resources and Support

The research team included the chief nursing officer as a UNLV student researcher who collected the data, communicated the project intent, administered the surveys, conducted the educational offering, and analyzed the data. The PIRNCA survey opportunity was communicated through various channels within the hospital.

The UNLV student researcher administered the HWEAT and PIRNCA online. Neither this student nor the nursing leaders were involved in collecting individual nurse information for these units, as the survey was based on unit-level data. A unique identifier was used on both surveys to maintain confidentiality for the nurses and nursing leaders.

The most significant resource for this project was the time to complete the survey. Each nurse needed to complete 31 questions on the PIRNCA and the 18-question HWEAT. The incentive to complete the survey was that the unit with the highest response rate received a pizza party on both shifts. The time for the leaders to take part in the educational series was determined and offered on two separate days to accommodate all leaders. The nursing leaders also received pizza during the educational sessions to thank and recognize them for their participation in this project.

Risks/ Threats to Implementation of Project/ Contingency Plans

Several risks were involved in conducting this project. This organization is a union environment, and the California Nurses Association has a very involved presence in many of the CSH hospitals. Although it was considered, a meeting with the union to discuss this project did not occur given the project timing, as participation was completely voluntary. As the chief nursing executive responsible for all nurses in the hospital and the nursing practice and patient outcomes, this may have created some risk due to nurses feeling as though they were evaluated by the student nurse researcher.

One way to eliminate this bias could have been to ask a research team to conduct the survey or to conduct the survey in another hospital. However, the positive outcome of conducting the survey and implementing change is that real change could occur because of this student researcher's status as a stakeholder with buy-in. Because of the transparency in demonstrating the differences in practice environments and the presence of missed care, a risk to the leaders' confidence and well-being could also be posed, creating a discouraged workforce in units that did not have a positive work environment. Given the survey timing, the results were

not shared immediately afterward. The participants were informed that the results would be shared within several months of the survey completion.

It was important to communicate the project with all nurses so that staff understood what was being done and why. Subsequently, it is equally important to share the results and next steps. Nurse leaders could participate in this project because time was set aside during their work time to complete the survey and attend the educational session. The last risk was the nurse's time participating in the PIRNCA and HWEAT. It took about 30 minutes for the nurses to take both surveys. The annual employee engagement survey was completed in May, which could have contributed to survey fatigue and a lack of willingness to participate. Contingency plans existed, for example, in the event that the computer didn't work for the survey links, paper copies of the surveys would be used. The most significant factor that impacted this project was COVID-19 and the recent surge in the hospitalizations during the project, placing additional strain on the organization and influencing the willingness of the nurses and nursing leaders to participate. Adaptions also had to occur surrounding flexibility with understanding the fatigue that was there and not recruiting more than this author would have if the pandemic was not happening at the time. Being sensitive to the nurses needs at the time was the priority over assuring enough surveys.

Data Collection and Analysis

After evaluating the adult acute care unit work environments, the data would be examined to determine whether less implicit rationing was occurring in healthy work environments. The Nurses Group completed the HWEAT and PIRNCA Survey, and the Nursing Leaders Group completed a pretest to evaluate their awareness of the relationship between healthy work environments and implicit rationing followed by an educational class session and a

post test. The survey return rate was expected to be 20% to 30% (Phillips et al, 2017). Once the student nurse researcher collected the results from the HWEAT, PIRNCA, pretest, and posttest, the data file was inspected to explore the nature of the variables.

Nursing Leader Survey Data Collection

The nursing leader survey was completed via an electronic link. Of the nursing leaders who participated in this survey, the demographics indicated that most were nurse shift managers. Moreover, 71.4% of these leaders were in their roles for less than 5 years. The majority of the leaders in this role were also in their roles in this unit for less than 5 years. Nonparametric statistics evaluated the nursing leader survey using an independent *t*-test and a matched, paired *t*-test. The Mann–Whitney U independent *t*-test was used to evaluate the groups that participated in only the pretest and only the posttest. Furthermore, 32 nursing leaders completed the survey out of 45 possible nursing leaders. Only14 completed the pretest only, 15 completed the post only, and 14 completed both. Of these, there were 29 out of 32 total entries due to duplicate entries by the same user using a unique ID. Appendix L reveals that several nursing leaders left the questions blank; therefore, their total score was 0. Because it could not be determined why the survey was not completed, those with scores of 0 were taken out of the evaluation, and the total sample was 12. Therefore, those surveys were removed, leaving 5 out of 14 pretests and 7 out of 15 posttests (12) of those who completed only the pretest or only the posttest.

Data Analysis

The planned statistical methods for this project include descriptive statistics on the details for each comparison regarding implicit rationing and the quality of the work environment.

Quality of Work Environment Data Analysis

Descriptive statistics were used to describe the results of the AACN HWEAT survey. The work environment was measured using the subscales reported in aggregate by each unit. Each subscale was calculated by taking the mean of the associated questions per unit. The mean for all units was then calculated by subscale for comparison. The nursing work environment received a score reported for the unit for each of the six essential subscales or standards. The scale uses a five-point Likert scale, where 4 to 5 is excellent, 3 to 3.99 is good, and 1 to 2.99 indicates improvement is needed (Appendix G). Each question was associated with a subscale; for example, Questions 1, 6, and 14 were associated with the subscale "skilled communication." A healthy work environment was identified by a score for each subscale of >3. A subscale of <3, it indicates the need for improvement.

Implicit rationing was reported as a percentage, by task, using the Implicit Rationing scale (Appendix H). Data from the Registered Nurses Group were grouped by organizational unit. Nurses reported how often they were unable to complete a task in the last seven shifts and a percentage was reported. The percent of care tasks that could not be performed was also reported as a percent for all units using an average of the eight surveyed units. The PIRNCA scale was used to determine the percentage of implicit rationing reported by task. The percentage by task was reported by unit, and the mean percentage was also calculated for all units by task (Appendix J).

Quality of Work Environment and Implicit Rationing Data Analysis

In evaluating the correlation between a healthy work environment and implicit rationing, the Pearson's *r* correlation was applied. A two-tailed *p*-value was used because there were two variables (healthy work environment and implicit rationing). The intent was to identify whether a

relationship exists between the quality of the work environment and implicit rationing. A relationship was interpreted using Pearson's *r* for each variable. The closer the number was to 1, the more positive the relationship. If the number was negative but close to 1, such as -.791, indicating a strong negative relationship, the presence of a healthy work environment negatively affected implicit rationing (meaning there was less implicit rationing).

Nursing Leaders Data Analysis

In the Nursing Leader Group, comparison of the pretest and post test scores were reported using independent t-tests and paired t-tests to evaluate the scores of the responding nursing leaders. Of the nursing leaders who took the survey, 14 completed only the pretest, 15 completed only the posttest, and 14 completed both the pretest and posttest, necessitating an independent t-test to examine the difference between groups, rather than matching the responses of each nurse leader as planned. Paired t-tests were used to compare the results of scores of those who completed both the pretest and posttest in order to demonstrate the effectiveness of the planned education class presented to the Nursing Leaders Group by the difference in scores between both groups the matched and the unmatched groups on the pretest and posttest.

Chapter 5

Results

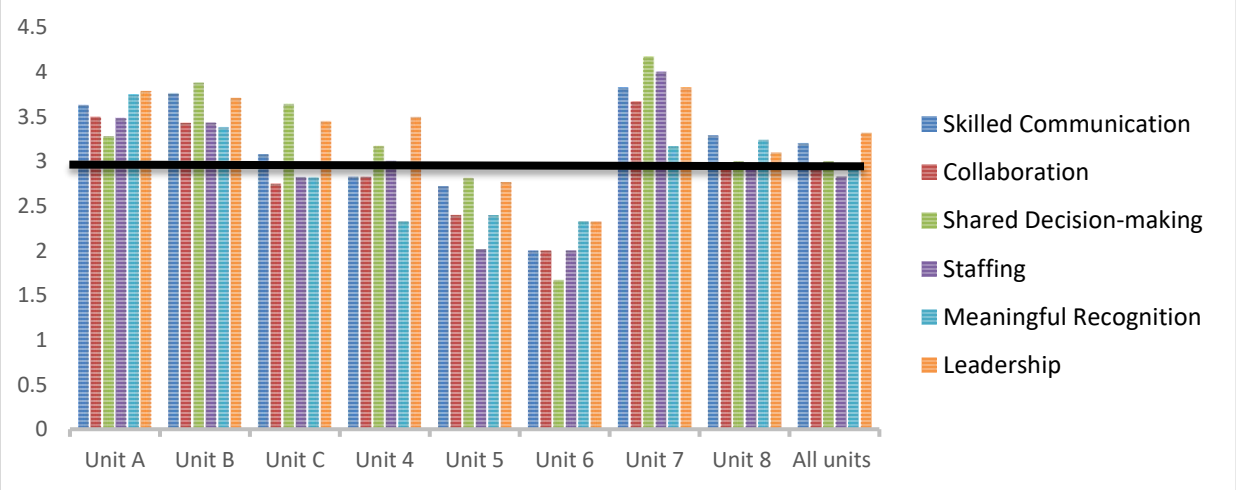
As part of this project, the goal was to determine the type of work environments present on the selected organizational units. Then the presence or absence of implicit rationing, within these units, was examined, looking further to determine if a relationship existed between the type of working environment and implicit rationing. A second goal was to determine the awareness of the Nursing Leaders with regard to the relationship between implicit rationing and the type of working environment as reported in the literature. This was assessed through a pretest and posttest administered to the Nursing Leaders with an intervention of an educational class about the relationship.

Healthy Work Environment Results

The AACN HWEAT and PIRNCA survey demonstrated the health of the work environment in this hospital using the HWE subscales reported in Figure 2.

Figure 2

Health Work Environment (HWE) Subscale Results



Of the seventy nurses, who participated in the HWEAT, as displayed in Figure 2, only three of the eight units that participated in the survey, reported all of their current work environment subscales as "good" or healthy. As shown in Figure 2, two of the eight units, Unit 5 and Unit 6 reported no subscale scores greater than 3, using the AACN healthy work environment scale, indicating opportunity for improvement in all areas. However, Unit 6 only had 1 response, therefore the interpretation was a limitation. By combining the responses of two units, Unit 5 and Unit 6, a more balanced interpretation could be made because of the increased sample size, however the unit leadership was not the same so the staff was not representative of the same unit.

The subscales of the healthy environment related to collaboration, staffing, and meaningful recognition were reported as needing the most improvement in all units, ranking <3.0. Units with all subscales above 3.0 were Unit A, Unit B, and Unit 7, indicating very healthy work environments. A limitation to this interpretation of results is Unit 7, where the n was only two responses.

Type of work environment and presence of implicit rationing were examined and a relationship was found between the type of working environment and the presence of implicit rationing of is attainable in a project outside of this one. The next steps would be, as part of hospital strategic planning and operations, to share this data with that leadership team, using the AACN guide for improvement strategies, to create healthier work environments in order to reduce implicit rationing on the nursing units.

Perceived Implicit Rationing of Nursing Care Results

The second goal was to identify the presence of implicit rationing, which was found in all units (Appendix I). Sharing the data about implicit rationing is sensitive information that would need to be shared in the appropriate context with the appropriate audience. On average, nurses reported the presence of implicit rationing at least 74% of the time. Nurses reported that implicit rationing occurred 86% of the time, related to assistance with physical care, specifically, ambulating, hygiene, and positioning (Appendix I). Most nurses reported that 74% of the time in the last seven shifts they worked, they were either sometimes, frequently, or often unable to complete specific care; therefore, rationing of nursing care was occurring. The top four nursing activities with the most implicit rationing were ambulation with assistance (92%), routine hygiene (90%), routine skin care (88.9%), and assistance with bladder or bowel functions (85.7%). The units with the lowest reported implicit rationing were Unit A and Unit B which also had the highest HWE subscale scores (greater than 3). This demonstrates the inverse relationship between healthy work environments and implicit rationing.

Healthy Work Environment/PIRNCA Correlation Results

Pearson's r correlation tests was conducted to evaluate whether a correlation exists between the work environment and implicit rationing of care as measured by the HWEAT Survey (Appendix J). Eight of the thirty-one questions on the Survey demonstrated statistical significance at the $p>.05$ showing there is an inverse correlation between HWE and implicit rationing. The questions with the most significant correlation with the subscales were Question 8: promoting physical comfort (with the presence of meaningful recognition; Pearson's $r = -.726$), Question 12: change IV/access sites, tubing and dressing (with the presence of meaningful recognition; Pearson's $r = -.747$), and Questions 22, 25, 28, and 30, which also had statistically

significant correlations present. For Question 17, which was delivering emotional or psychological support, demonstrated that with the presence of every HWE subscale, a strong negative relationship existed with the presence of implicit rationing (Appendix J).

The data demonstrated a strong statistically significant negative relationship between the presence of these subscales of the work environment and implicit rationing. As evidenced in Appendix J, when specific healthy work environment subscales were present, there was an inverse relationship related to the presence of implicit rationing. Further supporting the importance of the relationship between the presence of these healthy work environment factors to reduce the opportunities for implicit rationing to occur.

Nursing Leader Data Analysis and Results

Then, a paired *t*-test was conducted (Appendix M) to examine all the data from the nursing leaders who took both the pretest and posttest. The average improvement of individual posttest scores was assessed, and the score increased after the intervention (education), which demonstrated improvement, further supporting the influence of the education. This outcome revealed that education made a difference based on the scores afterward. The original group of those completing it was 14, but after removing duplicates and those with 0 scores, the sample completing both the pretest and posttest was 9 out of 14. There was a significant difference between the groups with a *p*-value =.006, demonstrating that the intervention influenced the scores. This result indicates a statistically significant difference between the pretest scores and posttest scores after the education (Appendix N).

Last, the influence of the leader education on their posttest survey score was significant for those who completed both the pretest and posttest surveys. This outcome demonstrates the influence of education on healthy work environments and implicit rationing on knowledge and

awareness. If the awareness of these topics is not present and embraced, it would be critical for organizational change to occur.

Limitations

There were several limitations to this project. The timing of the survey was a limitation because of survey fatigue and the overall morale of the workforce following a second pandemic. The overall response rate to the survey was 23%. Of a total possible 368 nurses who were eligible to take the survey, 84 completed it. Only 70 completed the survey in full (17.1%). During the survey period, several nurses verbally shared with their leaders that the survey was "too long" and took "too much time." There was concern that it was "too over our heads" and that some did not read the full description of what PIRNCA was. It asked for information from the last seven shifts, and some were intimidated by the word "implicit rationing." Many nurses stated that they stopped completing the survey when they reached that section, and several skipped certain questions. Float pool nurses were not originally included in the survey but asked to participate, so they were allowed to participate and select the unit they worked most in from the units, which was not part of the original inclusion criteria of the protocol.

Some feedback about the AACN HWEAT Survey from the nurses was that there was hesitancy to complete the survey because of their perception of "nurse managers, administrators, and others" categories in the survey did not allow for explication, so they were unclear how to answer. The nurses felt that the way the questions were asked assumed that the nurses' perception was the same as these groups and did not allow for describing how they felt differently about the groups individually rather than collectively.

The participation rate for the nursing leader survey was 71.1% of all nursing leaders who met the criteria to participate. Of the 45 nursing leaders who met the criteria, 32 participated in

the survey. However, after evaluating the unique participant ID, duplicate entries were removed, leaving 29. For the nursing leader survey, some feedback was also received. There was considerable hesitation to complete the survey due to the concern that they "didn't know the answer," and many leaders skipped several questions because they stated, "I didn't know." Another concern was again that the survey was "over their heads" due to the language, specifically "implicit rationing." The leader group also wanted a more detailed explanation beforehand about the survey, which could have influenced the results if too much information had been given in advance.

Because the survey timing was somewhat rushed due to the timing of both IRB approvals, there was limited time to complete the project. If there had been more time, it would have been spent recruiting participants to enhance the participation of both the Registered Nurse Group and the Nurse Leader Group.

Another major limitation was the influence that the pandemic (COVID-19) may have had on the nurses' ability to deliver care and the factors that may have influenced rationing of care that occurred during this timeframe. Because nurses were also working extra shifts and overtime to help during the peaks when the census was higher, they were tired. Fatigue and burnout occurred from months of taking care of COVID-19 patients for almost 2 years. Nurses had an intense focus on (a) infection prevention measures, (b) donning and doffing gowns, and (c) wearing masks for 12 hour a day and were dealing with families who could not see their loved ones daily or who experienced repetitive death. Staffing was often tight, with limited breaks for nurses on many days; however, staffing was always considered adequate during this study period. Sometimes nurses had to prioritize the care accomplished each shift based on the availability of resources that day.

Implicit rationing was present in most of the units in this project; however, because there was such limited timing, it is challenging to understand the influence of COVID-19 on this rationing.

Numerous agency or traveler staff members were utilized for many months during the pandemic, which put additional strain on the work environment because of lack of familiarity with the team members, protocols, expectations and culture. Providing meaningful recognition and celebrations were not always prioritized by the leaders because of the immediate focus on providing basic resources, supplies, and staff and adapting to the latest changes in infection prevention policies.

Threats and Barriers/ Unexpected events

The only threats to this project were the time, work environment, and employee morale at the time of this project. This project was completed at the end of December 2021. One of the most significant, unexpected events was that the hospital had just been through the second wave of a pandemic (Year 2), during which the highest COVID-19 inpatient census was in September 2021, with 80 patients with COVID-19 in the hospital. In May of this year, the annual employee engagement survey had already been done. Employees were experiencing burnout, post-traumatic stress, anger, disappointment, and exhaustion. The leaders were just realizing the reality of what had happened during the pandemic regarding the influence and psychological impact on all nurses. Morale was at an all-time low due to employees who quit and those who chose early retirement.

Barriers to this project were minimal but significant. The project took substantially longer than expected to obtain approval from both IRBs, which delayed the project timeline by almost 3 months. It was anticipated that the survey would be delivered in August or September at

the latest. However, this did not occur until late November. The education class and pretest/posttest survey occurred in December. The leaders and employees were tired. Taking part in a project was just one more task. Many nurses voiced a desire to participate, but the survey was too long. Several nurses voiced confusion with the word “implicit rationing” and did not complete the rest of the survey because of feeling that the survey would be over their heads. The timing of the nursing leader survey was also on the heels of the peak of the second pandemic; therefore, finding the time to complete the survey was a challenge.

Summary of Implementation

All of the objectives of this project were met. This project demonstrated a statistically significant, negative inverse relationship between implicit rationing and healthy work environments. The presence of implicit rationing confirmed the need to further commit to enhancing the work environment. Collaboration, staffing, and meaningful recognition were shown to be areas in the work environment that could impact the ability of nurses to provide quality care, which was the mission of this project.

Implicit rationing and healthy work environments are more important topics than ever, especially after COVID-19, with many nurses leaving the profession or being burnt out. It will be critical for nursing leaders to understand the health of the work environment and use evidence-based indicators to measure the influence on outcomes. A nurse’s work must be understood, and the care that cannot be completed must be evaluated so that no rationing occurs. It will be important for rationing to be measured and associated with patient outcomes. This method is a key factor in keeping patients safe. Any hospital or health system could adopt this project on a larger scale to understand the health of their work environment and the presence of implicit rationing to adopt an educational session for nursing leaders.

Utilization and Summative Evaluation

The results of this project will be shared with the key stakeholders, including but not limited to: senior leadership team, board members, and nursing leaders at the organization where the project was conducted. Recommendations will also be presented to the senior leadership team as a separate part of this work, as part of the role of the chief nurse. The goal is to share this work with other nursing leaders so they gain an understanding of implicit rationing and the factors in the work environment that may need to be adjusted or improved. Patient safety is critical to working as nursing leaders, and creating a healthy work environment where nurses can deliver this safe care is key. Using the McHugh framework is also vital for nursing leaders to understand how to assess what they must do structurally as an organization to improve patient outcomes. The content that was used to educate the nurse leaders will also be shared with other nursing leaders within the organization and beyond.

Discussion

Healthy work environment and the role of the nurse leader

After implementing this project, evaluating the data collected, and the evidenced based literature that supported this work, there is much to learn. The importance of a healthy work environment has been noted in the literature for over a decade, yet now more than ever it is important for leaders to truly understand the health of their environment, down to the unit level. A nurse leader's role is one of many factors in improving the health of the work environment as evidenced by the difference in reported healthy work environment subscales among units. (Figure 2).

Patient safety and the role of the nurse leader

Patient safety has not come as far as it should over the past 20 years and outcomes, although they have improved, still have a ways to go. The agency for health care research and quality (AHRQ) along with the Institute for Healthcare Improvement (IHI) and the Patient Safety Foundation are all organizations that continue to lead in promoting safety and improved outcomes. However, many health care organizations still struggle with either not delivering on their outcomes, not being on the high reliability journey, not achieving zero harm or not fostering cultures of safety. Creating an environment that is healthy is one that is safe and as leaders it is our job to assure the workforce has the infrastructure in place to achieve these outcomes. It is important for nurse leaders to understand the significance of the health of the work environment on patient outcomes. Nurse leader's awareness regarding healthy work environments and implicit rationing was statistically significant after receiving education. (Appendix L, M) Further demonstrating the ongoing need to continue to educate and provide nurse leaders with tools to assess the health of their work environment, including HWEAT and such tools as McHugh's Model.

It is the role of the nurse leader to understand the factors that contribute to this work environment that they can influence. In addition to being aware of the care that is delivered. Nurse leaders need to utilize evidenced based tools to assess the health of their work environment and outcomes, in order to develop a strong strategic plan to improve. Today more than ever our health care organizations need leaders who are going to not forget about the people, who are caring for the patients? This organizational safety will contribute to the health of the work environment and reduce the amount of errors or rationing that will occur, promoting positive outcomes.

Infrastructure to support healthy work environments

Health care leaders need to live the values of a truly highly reliable organization, promoting positive just culture behaviors when things go wrong. Focusing on continuous improvement, rather than blame will be critical in the era of post covid where our workforce is already burnt out, traumatized and beaten down. Leaders who recognize their worth, and lift employees up, striving for excellence even amidst difficult times will be important for any organization to succeed and maintain its workforce, while encouraging others to work there.

The work of improving the health of the work environment isn't new work, but it is work that will need to be better understood using the tools, and recommendations of this work. This includes increasing the awareness of leaders of implicit rationing, the work environment and their role in helping reduce implicit rationing, by improving the environment.

Many organizations talk about creating healthy work environments, they talk about even reducing harm, improving the health of our workforce, and some talk about decreasing missed care. But how many organizations have truly dedicated resources and, infrastructure and systems within their environments to improve the health of the work environment? This work could be used as a springboard to helping organizations really understand the health of their work environments as one of the most important factors that can contribute to improving outcomes. Such infrastructure might include: taking the concepts from the AACN healthy work environment instrument and turning them into actionable items that can be felt throughout an entire organization and measured by patient outcomes, retention, and employee satisfaction. Using valid, evidenced based tools to measure the work environment annually and routinely to continuously improve and demonstrate the ongoing commitment to creating a healthy work environment. Many hospi-

tals have achieved such success by becoming magnet or pathways certified, but are these organizations living the tenets of a healthy work environment that can be palpated throughout the hospital and beyond from patients, employees and communities. It would be then, that hospitals could say they were providing excellent care!

Nurse leader development

The role of the nursing leader is to understand what happens in the work environment that hinders nursing care and to establish strategies to improve these factors. Some factors are unit-based, and others are based on the culture, resources, and system-level initiatives that must be addressed. After implementing this project, the importance of providing education and awareness to nursing leaders regarding implicit rationing and healthy work environments was further demonstrated. (Appendices L, and M). The educational session was very informative, and the leaders wanted more information after the session. The scores of the posttest survey indicated significant improvement after receiving the education for those who completed both the pretest and posttest surveys, demonstrating the influence of the implementation.

The nursing practice environment has a significant influence on patient outcomes. Nursing leaders influence the practice environment and decrease opportunities for implicit rationing of care. Nursing leaders must address the current state of their nursing practice environment for the presence of characteristics that support a positive work environment. As demonstrated both in the literature review, and through the unit work environment subscales data, leadership does significantly impact the health of the work environment. (Figure 2) How nurse leaders are taught to lead is critical to future health care environments. Providing education to current and future aspiring nurse leaders and other leaders regarding the factors and qualities that make up a healthy work environment will be a key to success. Leadership programs are one of the best investments organizations can make, but often they are the ones forgotten. These

programs should be ongoing, with formal mentors, and have measurable evaluation of success, using healthy work environment tools and engagement surveys.

Nurse leaders are critical to improving the work environment and assessing the many factors that contribute to the health of the environment including staffing, decision making, collaboration, meaningful recognition, and communication. The skills of a nurse leader, are not developed over night, therefore, ongoing investment in the development and mentorship of nurse leaders before they assume formal leadership roles is critical. National organizations such as American Organization for Nursing Leadership, (AONL) should reevaluate their curriculum for leadership development and include healthy work environment concepts, using a framework like the McHugh Model to help leaders understand the impact of these factors on patient care and implicit rationing. Such organizations as (AONL), should sponsor grants and research projects that help health care systems better understand implicit rationing through observational studies that align with this project.

Implicit rationing and the role of the nurse leader

Nursing leaders need to understand the influence on patient outcomes due to implicit rationing phenomenon. They also must know whether a direct correlation exists between the work environment and implicit rationing. Addressing the many structural factors in the work environment is critical to successfully promoting a positive work environment. Using McHugh's model as a framework to assess the factors contributing to a complex environment is also important.

Understanding the phenomenon of implicit rationing and its influence on the work environment and patient outcomes can allow nursing leaders to act on this information. Therefore, it is critical that hospitals and health systems invest in leadership development

programs for nurse leaders, specifically providing tools to help them understand the importance of a healthy work environment and its impact on implicit rationing.

Implicit rationing is just one concept that presents opportunities for nurses to not deliver the care that is needed, that can lead to poor patient outcomes. As mentioned in the literature review, the work environment influences the presence of implicit rationing. One of the project outcomes was to increase the awareness of the nursing leaders that implicit rationing is occurring and that a healthy work environment may reduce it.

Instruments such as the perceived implicit rationing of nursing care assessment, (PIRNCA) are essential for supporting the nurse leader in fully understand the presence of implicit rationing occurring in their units. Once a leader utilizes an evidenced based, valid, and reliable tool, to demonstrate the presence of implicit rationing as this project did (Appendix I) it will provide data to support the leader in creating infrastructure to reduce the implicit rationing.

Infrastructure to reduce implicit rationing

As mentioned, infrastructure must be in place to supports the work environment of the nurse so they are not put in a position where implicit rationing of care occurs. This project demonstrated that almost 90% of the care that was rationed, was related to the assistance of physical care, activities that involved routine hygiene, ambulation, routine skin care and assistance with bowel and bladder. (Appendix I) These are tasks that the nurse can be supported by unlicensed assistive personnel. If technology and other resources were also put in place to support the role of the nurse, this would allow the nurse to not have to be put in the position of having to decide what care to deliver. McHugh's Model is a tool that leaders can use to begin to identify and assess the many factors that they can influence that contribute to creating a healthy work environment and the reduction of implicit rationing. In further examining the results from Appendix J, it is important to note the statistical significance between the presence of certain

work environment subscales and implicit rationing. Certain nursing activities specifically were shown to have a statistically significant inverse relationship with the presence or absence of certain work environment factors. Since such care as skin care, routine hygiene, ambulation, IV dressing and tubing changes, were reported as activities that were not always able to be completed, (Appendix I), it will be important for additional studies to be put in place to better understand the correlation between such implicit rationing and the presence of certain nursing sensitive outcomes such as pressure injuries, central line blood stream infections or urinary catheter infections. Nurse leaders play a critical role in understanding the care that is delivered in their units and hospitals. The more evidence nurse leaders are provided related to the health of the work environment and the presence of absence of implicit rationing, they will be empowered to design strategies, and make recommendations for putting certain infrastructure in place to reduce implicit rationing but improving the environment.

Dissemination of the Results

This project affected helping leaders understand the factors in their environment on which they need to focus. It is important to take the learning from this survey and replicate this research with a larger sample size, possibly including multiple sites and direct observations of practice. The nursing leader is well-positioned to understand the factors that contribute to the health of the work environment and its influence on implicit rationing. It is crucial to share this work with the organization. This project and the results will be shared at a future board meeting, and the results are expected to be shared this spring in a CSH nursing excellence showcase, a virtual forum for presenting scholarly work to nurses across the health system. Lastly, this work will be published in a healthcare journal, such as the *Journal of Nursing Administration*, aligning with nursing leadership and improving outcomes. This work will also be presented as either an

abstract, poster presentation or speaker at an annual nursing leadership conference within this next year.

Recommendations/Future Research

Although the presence of implicit rationing was confirmed, this project could not determine why these specific factors (nursing interventions, as noted in PIRNCA, Appendix I) were not able to be completed. This work would need to be further examined in future research. Implicit rationing has many contributing factors. The work environment is one such factor, but which element of the work environment (subscale elements) that contributed to implicit rationing was not demonstrable through this survey, which is a limitation of this project.

Because this was a quality improvement pilot project, after the results are shared with the organization, strategies to further promote positive nursing practice environments and reduce implicit rationing will be presented to the nursing research team at CSH. This presentation will not be a part of this UNLV project but a part of the student nurse researcher's role as a chief nurse. Because the findings from this project presented variation in the quality of work environments, and the presence of implicit rationing, it is important to present recommendations that support improvement, using evidenced based literature discussed in this project. Such recommendations include the importance of piloting and investing in initiatives that support a positive practice environment using (a) the AACN standards for best practice, (b) implementation recommendations, and (c) literature and data from this and other projects to validate the outcomes, along with education regarding missed care and implicit rationing and their influence on the outcomes. Some of these recommendations include infrastructure such as formal meaningful recognition programs for employees from the bedside to the boardroom,

possible resources to support staffing, shared decision making, enhanced communication and collaboration.

Additional recommended strategies include presenting the specific characteristics of a positive nursing practice environment using the valid and reliable HWEAT with all stakeholders and the nursing staff. Conducting an assessment of the cost, if any, that would be included in improving the work environment is key to understanding the economic feasibility of the level of improvement in the practice environment that can be achieved. Strategies that focus specifically on providing meaningful recognition could be the most impactful and could be the least costly and easy to implement. These recommendations could be made at a system level to recommend for all nursing leaders, including the education.

Conclusion

In summary, because the work environment is just one factor that can influence implicit rationing, nursing leaders must understand the complexity of the work environment using a framework (McHugh, 2022). Nursing leaders are responsible for the practice environment, developing and maintaining a healthy work environment, and patient outcomes. Therefore, nursing leaders must understand the elements of a healthy work environment, the presence of implicit rationing, and its influence on patient outcomes. To be successful, any leader must promote patient safety and healthy work environments and understand the factors that contribute to the health of that environment, eliminating the potential for implicit rationing.

Appendix A

Demographic Description of Subjects – Nurse Leaders

Demographics Leader survey Total participants 32**N*	Pretest only N *N* = 14 pretest score 6/36	Posttest only *N* = 15 posttest score 13.5/36	Pretest and posttest *N* = 14 pretest score 16.2/36 posttest score 18.85/36
Descriptive statistics			
Role *N*(%)	*N* = 28	*N* = 32	*N* = 32
Nurse shift manager	8/14 (57%)	11/15 (73%)	10/14 (71.4%)
Manager	2/14 (14.2%)	2/15 (14.2%)	1/14 (7%)
Nursing director	4/15 (27%)	1/15 (6%)	3/14 (21.4%)
Other		1/15 (6%)	
# of years in the current role			
<5 years	10/14 (71.4%)	11/15 (73%)	11/14 (78%)
5–10 years	3/14 (21.4%)	3/15 (20%)	2/14 (14%)
10+ years	1/14 (7%)	1/15 (6%)	1/14 (7%)
# of years as a leader in unit			
<5 years	5/14 (36%)	12/15 (80%)	10/14 (71.4%)
5–10 years	7/14 (50%)	3/15 (20%)	4/14 (29%)
10+ years	2/14 (14%)		
# of years as a nurse			
<10 years	2/14 (14%)	9/15 (60%)	5/14 (36%)
10–15 years	1/14 (7%)	2/15 (13%)	4/14 (29%)
16–20 years	6/14 (43%)	1/15 (6%)	4/14 (29%)
21+ years	5/14 (36%)	3/15 (20%)	1/14 (7%)

Appendix B

Permission Letter to Use AACN/HWE Survey

August 30, 2021

Allison McHugh

mchughallison@yahoo.com

Dear Ms. McHugh:

Thank you for your reuse request. We hereby grant permission for your reuse of the AACN copyrighted content below, free of charge, subject to the following conditions:

1. Content will be used in a DNP capstone project at the University of Nevada Las Vegas. The tool will be augmented with demographics including unit and years of experience and sent to all med surg and critical care nurses in the hospital (roughly 600).
2. Suitable acknowledgment to the original sources must be made, preferably as follows: American Association of Critical-Care Nurses. *Healthy Work Environment Assessment Tool.* Aliso Viejo, CA: American Association of Critical-Care Nurses. ©AACN. All rights reserved. Used with permission.
3. Permission is granted for the following use case: Healthy Work Environment Assessment Tool (HWEAT), individual/academic, electronic, United States, original language, up to 999 viewers, minor edits, current edition and up to 5 years (until August 30, 2026).

Any additional modifications to the HWEAT (other than those described in item No. 1 above) require written preapproval by AACN.

Thank you for your interest in the American Association of Critical-Care Nurses.

Sincerely,

Michael Muscat/AACN Publishing Manager

Appendix C

Permission Letter to Use PIRNCA Survey

to Allison, me, tjones69@vcu.edu

Hello Dr Jones,

I am so excited to have learned about you and your tool for measuring implicit rationing. I'm in school for my DNP as a nurse executive and wanted to know if I could have your permission to utilize your PIRNCA tool as part of my work. I will be submitting to the IRB soon and wanted to see how I go about this .

If you can let me know as soon as you are able, that would be great.

Thank you,
Allison McHugh, RN, BSN, MS, MHCDS, NE-BC
Chief Nursing Executive
Mercy Medical Center, CommonSpirit Health

This is my home email and the best email to reach me for this work. It isnt my work email.

Terry Jones <tjones69@vcu.edu> Sun, Jul 25, 2021, 3:43 PM

to Allison, me

Of course you can! I will send you the most recent version tomorrow. I don't have a copy on this computer. Thanks for doing work in this area - so important. Good luck in your program.

terry

•••

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Terry L. Jones RN, PhD
Associate Professor
Virginia Commonwealth University
(804)828-3216
1100 East Leigh Street PO Box 980567
Richmond Virginia 23298

Appendix D

Nursing Leader Recruitment Letter

Hello, (nurse leaders)

I am a DNP student at University of Nevada Las Vegas. I am conducting a project for my DNP at Mercy Medical Center Redding (MMCR) and invite you to participate in a research study. I would like to invite you to participate in a pretest, followed by a 1-hr educational session, and then a posttest survey. The time commitment for both the pre/post and education would not be more than 2 hr. The purpose is to examine the awareness of nursing leaders about positive work environments and implicit rationing.

Your participation in this research is completely voluntary. You can opt out or withdraw from this study at any time. Your decision to participate, or not participate, will have no impact or effect on your role at MMCR, your job performance, or your relationship with your supervisor, hospital leadership, Dignity Health MMCR or CommonSpirit Health. By completing the survey you consent to voluntarily participate in this study. The study survey will inquire about your knowledge and attitude regarding healthy work environments and implicit rationing. A link to an electronic survey will be emailed to you before and after participating in a 1-hr educational session. The time commitment for both the pre/post survey and education would not be more than 2 hr.

Questions about the project may be directed to CSH IRB or the Principal Investigator, Allison McHugh, allison.mchugh@commonspirit.org

Your input is essential to this project.

Thank you in advance,

Allison McHugh

Appendix D

2.0 Nurse Survey Recruitment Letter

I am a DNP student at University of Nevada Las Vegas. I am conducting a project for my DNP at Dignity Health Mercy Medical Center Redding (MMCR) and invite you to participate in a research study. You are invited to participate in a research study at Mercy Medical Center Redding (MMCR). The purpose of this research is to examine the health of your unit's work environment and to assess for any implicit rationing in your unit.

Your role in this research would be to participate by completing two surveys, one that asks you questions about the presence of implicit rationing in your unit using a valid tool called the PIRNCA (perceived implicit rationing nursing care assessment) and evaluating the health of your work environment through a second survey, the HWEAT.

Your participation in this research is completely voluntary. You can opt out or withdraw from the study at any time. Your decision to participate, or not participate, will have no impact or effect on your role at this hospital, your job performance, or your relationship with your supervisor, hospital leadership, Dignity Health MMCR or CommonSpirit Health. By completing the survey you consent to voluntarily participate in this study

An electronic link to the surveys will be sent to you via your work email, if you choose to participate, the survey will be open for 2 weeks. It will take you approximately 30 minutes to complete both surveys. Nine nurse units will be asked to participate, and the unit with the highest percentage of responses will receive pizzas for both shifts. Questions about the research may be directed to the Principal Investigator, Allison McHugh, allison.mchugh@commonspirit.org. If you have any questions about your rights as a research participant please contact the CommonSpirit Health Research Institute's Institutional Research Board (IRB) by phone at (844) 626-2299 or email at chirb@catholichealth.net.

Appendix D

3.0 Nursing Leader Survey

Before you begin the survey, please create a unique identification code by entering the first 3 letters of the town name where you were born: _____

Demographics:

1-Role:

- Nurse Shift Manager
- Manager
- Nursing Director
- Other

2-total # years in role_____

3-#years as RN _____

4- # years as a leader in this unit_____

Questions: HWE

1) List the 6 standards of a healthy work environment - 6 pts
2) List the 3 behaviors present in a healthy work environment (culture, leadership style)- 3 pts
3) List 3 strategies that support meaningful recognition for nurses- 3 pts
4) Provide 2 examples of nurses being involved in decision making impacting clinical outcomes using data? -2pts
5) What key factor is present in successful communication according to the AACN, standards of healthy work environment? -1PT
6) List 3 strategies where staffing decisions are supported by technology and benchmarks and involve the nurse? -3 pts
7) What is a strong predictor of psychological empowerment of nurses according to the AACN standards of a healthy work environment? -1 pt
8) What is the desired leadership style in a healthy work environment and name 3 behaviors of this style.- 4 pts
9) Have you ever heard of the HWEAT? Yes Or NO- If yes, what is it? 2 pts
10) List 3 EBP benefits of having a healthy work environment? -3 pts
11) Have you ever heard of implicit rationing? Yes or No, If yes, what is it? – 1 pt
12) If you answered yes to #11, can you influence implicit rationing in your role? Yes or no- 1 pt
13) Do you believe it is your role to improve the health of your work environment? Yes or no, If no, why? -2pts
14) List 3 ways you can improve the health of your work environment. – 3pts

Appendix E

Healthy Work Environment Survey

American Association of Critical Care Nurses Healthy Work Environment Assessment
Before you begin the survey, please create a unique identification code by entering the first 3 letters of the town name where you were born: _____
Demographics:

1. **Unit:** Please select 1 unit (your primary hired unit)

- Unit A
- Unit B
- Unit C
- Unit 4
- Unit 5
- Unit 6
- Unit 7
- Unit 8

2. How many **years** have you worked **in this unit** as a registered nurse?

    - <2
    - 2-5
    - 6-10
    - >10

3. How many **total years** have you been a registered nurse?

- <2
- 2-5
- 6-10

- >10

4. How many **years** have you worked **at this hospital** as a registered nurse?

- <2
- 2-5
- 6-10
- >10

AACN Survey Directions: Read the following statement and indicated the response that best represents your opinion to the statement. Use the following scale when answering:

1 = Strongly Disagree

2 = Disagree

3 = Neutral

4 = Agree

5 = Strongly Agree

1. Administrators, nurse managers, physicians, nurses and other staff maintain frequent communication to prevent each other from being surprised or caught off guard by decisions.
2. Administrators, nurse managers, and physicians involve nurses and other staff to an appropriate degree when making important decisions.
3. Administrators and nurse managers work with nurses and other staff to make sure there are enough staff to maintain patient safety.
4. The formal reward and recognition systems work to make nurses and other staff feel valued.
5. Most nurses and other staff here have a positive relationship with their nurse leaders (managers, directors, advanced practice nurses, etc.).

6. Administrators, nurse managers, physicians, nurses, and other staff make sure their actions match their words; they "walk their talk."
7. Administrators, nurse managers, physicians, nurses, and other staff are consistent in their use of data-driven, logical decision-making processes to make sure their decisions are the highest quality.
8. Administrators and nurse managers make sure there is the right mix of nurses and other staff to ensure optimal outcomes.
9. Administrators, nurse managers, physicians, nurses, and other staff members speak up and let people know when they've done a good job.
10. Nurses and other staff feel able to influence the policies, procedures, and bureaucracy around them.
11. The right departments, professions, and groups are involved in important decisions.
12. Support services are provided at a level that allows nurses and other staff to spend their time on the priorities and requirements of patient and family care.
13. Nurse leaders (managers, directors, advanced practice nurses, etc.) demonstrate an understanding of the requirements and dynamics at the point of care, and use this knowledge to work for a healthy work environment.
14. Administrators, nurse managers, physicians, nurses, and other staff have zero-tolerance for disrespect and abuse. If they see or hear someone being disrespectful, they hold them accountable regardless of the person's role or position.
15. When administrators, nurse managers, and physicians speak with nurses and other staff, it’s not one-way communication or order giving. Instead, they seek input and use it to shape decisions.

16. Administrators, nurse managers, physicians, nurses, and other staff are careful to consider the patient's and family's perspectives whenever they are making important decisions.
17. There are motivating opportunities for personal growth, development, and advancement.
18. Nurse leaders (managers, directors, advanced practice nurses, etc.) are given the access and authority required to play a role in making key decisions.

American Association of Critical-Care Nurses. Healthy Work Environment Assessment Tool. Aliso Viejo, CA: American Association of Critical-Care Nurses. ©AACN. All rights reserved. http://www.aacn.org/WD/HWE/Content/hwehome.content?menu=hwe. Used with permission.

**PIRNCA inserted here in electronic survey following AACN*

Appendix F

Perceived Implicit Rationing of Nursing Care Assessment (PIRNCA)

Registered Nurse Version

About the Survey

This survey has been designed to measure nurse perceptions of implicit rationing of nursing care. Implicit rationing of nursing care occurs when a nurse withholds or fails to adequately complete necessary nursing actions for patients due to a lack of resources (personnel or time). Necessary actions include nursing assessments, problem identification, care planning, implementation of interventions (independent, interdependent, and dependent), and evaluations of care that are accepted by nursing judgment, standards of nursing practice, and nursing knowledge as important for a patient to achieve the desired outcome. The PIRNCA survey is comprised of 31 common nursing actions that may be necessary to achieve desired patient outcomes for hospitalized medical-surgical patients.

Instructions for Completion of the Survey

When completing the PIRNCA survey please reflect on the most recent ***seven work-shifts*** completed at your ***primary nursing job***. You will be asked to indicate how often during these seven shifts that you were unable to complete each of the 31 nursing actions described due to a lack of resources (personnel or time). You should rate the frequency of occurrence as "Never," "Rarely," "Sometimes," or "Often" based on your work experience by placing a check in the corresponding box. If none of your assigned patients during these seven shifts required the nursing action described, you should select "Not Needed." If you were unable to personally complete a task but were able to get someone else to complete it for you (e.g. another nurse or unlicensed assistive personnel) the task should be considered complete through delegation. It is

estimated that completion of this survey will take about five to ten minutes of your time. At the end of the survey, space is provided for you to add comments about your ability to complete the necessary nursing actions for your assigned patients should you so desire. Thank you for your willingness to complete this survey.

Table F1

Perceived Implicit Rationing of Nursing Care Assessment (PIRNCA) Registered Nurse Version

	How often during the last seven working shifts did it happen that	Not Needed	Never	Rarely	Sometimes	Often
1	You could not carry out routine hygiene for patients (e.g., bathing, oral care, dental care) or ensure completion of this task through delegation?					
2	You could not carry out routine skincare for patients or ensure completion of this task through delegation?					
3	You could not change, in an adequate time period, patients' bed linen soiled with blood or body fluids or ensure completion of this task through delegation?					
4	You could not assist a patient with needed ambulation or ensure completion of this task through delegation?					
5	You were not able to mobilize or change the position of a patient with limited mobility or ensure completion of this task through delegation?					
6	You could not provide timely assistance with bowel or bladder elimination (e.g., bedpan, bedside commode, walk to the bathroom) or ensure completion of this task through delegation?					

	How often during the last seven working shifts did it happen that	Not Needed	Never	Rarely	Sometimes	Often
7	You could not appropriately assist patients unable to eat or drink independently with the intake of food or fluids or ensure completion of this task through delegation?					
8	You were unable to implement measures to promote physical comfort (e.g., Timely administration of pain medication, temperature adjustment, massage/back rub) or ensure completion of these measures through delegation?					
9	You were unable to administer medications (including) intravenous therapy) as prescribed and in accordance with safe medication practices?					
10	You were unable to administer enteral or parenteral nutrition as prescribed and in accordance with safe practices?					
11	You were unable to provide wound care (including changing dressings) as prescribed by physician/unit standards or as you felt was needed?					
12	You were unable to change intravenous access sites, tubing, and/or dressings within the timeframe prescribed by physician/unit standard or as you felt was needed?					
13	You were unable to adhere to recommended guidelines for safe patient handling (e.g., Use of lift-assist equipment and/or additional staff)?					
14	You were unable to adequately adhere to infection control guidelines (e.g., hand hygiene, aseptic technique, isolation)?					

	How often during the last seven working shifts did it happen that	Not Needed	Never	Rarely	Sometimes	Often
15	You could not provide the amount of teaching you felt was indicated for the patient or his/her family?					
16	You could not adequately prepare patients for treatments, tests, or procedures?					
17	You could not offer the level of emotional or psychological support to a patient(or family) that you felt was needed?					
18	You could not monitor a patient's physiologic status as had been prescribed by physician/unit standards or as you felt was necessary (e.g., vital signs, lab values)?					
19	You could not monitor a patient's affect and behavior as prescribed by physician/unit standards or as you felt necessary (e.g., compliance, eating habits, social interaction, mood)?					
20	You could not monitor a patient's physical safety as had been prescribed by a physician/unit standards or as you felt necessary?					
21	You could not follow up on patient status changes, unanswered requests for patient interventions (including assessments or referrals), or unclear orders?					
22	You had to keep a patient or family member waiting longer than 5 minutes when a request was initiated (e.g., by the call light)?					

	How often during the last seven working shifts did it happen that	Not Needed	Never	Rarely	Sometimes	Often
23	You could not have an important conversation with another member of a patient's multidisciplinary team regarding his/her care, or the conversation was delayed?					
24	You could not have an important conversation with an external agency about the care of a patient or the conversation was delayed?					
25	You could not have an important conversation with a patient or family member about discharge needs or instructions or the conversation was delayed?					
26	You were unable to provide adequate supervision of or follow up on delegated activities?					
27	You could not adequately review multidisciplinary patient documentation to inform yourself about a patient?					
28	You could not document the initiation or revision of a patient's plan of care?					
29	You could not document all of your assessment and monitoring activities?					
30	You could not document all of the nursing care you provided in sufficient detail?					
31	You could not adequately evaluate the plan of care (using critical thinking) to determine the appropriateness and/or effectiveness of interventions and make revisions as indicated?					

Appendix G

Healthy Work Environment (HWE) Scale

Scoring Tool for HWE and Mean Calculation of Subscales

HWE: Subscale code	Ratings for each question
1, 6, 14: skilled communication	Strongly disagree 1
2, 10, 15: true collaboration	Disagree 2
7, 11, 16: effective decision-making	Neutral 3
3, 8, 12: appropriate staffing	Agree 4
4, 9, 17: meaningful recognition	Strongly agree 5
5, 13, 18: authentic leadership	

Appendix H

Unit Healthy Work Environment Subscales

Unit	Nurses	Skilled Communication	Collaboration	Decision-Making	Staffing	Meaningful Recognition	Authentic Leadership
Total *N*	70	3.20	2.91	3.28	2.83	2.96	3.32
Unit A	8	3.63	3.50	3.88	3.48	3.75	3.79
Unit B	14	3.76	3.43	3.64	3.43	3.38	3.71
Unit C	17	3.08	2.75	3.33	2.82	2.82	3.45
Unit 4	2	2.83	2.83	3.17	3.00	2.33	3.50
Unit 5	19	2.72	2.40	2.81	2.02	2.40	2.77
Unit 6	1	2.00	2.0	1.67	2.00	2.33	2.33
Unit 7	2	3.83	3.67	4.17	4.00	3.17	3.83
Unit 8	7	3.29	2.95	3.00	2.95	3.24	3.10

Appendix I

Unit Percentage of Implicit Rationing

Item#	Nursing care activity	%IR All units % > never	Unit A	Unit B	Unit C	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
Assist with physical care		86.89								
6	Timely assist with bowel/bladder	85.7	62.5	76.9	93.8	100	85.7	100	100	100
1	Routine hygiene	90.5	87.5	76.9	100	100	85.7	100	100	100
5	Mobility or changing position	88.9	75	76.9	93.8	100	92.9	100	100	100
4	Ambulate with assistance	92	87.5	92.3	100	100	78.6	100	100	100
3	Changing soiled linen	84	87.5	53.8	93.8	100	85.7	100	100	100
2	Routine skin care	88.9	87.5	84.6	93.8	100	78.6	100	100	100
7	Assist with po intake fluid/food	84.1	75	76.9	81.3	100	85.7	100	100	100
8	Promoting physical comfort	81	62.5	61.5	87.5	100	85.7	100	100	71.4
Monitoring safety support		69.46								
18	Monitoring physiological status	58.7	62.5	61.5	62.5	100	28.6	100	50	85.7
19	Monitoring behavior	64.5	62.5	61.5	60	100	57	100	50	100
17	Emotional or psychological support	82.3	42.9	69.2	93.8	100	85.7	100	50	85.7
13	Compliance with safe patient handling	76.2	50	69.2	68.8	100	92.9	0	50	57.1
16	Prep for test, tx	71.4	50	53.8	81.3	100	71.4	100	100	100
20	Monitoring physical safety	64.5	50	69.2	60	100	50	0	50	100
15	Teaching for patient and family safety	76.2	75	46.2	87.5	100	78.6	100	100	85.7
21	Follow up on patient status change	61.9	50	46.2	62.5	100	64.3	100	100	100
Documentation supervision		75.65								
30	Documentation of all nursing care	84.1	75	69.2	81.2	100	100	100	100	85.7
31	Evaluation of plan of care	69.8	62.5	38.5	75	100	78.6	100	100	85.7
29	Documentation of assessments/re	71.4	75	61.5	62.5	100	78.6	100	100	85.7

Item#	Nursing care activity	%IR All units % > never	Unit A	Unit B	Unit C	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
28	Documentation of plan of care	77.8	62.5	46.2	81.3	100	100	100	100	71.4
27	Review of multidisciplinary documentation	79.4	75	46.2	81.3	100	100	100	100	85.7
26	Provide adequate supervision or follow up on delegated care	71.4	75	53.8	81.3	100	57.1	100	50	100
Communication		71.78								
24	Imp. conversation with outside agency	60.3	37.5	61.5	62.5	100	57	0	50	100
23	Imp. conversation with team members	77.8	62.5	53.8	87.5	100	85.7	0	50	85.7
22	Timely response to request with in <5 min	85.5	87.5	58.3	93.8	100	85.7	100	50	100
25	Imp. conversation with family/patient regarding discharge	63.5	62.5	46.2	68.8	100	57	100	50	100
Implementation of tx plans		57.3								
10	Administer enteral or parental nutrition	52.4	37.5	30.8	50	100	71.4	100	100	85.7
9	Administer meds	53.2	37.5	30.8	53.8	100	57.1	0	50	71.4
11	Provide wound care	76.2	62.5	46.2	81.3	100	92.9	100	100	85.7
12	Change IV access sites/tubing and dsg	71.4	37.5	46.2	75	100	92.9	100	100	85.7
14	Adhere to infection control guidelines	33.3N/ICUS	37.5	23.1	6.3	100	50	100	100	85.7

Appendix J

Correlation Between Healthy Work Environment and Implicit Rationing

IR Question PIRNCA	HWE Subscale	Pearson's *r*	*p*-value
Question 8 Promote physical comfort	Recognition	-.726	0.041*
Question 12 Change IV site/tubing/dsg	Recognition	-.726	0.033*
Question 17	Skilled Communication	-.793	0.019*
Question 17	Collaboration	-.878	0.004**
Question 17	Decision-making	-.817	0.013*
Question 17	Staffing	-.827	0.011*
Question 17	Recognition	-.791	0.019*
Question 17	Leadership	-.793	0.019*
Question 22 Timely response to request in <5 min	Collaboration	-.709	0.049*
Question 22	Staffing	-.708	0.049*
Question 25 Important discharge conversation with patient/family	Decision-making	-.735	0.038*
Question 28 Documentation of plan of care	Recognition	-.752	0.031*
Question 30 Documentation of all nursing care	Recognition	-.720	0.044*

Note. Two-tailed: * $p = .05$; ** $p = .01$.

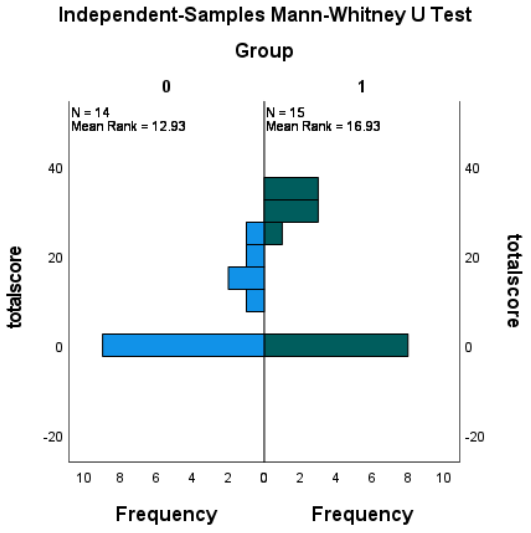
Appendix K

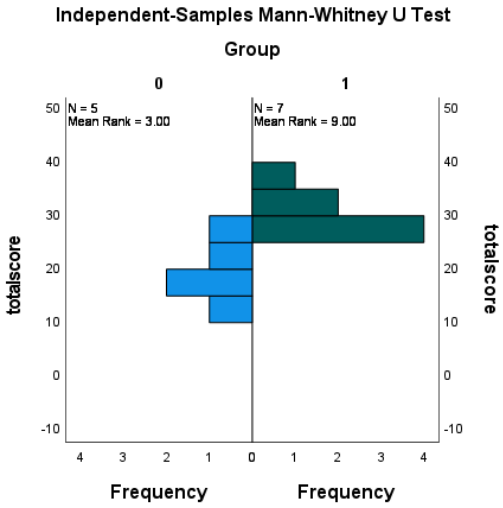
McHugh's Model: Organizational Framework

McHugh's Model © 2022, Organizational Framework for evaluating the work environment

Appendix L

Independent t-test: pretest and posttest only: Nursing Leaders





Paired t-test: Pretest and Posttest for Nursing Leaders

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Prescpre total	17.33	9	9.367	3.122
	posttotalscore	29.33	9	3.354	1.118

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Prescpre total & posttotalscore	9	.111	.775

Paired Samples Test

		Paired Differences			
					95% Confidence Interval of the Difference
		Mean	Std. Deviation	Std. Error Mean	Lower
Pair 1	Prescpre total - posttotalscore	-12.000	9.592	3.197	-19.373

Paired Samples Test

		Paired Differences			
		95% Confidence Interval of the Difference			
		Upper	t	df	Sig. (2-tailed)
Pair 1	Prescpre total - posttotalscore	-4.627	-3.753	8	.006

Appendix N

Pretest and Posttest Scores Nursing Leaders

Matched pretest/posttest score	Pretest score	Posttest score
A1	6	0
A2	12	0
A3	3	33
A4	19	23
A5	12	29
A6	7	26
B1	20	32
B2	29	33
B3	27	0
B4	12	29
B5	27	31
B6	26	0
C1	27	28
C2	0	0
Total Score	227	264
Average Score out of 36	16.21	18.85

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Curriculum Vitae

Allison McHugh, MHCDS, MS, BSN, RN, NE-BC

mchughallison@yahoo.com

Professional Experience

CommonSpirit Health (Dignity Health) – Mercy Medical Center, Redding, CA

Mercy Medical Center is a Level 2 trauma center that serves as one of the largest hospitals in Northern California. Services include cardiac surgery, stroke, neurosurgery, oncology, and a joint/spine center. Total annual revenue is $1.9 billion.

Chief Nursing Officer (CNO) 7/2017 – current

This role reports directly to the CEO and is responsible for 1000+ nurses across the organization. Responsibilities include patient experience, safety, and quality (which report directly to the CNO) and oversight of all nursing practice and operations.

Key Accomplishments:

Nursing Operations

- Nurse executive sponsor for revenue capture initiatives, including the proposal for the development of a step-down unit, neuroscience units, and LOS reduction
- Partnered with service line leaders to enhance nursing practice and improve outcomes
- Partnered with CEO/COO on cost reduction strategy using 100-day workout initiative, focusing on waste, direct cost (overtime and expenses), and patient experience
- Champion for patient safety, partnered with CEO, CMO, COO, and PSO; instituted daily safety rounds, promoted a culture of excellence in nursing
- Decreased serious safety event rate to >50% within 2.5 years

- Reduced cost of harm: pressure ulcers 75% ($860k) and falls 70% ($3M) within 3 years
- Executive sponsor for patient safety roundtable
- CNO executive sponsor for Dignity Health Hospital-Acquired Pressure Injury Taskforce
- Implemented standardized bed implementation: actualized ~$800k in annual cost savings in excess supplies, bed rentals, and cost of harm

Leadership Development/Nursing Practice

- Organizational restructure and implementation of new nursing leadership model
- Instituted mentoring program for directors (partnership with executive coach)
- Sponsored two clinical nurses for a research fellowship with CommonSpirit Health: "Use of Music Therapy in ICU" and "Pressure Ulcer Risk Reduction: Knowledge, Attitude & Behavior"
- Developed infrastructure for shared governance councils (2017)
- Implemented DAISY clinical excellence program (2017)
- Principal investigator for a nursing research study on missed care (in progress)
- Executive sponsor for the Opioid Awareness Symposium (9/2019)
- Champion for self-care among employees and patients during and after two major community disasters/wildfires (The Carr Fire and Camp Fire) through collaboration with the Center for Mind-Body Medicine
- Established First Annual North State Nursing Leadership Nurses Luncheon celebrating nursing leadership on Nurses Day (May 2019)

Dartmouth–Hitchcock Medical Center/Dartmouth College, Lebanon, NH

Dartmouth–Hitchcock Medical Center (DHMC) is the flagship hospital for Dartmouth–Hitchcock Health, an academic health system serving a patient population of 1.9 million and the

state's only Level 1 adult and pediatric trauma center. The system also includes the Norris Cotton Cancer Center, one of only 45 National Cancer Institute-designated comprehensive cancer centers; the Children's Hospital at Dartmouth–Hitchcock, four affiliate hospitals, 30 outpatient clinic locations, and 10,000 employees. Dartmouth–Hitchcock provides access to more than 1,000 primary care and specialty providers in almost every area of medicine. Total annual revenue is $2.9 billion.

Associate Chief Nursing Officer (6/2012 – 12/2016)

This role reports directly to the system chief nursing officer and is responsible for operations and oversight of nursing practice, safety, and patient experience across multiple service lines within the inpatient and outpatient areas, including the Heart and Vascular Center, neurosciences, medical specialties, critical care and dialysis. Responsible for 530+ full-time employees and a $40+ million budget.

Key accomplishments:

Nursing operations

- Participated in several service line initiatives that generated additional revenue, utilizing nurses to the highest level of their license to improve patient access and satisfaction
- Participated in an initiative to enhance access within the Heart and Vascular Center by establishing a process for admissions aligned with the service line strategy, decreasing avoidable days for OBS patients, enhancing utilization of nurse practitioners to facilitate early discharges and leveraging the use of telehealth
- Developed a cardiac nursing service line team across the hospital system and designed/executed a business plan for a cardiac step-down unit within the Heart and Vascular Center to support new models of nursing care and decrease LOS in the critical-

care units

- Developed a Stroke Center business plan to build programmatic infrastructure to support becoming a Joint Commission Certified Comprehensive Stroke Center
- Participation in senior leader safety rounds to promote a culture of safety and engagement
- Annual cost savings of ~ $500k through a decrease in hospital-acquired conditions (25% reduction and 36 fewer patients harmed compared with the prior year)
- Implemented nurse leader rounding using an electronic tool (CipherHealth) for real-time feedback and enhanced patient experience
- Decreased nursing turnover from 18% to 10% in medicine units (retention/engagement)
- Reduced annual travel nurse expenses by $3.5M (a 50% cost reduction)
- Implemented the clinical nurse leader role in medicine after completing a successful three-month pilot that demonstrated a reduction in hospital-acquired conditions (a potential annual cost savings of $500k)

Leadership Development/Nursing Practice

- Designed and implemented several leadership programs utilizing the American Organization of Nurse Leaders (AONL) based curriculum in addition to participating in organizational leadership design
- Developed a nurse mentor program in partnership with human resources and the CNO, leading the Transformational Leadership Council to increase nursing leadership development across the system
- Created and implemented a Nursing Leadership Development Series for nurse leaders within DHMC, based on the AONL curriculum
- Member of the planning committee at DHMC that implemented the first annual

Dartmouth–Hitchcock Nursing Leadership Conference at Colby Sawyer College, with over 200 attendees. This event was sponsored by the Conaty Leadership Institute at DHMC

- New Hampshire Nursing Action Coalition, colead for the leadership pillar
- Organization of Nurse Leaders (ONL) New Hampshire board member

Catholic Medical Center, Manchester, NH

Catholic Medical Center (CMC) is one of New Hampshire's largest medical centers. The CMC is home to the New England Heart Institute, is the site of the state's first open heart surgery in 1978 and is a leader in advanced cardiovascular services. Total annual revenue is $1.3 billion.

Director of Professional Development, Education and Nursing Research (2/2011 – 5/2012)

This role was responsible for the professional development, practice, education, and research for all nurses, including such initiatives as the joint commission, patient safety, quality improvement initiatives, magnet, and clinical/educational advancement.

Key accomplishments:

- Developed an innovative, hybrid online Advanced Nursing Leadership certificate program (60 contact hours) between CMC and Saint Anselm College (for directors, managers, supervisors, and educators) that produced revenue from tuition paid by outside participants (program also served as a method of seamless academic progression for employees pursuing their BSN)
- Collaborated with the nursing research coordinator and schools of nursing to promote nursing research activities

Beth Israel Deaconess Medical Center/Harvard Medical School, Boston, MA (8/2004 – 11/2010)

Beth Israel Deaconess Medical Center is an academic medical center and Level 1 trauma center

with 750,000+ patient visits annually and 6,000 employees. Total annual revenue is $3.4 billion.

- ***Manager of Emergency Cardiac Care Education Program*** (6/2006 – 11/2010)
- ***Nursing Director/Nurse Manager***, 31-bed solid organ transplant unit **(**8/2004 – 6/2006)

Harborview Medical Center/University of Washington, Seattle, WA

Harborview is an academic medical center and the only designated Level I adult and pediatric trauma and burn center in the state of Washington. The hospital also serves as the regional trauma and burn referral center for Alaska, Montana, and Idaho. It employs 4,500 employees.

Nursing Director/Nurse Manager, 32-bed medicine/telemetry unit (2/2003 – 7/2004)

Mercy Medical Center (now Saint Alphonsus Medical Center), Nampa, ID

Assistant Director/Clinical Nurse Supervisor, 56-bed med surg/ortho unit **(**11/2000 – 12/2002**)**

St. Luke's Regional Medical Center, Boise, ID

Charge Nurse/Registered Nurse, 35-bed cardiac surgery/tele/step-down unit (1996 – 2002)

John D. Archbold Memorial Hospital, Thomasville, GA

Registered Nurse, 21-bed telemetry/hemodialysis unit (1995 – 1996)

Professional Education

Doctor of Nursing Practice (DNP - Executive Track), University of Nevada, Las Vegas (Anticipated graduation 2021)

Master's Degree in Health Care Delivery Science, Dartmouth College, Hanover, NH (2015)

The Tuck School of Business and The Dartmouth Institute for Health Policy and Clinical Practice (TDI) have partnered to offer the MHCDS degree from Dartmouth College. The combination of The Dartmouth Institute's advanced research expertise in healthcare outcomes with the Tuck School's proven success in teaching leadership and teamwork, finance, and operations creates a unique educational opportunity for today's healthcare executive.

Master's Degree in Health Sciences, **Boise State University**, Boise, ID (2002)

Areas of study: health policy, economics, health promotion, program evaluation, epidemiology, and ethics

- Major: Health Care Leadership, GPA: 3.8

Research

- ANCC Magnet Nursing Recognition for Excellence Program (Master's Thesis Project)
- Critical Thinking and Clinical Competency
- Staffing Effectiveness (thesis project)

Bachelor of Science Degree in Nursing, Boise State University, Boise, ID (1998)

Associate of Science Degree in Nursing/Diploma

Fisher College, Boston, MA/Brockton Hospital School of Nursing, Brockton, MA (1995)

Class President

Professional Organizations

- Sigma Theta Tau International (Chico, CA Chapter) member since 2018
- Association of California Nurse Leaders (ACNL) member since 2017
- American Organization of Nurse Leaders (AONL) member since 2004
- Colby Sawyer/DH Sigma Theta Tau (past chapter VP)
- NHNA Member and Colead: Leadership Pillar/NH Action Coalition
- Organization of Nurse Leaders (MA, RI, and NH) member and NH representative and board member

Publications/Presentations

- "**Understanding Missed Care and Complexity Compression**," Sacramento, CA (11/2018) presentation at Dignity Health Annual Research Conference

- **Coauthored chapter in *Leading in Academic Health Systems*, 2017**
- Presented at **AONE Annual Conference** in Fort Worth, Texas **–** "**Finding Purpose**" (2016)
- "**Nurses' Perceptions of Role, Team Performance and Education Regarding Resuscitation in Adult Medical-Surgical**" Continuing Education Series: Published in *Med/Surg Nursing Sept/October 2015*
- "**Every Nurse a Leader**" First Annual Sigma Theta Tau local chapter, Dartmouth**–** Hitchcock Hanover, NH March 2015. Presentation
- "**Influential Leadership: The power of connection**" Annual Nurse Leader Manager Conference, Saint Anselm's College, Kennebunkport, ME. Oct, 2014. Presentation
- "**Understanding barriers to access, and flow: Utilizing the right resources, for the right patient, at the right time, for the right cost"** IHI, Orlando, Florida, Dec 2014. (Poster)
- "**Understanding Best Practices within the Medical Specialties and Neuroscience Work Environments Using ANA Staffing Standards Framework**" IHI, Orlando, Florida, Dec 2014. (Poster)
- Authored Nursing Simulation Chapter in the ***Textbook of Surgical Simulation*** (Published 2012)

Research

- "**Missed Care in Nursing: Thematic Analysis**" work in progress (9/2019)
- "**Nurses' Perceptions of Role, Team Performance and Education Regarding Resuscitation in Adult Medical-Surgical**" Continuing Education Series: Published in *Med/Surg Nursing Sept/October 2015*

Principal investigator of pilot research project: “An Evaluation of the Influence of Simulation in the Development of Critical Thinking Among Novice Nurses: A pilot study” This work was presented at the following conferences:

- Massachusetts Association of Registered Nurses: Fall 2008 workshop, Randolph, MA
- International Society for Simulation in Health Care: Jan 2009, Orlando, FL
- Eastern Nursing Research Society: March 2009, Boston, MA