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Addressing Critical Care Nurse Burnout

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NURS 670: Internship

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Table of Contents

Section I: Abstract

Problem: Critical care nurses are at higher risk for developing burnout than nurses from other areas of clinical practice. If not addressed promptly, the problem of burnout can worsen, negatively affecting the healthcare provider, organization, and patient outcomes.

Context: Increased stress and burnout observed in the microsystem with the onset of the COVID-19 pandemic prompted consideration of ways to address the well-being of critical care nursing staff with targeted interventions that could be implemented quickly with readily available resources.

Interventions: The project aim was to reduce critical care nurse burnout scores through implementation of evidence-based strategies addressing participative management, camaraderie and teamwork, and wellness and resilience. The interventions were guided by a constructed conceptual framework based on the Institute for Healthcare Improvement Framework for Improving Joy in Work, Unitary Caring Science Resilience Model, and the Model for Improvement.

Measures: The outcome measure was the Maslach Burnout Inventory-Human Services Survey for Medical Personnel (MBI-HSS MP), for which data was collected pre- and post-intervention. Process measures were weekly tracking of the single-item burnout measure and staff completion of the Well-Being Index. The balancing measure was the annual Healthy Work Environment Assessment.

Results: Post MBI-HSS MP results improved from baseline results by at least 0.1 point on all three MBI burnout scales. Self-reported burnout levels fluctuated over time, and between shifts despite interventions.

Conclusions: Many factors were associated with and contribute to burnout. Preventing and mitigating burnout requires coordination, collaboration, and a systems-based approach. Strong leadership support is essential, and leaders should continue to prioritize burnout assessment, awareness, education, and support for critical care nurses.

Keywords: burnout, critical care, nurse, pandemic, joy in work, well-being, Maslach, healthy work environment

Addressing Critical Care Nurse Burnout

Section II : Introduction

Burnout can affect nurses in any specialty of healthcare; however, it more often occurs in nurses working in critical care. Burnout affects 25% to 33% of critical care nurses, and up to 86% have at least one symptom of burnout (Moss et al., 2016). The repercussions of burnout in nurses can affect the organizations they work for and the patients they serve. Healthcare burnout is associated with reduced quality of care, poor work performance, decreased nursing job satisfaction, a fall in nursing retention rates, less compassionate behaviors, and worse patient outcomes (Amendolair et al., 2012; Cabarkapa et al., 2020; Moss et al., 2016). Among nurses, increased levels of burnout are associated with higher patient mortality and hospital acquired infections (Cabarkapa et.al, 2020). Burnout is related to nurse turnover and attrition, increasing the cost to healthcare organizations as they hire, onboard, and train replacements, and reducing a workforce already insufficient to meet demand (Kelly et al., 2021).

Problem Description

Classic symptoms associated with burnout are exhaustion, depersonalization, and reduced personal accomplishment (Moss, et al., 2016). The emotional and physical impact of burnout can translate directly to the quality of care at the bedside and patient outcomes. In addition, global epidemics can have a profound impact on healthcare workers (Maduke et. al, 2021). During an infectious disease outbreak, healthcare workers are exposed to greater risk of infection, more patient death and suffering, excessive workloads, and burdening moral dilemmas (Cabarkapa et.al, 2020; Reith, 2018), all contributors to burnout.

The setting for this project is a 20-bed medical surgical intensive care unit (ICU) microsystem within a large 340-bed suburban hospital in Northern California. Microsystem staff

includes 17 intensivists, one manager, five assistant managers, 120 registered nurses, six unit assistants, and three mobility technicians—a highly skilled team providing twenty-four-hour care to critically ill patients. Additional personnel provide specialized services based on individual patient needs. The purpose of the ICU microsystem is to deliver compassionate, patient-centered care that ensures the best outcomes, with a strong foundation in evidence-based practices. The ICU has held the American Association of Critical Care Nurses (AACN) Silver Beacon Award for Excellence since February 2016. The ICU frequently fosters nurse-led initiatives through a well-established, high-performing nursing unit council of the hospital-wide shared governance council. Direct and indirect evaluation of practice changes are carried out on an ongoing basis using standardized data from Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), Statit, and internal and external tracking systems. Staff feedback from direct report rounding and anonymous surveys are collected regularly for subjective data and suggestions for improvement.

The COVID-19 pandemic has been a major contributor to increased stress and strain in the ICU since early 2020. The 20-bed capacity was expanded to 31 to accommodate the rise in critical care patient admissions due to combined standard winter increases and a COVID-19 surge. Within the microsystem, patient acuity, staff workload, and stress all increased, while staff motivation in the typically highly engaged unit fell. More frequent mention of burnout during staff conversations and a higher staff nurse turnover rate were observed. Staff nurse turnover reached 22% in 2020. The ICU closely monitors patient care outcomes related to patient safety and risk of hospital acquired conditions. Following the onset of the COVID-19 pandemic, the microsystem experienced increases in patient falls, central line associated blood stream infections, hospital acquired pneumonia, and hospital acquired pressure injuries.

Evidence-based practices for improving clinician wellbeing and reducing burnout exist (Sinsky et.al, 2020). Healthcare leaders within the microsystem also shared the same observation and fully supported a performance improvement project to address nurse burnout. It was noted that if burnout was not addressed promptly, that it could continue to worsen, negatively affecting both the healthcare providers and patient outcomes.

Available Knowledge

A PICO question was developed to learn more about burnout in critical care nurses and guide a literature search for evidence-based practices in mitigating burnout. The PICO question was: For critical care nurses (P), how does burnout education, assessment, intervention, and support (I), compared to no education, assessment, intervention, and support (C) affect nurse reported burnout and professional wellbeing (O)? A literature search was performed using the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete, and PubMed. The search terms used were *burnout*, *resilience*, *critical care*, *compassion fatigue*, *nurse*, *professional quality of life*, *self-care*, *stress*, *grief*, and *death*. Criteria for inclusion were English language, published after 2011, and analysis of the topic specific to acute care staff nurses and either burnout or personal stress levels. While selected articles need not have specifically used the term “burnout,” they must have addressed similar concepts in their interventions and evaluations, or discussed factors that are known to contribute to burnout. Resources that only referred to physicians or students, and opinion pieces without standardized methods of research or analysis were excluded. Twenty-six studies were found that included one or more aspect of the specific search. Five articles were selected based on their relevance to the PICO, which had the strongest data, level of evidence, or professional expertise to support the specific topic. The studies were rated using the Johns Hopkins Nursing

Evidence-Based Practice Research Evidence Appraisal tool (Dang & Dearholt, 2018). See Appendix A for the Evaluation Table.

A consensus viewpoint and position statement on burnout in critical care was developed through a collaboration of the AACN, the American College of Chest Physicians, the American Thoracic Society, and the Society of Critical Care Medicine as a call to action to raise awareness of burnout within the critical care community. Moss et al. (2016) authored a summary of the diagnostic criteria, prevalence, causative factors, consequences, and potential interventions to address burnout. While the article was rated Level IV B, the findings were from highly regarded professional groups in critical care, with content providing evidence-based recommendations for healthcare professionals and leaders to address burnout.

Critical care nurses are at increased risk for developing physical and psychological symptoms of burnout due to the high stress environment and exposure to traumatic events. Galuska and Bursch (2020) discussed (a) application of Seligman's well-being theory to critical care nursing; (b) emergent themes of nurses' experiences with meaning and joy in their practices; (c) validated measurement tools to assess stress, burnout, and well-being; and (d) evidence-based interventions to promote well-being. The article was appraised Level V A.

Sinsky et al. (2020) described evidence-based and promising organizational practices to address clinician well-being. Six domains of practice were discussed: (a) organizational commitment; (b) workforce assessment; (c) leadership; (d) policy; (e) efficiency of the work environment; and (f) support. The authors shared step-by-step principles to guide implementation of interventions to improve clinician well-being, including periodic assessment and reporting, and shared accountability for outcomes. The article rating is Level V A.

Large scale viral epidemics, such as the COVID-19 pandemic, pose additional challenges for healthcare workers. Through a systematic review of literature published from 2002 until August 21, 2020, Cabarkapa et al. (2020) investigated the psychological impact on frontline healthcare workers facing epidemics or pandemics. Uncertainty, fear, death and dying, increased workloads, and moral dilemmas were among the most prevalent stressors. The study appraisal rating is Level III B.

Zheng et al. (2018) performed a systematic review and qualitative meta-synthesis to investigate how experiencing the death of a patient can increase nurse distress, grief, and stress, contributing to burnout especially for nurses who lack adequate coping skills. The authors recommended implementation of coping and management strategies to promote emotional health, job satisfaction, and better care of dying patients and their family members. As the COVID-19 pandemic resulted in an increased staff observation of suffering and death within the microsystem, it was important to understand this effect. The article rating is Level III B.

The literature reviewed provided evidence of the elevated risk of burnout among critical care professionals relative to other clinical practices. Critical care nurses experience high levels of patient suffering and death; ethical dilemmas are common and often profound. Cabarkapa et al. (2020) concluded the psychological implications of elevated stress for frontline healthcare workers are largely negative (Cabarkapa et al., 2020; Zheng et al., 2018) and require greater attention. Evidence-based organizational practices (Galuska & Bursch, 2020; Sinsky et al., 2020) exist to address clinician well-being. Within the microsystem, as evidenced by the literature, increasing critical care nurse knowledge of burnout, and implementing mitigation strategies, including self-assessment and self-reporting, will promote the personal and professional well-being of nurses and improve patient outcomes.

Rationale

The Unitary Caring Science Resilience model (Wei et al., 2020), Institute for Healthcare Improvement (IHI) Framework for Improving Joy in Work (Perlo et al., 2017), and the Model for Improvement (IHI, 2021) were used in combination as a constructed framework to guide this project. Systematic application of the models and framework informed the complex process of assessing, preventing and mitigating critical care nurse burnout.

The Unitary Caring Science Resilience Model was introduced in 2020 in response to heightened recognition that frontline healthcare professionals are at increased risk for burnout. The model acknowledges that stress is unavoidable; clinicians are always "giving" and "doing" institutional tasks, diminishing sense of purpose, resilience, and well-being. Quality of care and patient outcomes suffer as a result. The model offers a framework for understanding individualized resilience-building strategies for clinicians that blended Caring Science philosophy (Watson, 2008) with research-informed psychology and evidence from neuroscience research (Wei et al., 2020). The Unitary Caring Science Resilience model comprises six resilience-building strategies: a) embracing, b) nurturing, c) deepening, e) balancing, f) valuing, and g) inspiring, to minimize burnout and improve personal resilience to create meaning and purpose in healthcare work (Wei et al., 2020). The model focused on caring for self, connections with others, self-learning and awareness, sense of belonging, releasing negativity, and maintaining hope, all of which are focused on in the project themes and interventions.

The premise of the IHI Framework for Improving Joy in Work (Perlo et al., 2017) is that by improving joy in work, clinicians will find more meaning and purpose in their work, leading to improved patient experiences and outcomes, safety, and a healthier workforce. The context of burnout is reframed to enable healthcare professionals to look at burnout from a different

perspective. The framework shifts the attention to what creates more joy in work, with outcomes of greater engagement and lower incidence of burnout, rather than focusing on lack of engagement and other consequences of burnout. Using the framework specific components within the microsystem, such as wellness and resilience, camaraderie and teamwork, participative management, and real-time measurement can be identified and targeted for improvement (Perlo et al., 2017).

The Model for Improvement (IHI, 2021) was used in the project's performance improvement (PI) work. The evidence-based performance improvement tools within this model systematically guided forming the PI team, setting aims, establishing measures, and selecting, implementing, and testing changes through Plan, Do, Study, Act (PDSA) cycles.

Specific Aim

The specific aim of this project was to stabilize or reduce self-reported burnout, as indicated by no change or at least a 0.1-point improvement in the Maslach Burnout Inventory after the introduction of a series of evidence-based interventions and strategies.

Section III: Methods

Context

A systems approach is essential for improving quality, safety, or health outcomes because it recognizes "the large number of ways in which the parts interact and the nature of the interactions" (Johnson & Sollecito, 2020, p.7). The microsystem is made up of internal and external influences that determine the overall functioning of that microsystem. The following is focused on the microsystem assessment as it specifically relates to this project's problem description.

Microsystem Assessment

Using a microsystem assessment and a 5Ps (purpose, patients, professionals, processes, and patterns) analysis (Institute for Excellence in Health and Social Systems, 2005), a Clinical Nurse Leader can assess the microsystem based on the interaction of all its adjacent and interacting parts, to better assess who, when, where, what, and how to implement the best changes for sustained improvement. See Appendix B for the Microsystem Assessment.

Purpose

The overall purpose of this ICU is to provide compassionate, patient-centered care that ensures the best outcomes, with a strong foundation in evidence-based practices.

Patients

The patient population brings a wide variety of ages, education levels, and socioeconomic status to the microsystem. Family members and designated decision makers are often involved in care decisions. The patients admitted to the ICU are the most ill and require highly specialized care in a high-stakes environment.

Professionals

The ICU microsystem leadership team consists of 24-hour coverage by one manager and five assistant managers. Most staff in the microsystem are the 120 bedside registered nurses (RNs), and a lesser number of unit assistants and mobility technicians. Other professionals linked to the ICU microsystem include respiratory therapists, laboratory staff, radiology technicians, social workers, palliative care, and dietary staff. Recently, implementation of the TeleCritical Care telemedicine program in March 2019 added a linked microsystem that directly interacts with and influences the staff, patients, and processes between the hours of 8:00 p.m. to 8:00 a.m.

Processes

The ICU has myriad processes and steps to provide the best care for patients. Continuous evaluation of processes is necessary to ensure that best practices are being followed and to investigate ways for continuous quality improvement. Standardized data from internal and external tracking systems are used to evaluate whether changes have led to process improvements, or if further changes are needed. The ICU culture fosters peer-to-peer feedback and frontline staff involvement in decision making, particularly for processes that affect them.

Patterns

Data is analyzed on an ongoing basis to evaluate trends and patterns. Subjective data and suggestions for improvement are collected from staff through direct interaction and anonymous surveys. Unit groups, committees and councils meet at least monthly to review data, and assess current practices and processes in their area of specialization. When a deeper inspection into patterns and processes is warranted, multidisciplinary sub-teams are formed to assess, evaluate, and plan for future improvements. The AACN Healthy Work Environment Assessment (HWEA) is one of the metrics that matters within the 5Ps microsystem assessment and is also a balancing

measure for this project. The HWEA was first administered in July 2020. The response rate was 60% (n=72). Despite an overall "good" rating of 3.93, just short of "excellent" (4.0 to 5.0), the results revealed important information on staff perceptions and focus areas to create a healthier work environment. See Appendix C for the AACN Healthy Work Environment Assessment Summary Score Results.

Return on Investment

High nurse turnover and vacancies impose substantial costs on healthcare organizations due to onboarding new staff and relying on "premium pay" staff to cover shifts for vacant positions. Costs associated with hiring temporary staff and replacing nurses, can be reduced by having healthier nurses who report lower levels of burnout and increased well-being. Improved nurse retention reduces the onboarding and orientation costs incurred to replace nurses who leave due to burnout.

The turnover rate for this microsystem was 22% in 2020, above the nationwide benchmark of 18.7% set by the Nursing Solutions, Inc. (NSI, 2021). The microsystem turnover rate accounted for nurses leaving to other units within the hospital, other hospitals within the organization, or retiring. Nationwide, the average cost to replace a bedside RN is $40,038, resulting in an average hospital losing up to $6.5 million annually; however, for every percent change in nurse turnover, the hospital can save the average of $270,800 per year (NSI, 2021). Burnout plays a significant role in nursing turnover with increases in turnover rates related to increases in burnout scores (Kelly et al., 2021). Implementation of strategies to reduce burnout will ultimately result in improved personal and professional well-being that can reduce self-reported burnout, improve patient care outcomes, and reduce nurse turnover.

SWOT Analysis

Based on the information gathered during the microsystem assessment, it was evident that nurse burnout and the resulting consequences were a significant concern to be addressed. Using IHI Model for Improvement and Framework for Improving Joy in Work rationale, a team-based approach was chosen for this project. In March 2021, a performance improvement (PI) team was formed to address the ongoing concerns related to nurse burnout, and to implement evidence-based strategies. This team was made up of a diverse group of nine front line staff nurses and two nursing leaders, representing all shifts and all current ICU committees. By using IHI performance improvement tools and strategies and working with a PI team, much was accomplished as a start to assessing the microsystem, addressing burnout, managing evidence-based implementation of strategies, and sustaining efforts to address burnout in critical care nurses. Prior to interventions being selected, the PI team met several times to discuss microsystem assessment, brainstorm ideas and plan for possible interventions.

An analysis of strengths, weaknesses, opportunities, and threats (SWOT) was completed. See Appendix D for SWOT Analysis. The SWOT received input from the entire PI team, reflected multifaceted perspectives, and generated ideas that informed potential interventions. Microsystem strengths included highly engaged staff, access to internal resources, and multiple well establish unit-based teams, while opportunities added access to external resources. Weakness included high stress levels, low morale, time constraints, and resistance to change. Threats included pandemic restrictions, stress resulting from factors outside work, and unpredictability.

Idea Prioritization Matrix

Following the SWOT analysis, the PI team brainstormed and generated possible ideas for

interventions to mitigate burnout that were appropriate for the critical care microsystem. A four-quadrant idea prioritization matrix was used to sort the proposed interventions according to greatest impact and ease of accomplishment. Similar ideas were then paired by affinity matching. The ideas were subsequently grouped into themes, prioritized, and placed in order of those that would make the highest impact and were relatively easy to do during the timeframe of the project, and had adequate resources available. During a PI team meeting, the members reviewed the themes and used an anonymous live polling platform to select the focus theme for this project, which was chosen as addressing burnout by improving joy in work. See Appendix E for Project Charter, idea prioritization grid, and polling results.

Interventions

Once the theme of improving joy in work was selected by the PI team, the ideas were refined and separated into four intervention categories. Team members were designated to work on developing appropriate interventions for each of the following categories.

1. Burnout Awareness: Increase awareness of burnout though messaging (electronic and verbal); provide access to resources to increase knowledge and share project data.
    a. Well-Being Index resource sharing
    b. Staff meeting (virtual platform)
2. Participative Management: Avenue for “What matters?” conversations (See Appendix F for visual boards).
    a. Visual boards to collect information on how staff experience joy in work
    b. Visual board to collect information on barriers to joy and gather solutions
3. Meaningful Recognition: Recognize individual and team wins.
    a. Unit board to encourage peer-to-peer recognition

b. Weekly team “Win of the Week” (WOW) sharing in daily shift huddle

4. Teamwork and Camaraderie: Fun, themed days and at-work activities.
    a. Birthday celebration and recognition at weekend shift huddles
    b. Birthday card mailed home to staff on their birth month by nursing leadership
    c. Weekly themed dress days

Study of the Interventions

Biweekly PI team meetings took place throughout the project timeline to review data and feedback collected weekly, study multiple PDSA cycles, and discuss emergent barriers and potential changes to interventions. Regular review of short-term and long-term follow up data and staff feedback were central to the measurement and evaluation strategy. Interventions were added, refined, or discontinued as needed, based on weekly data and feedback. The following list of PDSAs shows the chronological order of intervention implementation with dates and the reviews and changes that occurred during the biweekly meetings.

1. Peer-peer recognition visual board (May 10, 2021)
    a. Improved visual display and access to thank you cards (June 28, 2021)
2. Well-Being Index assigned to all nursing staff via HealthStream (May 14, 2021)
    a. Reinforced at staff meeting and emailed out to all staff with staff meeting minutes (June 23, 2021).
3. Monthly birthday recognition at huddle (May 17, 2021)
4. WOW (win of the week) huddle messages updated weekly (June 1, 2021)
5. Birthday cards mailed to staff from nursing leadership (June 1, 2021)
6. What matters? conversations and visual boards (June 9, 2021)
    a. Move boards to more discrete location; encourage use (June 21. 2021)

7. Themed dress days (June 14, 2021)
8. Staff meeting held; presentation and minutes emailed to all staff (June 22-23, 2021)

Measures

Several measures were used to track and evaluate the project. All measures were aimed at evaluating individual and group self-reported burnout levels amongst nurses, as well as outcomes related to burnout and a healthy work environment.

Outcome Measure

The Maslach Burnout Inventory—Human Services Survey for Medical Personnel (MBI-HSS MP), was the outcome measure for the project (Maslach & Leitner, 2016). The Maslach Burnout Inventory (MBI) is considered the most reliable and thoroughly validated burnout scale worldwide. The 22-question MBI was adapted to healthcare and medical professionals (and renamed MBI-HSS MP) by inserting the word "patients" into the questions. For this project, data was collected at pre and post project implementation from at least 50% of current microsystem nursing staff. This first-time data collection for the microsystem assessed burnout levels in three categories: emotional exhaustion, depersonalization, and personal accomplishment (Maslach & Leitner, 2016). See Appendix G for the MBI Questions. Recipients were advised that their participation was voluntary, that all responses would be collected anonymously, and confidentiality was assured. The surveys were administered electronically, with collection, scoring, and report generation performed by a third-party company. Data was reported solely in aggregate.

Process Measures

Two process measures were used, a non-proprietary single-item burnout measure that was assessed weekly, and the overall completion rate for the Well-Being Index.

The single-item burnout measure has been determined to be a reliable and valid substitute for the one-item version of MBI Emotional Exhaustion (EE) sub-scale, itself a validated standalone burnout measure (Dolan et al., 2015). See Appendix H for the Single Item Burnout question, answering options, and scoring reference. Data was collected electronically using a quick response (QR) code in common areas within the microsystem. The measure enabled collection of real-time feedback and facilitated understanding of fluctuations over the course of the project. At least twenty random responses were collected each week and tracked over time on a line chart. The responses were separated by shift for comparison to whole-unit aggregate data.

The Well-Being Index (WBI) is a validated and reliable individualized burnout measure created and owned by the Mayo Clinic (WBI, 2021b). As a screening tool, responses to the WBI questionnaire are used to identify distress and well-being across six dimensions: (a) meaning in work: (b) severe fatigue; (c) quality of life; (d) likelihood of burnout; (e) work-life integration; and (f) suicidal ideation; and to identify nurses most at risk for severe distress that may negatively affect patient care and retention (Dyrbye et al., 2018; WBI, 2021a). The WBI platform provides trackable online resources for nurses to help them manage stress, reduce burnout, and build resiliency. The WBI was electronically shared with all microsystem nurses through an assigned module utilizing an internal educational platform, HealthStream. This process measure tracked how many nurses accessed the available resources over the course of the project, with the presumption that utilizing the resource would increase burnout education and help some cope with burnout in individualized ways.

Balancing Measure

The balancing measure is the aggregate summary score for the annual Healthy Work Environment Assessment (HWEA). The HWEA was created by the AACN (2016) to evaluate

six factors that create effective and sustainable work environment outcomes for both patients and nurses: (a) skilled communication; (b) true collaboration; (c) effective decision making; (d) appropriate staffing; (e) meaningful recognition; and (f) authentic leadership. HWEA baseline results were collected in July 2020. Once the 2021 results are collected in September 2021, they will be compared to the 2020 results to assess for potential improvement.

Ethical Considerations

Jesuit values give high regard to human dignity, tending to the whole person, uniting the mind and heart, and amplifying the voices of the underserved, disadvantaged, and poor (University of San Francisco, n.d.). This project put Jesuit values into practice by respecting individual dignity and privacy, and by reaching out to all the ICU nurses, individuals who are at high risk of burnout. Individuals experience burnout in different and unique ways; thus, a variety of resources and opportunities were provided, with full acceptance of nurses not wanting to participate.

The American Nurses Association (ANA) Nursing Code of Ethics encompasses the principles of autonomy, beneficence, justice, and non-maleficence (ANA, 2015). This project honored those ethical values in the attempt to address nurse burnout in the ICU. Autonomy was engaged through providing resources and allowing nurses to decide for themselves what would be of benefit. Self-determination and decision-making by individuals was supported; those who did not want to directly participate were still supported. This project incorporated beneficence through its goals to reduce ICU nurse burnout through compassionate actions. Justice was aided through fair distribution of resources and information, and allowing non-participation with assurance that participation was both voluntary and anonymous. Non-maleficence ensured that processes related to this project would not cause further harm.

The fifth provision of the ANA Nursing Code of Ethics states that “the nurse owes the same duties to self as to others, including the responsibility to promote health and safety, preserve wholeness of character and integrity, maintain competence, and continue personal and professional growth” (ANA, 2015, p. 19). This project supported this provision by contributing to the promotion of individual safety, health, and well-being, and encouraged nurses to continue to grow and improve while respecting the wholeness of their character. Nurses who consider themselves burned out may be in a vulnerable state. The data collected for this project was combined aggregate data only to assure participants of privacy and anonymity.

This project was reviewed by University of San Francisco School of Nursing and Health Professions faculty and was approved as an evidence-based change in practice project not requiring Institutional Review Board (IRB) consideration and approval. See Appendix I for Statement of Non-Research Determination.

Section IV: Results

Maslach Burnout Inventory

Baseline and follow-up Maslach Burnout Inventory (MBI) data were the main outcome data for this project. Responses for the baseline results were collected from ICU nurses between April 8 and 30, 2021. The response rate was 56% (n= 67). The results revealed nursing staff in the microsystem were experiencing higher levels of emotional exhaustion than the general population (see Figure 1a). This result was consistent with the microsystem SWOT analysis which listed high stress levels and burnout as a potential internal weakness. In contrast, despite reporting higher levels of emotional exhaustion, the baseline results indicated lower levels of depersonalization and a higher sense of personal accomplishment compared to the general population, both inversely related to higher levels of overall burnout (Maslach et al., 2016). The baseline MBI standard deviation results indicated a greater deviation between nurses' responses, as compared to the general population, reflecting a wider variation of responses within the group (See Figure 1b).

Follow-up MBI data was collected from ICU nurses from July 1 through July 23, 2021. The response rate was 58% (n= 70). The results revealed improvements in all three categories of the MBI: (a) emotional exhaustion, (b) depersonalization, and (c) personal accomplishment. (Figure 1a). The standard deviation between MBI scores narrowed in comparison to baseline, reflecting a greater agreement between nurses' responses in addition to the improved scores. Baseline, follow-up, and general population MBI average scores and standard deviations are compared side-by-side in Figure 1a and Figure 1b. See Appendix J for MBI Results (taken directly from the MBI reports).

Figure 1a

Maslach Burnout Inventory: Average Scores-Baseline, Follow-up, and General Population

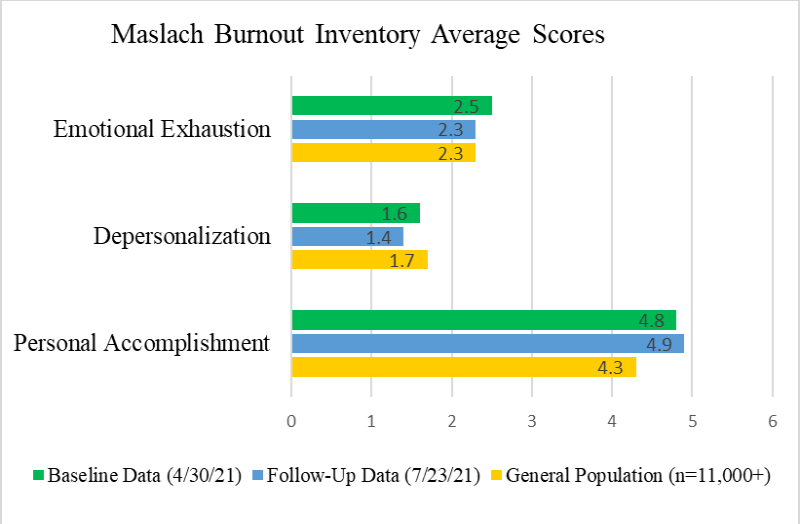
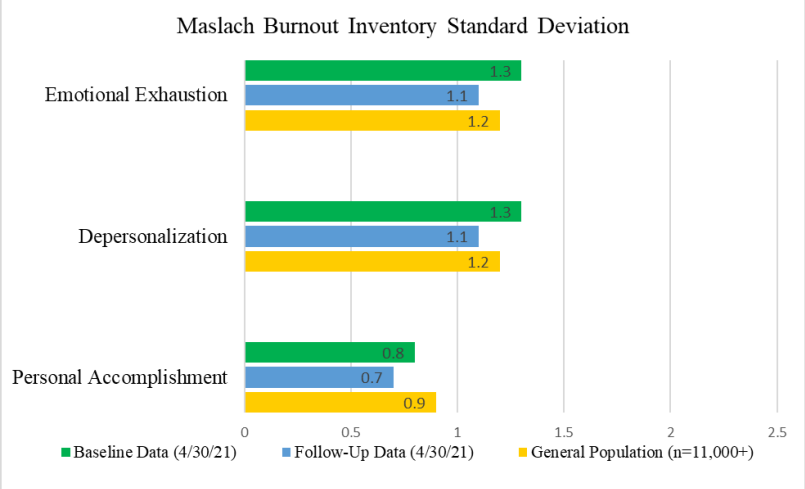


Figure 1b

Maslach Burnout Inventory: Standard Deviation-Baseline, Follow-up, and General Population



Single-Item Burnout Measure

The single-item burnout measure was a process measure. Responses were collected using SurveyMonkey, averaged, and tracked weekly over 10 weeks to assess ongoing self-reported burnout levels beginning on May 10 through July 18, 2021. Each week was measured as Monday through Sunday. The measure was tracked and trended both as an overall microsystem average

score (Figure 3) and separated by shift (Figure 4). Fluctuations and difference between shifts can be viewed in Figure 4 and are directly reflective of how staff from each shift self-reported burnout scores. The total number of responses per week varied between 24 and 42 responses from all shifts combined. Responses were relatively evenly distributed among shifts, with average responses per week per shift of 12 for day shift, 11 for evening shift, and 11 for night shift. See Appendix K for greater detail on specific scores for each shift. The weekly sample total is not reported as a percentage because the survey allowed for one person to participate in the survey more than once per week. In general, a score of ≤2 for this measure indicates no symptoms of burnout; a score of ≥3 indicates 1 or more symptoms of burnout (Dolan et al., 2015). A score of 2 provides the reference line for interpreting the data.

Figure 3

Single-Item Burnout Measure-Overall

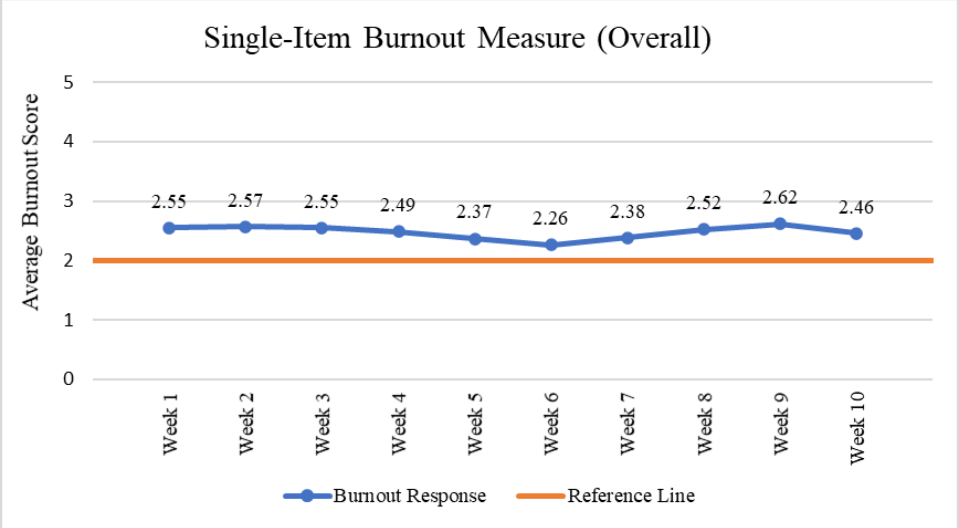
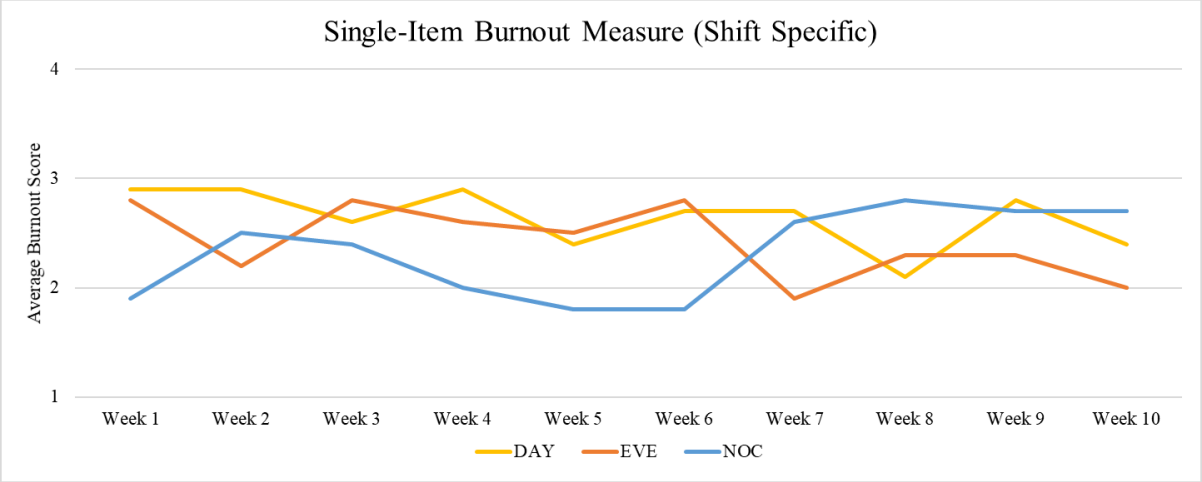


Figure 4

Single-Item Burnout Measure: Shift Specific Line Chart

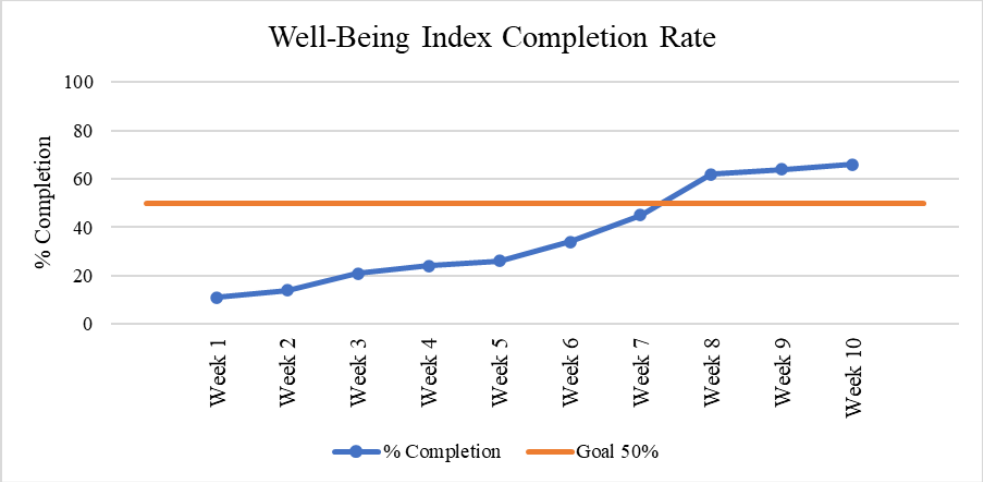


From the data above, overall single-item burnout measure scores varied slightly from week to week; however, scores remained mainly within the two to three score range, reflective of continuing and steady burnout levels amongst the respondents. For shift-specific single-item burnout score trends, the data shows that the three shifts rated their burnout levels differently and generally stayed within the two to three score range, like the overall unit data. Day and evening shifts reported higher levels of burnout than the night shift, which consistently reported lower levels of burnout throughout the data collection period. However, some variations were observed when individual shifts decreased or increased their self-reported burnout scores. When reviewing this data, it is important to acknowledge that the scores varied from week to week, depending on which staff members participated in that week's survey, fluctuating unit activities, and many other factors, both known and unknown. Of note, some individuals rated themselves at the extremes of the scale (one and five), demonstrating a wide range in the severity at which staff may be experiencing burnout symptoms.

Well-Being Index

The Well-Being Index (WBI) was individually assigned to nurses for voluntary completion on HealthStream, an internal educational platform. The completion rates were tracked over the course of the project timeline (Figure 5), and an overall completion rate of 66% (n= 79) was achieved by project end date. Annual required education on HealthStream for all staff was also due during this project timeline, which possibly contributed to a higher overall completion rate.

Figure 5



Healthy Work Environment Assessment

The Healthy Work Environment Assessment (HWEA) was planned as the balancing measure and was scheduled for collection in July 2021. Due to other surveys being conducted concurrently (i.e., MBI), feedback from PI team, and possibility of inducing survey fatigue and decreasing response rates, it was decided to postpone the HWEA until September 2021. Results from the HWEA will be analyzed after project completion to evaluate changes from past results, and potential improvements that may have occurred because of this project.

Section V: Discussion

Summary

It is known that burnout affects critical care nurses to a higher degree than nurses in any other specialty of healthcare (Moss et al., 2016). Based on the MBI outcome measure results from this project, the nurses in this microsystem are similarly affected. The increased stress and demands resulting from the COVID-19 pandemic created an environment of increased exposure to patient death, moral dilemmas, and excessive workloads (Cabarkapa et.al, 2020; Reith, 2018), which may have contributed to higher burnout rates in this microsystem compared to the general public.

The project reinforced understanding that burnout can fluctuate due to many circumstances and continued, steady support is necessary for long term success. Expected normal fluctuations were observed through the weekly data collection, and can be attributed to many known and unknown factors within the complex system. Improvement to microsystem MBI self-reported burnout scores were noted in all MBI categories, with a greater agreement in self-reported responses. This project was a success as it focused on addressing factors to improve joy in work as a strategy to decrease burnout levels, and to minimize causes of burnout, both current and future. Increased awareness, knowledge sharing, and access to resources brought forth by this project resulted in higher prioritization of recognition and management of burnout within the microsystem. Increases in problem identification and solution gathering by front line staff were observed during the project. The project contributed to greater awareness around burnout, more frequent self-reflection, and a renewed culture of recognition and support.

Having frontline nursing staff guide the assessment, decision making, and implementation of this performance improvement project helped gain trust of other staff nurses,

increased the response rates on several surveys, as well as participation in other intervention strategies. Open and transparent sharing of data contributed to the project's success. The nurses were interested in how the unit was doing and knowing the ongoing trends for the surveys they participated in. Utilizing a designated staff meeting provided an avenue to dive deeper into the project results, resources available, and solutions to help nurses individually cope with burnout.

The project aimed to address burnout from different angles utilizing the IHI Framework for Improving Joy in Work. The hope was that each nurse would select one or more of the implemented strategies, which they could use at work or at home, to improve joy at work and reduce burnout. Among the microsystem nurses, there is now more awareness and self-reflection of burnout and knowledge of resources available to them, both within the unit and organization-wide. In addition, multilevel leadership support for this project was strong and sustained. The project thrived in part due to increased time and resources allocated for paid meeting times, purchasing project supplies, and joint messaging through several avenues.

A limitation for the project was the voluntary nature of all survey responses and other data collection methods. Fluctuations in response rates and collected data may not accurately reflect true burnout levels due to not all staff responding. It is possible that staff with higher levels of burnout also lacked the desire or motivation to complete the surveys, resulting in an underestimate of true burnout rates within the microsystem.

As the project was designed for voluntary participation and anonymous data collection, the PI team was unable to identify individual staff who may have been experiencing severe burnout or suicidal ideation, with the resultant inability to offer support. However, all individuals within the microsystem were provided multiple psychological and supporting resource options that they could access independently, such as the Well-Being Index (WBI), Employee Assistance

Program (EAP), and Resilience In Stressful Events (RISE) per-peer emotional support program. The process measure for completion of the WBI merely tracked the fact that the module was accessed, but not the extent that the nurse used the resources. In order to get more detailed tracking and information, there was a fee associated with information sharing by the WBI with the organization. Project implementation and follow-up were done within a short period of time, perhaps insufficient to observe meaningful improvements to reported burnout responses in both the MBI and single-item burnout measures. It may be beneficial to reevaluate burnout data annually to track changes over longer time periods and compare to baseline data. In addition, because burnout is multifactorial and can include factors outside of work as well, it can be difficult to address it with work-based strategies alone. An anonymous comment from one staff member was, “It’s not just work. It’s a life and work combo.” Another shared that their daily commute back and forth between family at home and work “burns them out.”

Conclusions

Although burnout primarily affects nurses individually, there are repercussions for the organizations they work for and the patients they serve. Healthcare burnout is known to be associated with lesser quality of care, poor work performance, less compassionate behaviors, lower nursing job satisfaction, increased nurse turnover, poorer patient outcomes, higher patient mortality, and increased hospital acquired infections (Amendolair, 2012; Cabarkapa, et.al, 2020; Cimiotti et al., 2012). The cost of nurse burnout is high, reflected in costs to replace nurses who call out sick or leave their jobs, and increased patient length of stay related to poorer quality of care or hospital-acquired complications.

Burnout is multifactorial in cause and must also be multifactorial in solutions. Nurse leaders must acknowledge that each person has unique reasons for burnout to manifest and needs

personalized solutions to cope and recover. From an organizational perspective, coordination, collaboration, and a systems-based approach are required to address the multiple factors that contribute to burnout. Strong leadership support is essential for sustainability; nurse leaders should continue to openly prioritize burnout awareness, education, and solutions to support critical care nurses. Successful interventions at the unit level, as demonstrated for an ICU, can serve as models for replication or adaptation in other units. Speaking up about burnout, educating colleagues and organizational leadership, prioritizing clinician health and well-being, and supporting well-rounded, evidence-based interventions to minimize the causes of burnout, are the best ways to support critical care nurses and improve quality, safety, and health outcomes for all concerned.

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Section VII: Appendices

Appendix A

Evaluation Table

PICO Question:
For critical care nurses (P), how does burnout education, assessment, intervention, and support (I), compared to no education, assessment, intervention, and support (C) affect nurse reported burnout and professional wellbeing (O)?

Study	Design	Sample	Outcome/Feasibility	Evi-dence rating
Cabarkapa et al. (2020). The psychological impact of COVID-19 and other viral epidemics on frontline healthcare workers and ways to address it: A rapid systematic review. *Brain, Behavior, & Immunity Health*. https://doi.org/10.1016/j.bbih.2020.100144	Systematic review	A total of 55 studies included, with 53 using quantitative methodology and two were qualitative. Date range is 2002 until August 2020, across multiple countries and infectious diseases SARS (13 studies), Ebola (one), MERS (three) and COVID-19 (38). Only studies with over 100 subjects were included.	During infectious disease outbreaks, there are instances of increased stress, exposure to traumatic experiences, suffering, and fear that can contribute to detrimental outcomes, such as burnout, increased stress, anxiety and depression. The study is specifically looking at impacts on mental and psychological health of frontline healthcare workers. Given the increased rates of these effects during an infectious disease outbreak, it reinforces that these issues must be addressed proactively. This is a vulnerable groups and outcomes can be long-term and have profound consequences. Many of the strategies and recommendations are highly feasible within the microsystem.	L III B

Galuska, L. A. & Bursch, B. (2020). *Meaning, joy, and critical care nurse well-being: A call to action. Critical care nursing clinics of North America, 32*(3), 349-367 https://doi.org/10.1016/j.cnc.2020.04.002	Expert opinion/literature review	None	Thorough discussion of recommendations for improving clinical wellbeing from five evidence-based frameworks. The frameworks discussed include: A Narrative Analysis of Nurses' Experiences with Meaning and Joy in Nursing Practice, Strengthening Workplace Well-Being, AACN Standards for Establishing and Sustaining Healthy Work Environments, IHI Joy in Work Framework, and Comprehensive, Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being. In addition, validated measurement and assessment tools are reviewed. All of the proposed frameworks are feasible as guiding options for the improvement project.	L V A
Moss, M., Good, V. S., Gozal, D., Kleinpell, R. & Sessler, C. N. (2016). An official Critical Care Societies Collaborative statement. Burnout syndrome in critical care health-care professionals: A call for action. *American journal of respiratory critical care medicine, 194*(1), 106–113. https://doi.org/10.1164/rccm.201604-0708ST	Consensus / collaborative position statement	None	Thoroughly discusses recent literature review, burnout incidence, prevalence, risk factors, consequences and interventions for prevention and treatment of burnout syndrome in critical care professionals. In addition, there is a "call to action" with specific recommendations for critical care healthcare professionals, ICU unit-based leaders, hospital administrators, and other professional societies, agencies, and institutions.	L IV B

Sinsky, C. A. Et al. (2020). Organizational evidence-based and promising practices for improving clinician well-being. *National Academy of Medicine (NAM) Perspectives*. https://doi.org/10.31478/202011a	Discussion paper/expert opinion	None	Interventions discussed are aimed at both individual and organization, showing improved outcomes to staff well-being and reduction in burnout after implementation. Interventions for each category are discussed.	L V A
Zheng R, Lee SF, Bloomer MJ. How nurses cope with patient death: A systematic review and qualitative meta-synthesis. Journal of clinical nursing, 27, e39-e49. https://doi.org/10.1111/jocn.13975	Systematic review and qualitative meta-synthesis	16 studies were reviewed (11 qualitative studies, four mixed-methods studies, and one quantitative study) from eight countries, and included 380 combined sample size	Discussed how death can result in increased distress, grief, stress, leading to incidence of burnout in nurses. The reviews findings were synthesized into 10 categories of intrinsic and external resources that support nurses when coping after a patient death. Application of the systematic review is highly feasible due to the nature of widespread sample and similarities between all studies, most likely correlates closely to experiences of the nurses in this microsystem.	L III B

Appendix B

Microsystem Assessment

Inpatient Unit Profile

A. Purpose:

ICU Vision Statement: To provide a compassionate, centered care experience with the highest quality of outcomes, committed to the never-ending quest to be leaders in critical care.

ICU Mission Statement: Our Mission is to provide compassionate and comprehensive care to critically ill patients by implementing best- practices and utilizing optimal multidisciplinary teamwork to enhance the well-being of our patients, their families, and the communities we serve.

Unit Manager: Amberly Galli	Site Contact: Debbie Reitter	Date: September 18, 2020
Administrative Director: Michelle Pavano	Nurse Director: Daniel Moffit	Medical Director: Dr, Rich Haynes

B. Know Your Patients:

Est. Age Distribution of Pts:	**%**	**List Your Top 10 Diagnoses/Conditions**		**Patient Satisfaction Scores**	% Always
19-50 years	20	1. Respiratory Failure/PNA	6. DKA	Nurses	92.1%
51-65 years	35	2. Heart Arrhythmias	7. ETOH withdraws	Doctors	93.4%
66-75 years	25	3. Sepsis	8. GI Bleed	Environment (Quiet at NOC)	74.6%
76+ years	20	4. Stroke	9. Vascular Surgery	Pain (Not included in HCAHPS as of 2019)	NA%
		5. STEMI	10. Liver/Kidney Failure	Discharge % Yes	85.9 %
% Females	45			Overall % Excellent	92.3 %

Living Situation	**%**	**Point of Entry**	**%**	**Pt Population Census: Do these numbers change by season? (Y/N)**	**Y/N**
Married	30 %	Admissions (direct)	15%	Pt Census by Hour	Y
Domestic Partner	15 %	Clinic	1%	Pt Census by Day	Y
Live Alone	10 %	ED	49%	Pt Census by Week	Y
Live with Others	20 %	Transfer	35%	Pt Census by Year	Y
Skilled Nursing Facility	10 %	**Discharge Disposition**	**%**	30 Day Readmit Rate	Y
Nursing Home	10 %	Home	12%	Our patients in Other Units	Y
Homeless	5 %	Home with Visiting Nurse	3%	Off Service Patients on Our Unit	Y
Patient Type / **LOS avg.** / **Range**		Skilled Nursing Facility	5%	Frequency of Inability to Admit Pt	Y

Medical	7.8	1-365 days	Other Hospital	5%	
Surgical	3.4	1-40 days	Rehab Facility	2%	
Mortality Rate	8.7%		Transfer to another unit	73%	

Patient's Perceptions:
Overall, patients perceive staff as "great and very helpful". Negatives include noise at night, no real bathrooms in room. Frustrations include wait times for MD or tests, and dietary concern.

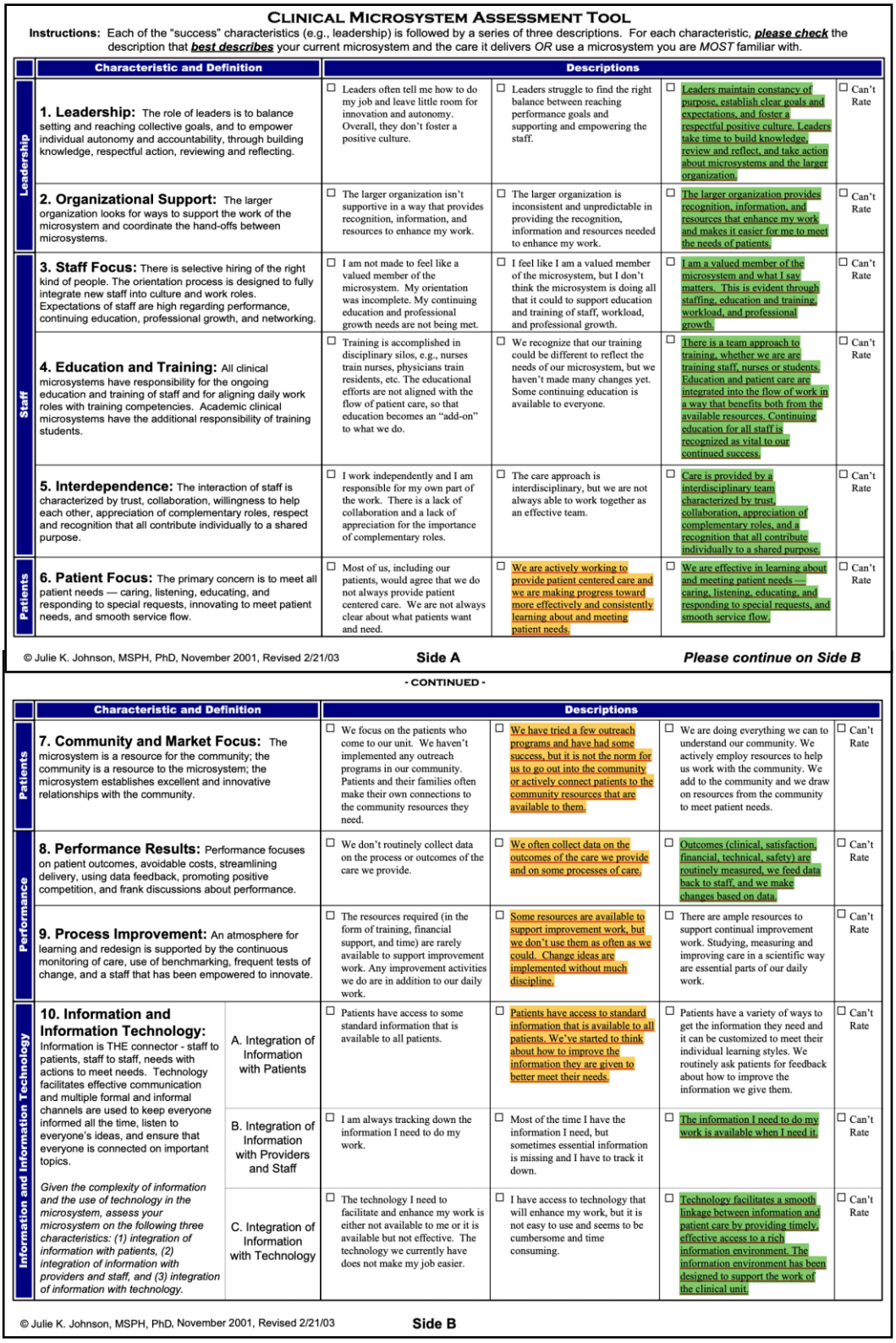
C. Know Your Professionals:

Current Staff	**Day FTEs**	**Evening FTEs**	**Night FTEs**	**Weekend FTEs**	**Over-Time by Role**	**Admitting Medical Service**	**%**
MD Total (Intensivist)	18.2 FTE to cover all shifts (including NOC on-call and weekends)	Included	Included	Included	N/A	Internal Medicine	35
Hospitalists Total	0-None staffed directly into ICU	0	0	0	N/A	Hematology/Oncology	5%
Unit Leader Total	3.7	N/A	1.8	N/A	N/A	Pulmonary	10%
CNSs Total	0	0	0	0	0	Family Practice	5%
RNs Total	25	22.4	22	Included	3.2	ICU	45%
LPNs Total	0	0	0	0	0	Other	NA
LNAs Total	0	0	0	0	0	**Supporting Diagnostic Departments**	
Residents Total	0	0	0	0	0		
Technicians Total	1.4	0.6	0	0	1.2	Radiology, Cardiac Cath Lab, Respiratory Therapy, Pulmonary, Operating Room, Gastroenterology, and Laboratory.	
Secretaries Total	2.8	1.4	0	0	2		
Clinical Resource Coord.	1.4	N/A	N/A	N/A	N/A		
Social Worker	1	0	0	0	N/A		
Health Service Assts.	0	0	0	0	0		
Ancillary Staff	0	0	0	0	0		

Do you use Per Diems?	_**X**__Yes	_____NO	**Staff Satisfaction Scores**		**%**
Do you use Travelers?	**X**___Yes	_____NO	How stressful is the unit?	% Not Satisfied	30%
Do you use On-Call Staff?	_**X**__Yes	_____NO	Would you recommend it as a good place to work?	% Strongly Agree	85%
Do you use a Float Pool?	___Yes	_**X**__NO			

<table>
<tr><td colspan="4">D. Know Your Processes:</td></tr>
<tr><td>1. Create flow charts of routine processes.</td><td>Do you use/initiate any of the following?</td><td rowspan="2">Capacity</td><td># Rooms
__20___</td><td># Beds
__20___</td></tr>
<tr><td>a) Overall admission and treatment process. Process is good when open bed is available.</td><td>Check all that apply</td><td colspan="2" rowspan="2"># Turnovers/Bed/Year: 3640</td></tr>
<tr><td>b) Admit to Inpatient Unit: Delays in admit can occur when no beds are available</td><td>X Standing Orders/Critical Pathways</td></tr>
<tr><td>c) Usual Inpatient care</td><td>X Rapid Response Team</td><td colspan="2" rowspan="2">Linking Microsystems</td></tr>
<tr><td>d) Change of shift process: Report on 1-2 patients aprox 15-20 minutes total with NKE+. Fluctuation occurs due to patient condition and other delaying factors.</td><td>X Bed Management Rounds</td></tr>
<tr><td>e) Discharge process: Fewer patients discharge from ICU, flow may be able to be improved.
f) Transfer to another facility process: No concerns.</td><td>X Multidisciplinary/with Family Rounds
□ Midnight Rounds</td><td colspan="2" rowspan="2">Other microsystems connected to ours are Emergency Dept., Telemetry, Medical Surgical Units, Dietary, PACU, Social Work, Palliative, Anesthesia, Cardiac Cath Lab, Radiology, TeleCritical Care.</td></tr>
<tr><td>g) Medication Administration: No concerns.</td><td>X Preceptor/Charge Role</td></tr>
<tr><td>h) Adverse event: No concerns.</td><td>X Discharge Goals</td><td colspan="2"></td></tr>
<tr><td colspan="4">E. Know Your Patterns:</td></tr>
<tr><td>• Does every member of the unit meet regularly as a team? Dependent on staff meeting attendance. ANMs/Leadership meets consistently. Other committees meet monthly. SMART goals established each year based on needs assessed.</td><td colspan="2" rowspan="2">• Do the members of the unit regularly review and discuss safety and reliability issues? Safety committee meets monthly within microsystem. Daily shift huddles are attended by all staff. Patients are usually NOT involved in meetings or decision making, unless it is a major project, in which case we would work with administration to involve the patient advisory council.</td><td>• What have you successfully changed? Reduction in SPI events by utilizing bundles, sharing data and daily safety rounds. Meaningful recognition.</td></tr>
<tr><td>• How frequently? Monthly</td><td>• What are you most proud of? Overall culture that supports change based on EBP and best patient outcomes. Peer-peer education sustainment, and development of standardized preceptor program and RRT nursing team. Silver Beacon Award since 2016.</td></tr>
<tr><td colspan="2">• What is the most significant pattern of variation? The most significant pattern of variation is related to limited bed availability during high census. Need to utilize overflow spaces and float staff to other areas. Despite the positive culture and a speak up environment, the COVID-19 pandemic has added strain and stress to nursing staff. Staff have mentioned experiencing burnout. Increased staff turnover and ease of transfer to other departments.</td><td colspan="2">Metrics that Matter:
Main metrics under review are STATIT, PRISM, KP Tableau, JCAHO, CMS reportable data. These are reviewed by microsystem leadership daily, weekly, or monthly to guide improvements and evaluate successes. The Healthy Workplace Survey was also collected in July 2020 and had an estimated 50% response rate (included in Appendix B). Annual People Pulse. HCAHPS.</td></tr>
</table>

Source: (Institute for Excellence in Health and Social Systems, 2005).



CLINICAL MICROSYSTEM ASSESSMENT TOOL

Instructions: Each of the "success" characteristics (e.g., leadership) is followed by a series of three descriptions. For each characteristic, ***please check*** the description that ***best describes*** your current microsystem and the care it delivers *OR* use a microsystem you are *MOST* familiar with.

	Characteristic and Definition	Descriptions			
Leadership	**1. Leadership:** The role of leaders is to balance setting and reaching collective goals, and to empower individual autonomy and accountability, through building knowledge, respectful action, reviewing and reflecting.	☐ Leaders often tell me how to do my job and leave little room for innovation and autonomy. Overall, they don't foster a positive culture.	☐ Leaders struggle to find the right balance between reaching performance goals and supporting and empowering the staff.	☐ Leaders maintain constancy of purpose, establish clear goals and expectations, and foster a respectful positive culture. Leaders take time to build knowledge, review and reflect, and take action about microsystems and the larger organization.	☐ Can't Rate
	2. Organizational Support: The larger organization looks for ways to support the work of the microsystem and coordinate the hand-offs between microsystems.	☐ The larger organization isn't supportive in a way that provides recognition, information, and resources to enhance my work.	☐ The larger organization is inconsistent and unpredictable in providing the recognition, information and resources needed to enhance my work.	☐ The larger organization provides recognition, information, and resources that enhance my work and makes it easier for me to meet the needs of patients.	☐ Can't Rate
Staff	**3. Staff Focus:** There is selective hiring of the right kind of people. The orientation process is designed to fully integrate new staff into culture and work roles. Expectations of staff are high regarding performance, continuing education, professional growth, and networking.	☐ I am not made to feel like a valued member of the microsystem. My orientation was incomplete. My continuing education and professional growth needs are not being met.	☐ I feel like I am a valued member of the microsystem, but I don't think the microsystem is doing all that it could to support education and training of staff, workload, and professional growth.	☐ I am a valued member of the microsystem and what I say matters. This is evident through staffing, education and training, workload, and professional growth.	☐ Can't Rate
	4. Education and Training: All clinical microsystems have responsibility for the ongoing education and training of staff and for aligning daily work roles with training competencies. Academic clinical microsystems have the additional responsibility of training students.	☐ Training is accomplished in disciplinary silos, e.g., nurses train nurses, physicians train residents, etc. The educational efforts are not aligned with the flow of patient care, so that education becomes an "add-on" to what we do.	☐ We recognize that our training could be different to reflect the needs of our microsystem, but we haven't made many changes yet. Some continuing education is available to everyone.	☐ There is a team approach to training, whether we are are training staff, nurses or students. Education and patient care are integrated into the flow of work in a way that benefits both from the available resources. Continuing education for all staff is recognized as vital to our continued success.	☐ Can't Rate
	5. Interdependence: The interaction of staff is characterized by trust, collaboration, willingness to help each other, appreciation of complementary roles, respect and recognition that all contribute individually to a shared purpose.	☐ I work independently and I am responsible for my own part of the work. There is a lack of collaboration and a lack of appreciation for the importance of complementary roles.	☐ The care approach is interdisciplinary, but we are not always able to work together as an effective team.	☐ Care is provided by a interdisciplinary team characterized by trust, collaboration, appreciation of complementary roles, and a recognition that all contribute individually to a shared purpose.	☐ Can't Rate
Patients	**6. Patient Focus:** The primary concern is to meet all patient needs — caring, listening, educating, and responding to special requests, innovating to meet patient needs, and smooth service flow.	☐ Most of us, including our patients, would agree that we do not always provide patient centered care. We are not always clear about what patients want and need.	☐ We are actively working to provide patient centered care and we are making progress toward more effectively and consistently learning about and meeting patient needs.	☐ We are effective in learning about and meeting patient needs — caring, listening, educating, and responding to special requests, and smooth service flow.	☐ Can't Rate

© Julie K. Johnson, MSPH, PhD, November 2001, Revised 2/21/03 **Side A** ***Please continue on Side B***

- CONTINUED -

	Characteristic and Definition		Descriptions			
Patients	**7. Community and Market Focus:** The microsystem is a resource for the community; the community is a resource to the microsystem; the microsystem establishes excellent and innovative relationships with the community.		☐ We focus on the patients who come to our unit. We haven't implemented any outreach programs in our community. Patients and their families often make their own connections to the community resources they need.	☐ We have tried a few outreach programs and have had some success, but it is not the norm for us to go out into the community or actively connect patients to the community resources that are available to them.	☐ We are doing everything we can to understand our community. We actively employ resources to help us work with the community. We add to the community and we draw on resources from the community to meet patient needs.	☐ Can't Rate
Performance	**8. Performance Results:** Performance focuses on patient outcomes, avoidable costs, streamlining delivery, using data feedback, promoting positive competition, and frank discussions about performance.		☐ We don't routinely collect data on the process or outcomes of the care we provide.	☐ We often collect data on the outcomes of the care we provide and on some processes of care.	☐ Outcomes (clinical, satisfaction, financial, technical, safety) are routinely measured, we feed data back to staff, and we make changes based on data.	☐ Can't Rate
	9. Process Improvement: An atmosphere for learning and redesign is supported by the continuous monitoring of care, use of benchmarking, frequent tests of change, and a staff that has been empowered to innovate.		☐ The resources required (in the form of training, financial support, and time) are rarely available to support improvement work. Any improvement activities we do are in addition to our daily work.	☐ Some resources are available to support improvement work, but we don't use them as often as we could. Change ideas are implemented without much discipline.	☐ There are ample resources to support continual improvement work. Studying, measuring and improving care in a scientific way are essential parts of our daily work.	☐ Can't Rate
Information and Information Technology	**10. Information and Information Technology:** Information is THE connector - staff to patients, staff to staff, needs with actions to meet needs. Technology facilitates effective communication and multiple formal and informal channels are used to keep everyone informed all the time, listen to everyone's ideas, and ensure that everyone is connected on important topics. *Given the complexity of information and the use of technology in the microsystem, assess your microsystem on the following three characteristics: (1) integration of information with patients, (2) integration of information with providers and staff, and (3) integration of information with technology.*	A. Integration of Information with Patients	☐ Patients have access to some standard information that is available to all patients.	☐ Patients have access to standard information that is available to all patients. We've started to think about how to improve the information they are given to better meet their needs.	☐ Patients have a variety of ways to get the information they need and it can be customized to meet their individual learning styles. We routinely ask patients for feedback about how to improve the information we give them.	☐ Can't Rate
		B. Integration of Information with Providers and Staff	☐ I am always tracking down the information I need to do my work.	☐ Most of the time I have the information I need, but sometimes essential information is missing and I have to track it down.	☐ The information I need to do my work is available when I need it.	☐ Can't Rate
		C. Integration of Information with Technology	☐ The technology I need to facilitate and enhance my work is either not available to me or it is available but not effective. The technology we currently have does not make my job easier.	☐ I have access to technology that will enhance my work, but it is not easy to use and seems to be cumbersome and time consuming.	☐ Technology facilitates a smooth linkage between information and patient care by providing timely, effective access to a rich information environment. The information environment has been designed to support the work of the clinical unit.	☐ Can't Rate

© Julie K. Johnson, MSPH, PhD, November 2001, Revised 2/21/03 **Side B**

Source: (Johnson, 2003).

Appendix C

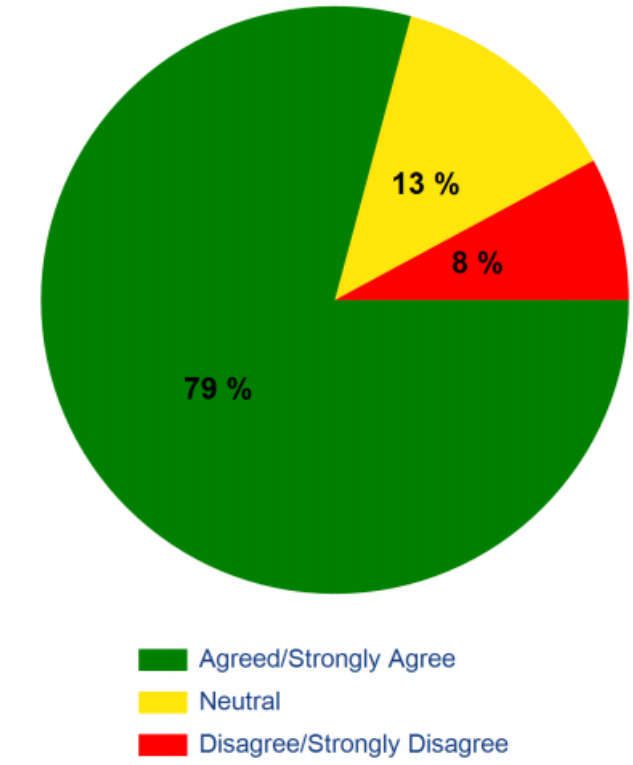
AACN Healthy Work Environment Assessment Results

Survey close date: 7/18/2020

Summary Score

The mean score for the entire survey, including all six standards

Using the scoring guidelines provided below, evaluate the overall score for this assessment.



	Responses	Percent
Strongly Disagree	8	0.62%
Disagree	94	7.25%
Neutral	168	12.96%
Agree	735	56.71%
Strongly Agree	291	22.45%

Aggregate Score:	**3.93**
Total Individual Responders:	**72**
Nurse Professionals:	65
Other Professionals:	7

Scoring Guidelines

Please use the following scale to interpret your team's scores for this assessment:

1.00 - 2.99 - Needs Improvement
3.00 - 3.99 - Good
4.00 - 5.00 - Excellent

Appendix D

SWOT Analysis

Strengths (Internal, Helpful)	Weaknesses (Internal, Harmful)
• Culture, Teamwork, Engaged • Resources • Access to Virtual Platform • Access/avenue for in-person meetings • Multiple well-established groups • Core group buy-in • Huddle communication established • New Staff, Veteran Staff • Access to equipment when needed • Access to EAP, Librarian • Leadership support • Wide skill/experience mix	• Poor communication • Bias, Resistance to Change • Lack of knowledge base/awareness • New Staff, Veteran staff • No Buy-in • Cancellations/unpredictability • Time constraints (actual or perceived) • Stress levels, Burnout • Workload/Acuity (actual or perceived) • Assignment Making, Proper skill mix • Low morale from other units or surrounding areas • No food at meeting/work
Opportunities (Internal, Helpful)	**Threats (External, Harmful)**
• Access to resources through KP • (Calm, Exercise App) • Equipment (as needed) • Increased virtual opportunities • Access to manufacturer representatives (reps)	• Pandemic Restrictions • Shortages of drugs • Outside work stress, schools, schedules, kids, etc. • Many things are closed, lack of access • Change is the norm • Unpredictability

Done on 3/10/2021 by PI team

Appendix E

Project Charter: Addressing Critical Care Nurse Burnout

Project Charter
Addressing critical care nurse burnout by improving joy in work.

Global Aim
The global aim of this project is to increase awareness and identification of burnout and reduce the incidence of self-reported burnout symptoms in critical care nurses working within the intensive care unit.

Specific Aim—Outcome Measure
The specific aim of this project is to improve aggregate burnout scores by one point, or no change, from baseline score in each of the three Maslach's Burnout Inventory (MBI) scales (emotional exhaustion, depersonalization, and personal accomplishment), after increasing awareness and identification of burnout symptoms in at least 50% of current critical nurses working within the microsystem, and implementing evidence-based strategies for improving joy in work, by project completion date of July 25, 2021.

Background Information and Rationale
Burnout can affect nurses in any specialty of healthcare; however, it more often occurs in nurses working in critical care areas. Based on multiple studies, burnout affects 25% to 33% of critical care nurses, and up to 86% have at least one symptom of burnout (Moss, et al., 2016). In 2016, the Critical Care Societies Collaborative released a "call to action" statement to raise awareness of the high levels of burnout that exist, and the need for critical stakeholder to develop strategies to mitigate the development of burnout in critical care professionals (Moss et al., 2016). Healthcare burnout is associated with reduced quality of care, poor work performance, decreased nursing job satisfaction, a fall in nursing retention rates, less compassionate behaviors, and worse patient outcomes. Among nurses, increased levels of burnout are associated with higher patient mortality and hospital acquired infections (Cabarkapa, et.al, 2020).

This body of evidence and knowledge clearly demonstrate that the risk of burnout is higher among critical care professionals as compared to other healthcare professionals and steps must be taken to address its impact within the microsystem. Critical care nurses are often faced with a higher level of patient suffering, ethical dilemmas related to care, and death during their regular work, and the COVID-19 pandemic has increased that frequency over the past year. Increased levels of burnout can not only lead to less caring behaviors (Amendolair, 2012), poorer patient experience and increased risk of hospital acquired infections (Cimiotti et al., 2012), but also has harmful long-term consequences on the psychological and mental health of critical care nurses. Increased knowledge of burnout, including self-assessment and implementation of mitigation strategies are essential to promote nurse personal and professional well-being, as well as improved patient outcomes.

The Institute for Healthcare Improvement Framework for Improving Joy in Work (Perlo et al., 2017), guides professional in evidence-based strategies to address burnout through improving

factors that bring joy and meaning to the workplace. This project will focus on implementing and evaluating several strategies that encompass bring "joy" to the workplace.

Sponsors

Chief Nurse Executive	D. R.
Intensive Care Unit Manager	A. G.

Project Goals

To address nurse burnout by providing education and implementing strategies to improve joy in work, based on IHI Framework for Improving Joy in Work by implementing the following:

1. Collecting baseline burnout data utilizing Maslach's Burnout Inventory.
2. Implementing several evidence-based interventions to address and improve joy in work.
3. Ensuring that a 50% of the current critical care nurses participate in interventions and surveys.
4. Meet bi-weekly to study PDSA cycles and collected data.
5. Collect follow up data utilizing Maslach's Burnout Inventory.

Measures

Measure	**Data Source**	**Target**
Outcome		
Improvement in post intervention self-reported burnout scores from baseline results	Maslach Burnout Inventory-Human Services Survey for Medical Personnel (MBI-HSS MP; MBI) Group Report	Improvement in self-reported burnout scores by 0.1 point, or no change, in each category: (a) emotional exhaustion, (b) depersonalization, and (c) personal accomplishment
Process		
Weekly tracking of self-reported burnout measure	Single-Item Burnout Measure	At least 20 staff responses collected per week; Target score < 3
Individual completion of the Well-Being Index (WBI)	Completion of WBI on HealthStream internal educational platform	> or = 50% staff nurse completion
Balancing		
Increase in overall summary score to "Excellent" score range	American Association of Critical-Care Nurses Healthy Work Environment Assessment	> or = to 4, which is "Excellent" range

Team Members

Title	Name
Nurse Leader Project Lead	J. S.
Nurse Leader Champion	A. T.
Unit Educator	M. M.
Staff Nurse Champions	C. C. J. C. A. F. C. G-S. N. J. J. L. M. O. J. S. R. S.

Measurement Strategy

Background (Global Aim)

The global aim of this project is to increase awareness and identification of burnout and reduce the incidence of self-reported burnout symptoms in critical care nurses working within the intensive care unit.

Population Criteria

Intensive care unit staff nurses (current total 120)

Data Collection Method

1. Maslach Burnout Inventory will be collected from at least 50% of nurses, via electronic route, during the month of April (baseline) and July (follow-up).
2. Well-Being Index completion by at least 50% of nurses by July 25. Data collection done through automated weekly HealthStream report.
3. Single-item burnout measure tracking done weekly at random intervals (sample= at least 20 per week). Data collection through QR code electronic survey when staff are at work.
4. Healthy Work Environment Assessment will be collected via electronic route in July 2021.

Data Definitions

Data Element	Definition
Burnout	Burnout is a psychological syndrome emerging as a prolonged response to chronic interpersonal stressors on the job. The three key dimensions of this response are exhaustion, depersonalization, and lack of accomplishment.
Depersonalization	Negative or inappropriate attitudes towards clients, irritability, loss of idealism, and withdrawal (Maslach & Leiter, 2016).
Exhaustion	Mental or physical wearing out, loss of energy, depletion, debilitation, and fatigue (Maslach & Leiter, 2016).
Lack of personal accomplishment	Reduced productivity or capability, low morale, and an inability to cope. (Maslach & Leiter, 2016).

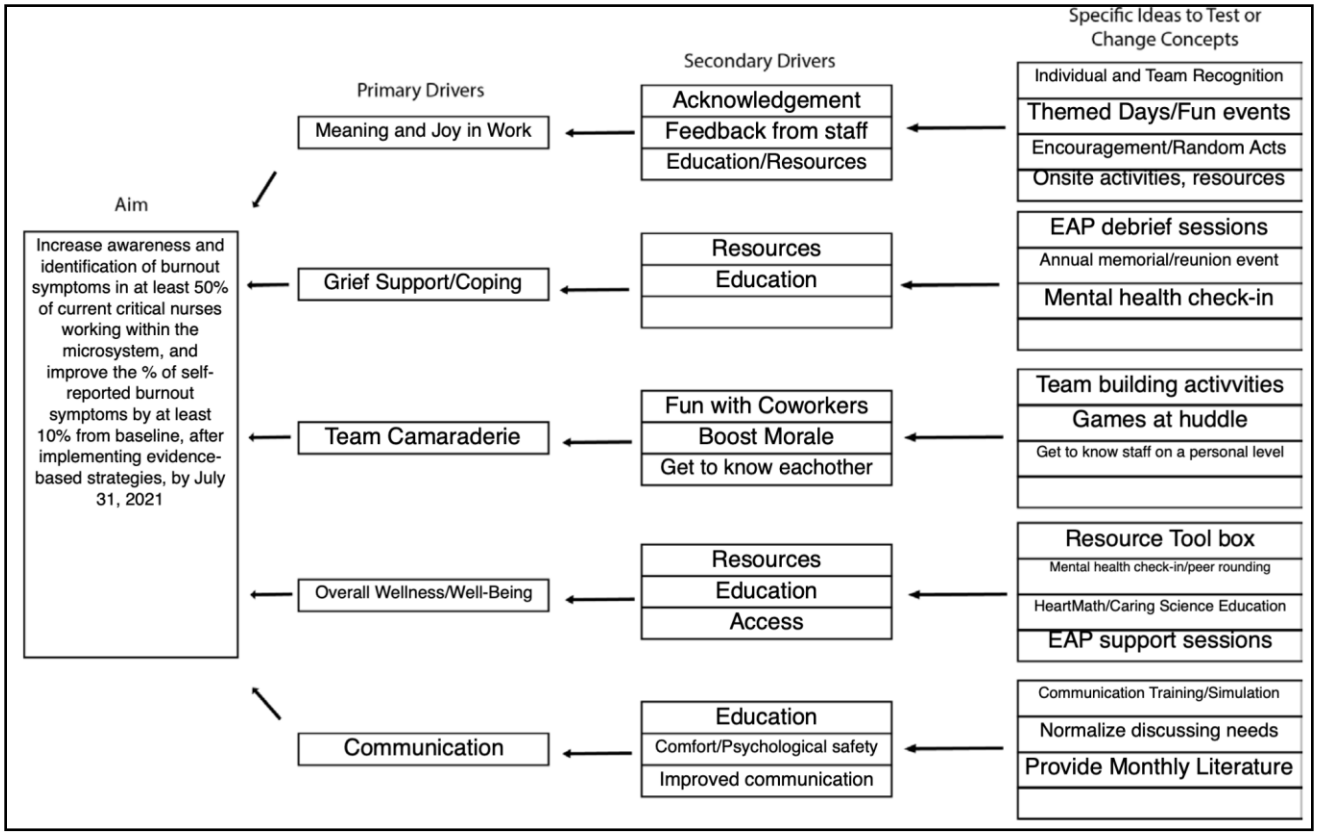
Measure Descriptions

Measure	Measure Description	Data Source Collection	Goal
Outcome			
Improvement in overall Maslach Burnout Inventory scores by1 point or no change	Maslach Burnout Inventory is a 22-question survey	Maslach Burnout Inventory, Transform Mind-Garden	Improvement by 1 point from baseline in each of the three scales, or no change in each of the three scales
Process			
% of respondents selecting 1 or 2, on a scale of 1-5	Single-Item Burnout Measure	SurveyMonkey collection via personal electronic device	> or = 50 % of respondents selecting either 1 or 2
% completion of the Well-Being Index (WBI)	Completion rate of WBI	HealthStream Report	50% microsystem staff nurse completion
Balancing			
Overall summary score	American Association of Critical-Care Nurses (AACN)	American Association of Critical-Care Nurses (AACN) online responses and report.	Increase in overall summary score to “Excellent”

	Healthy Work Environment Assessment.		(score of > or = to 4)

Driver Diagram

This driver diagram was generated from a PI team brainstorming activity with affinity matching, in which similar ideas were grouped together. Several themes emerged, which can be viewed as the primary drivers: Improving joy in work, grief support and coping, team camaraderie, overall wellness/well-being, and communication. Specific ideas to test became apparent, with some ideas overlapping into multiple themes.

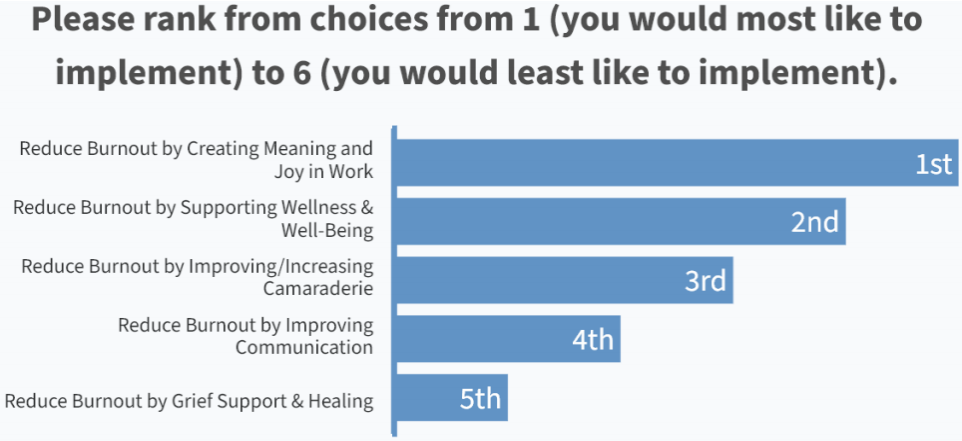


Idea Prioritization Activity and Grid

Themes were generated from the ideas brainstormed. Green items are those that were located at or near the High Payoff, Easy Implementation quadrant. Selecting one of the themes DOES NOT mean implementing all of the ideas, and some ideas can overlap between themes. This was used for intervention refinement and selection.

THEME of Intervention/Goal	Strategy/Description	Strategy/Description
Supporting Wellness & Well-Being	Provide resources for Wellness	Nurse well-being Index (individual)
	Provide Support In person, Mental Health Check in	Online Resource Toolbox (handouts and numbers to EAP, RISE)
	Onsite yoga, walks, hike (2)	HeartMath, Caring Science education
	Peer-Peer rounding, coaching	EAP support sessions (2)
	Notes of encouragement	Peer lead debriefing sessions
	Mental health check-in	Calm environment (Zen den). Keep or create new
Creating Meaning and Joy at Work	Peer-peer rounding	Random Acts of kindness
	Individual Recognition in the moment (4)	Small gifts to brighten shift, Coffee (gift cards)
	Whole Team recognition concept	Nurse Week Treat
	Birthdays	Massage
	Recognize wins	Team recognition, free jacket
Grief Support & Healing	Address death/dying	EAP Debriefing (2)
	Yearly Memorial, Provide avenue for Support/Closure	ICU Reunion or update
	"The Pause" after unsuccessful resuscitation	Allowing for hard days
		Mental health Check-in
Improving Communication	Normalize discussing needs/Support	Providing monthly Literature
	Improved communication	
Improving/ increasing Camaraderie	Games at huddle	Get to know staff on a personal level (activity)
	Fun Themed Days	Utilize Mentor Program
	Team Building Activities	Bring back potlucks
	Boost Morale	

Live Polling Group Results



Changes to Test

The PI team members used an anonymous live polling platform to select the main focus theme of "improving joy in work". Main changes selected by the team are within this theme and guided by IHI Framework for improving Joy in Work and Unitary Caring Science Resilience model (Wei et al., 2021).

These changes will include specific strategies under the main areas below:

1. Increase awareness of burnout though messaging (electronic and verbal)
2. Provide avenue for "what matters?" conversations. Collection information on how staff experiences joy in work, and barriers to joy.
3. Provide access to resources to increase knowledge
    a. Well-Being Index completion
    b. Online access to resources (ICU website, email and flyer)
4. Individual and team recognition, recognizing wins
5. "Fun" themed days and at-work activities

Biweekly team meetings planned to discuss weekly data collected and feedback received and to study PDSA. Discuss potential changes and existing barriers.

Project Timeline

Proposed timeline for addressing critical care nurse burnout by improving joy in work.							
Dates (2021)	2/15	2/15-2/28	3/10-3/25	4/5-4/30	4/19-7/25	7/1-7/23	7/25
Review project idea with leadership and sponsor endorsement.							
Recruit staff nurse champions for project							
PI team meetings and project strategy building							
Collecting baseline data							
Implementing several evidence-based strategies using PDSA cycles. Bi-weekly team meetings							
Collecting weekly data							
Collecting follow up Burnout Inventory Data							
Project Completion							

CNL Competencies

The Clinical Nurse Leader (CNL) is a healthcare leader for all, patients, and staff alike, within the microsystem. By utilizing research-based information, the CNL can help lead projects and interventions that directly target a cohort and engage diverse teams to make improvements that ultimately translate into better outcomes for the patient population. Striving to improve staff well-being and building a healthier, more engaged workforce can increase the level of care and attention to better patient care and outcomes.

For this project, the CNL will function as a team leader, educator, and outcomes manager. Having a CNL manage the implementation of this project is valuable, because if the CNL's background knowledge and expertise of performance improvement skills. As a team leader, the CNL will facilitate the implementation of evidence-based and innovative interventions directed at critical care staff nurses. The CNL will be responsible for the PI team's activities and functions, as well as delegation of tasks within the project. As an educator, the CNL will provide leadership and education to the project champions and healthcare team to promote health, well-being, and optimize engagement to prevent the future decline of unit staff related to burnout. As an outcomes manager, the CNL will assist in collection, interpretation, and pattern recognition to evaluate outcome trends resulting from interventions and compare those against other benchmarks and outcomes data that exists. The CNL synthesizes the data, knowledge and information gained to evaluate whether the project's outcomes were achieved.

Appendix F

What Matters? Visual Boards

Original work (Suarez, J. 2021; Perlo et al., 2017).

Appendix G

Maslach Burnout Inventory Questions

MBI Human Services Survey for Medical Personnel

How often:	0	1	2	3	4	5	6
	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

How often 0-6	Statements:
1. _____	I feel emotionally drained from my work.
2. _____	I feel used up at the end of the workday.
3. _____	I feel fatigued when I get up in the morning and have to face another day on the job.
4. _____	I can easily understand how my patients feel about things.
5. _____	I feel I treat some patients as if they were impersonal objects.
6. _____	Working with people all day is really a strain for me.
7. _____	I deal very effectively with the problems of my patients.
8. _____	I feel burned out from my work.
9. _____	I feel I'm positively influencing other people's lives through my work.
10. _____	I've become more callous toward people since I took this job.
11. _____	I worry that this job is hardening me emotionally.
12. _____	I feel very energetic.
13. _____	I feel frustrated by my job.
14. _____	I feel I'm working too hard on my job.
15. _____	I don't really care what happens to some patients.
16. _____	Working with people directly puts too much stress on me.
17. _____	I can easily create a relaxed atmosphere with my patients.
18. _____	I feel exhilarated after working closely with my patients.
19. _____	I have accomplished many worthwhile things in this job.
20. _____	I feel like I'm at the end of my rope.
21. _____	In my work, I deal with emotional problems very calmly.
22. _____	I feel patients blame me for some of their problems.

(Administrative use only)

EE Total score: _____ DP Total score: _____ PA Total score: _____

EE Average score: _____ DP Average score: _____ PA Average score: _____

Source: Maslach & Jackson (2016).

Appendix H

Single-Item Burnout Measure

Single-Item Burnout Measure

“Overall, based on your definition of burnout, how would you rate your level of burnout?”

Possible Responses

Responses are scored on a five-point Likert scale.

1 = I enjoy my work. I have no symptoms of burnout.”

2 = Occasionally I am under stress, and I don t always have as much energy as I once did, but I don t feel burned out.”

3 = I am definitely burning out and have one or more symptoms of burnout, such as physical and emotional exhaustion.”

4 = The symptoms of burnout that I m experiencing won t go away. I think about frustration at work a lot.”

5 = I feel completely burned out and often wonder if I can go on. I am at the point where I may need some changes or may need to seek some sort of help.”

Scoring

≤2 (no symptoms of burnout) vs. ≥3 (1 or more symptoms)

Source: (Dolan et al., 2015).

Appendix I

Statement of Non-Research Determination

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CNL Project: Statement of Non-Research Determination Form

Student Name: Julie Suarez

Title of Project:
Addressing Burnout in Intensive Care Nurses by Improving Joy in Work

Brief Description of Project:
The global aim of this project is to increase awareness and identification of burnout, and reduce the incidence of self-reported burnout symptoms in critical care nurses working within the intensive care unit.

A) Aim Statement: The specific aim of this project is to and improve the % of self-reported burnout symptoms by at least 10% from baseline, in Maslach's Burnout Inventory (MBI), after increasing awareness and identification in at least 50% of current critical nurses working within the microsystem, and implementing evidence-based strategies for improving joy in work, by July 31, 2021.

B) Description of Intervention: Group champions will implement several targeted evidence-based strategies for improving joy in work, specifically focused on three main areas: Meaningful recognition, increasing "fun" at work, and "what matters?" conversations.

C) How will this intervention change practice? Interventions will focus on several areas known to improve joy in work based on IHI Framework for Improving Joy in Work. The interventions aim to set a new baseline unit culture of increased staff engagement, and purpose, meaning and joy at work.

D) Outcome measurements: Unit-based Maslach Burnout Inventory data collected at end of project timeline, with improvement of scores from baseline by 10%.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/ohrp/categories/1569)

☐ This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

5-17

UNIVERSITY OF SAN FRANCISCO | School of Nursing and Health Professions

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**X**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**X**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**X**	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	**X**	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**X**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**X**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**X**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**X**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	**X**	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

5-17

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*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): Julie Suarez

Signature of Student:  **DATE: 4-11-2021**

SUPERVISING FACULTY MEMBER NAME (Please print):

_____

Signature of Supervising Faculty Member _Liesel Buchner_____DATE_05.06.2021_____

Appendix J

Maslach Burnout Inventory Results

Figure 1a

Maslach Burnout Inventory: Group Baseline Data pre-intervention results (April 30, 2021)

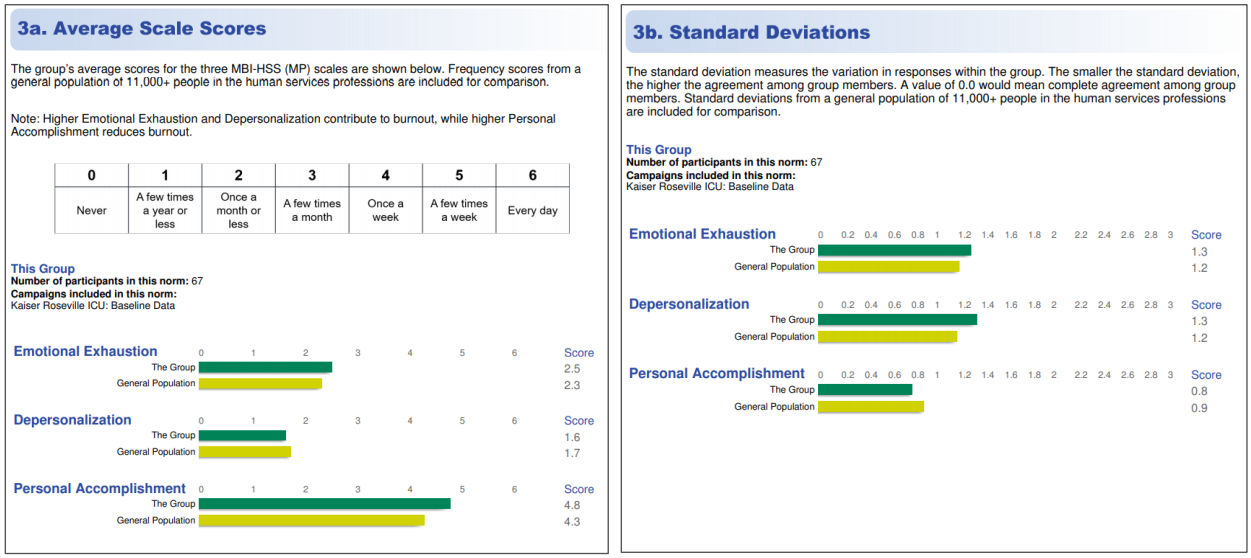
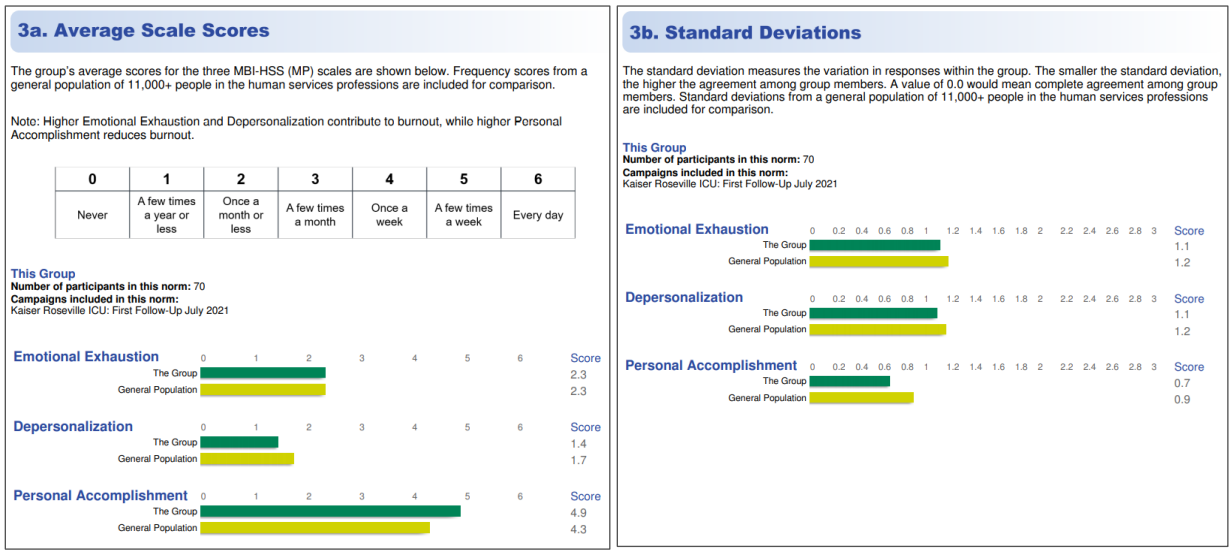


Figure 1b

Maslach Burnout Inventory: Group Follow Up Data post-intervention results (July 23, 2021)



Appendix K

Single Item Burnout Measure Results

Single-Item Burnout Measure: Shift Specific Scores Bar Graph