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# Improving End-of-Life Patient Care Through the Implementation of a Standardized Assessment Tool and Bedside Nurse Education

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**Table of Contents**

**ABSTRACT**

**Problem:** Lack of a standardized assessment tool (SAT) in the acute care setting that correlates pharmacological interventions with assessment findings negatively impact patients who have transitioned to "End-of-life" (EOL) level of care. Bedside nurses are left to interpret their own subjective assessment findings and implement interventions they feel appropriate, leading to a variance in the treatment provided to patients. It has been identified there is an issue in the current practice at one acute care organization in which medication indications are not specific as to which type and dosage of medication to administer to the EOL patient. EOL patient care is also not a topic of annual education for bedside nurses, leading to the possibility of a deficit in the knowledge of caring for this patient population.

**Purpose:** This quality improvement (QI) project would implement a validated SAT, the Respiratory Distress Observation Scale (RDOS), and correlate existing pharmacological interventions to provide bedside nurses with a validated tool for reference based upon their objective assessment findings, to clearly guide them as to which specific medication to administer. Together, the implementation of the RDOS and education provided on caring for the EOL patient, bedside nurses' confidence may increase in caring for the EOL patient population and administering appropriate pharmacological interventions.

**Methods:** A pre- and post-study design will compare the level of confidence and knowledge of bedside nurses in managing dyspnea and caring for the EOL patients within one acute care facility. The post survey will assess if the RDOS increases bedside nurses' confidence in administering pharmacological interventions to the EOL patient population. A convenience sample of bedside nurses and providers who are currently employed at one acute care facility within the Intensive Care Unit, Progressive Care Unit, and Medical Unit will be recruited to complete surveys. A paired sample t-test will be used to compare pre- and post-survey responses.

**Implications for Practice:** Implementing the RDOS for managing dyspnea in EOL patients and providing education on caring for the EOL patient population may increase the level of confidence of bedside nurses in caring for this population.

## Improving End-of-Life Patient Care

Thorough assessments and the ability to interpret the findings for appropriate intervention are the core of the nursing profession and promote patient safety, patient-centered care, and effectiveness (Jevon, 2012). When applicable, nursing should include an assessment of patient symptoms and needs by utilizing standardized tools, implementing appropriate interventions, and then evaluating the outcome of the intervention's effect (Neugebauer, 2021). Standardized assessment tools (SAT) are based upon evidence-based practice (EBP), the "golden standard" in clinical practice, and promote timely and efficient health care (Neugebauer, 2021). Standardized assessments allow the clinician to gather and interpret data in a standard way to confirm clinical judgement and allow the results to be easily communicated to another clinician (Birkholz, 2018). It is important to incorporate SATs to guide care for the end-of-life patient. The *Respiratory Depression Observation Scale* (RDOS) is a reliable and validated SAT that is useful to guide management of the care for the end-of-life (EOL) patient population.

## Background and Significance

Within all acute care hospitals in the United States, is has been estimated that approximately 760,000 deaths occur in the inpatient setting annually (Steinberg et al., 2021). Approximately 60% of Americans die within a hospital setting, with 80-90% of those deaths being expected (Stacy et al., 2019). Furthermore, approximately 146,000 of those deaths occur after a patient has transitioned to EOL care (Steinberg et al., 2021). When a patient and their loved one's treatment goals are no longer to sustain life, the focus shifts to EOL, often referred to as "comfort care" treatment. According to The National Institute on Aging, "end-of-life care is the term used to describe the support and medical care given during the time surrounding death" (2021). Although often considered a sensitive subject, the topic of EOL care should be one of interest to the general population, as it is one of the few situations within healthcare that can be guaranteed to be applicable to all individuals, whether through being a part of

the EOL process of a loved one or being the patient in the EOL care process themselves. The end of one's life is an individualized process in which ideally, a patient and their loved ones experience a "good death" (Ganz, 2019). After reviewing studies spanning over two decades, Ganz (2019) defines a "good death" as "death with dignity, ensuring that the patient does not die alone, an appropriate environment, good symptom management, following patient wishes regarding end-of-life care, acceptance of the impending death by the patient and the family, respect for individual differences, and good, timely communication" (p. 55).

Quality of care is one of the main focal points of health care in the U.S. (AHRQ, n.d.). The Institute of Medicine put forth the framework that promotes the six aims of health care: safe, effective, patient-centered, timely, efficient, and equitable (AHRQ, n.d.). Many hospital facilities do not have set policies, protocols, and tools in place to assist staff in caring for these individuals (Birkholz & Haney, 2018). As Freedman (2013) states, "knowledge deficits, misconceptions, and unfounded beliefs continue to result in barriers affecting pain and symptom management for the dying. The fear of causing harm is counterproductive for dying patients and often results in undertreatment and further suffering" (p. 146). Dyspnea, pain, and other symptom management during the EOL care process with pharmacological interventions is aimed to relieve suffering, though some personal misconceptions of nurses and family members may feel as though it is providing euthanasia to the patient (Freedman, 2013).

To add to the complexity of EOL patient care, bedside nurses caring for this patient population are often faced with patients who are unable to verbally communicate as cognitive function declines during the active dying process. This inability to self-report leads to the necessity of subjective assessment by the healthcare team for medication administration to decrease dyspnea and improve comfort; with comfort being the overall goal for patients and their loved ones during this time (Cooney-Newton & Hare, 2022; Campbell, 2017; Birkholz & Haney, 2018; Choi et al., 2017). Nurses at the bedside

of patients who are not able to vocalize their discomfort, distress, or issues are responsible for helping to enforce these aims throughout their assessment skills. Thorough assessments and the ability to interpret the findings for appropriate intervention are the core of the nursing profession and promote patient safety, patient-centered care, and effectiveness (Jevon, 2012). Care inconsistencies are present among nurses providing EOL treatment to patients who cannot self-report due to the general subjective approach utilized in most acute care facilities without a standardized, quantitative tool for guidance (Birkholz & Haney, 2018).

Many assessment tools are directed toward the patient who can self-report or answer the questions directly; but for the EOL patient population, the verbal, cognitively intact patient is the minority. As stated by Rose et al., "a patient's inability to self-report is a marked barrier to effective assessment and management" (2013, p. 247). Pain, anxiety, and respiratory distress (dyspnea) are common assessment challenges faced by bedside nurses caring for the EOL patient, due to the frequent cognitive impairments that are present in this population. Without standardized assessment tools in clinical practice, clinicians are left to interpret their observations to guide treatment, which leads to significant variance in the treatment provided to patients among each individual clinician (Topolovec-Vranic et al., 2010).

**Respiratory Distress/Dyspnea**

Of the symptoms experienced at end-of-life, dyspnea, as described by patients as "difficulty breathing", and is prevalent in 70% of end-of-life patients (Birkholz & Haney, 2018). Of these patients who are experience dyspnea, it is estimated that over 50% are unable to self-report dyspnea (Morris & Galicia-Castillo, 2017). Dyspnea is evidenced by the clinical presentation of respiratory distress, often referred to "air hunger". This symptom has been compared to the feeling of suffocation, which is one of the worst symptoms that can be experienced by patients (Campbell, 2015). Since many patients in EOL

care are cognitively impaired and unable to self-report the level of dyspnea and/or any coexisting discomforts, the dyspnea assessment is a critical component of caring for this population.

Regarding quality of care, Yamamoto et al. (2021) states that "dyspnea has a major impact on patient quality of life, and this impact extends to patient families" (p. 797). Dyspnea is perceived as patient suffering and when witnessed by a patient's loved ones, it can "leave families feeling guilty and angry, which can result in an increased propensity for depression, complicated grief, and other mood disturbances" (Birkholz & Haney, 2018, p. 220). Preventing distress felt by both the patient and their loved ones during this period is one of the most crucial and simultaneously difficult aspects of nursing practice.

**Treatment of Dyspnea**

Treatment of dyspnea is most often treated with positioning, oxygen, and pharmacological treatments which include opioids and benzodiazepines (Campbell, 2015). Opioids, such as morphine and fentanyl, "may relieve dyspnea by altering central processing of efferent and afferent sensory information" (Parshall et al., 2012, p. 436). These medications concurrently decrease any pain the patient may be experiencing during this time and are the most prescribed medications for the EOL patient population (Prommer, 2021). Second to opioids are benzodiazepines, such as midazolam and lorazepam, which are recommended as second line treatment when opioids and other therapies have failed to relieve dyspnea (Campbell et al., 2021).

**The Respiratory Distress Observation Scale**

The chosen SAT in this QI project for managing distress in the EOL patient will be the *Respiratory Distress Observation Scale* (RDOS) (see Appendix D). Created by Campbell et al. (2010), the RDOS is the first validated symptom assessment tool created for measuring respiratory distress in patients unable to self-report (Zhuang et al., 2018). This tool is currently used throughout the United States, with

adaptations created in 11 other countries (Zhuang et al., 2018). According to Zhuang et al. (2018), "the internal consistency (alpha) across studies ranged from 0.64 to 0.84 [. . .], with the inter-rater reliability being 100%" (p. 305). This eight-point ordinal scale allows the bedside RN to objectively assess patient symptoms from 0 (no distress) to 16 (highest level of distress) (Campbell et al., 2010).

The RDOS is a vital SAT that addresses dyspnea management in the EOL patient through objective assessment of the following eight categories: respiratory rate, heart rate, restlessness, paradoxical breathing, use of accessory muscles, grunting, nasal flaring, and look of fear (Campbell, 2013). This tool is utilized by bedside nurses to obtain a numeric value for guidance as to which corresponding pharmacological intervention, as ordered by the provider, is appropriate for the individual patient to decrease symptoms of dyspnea (Campbell, 2013). Scores greater than or equal to 3 indicate the necessity of pharmacological intervention to alleviate distress symptoms (Cooney-Newton & Hare, 2022). The numeric value calculated using the RDOS guides nurses as to which mediation and what dosage to administer to the patient to alleviate symptoms present.

Without a tool such as this that provides clear guidance on medication intervention, inconsistencies are prevalent among different bedside nurses as to which medication and dose is administered. The confidence of the bedside nurse that they have provided the most appropriate pharmacological intervention for the individual EOL patient experiencing respiratory distress is also limited, as they have no specific grounds of validation of their personal assessment interpretations.

## Needs Assessment

A thorough SWOT analysis was completed to determine the strengths, weaknesses, opportunities, and threats within one designated acute care facility where the need for quality improvement has been identified (see Appendix A). This acute care facility is a community hospital which state their organization's message is to, "provide top quality care with warmth and compassion"

(Augusta Health, n.d.). One of the greatest opportunities in healthcare is to provide warmth and compassion to patients and their loved ones is during the difficult EOL period. EOL care is a multifaceted process with the goals of ensuring physical comfort and meeting the mental, emotional, and spiritual needs of the patient are met; all while simultaneously supporting the family of the dying individual (Rose et al., 2013).

Currently, many care inconsistencies are present within the organization in caring for the EOL patient population due to provider and bedside nurse preferences, experience, and personal views. When a patient is transitioned to EOL care within this acute-care facility, the provider utilizes the "comfort care order set" to choose which orders, including medication types and dosages, they want to implement for each individual patient. Pharmacological interventions commonly consist of standing orders selected by the provider for specified opioids and benzodiazepines within the electronic medication administration record (eMAR). The indication for these medications is most often ordered for "SOB/air hunger", with dosage and frequencies also determined by the preference of each provider for each individual patient. A critical problem identified regarding this protocol is that different medications, some of multiple dosages, are standing medication order for an EOL patient for the same indication of "SOB/air hunger"; such as 2mg morphine IV, 4mg morphine IV, and 2mg lorazepam IV. This means there is no clear differentiation for the bedside nurse as to which dose of medication to give or whether an opiate or benzodiazepine is indicated as first line treatment, leading to inconsistencies in medications administered among different bedside nurses, dependent on their personal assessment skills and interpretations of the patient's dyspnea and/or discomfort. This quality improvement (QI) project would give nurses at the bedside of EOL patients a validated tool for reference, based upon their assessment with objective findings, to clearly guide them as to which specific medication to administer.

The strengths of this organization include the culture of multidisciplinary collaboration and decision making, staff engagement, leadership and administration direct involvement with staff, and the

promotion of patient-centered care. Weaknesses that have been identified include lack of a SAT for EOL patients, staff burn-out and high workloads, bedside nurse knowledge and experience with EOL care, and the inconsistences present through the process for providers in placing necessary pharmacological interventions for EOL patients.

There are current opportunities within the organization for positive outcomes through this QI project, which include the implementation of a SAT for bedside nurses to assess dyspnea in the EOL patient population with standardized correlating pharmacological interventions. There is an opportunity using technology and the electronic medical record (EMR) to provide an easier way for providers to place these orders and bedside nurses to assess this patient population. EOL patient care is also not a current topic of required annual education for bedside nurses in the acute care organization of interest, which allows the opportunity for this to be addressed through this DNP quality improvement project with the RDOS and EOL patient care education. In correlation with the organizations recent approval from the American Nurses Credentialing Center (AACN) for *The Pathway to Excellence Program*, this DNP project allows an opportunity for the organization to show evidence of how it promotes a "positive practice environment for nursing" (AACN, n.d.). Key elements of *The Pathway to Excellence* Program that coordinate with this project include shared-decision making, quality of care through person and family-centered care and EBP, and professional development (AACN, n.d.).

Threats identified that may be a barrier to the implementation of this QI project include resistance to change by providers, such as if they prefer to do things how they "always have" and individually place pharmacological interventions when a patient has transitioned to EOL care, bedside nurses not fully utilizing the SAT, and difficulties in creating the necessary changes and new intervention tool within the EMR.

This organization lacks a SAT utilized for assessing dyspnea in the EOL patient. The lead for this DNP project has proposed a QI project to implement a SAT, specifically the RDOS, with correlating

pharmacological interventions as part of the existing “comfort care” order set to create a standardized procedure for care of the EOL patients. It is important to note that this QI project will not create or change the actual pharmacological interventions and their dosages but would correlate the current opiates and benzodiazepines used for EOL patient care within the organization with the RDOS tool to provide guidance of appropriate interventions for the bedside nurses, aiming to remove the uncertainty they may have in their assessment skills and chosen pharmacological intervention.

## Problem Statement

Thorough assessments and the ability to interpret findings for appropriate intervention are the core of the nursing profession. Nurses at the bedside of EOL patients are usually faced with patients who are unable to verbally communicate as cognitive function declines during the active dying process. SATs have been recommended EBP to aid nurses at the bedside as tools to guide interventions. Without standardized SAT in clinical practice, clinicians are left to interpret their subjective observations to guide treatment, which leads to significant variance in the treatment provided to patients among each individual clinician. A needs assessment conducted within an acute care facility identified the need to implement a SAT to provide bedside nurses with a tool for assessing and managing dyspnea in the EOL patient population and provide education to bedside nurses about caring for the EOL patient population. Implementation of a reliable and validated SAT, the RDOS, along with staff education, could decrease care inconsistencies for EOL patients and increase nurses’ confidence in symptom management.

## Aims and Objectives

The main purpose of this project is to correlate preexisting pharmacological interventions with a usable SAT, the RDOS, within the existing “comfort care” order set available to providers for EOL patients in the acute care setting to increase nurses’ confidence in treating the EOL patient population

and decrease care inconsistencies of the EOL patient over a three-month period. Below, a complete list of aims with outcome measures are listed:

- Aim #1: Improve the knowledge and confidence of bedside nurses in caring for the EOL patient population post-intervention implementation of the RDOS over a three-month period.
    - *Goal*: Bedside nurses' knowledge and confidence ratings in caring for the EOL patient will increase after the implementation of the RDOS with training and education on caring for the EOL patient population when compared to baseline ratings by at least one point on the five-point Likert Scale.
- Aim #2: Provide bedside nurses with a SAT, the RDOS, to increase their confidence in providing pharmacological interventions to the EOL patient.
    - *Goal:* Bedside nurses' confidence in utilizing the RDOS for pharmacological interventions will be rated 3 greater on a 4-point Likert scale in the post-study surveys.
- Aim #3: Assess clinicians' satisfaction with the process of ordering the RDOS and correlating pharmacological interventions for patients who have transitioned to EOL care within the "comfort care" order set post-intervention implementation period.
    - *Goal:* 75% of clinicians' will report their level of satisfaction with the RDOS tool and corresponding pharmacological interventions 3 or 4 on the 4-point Likert scale.

## Review of Literature

After the identification of the need present within the one acute care facility to decrease care inconsistencies in the EOL patient population, the literature was reviewed for available interventions to address this issue. A topic such as this requires a synthesis of evidence to determine best practices and interventions to promote positive outcomes. The significance of EOL research has become an increasingly significant topic within the past ten years (Ganz, 2019). The use of a SAT for EOL patient care to standardize the process was the first step in addressing this issue through a literature search.

The literature search produced information on the RDOS as a validated tool for managing dyspnea in the EOL patient population, which entails corresponding pharmacological interventions.

A literature review has been performed to provide a summary of the available evidence on the implementation of a respiratory distress observation scale (RDOS) for care of EOL patients. This quality improvement project allowed for a thorough literature review to obtain and present information regarding the use of standardized assessment tools in practice, dyspnea in the end-of-life patient population, and the RDOS. This review has been conducted to obtain the current practice knowledge to identify gaps present within the organization and the best method for quality improvement of this subject.

**Search Strategy**

The initial search of literature for this project was conducted by analyzing the impact of implementing a SAT and symptom management. Searches were conducted through PubMed, CINAHL, MEDLINE, and Scopus databases. At the recommendation of the librarian at George Washington University (GWU), a CINAHL search initiated the research with assistance on search headings. The databases were accessed through GWU's *Himmelfarb Health Sciences Library*. Articles were analyzed initially using their titles and abstracts with predetermined inclusion and exclusion criteria. Years of publication included in this search were from 2010-2023.

Though the advice of the GWU librarian, the author started the search through the Cumulative Index to Nursing and Allied Health Literature (CINAHL) database using the search heading "TI(nonverbal) AND TI(assessment* OR tool* OR method* OR scale* OR instrument* OR screen*) AND (management OR treatment)". Additional search headings included "("assessment tool" [tiab] AND "standard*" [tiab]) AND ("symptom*" [tiab]) AND ("medication" [tiab])". It was through this search that the project lead

learned of the RDOS. In total, four articles were obtained and utilized for thorough analysis for this project from the CINAHL search.

PubMed was the next database, obtained through the *Himmelfarb Health Sciences Library.* Two search headings were utilized through this database: "(assessment tool [mesh] OR standard* tool [tiab]) AND (nonverbal [mesh] OR critically ill) AND (pain [tiab])" and "(nonverbal) AND (assessment* OR tool* OR method* OR scale* OR instrument* OR screen*) AND (management OR treatment)". After the elimination process, six articles were obtained for final analysis in the literature review table.

Scopus and Medline databases, accessed in the same manner as the other databases, utilized keyword term searches of "assessment tool", "respiratory distress observation scale", "comfort care", and "end of life care", which produced two additional articles for analysis.

In total, 12 articles consisting of two qualitative studies, two mixed methods studies, two randomized controlled trials, four quasi-experimental studies, and one clinical practice guidelines were fully analyzed in the table of evidence (see Appendix B). This table of evidence includes the level of evidence and quality of the evidence for each of the articles.

**Evidence in Literature**

Patient and family centered care during EOL patient care has been the guiding factor for clinical practice guidelines (Ganz, 2019). Inpatient staff nurses play a significant role in ensuring the care provided is holistic in encompassing the goals of both the patient and their loved ones, while ensuring the goal of comfort is achieved within the acute-care setting. Moir et al. (2015) found after their own literature review that, "inpatient staff nurses may not be prepared to provide optimal care to end of life (EOL) and palliative care to patients and their families" (p. 110). Quality of care should be promoted throughout the span of a patient's life, to include the end of their lives when they are nearing death.

Without a standardized approach or guidelines, such as the utilization of an assessment tool for dyspnea, significant care inconsistencies have been found during EOL care for patients (Birkholz & Haney, 2018; Cooney-Newton & Hare, 2022; Zhuang et al., 2018). These care inconsistencies lead to a significant gap in practice found through inadequate symptom management in the care of EOL patients unable to self-report (Campbell (2017); Cooney-Newton & Hare, 2022; Mansouri et al., (2013); Olsen et al., (2016). Cooney-Newton & Hare (2022) state a key factor in EOL care that it is "essential to individualize comfort care with a patient-centered algorithm" (p. 68). Using an objective tool such as a RDOS "guides the assessment, decision-making process, and appropriate medication administration to optimize patient comfort at EOL" (Cooney-Newton & Hare, 2022, p. 76), which is individualized to each patient. Having this standardized process decreases stress to the patient, family, and the healthcare team, leading to more positive outcomes for all involved during a difficult time such as this. It also provides a clear guideline for staff regarding medication administration, which promotes confidence in their care by decreasing the fear or anxiety they may experience related to over or under medicating, without a tool to assist in the proper management of dyspnea (Birkholz & Haney, 2018; Baker et al., 2020; Cooney-Newton & Hare, 2022; Georgiou et al., 2018; Topolovec-Vranic et al., 2010).

Birkholz & Haney (2017) found "97.4% of nurses who used the RDOS tool consider it easy to understand and complete, and they recommend it as an assessment tool for practice" (p. 224). Cooney-Newton & Hare (2022) concluded that "the RDOS validates the need for comfort measures or medication to decrease respiratory distress while avoiding under-medicating or over-medicating patients" (p. 77).In all five studies that analyzed the outcomes after implementation of a RDOS for the care of EOL patients to decrease dyspnea, it was overall concluded that staff who utilized the assessment tool recommend the use of a RDOS for EOL management (Campbell, 2017; Campbell & Templin, 2022; Zhuang et al., 2019; Birkholz & Haney, 2017; Cooney-Newton, 2022).

Zhuang et al. (2019) included 122 patients in their RCT study to test the validity, reliability, and diagnostic accuracy of the RDOS and concluded that "the RDOS shows strong concurrent inter-rater reliability, convergent validity, and divergent validity, suggesting its reliability and validity as a potential observational tool in dyspnea assessment for palliative care patients" (p. 309). This study also supports the generalizability of the use of the RDOS with standardized training (Zhuang et al., 2018). Perisichini et al. (2015) and Campbell (2017) both also tested validity of the RDOS and found it to be a reliable SAT to assess dyspnea in patients who are unable to self-report.

Documentation to provide evidence of properly managed distress symptoms for patient during EOL care is also crucial. Standardized assessment tools provide the means, when implemented, for information to be clearly included in the patient's EHR and relayed among clinicians. A study performed by Gelinas et al. (2010) on the implementation of a SAT for pain management in the patient unable to self-report, the researchers found interrater reliability for patients during procedures post-CPOT implementation improved 86-100% and pain assessments were documented four times more frequently than pre-implementation. The evidence shows a uniform increase in assessment documentation, thereby increasing evidence of symptom management, when a SAT is implemented into practice (Birkholz & Haney, 2018; Gelinas et al., 2010; Georgiou et al., 2018; Mansouri et al., 2013; Olsen et al, 2016; Topolovec-Vranic et al., 2010; Zhuang et al., 2018). In a study which implemented a SAT for pain assessment, staff's confidence with assessing pain in nonverbal patients increased significantly ($p=0.02$) after the implementation of the NVPS (Topolovac-Vranic et al., 2010). Five of the six studies which focused on implementing SATs recommended further use of the standardized tool after the conclusion of the study.

Using a respiratory distress observation scale for medication administration to manage dyspnea for end-of-life patients has proven to be an effective, favorable intervention to assist the health care team in providing quality care to this patient population. This topic of interest is challenging and

multifaceted in that it involves not only the patient directly, but their loved ones and the health care team as well. By bridging a gap in practice that is present for care of EOL patients, this difficult experience for all individuals involved can become more positive with less stressors involved.

## EBP Translation Model

This quality improvement project will be guided by *The Plan-Do-Study-Act* (PDSA) cycle. According to Melnyk & Fineout-Overholt (2019), "the PDSA cycle has become a widely adopted and effective approach to testing and learning about change on a small scale" (p. 110). This model for improvement entails approaches that "are simple, rapid cycle quality improvement processes that provide a structured, data-driven learning approach that allows teams to assess whether a change leads to improvement in a particular setting and to make appropriate, timely adjustments" (Dang et al., 2021, p. 193). Given the barrier present through the limitation of an inconsistent number of patients who transition to EOL care within any given period, it is not feasible to implement this QI project in only one of the three major units within the one acute care facility. Therefore, where the PDSA cycle promotes the implementation of a QI on a "small scale", which is commonly within one unit of an acute-care facility, the lead of this project has weighed the benefit of implementing the project within the three designated units to increase the odds of the number of EOL patients through which this QI project can be implemented.

## Methods

### Design

This DNP QI project will involve the collaboration of interprofessional team members and key stakeholders to include: the project lead, the Chief Nursing Officer (CNO) of the organization, the assistance Chief Nursing Officer (who is also the manager of the quality improvement department), nurse managers of the three designated units, a hospitalist, the palliative care director, a pharmacist,

the clinical educator, the IT clinical manager, charge nurses of the three units, managers of the three units, and bedside nurses. Approval of this project for implementation within the organization will be presented to the CNO. The palliative care director, IT clinical manager, and a hospitalist have already been consulted and presented this project for feedback, in which support for this project was obtained by all three.

This QI project will follow the PDSA Cycle and utilize a pre- and post-test design to evaluate data obtained through surveys before and after the implementation of the RDOS and education to bedside nurses. This QI project will expand upon the organization's current policy and procedure of EOL patient care through the implementation of the RDOS for bedside nurses to utilize for guidance on medication administration. As mentioned, this QI project will not be changing current medication types or dosages but will correlate the medications ordered by providers when a patient transitions to EOL care to the RDOS. The RDOS will be implemented within the EMR to allow a method for objectively assessing distress in the EOL patient by RNs. The project will also measure bedside nurses' level of confidence and knowledge in managing dyspnea in EOL patients before and after education provided through this project on the RDOS and care of EOL patients.

**Setting**

The chosen acute care facility is a fully accredited, non-for-profit, 255-bed, acute care, community hospital located in a rural area of Virginia. This facility serves over 125,433 residents of Augusta County, Staunton, Waynesboro, and the surrounding areas. Inpatient acute care units consist of a surgical/joint unit, a medical unit, a progressive care unit (PCU), and an intensive care unit (ICU). This project will be implemented within the medical, progressive care, and intensive care units.

**Population and Sample**

The participants of the study are the bedside nurses within the three designated units at one acute care hospital and providers who implement EOL care orders for patients in the acute care setting. A convenient sample of nurses and providers will be obtained through voluntary participation. Nurses and providers are eligible if they provide care for adult patients who are admitted within the project timeframe, remain as inpatient status, and have transitioned to EOL care, also called "comfort care", within the acute care facility.

**Sample Size**

Without eliminating participants who do not meet the inclusion criteria, there are approximately 112 potential bedside nurses who could participate in the surveys. Considering a moderate effect size (Cohen's d) has been selected of d=0.5 with a probability level of alpha=0.05 and statistical power of 0.8, a target sample of 34 participants for both the pre- and post-study surveys would be necessary to conduct a paired t-test analysis (Dhand & Khatkar, 2014). The goal would also be 34 participants for the post-study survey from providers for analysis of their satisfaction with the QI project interventions.

**Participant Recruitment**

Recruitment of charge nurses within the specified units will be helpful to ask their RNs for participation in this study during shift-change huddles prior to the start of day and night shift. Emails will be sent within the organization's email to nurses within the three units to ask for participation in the surveys, both pre- and post-study. Request for participation in the post-study survey will also be sent to the providers via email upon completion of the intervention implementation period. Education will be automatically assigned to bedside nurses within the three designated units for completion within *HealthStream*, the platform for the organization's education requirements. Emails reminding staff to

complete the education module will be sent prior to *HealthStream* assignment and two weeks after the module has been assigned as a reminder for completion.

**Inclusion Criteria**

- Nurses who currently practice at the bedside within the specified units (ICU, PCU, and Medical Unit) at one acute care hospital
- Providers who attend to patient who can be potentially transitioned to EOL care (i.e., hospitalists, intensivists, and palliative care providers)

**Exclusion Criteria**

- Bedside nurses outside of the specified units
- Staff members who are not nurses (such as patient care techs)
- Travel nurses who have not been at the facility for at least 6 months
- Patients who have transitioned to EOL care outside of inpatient care (i.e., "Shenandoah House"- the hospice care center)

**Consent Procedure**

The pre- and post-surveys of this project will be completed through voluntary participation only, but the surveys will inform the participants that the data is being collected and will be used for analysis to evaluate a DNP Project. This QI project will also be presented to the institutional review board (IRB) for authorization to conduct the project within the designated setting.

**Risks/Harms**

There are no foreseeable risks or harms to the participating nurses and providers. The implementation of the RDOS in caring for the EOL patient does not entail any additional risks to this population greater than what is already involved in the usual care of this patient population.

**Costs and Compensation**

As learned through meeting with the Manager of Information Technology (IT), the IT team has a set process of incorporating projects needing to be completed. Projects needing to be completed, as determined by the organization leaders and executives, are placed in categories related to when they need to be completed: 30-60 days out, 60-90 days out, and 90-120 days out. Projects such as this are prioritized as determined by the organization's leaders. The timeline is then evaluated monthly by the team to determine if any changes need to be made. Student projects are incorporated into this timeline, therefore becoming part of the necessary projects to be completed by the IT staff during their regular work hours which could be considered a cost of this project implementation.

The lead of this project will be completing the qualitative and data collection, which would be of no cost to the organization. Time will be a necessity for the project lead throughout the course of this QI project, especially to collect and analyze the data. There will be no financial or any other form of compensation provided by the organization to the project lead for the time spent on this QI project.

**Interventions**

In following the PDSA cycle, this QI project will require planning of the RDOS with the correlating pharmacological interventions. The project team members to include the project lead, the palliative care director, a pharmacist, a hospitalist, and the IT manager will need to plan a meeting to determine how to correlate the existing pharmacological interventions to the RDOS in a standardized format that the group can agree upon. They will not be changing the dosages of current medications utilized, but making the protocol for which medications to correlate with the RDOS scale scored values to provide clear instructions as to which medication is appropriate for administration. The IT manager will provide input of technical aspects of the project and will be the source to relay the information to IT team members who will be working on the QI project implementation within the EMR.

The IT team will create the actual option for the RDOS implementation within the "comfort care" order set utilized by providers to ensure they can easily include this order as part of the "comfort care" orders when a patient transitions to EOL care. Once the pharmacological interventions have been standardized in this QI project, relating to which medications and doses currently used will be correlated with which RDOS numeric score, the project team will need the assistance of the IT team to ensure the indicated medications and doses for the correlating pharmacological interventions that coincide with the set RDOS numeric ratings are updated with the indications. For example, though this has not been officially determined, if 2mg of morphine IV was indicated for RDOS ≥ 3, it would be necessary to make sure that the order for 2mg of morphine IV for the EOL care patient included the indication "for a RDOS of ≥3" within the eMAR for bedside nurses to follow.

Pre-study surveys have been created by the project lead (see Appendix D) and will be placed in the breakrooms of the three specified units for nurses to complete at least six-weeks prior QI project implementation, over the span of two weeks to collect data regarding confidence and knowledge in caring for the EOL patient and opinions on the current process of EOL within the acute care facility. Pre-study surveys for providers will be placed in the physician's lounge for their voluntary completion to collect data on their opinions on the current process of implementing orders for the transition of a patient to "comfort care" (EOL care). The completed surveys will have a designated folder to place them in for collection by the project lead after the two designated weeks, prior to the implementation of the RDOS intervention. These pre-study surveys will be placed in the designated areas for staff to complete after the approval process has been completed through the University and the acute care organization.

Education on the RDOS and caring for the EOL patient will be created in the format of a PowerPoint presentation for submission to the palliative care director for approval of information and to the clinical educator for approval and to upload to the presentation to *HealthStream*. The education will focus on how to use the RDOS, with explanations of the objective data within the scale, assessing

dyspnea in the EOL patient, the use of opioids and benzodiazepines manage dyspnea, and how the interventions they provide alleviate symptoms of distress. The clinical educator will be responsible for assigning the education module to the designated bedside nurses within the three units. An email will be dispersed to the designated staff by the clinical educator informing them of the education within their HealthStream platform for completion as part of the upcoming QI improvement project on the RDOS and caring for the EOL patient.

Two weeks before the project start date of the RDOS intervention, an email will be sent by the project lead to staff to provide necessary information for quick reference on the RDOS regarding how to utilize the tool, what the numbers mean, and how often the tool should be documented. The project lead will also send an email to the providers to educate them on the implementation of the tool and the start date, how to order it within the order set, and the corresponding pharmacological interventions. Flyers with key elements regarding the use of the RDOS and caring for the EOL patient will be placed in areas of the three units where education and updates are posted.

During the “Do” phase of the cycle, providers attending to patients who have transitioned to EOL care will be responsible to place an order for the bedside nurses to utilize the RDOS, along with the correlating pharmacological interventions. This is a required aspect of this QI project and the RDOS will not be utilized unless a provider has placed the order within the EMR. The RDOS will then be added into the “interventions” within the EMR of the patient. The bedside nurse will then be able to utilize the RDOS for patient assessment, obtain a number from the scale, and then correlate that number to the standing pharmacological interventions as ordered by the provider.

Meetings with the project team will take place two weeks after the start of the project implementation, the “study” phase of the PDSA Cycle, to discuss any major issues or concerns of the project at that point to make any necessary changes. It will also be a time to discuss if the tool is being ordered by providers and if not, address how to increase the use of this tool. The clinical educator can

also provide an update as to the percentage of staff that have completed the education. The project lead will obtain feedback from bedside nurses by directly asking them about any issues or concerns they may be having so far with the project. Meetings will then be once in October to discuss the same topics and two-weeks prior to the end of the study in December.

Post-study surveys will be made available in December upon completion of the three-month QI project intervention period, in the same manner and same location as the pre-study surveys. Over the course of the two weeks the surveys are available, surveys will again be collected by the author of this study to collect and analyze data for comparison to the pre-study surveys and determine if the outcome goals were achieved through this QI project.

**Outcomes**

The first outcome to be measured for this QI project is the knowledge and confidence of bedside nurses in caring for the EOL patient population before and after the project implementation through self-reported surveys. Participants would be asked to answer questions regarding their knowledge on caring for the EOL patient population and providing pharmacological interventions on a scale from 1 (very low) to 5 (very high). An increase of one or more points in the mean average of the post-study survey questions when compared to the mean average of the pre-study surveys would meet the goal for this outcome (see Appendix D & E).

The second outcome to be measured is if the confidence of bedside nurses in providing pharmacological interventions to the EOL patient increased with the use of the RDOS. This quantitative data will be analyzed within the post-study surveys in which the participant is asked to utilize a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree) to choose their level of agreeance that “the use of the RDOS has increased my confidence in providing specific medication interventions to the

'comfort care' patient". This outcome goal would be to see the average score of this survey question being 3 or greater (see Appendix E, part 2).

The third outcome to measure is the clinicians' satisfaction with the changes made through this QI project which would add the RDOS with correlating pharmacological interventions as part of the "comfort care" order set for the provider to implement. This outcome would be measured in the post-study survey for providers where they are asked to utilize a 4-point Likert scale to determine their level of agreeance from 1 (strongly disagree) to 4 (strongly agree) if they "feel satisfied with the changes made in implementing orders for patients transitioned to 'comfort care' with the RDOS intervention for bedside nurses with correlating medication and support its continuation as part of future practice" (see Appendix G, part 1). This outcome goal would be achieved if the 75% of the provider participants response to this question within the completed surveys is 3 or 4 on the 4-point Likert scale.

**Project Timeline**

A timeline has been created to ensure goals are being met throughout the course of this study utilizing a GANTT chart (see Appendix H). Throughout May and June, the DNP project proposal will be refined and presented for approval to The George Washington University School of Nursing and leaders of the organization within the one designated acute care facility. June through August will allow for IRB approval to ensure the project is permitted to be implemented within the organization and data collection is permittee. Once IRB approval has been completed, pre-study surveys will be placed in the designated areas for participants to complete in June or July. The education will be implemented and assigned in August, allowing for adequate time for completion prior to the QI projects intervention period, to promote awareness of the QI project and the RDOS intervention is present. The implementation period will be from September to December, totaling three months. The end of December will be when data is collected and throughout January and February, data will be analyzed. The final piece of the project will be the dissemination of the study results in spring 2024.

### Resources Needed

Assistance and time from IT for the implementation of the RDOS within the EHR will be critical for this project. This project has already been presented to the IT manager for assistance as to the best way of implementing the new intervention within the EHR, how the medications would be correlated to the RDOS, and the process the IT team uses in determining when EHR changes or new projects are started. They will also serve as the liaison between this QI project and their team members to provide information on what needs to be done with the EMR.

Computer access to complete the education will be necessary for bedside nurses assigned the education module. Assistance and time from the clinical educator will be necessary to be able to upload the module into the *HealthStream* platform. The education module will aim to take less than 30 minutes to complete, to minimize the time requirement from the bedside nurses. Office supplies including paper, ink, and envelopes will be necessary to provide the surveys for completion in the designated areas. Time will also be needed from the bedside nurses and providers to fill out the surveys, though leaving in the break areas will hopefully allow this to be done at a convenient time for both.

## Evaluation Plan

### Tools/Instruments

To ensure the specific outcomes can be appropriately measured, obtaining a pre-created, validated survey tool was unsuccessful. The project lead designed the questions within the surveys be specific to this QI project to allow the data to properly measure the listed outcomes for this project (see Appendices D-G). The surveys will utilize Likert scales from 1-5 or 1-4 to provide quantitative values on the qualitative data of interest, with each numeric response defined to ensure the participants understand what each response means.

The pre-study survey for bedside nurses consists of one demographic question asking which department the participant is employed in (ICU, PCU, Medical, or the Float Pool). This data is being collected to analyze the number of participants who completed the surveys from each department. *Part 1* of this survey utilizes a 5-point Likert scale, with 1 being "very low (no understanding/knowledge)" to 5 being "very high (know almost everything about this topic") for participants to rate four questions about their knowledge and confidence in managing dyspnea in the EOL patient and their knowledge and comfort administering opioids and benzodiazepines to the EOL patient. These questions were designed to determine the effect of the education module on these topics of interest after conduction of the QI project. *Part 2* of the pre-study survey entails two questions about the current practice within the organization for EOL patient care utilizing a Likert scale from 1-5, with 1 being "strongly disagree" and 5 being "strongly agree" for quantifying the qualitative data for analysis. These first two questions in *Part 2* of the pre-study survey assess the opinions of the participant regarding their satisfaction with how medications are currently ordered for EOL patient within the organization and if the participant often feels unsure as to which pharmacological intervention to administer to the EOL patient. The third question is to assess the support of the bedside nurse participant in implementing a SAT to guide medication administration. These questions were designed to analyze the opinions of the participants on the EOL patient care process prior to the implementation of the QI project. Although not included in the four main outcomes of this QI project, this data would be beneficial to obtain to determine the baseline opinions of bedside nurses and show data which promotes the necessity of this QI project.

Post-study surveys for bedside nurses entails identical questions with the same Likert scale in *Part 1* to ensure comparability between the pre- and post-study surveys when analyzing and comparing data. There is also an additional section added in the post-study surveys to assess if during the 3-month implementation period the participant directly utilized the RDOS and if they have directly witnessed the use of the RDOS, such as through a coworker. *Part 2* of the post-study survey is different than the pre-

study survey to obtain data regarding the process of the RDOS intervention within the QI project. This first question in this section has been created to measure the outcome of the aim to provide bedside nurses with a SAT, the RDOS, to increase their confidence in providing pharmacological interventions to the EOL patient population. The other three questions assess the ease of use of the RDOS, the applicability, and if the participant would like to see it continued as part of future practice. These four questions are measured using a Likert scale from 1-4 with 1 being “strongly disagree” and 4 being “strongly agree”. This scale does not include the option for a “neutral” response, as eliminating a neutral response ensures the participants commit to a certain position for a more ideal analysis of the data (Croasmun & Ostrom, 2011).

Providers will also have an opportunity to complete surveys pre- and post-study. Two demographic questions of interest are included in both surveys to analyze how many providers from each specialty (Hospitalist, Intensivist/Pulmonology, Palliative Care, and other-which allows space to write their specialty if not one of the three) and their role as a provider (Physician’s Assistant, Nurse Practitioner, MD, or DO) participated in the surveys. The pre-study surveys entail two questions about the current process of implementing orders when a patient is transitioned to EOL care and one question asking if the provider participant would support the implementation of a SAT for bedside nurses to utilize to guide them on medication administration. These questions again allow for analysis of baseline data on participant’s opinions on their satisfaction with the current process within the organization when implementing EOL care orders. Answers are rated on a Likert scale of 1-4 with 1 being “strongly disagree” and 4 being “strongly agree”.

The provider post-study surveys include the same two demographic questions to determine how many of the participants from each specialty and of each role completed the surveys. The post-study survey for providers has an additional question added to determine if the participant directly implemented the RDOS during the 3-month QI project implementation period. The three questions in

the post-study utilize the same Likert scale from 1-4, and ask the same questions as the pre-study, with alterations made to assess the changes implemented through the QI project. The first question within the post-study survey would directly measure the third outcome and determine if providers are satisfied with the changes implemented through the QI project to determine if providers approve of the use of the RDOS with corresponding pharmacological interventions and recommend it as part of future practice. This question will be utilized to determine if the outcome goal of 75% of providers who participate in the surveys answered 3 or 4 (agree or strongly agree) to being satisfied with the RDOS implementation and recommend it as part of future practice.

**Data Analysis**

Pre- and post-study survey data will be entered into the Statistical Package for Social Sciences (SPSS) program for descriptive statistics analysis. Data elements, variables, measures, and other key information is outlined within the *Outcome Measures Table* (see Appendix I) to allow efficient data analysis within SPSS. Analysis of the ordinal survey data will be generated through descriptive statistics to obtain mean, standard deviation, and minimum/maximums.

Through the performance of a paired t-test, ordinal data collected in the pre- and post-studies can be compared and evaluated to determine if the education provided on the RDOS and caring for the EOL patient increased the knowledge and confidence of bedside nurses. The paired t-test will be performed using the set significance level of 0.05 (a=0.05). It will be analyzed to determine if the null hypothesis, that there will be no difference in the pre- and post-study scores, would be rejected.

The data obtained from the surveys will also aid to evaluate the PICOT question:

For patients receiving end-of-life care in an acute care facility (P), does the implementation of a standardized assessment tool (SAT) to assess for respiratory distress (The Respiratory Distress Observation Scale) with correlating medication administration guidelines (I) increase staff's confidence

in managing dyspnea (O), in comparison to the current practice without a standardized assessment tool (C), after a 3-month project implementation period (T)?

This data will be collected and entered in the SPSS database to combine the ordinal data of the first question in *Part 2* (see Appendix E) of the post-study survey for bedside nurses. A calculation will be performed to provide the average response on the total number of completed surveys. An average of 3 or 4 would show that the participants of the survey feel that the RDOS increased their confidence in providing pharmacological interventions to the EOL patient. This same method would be utilized to determine the satisfaction of clinicians with the RDOS and corresponding pharmacological interventions, with a mean average of 3 or 4 showing a positive level of satisfaction and support in continuing these interventions as part of future practice.

**Security and Data Management**

Patient data review will not be necessary for this DNP project, so the risk of human subject data breeches is minimal. Surveys will be completed through voluntary participation for bedside nurses and providers and contain only the identifiers of which unit they are employed within for nurses and what the provider's specialty is and their role within their surveys, making the potential of identifying individuals limited.

To promote data validation, it will be entered into SPSS database twice, on two separate occasions, to ensure the data is identical and prevent errors. Data analysis will also be performed twice to ensure the results correlate and errors were not made. Guidance from expert advisors within GWU will ensure the tests being performed are appropriate for this QI project and its outcome measures.

## Anticipated Findings

Through this QI project implementation of a SAT (the RDOS) with education provided on the RDOS and caring for the EOL patient population, the following are anticipated findings:

- Knowledge and confidence of bedside nurses in caring for the EOL patient population within the one acute care facility will increase after completing the education module.
- Bedside nurses' confidence in providing appropriate pharmacological interventions to the EOL care patient population will increase with the use of the RDOS.
- At least 75% of providers will recommend the RDOS with standardized, correlating pharmacological interventions as part of future practice within the organization.

## Summary

This QI project has been designed and created by the project lead after the identification of a knowledge gap in current practice within the one acute care facility through the lack of a SAT for assessing the EOL patient population to guide bedside nurses on administering appropriate pharmacological interventions. This gap in practice can addressed by implementing a SAT for medication administration in EOL patient care and providing education to bedside nursing staff on the tool and caring for the EOL patient population. Using the RDOS for medication administration to manage dyspnea for end-of-life patients has proven to be an effective, favorable intervention to assist the health care team in providing quality care to this patient population. Increasing the confidence and knowledge of bedside nurses caring for this population is critical to ensure this difficult time for all those involved does not entail a greater level of distress than necessary. This topic of interest is challenging and multifaceted in that it involves not only the patient directly, but their loved ones and the health care team as well. By bridging a gap in practice that is present for care of EOL patients, this difficult experience for all individuals involved can become more positive with less stressors involved.

**References**

AACN. (n.d.). *About Pathway*. https://www.nursingworld.org/organizational-programs/pathway/overview/

Baker, K. M., Vragovic, N. S., & Banzett, R. B. (2020). Intensice care nurses' perceptions of routine dyspnea assessment. *American Journal of Critical Care Medicine, 29*(2), 132-139. doi: 10.4037/ajcc2020711

Bayuo, J. (2017). Application of Watson's Theory of Human Caring to End of Life Care in the Burns Intensive Care Unit: A Case Report. *International Journal for Human Caring*, *21*(3), 142–144. https://doi.org/10.20467/HumanCaring-D-17-00017

Birkholz, L. & Haney, T. (2018). Using a dyspnea assessment tool to improve care at the end of life. *Journal of Hospice and Palliative Nursing*, *20*(3), 219–227. https://doi.org/10.1097/NJH.0000000000000432

Brooke, J. (1995). SUS: A quick and dirty usability scale. *Research Gate*. https://www.researchgate.net/publication/228593520_SUS_A_quick_and_dirty_usability_scale

Campbell, Donesky, D., Sarkozy, A., & Reinke, L. F. (2021). Treatment of dyspnea in advanced disease and at the End of Life. *Journal of Hospice and Palliative Nursing, 23*(5), 406–420. https://doi.org/10.1097/NJH.0000000000000766

Campbell, M. L. (2015). Caring for dying patients in the intensive care unit: managing pain, dyspnea, anxiety, delirium, and death rattle. *American Association of Critical Care Nurses: Advanced Critical Care*, *26*(2), 110–120. https://doi.org/10.1097/NCI.0000000000000077

Campbell, M. L. (2017). Dyspnea. *Critical Care Nursing Clinics of North America*, *29*(4), 461–470. https://doi.org/10.1016/j.cnc.2017.08.006

Campbell, M. L., Templin, T. N. & Walch, J. (2010). A Respiratory Distress Observation Scale for Patients Unable to Self-Report Dyspnea. *Journal of Palliative Medicine, 13*(3). 285-289.

Cooney-Newton, K. & Hare, E. C. (2022). Palliative care and population management compassionate extubation of the ICU patient and the use of the Respiratory Distress Observation Scale. *Critical Care Nursing Clinics of North America, 34*(1), 67-78. http://doi.org/10.1016/j.cnc.2021.11.004

Cooney-Newton, K. & Hare, E. C. (2022). Palliative care and population management compassionate extubation of the ICU patient and the use of the respiratory distress observation scale. *Critical Care Nursing Clinics of North America, 34*(1), 67-78. https://doi.org/10.1016/j.cnc.2021.11.004

Croasmun, J. T. & Ostrom, L. (2011). Using Likert-type scales in the social sciences. *Journal of Adult Education, 40*(1), 19-22. https://files.eric.ed.gov/fulltext/EJ961998.pdf

Davis, D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13,* 319–339.

Freeman, B. (2013). CARES: An acronym organized tool for the care of the dying. *Journal of Hospice & Palliative Nursing, 15*(3), 147-153. DOI: 10.1097/NJH.0b013e318287c782

Ganz, F. D. (2019). Improving family Intensive Care Unit experiences at the end of life: Barriers and facilitators. *Critical Care Nurse, 39*(3), 52-58. https://doi.org/10.4037/ccn2019721

Gelinas, C., Arbour, C., Michaud, C., Vaillant, F., & Desjardins, S. (2010). Implementation of the critical care pain observation tool on pain assessment/management nursing practices in an intensive care unit with nonverbal critically ill adults: A before and after study. *International Journal of Nursing Studies, 48*(2011), 1495-1504. DOI: 10.1016/j.ijnurstu.2011.03.012

Georgiou, E., Paikousis, L., Lambrinou, E., Merkouris, A., & Papathanassoglou., E. (2020). The effectiveness of systematic pain assessment on critically ill patient outcomes: A randomised controlled trial. *Australian Critical Care, 33*(5), 412-419. doi: 10.1016/j.aucc.2019.09.004

Hayes, M., Oakjones-Burgess, K., Subhas, S., Checkley, W., & Brower, R. (2014). Nursing perceptions and satisfaction with terminal extubation in the Medical Intensive Care Unit: Phase I of a Quality Improvement Project. *Chest*, *146*(4), 726. https://doi.org/10.1378/chest.1993706

Mansouri, P., Javadpour, S., Zand, F., Ghodsbin, F., Sabetian, G., Masjedi, M., & Tabatabaee, H. R. (2013). Implemetation of a protocol for integrated management of pain, agitation, and delirium can improve clinical outcomes in the intensive care unit: A randomized control trial. *Journal of Critical Care, 28*(2013), 918-922. DOI: 10.1016/j.jcrc.2013.06.019

Moir, C., Roberts, R., Martz, K., Perry, J., & Tivis L. J. (2015) Communicating with patients and their families about palliative and end-of-life care: Comfort and educational needs of nurses. *International Journal of Palliative Nursing, 21*(3), 109-112. DOI: 10.12968/ijpn.2015.21.3.109. PMID: 25815758; PMCID: PMC4718559.

Morris, D. & Galicia-Castillo, M. (2017). Dying With dyspnea in the hospital. *American Journal of Hospice & Palliative Medicine, 34*(2), 132–134. https://doi.org/10.1177/1049909115604140

Olsen, B. F., Rustoen, T., Sandvik, L., Jacobsen, M., & Valeberg, B. T. (2016). Results of implementing a pain management algorithm in intensive care unit patients: The impact on pain assessment, length of stay, and duration of ventilation. *Journal of Critical Care, 12(*36), 207-211. doi: 10.1016/j.jcrc.2016.07.011

Parshall, M. B., Schwartzstein, R. M., Adams, L., Banzett, R. B., Manning, H. L., Bourbeau, J., Calverley, P. M., Gift, A. G., Harver, A., Lareau, S. C., Mahler, D. A., Meek, P. M., & O'Donnell, D. E. (2012). An official American Thoracic Society statement: Update on the mechanisms, assessment, and management of dyspnea. *American Journal of Respiratory Critical Care Medicine, 185*(4), 435-452. DOI: 10.1164/rccm.201111-2042ST

Peres, S., Pham, T., & Phillips, R.. (2013). Validation of the System Usability Scale (SUS). *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 57(1)*. 192-196. 10.1177/1541931213571043.

Persichini, R., Gay, F., Schmidt, M., Mayaux, J., Demoule, A., Morélot-Panzini, C., & Similowski, T. (2015). Diagnostic accuracy of Respiratory Distress Observation Scales as surrogates of dyspnea self-

report in intensive care unit patients. *Anesthesiology, 123*(4), 830-837. doi: 10.1097/ALN.0000000000000805

Prommer, E. (2020). *Midazolam: An essential palliative care drug. Palliative Care Society Practice, 14*(1), 567-576. DOI: 10.1177/2632352419895527

Scheper, K.. (2014). The nurses' perspective of the effectiveness and value of the respiratory distress observation scale. *Journal of Clinical Oncology*, *32*(31), 139. https://doi.org/10.1200/jco.2014.32.31_suppl.139

Stacy, A., Magdic, K., Rosenzweig, M., Freeman, B., & Verosky, D. (2019). Improving knowledge, comfort, and confidence of nurses providing End-of-Life care in the hospital setting through use of the CARES tools. *Journal of Hospice and Palliative Nursing*, *21*(3), 200–206. https://doi.org/10.1097/NJH.0000000000000510

Stevens, K. R. (2013). The impact of evidence-based practice in nursing and the next big ideas. The Online Journal of Issues in Nursing, 18(2). DOI: 10.3912/OJIN.Vol18No02Man04

The National Institute on Aging. (2021). *Providing care and comfort at the end of life*. National Institute of Health. https://www.nia.nih.gov/health/providing-comfort-end-life

Topolovec-Vranic, J., Canzian, S., Innis, J., Pollmann-Mudryj, M.A., White, A., & Baker, A. J. (2010). Patient satisfaction and documentation of pain assessments and management after implementing the adult nonverbal pain scale. *American Journal of Critical Care, 19*(4), 345-354. DOI: 10.4037/ajcc2010247

Yamamoto, S., Arao, H., Aoki, M., Mori, M., Morita, T., Kizawa, Y., Tsuneto, S., Shima, Y., Masukawa, K., & Miyashita, M. (2021). Care associated with satisfaction of bereaved family members of terminally ill cancer patients with dyspnea: A cross-sectional nationwide survey. *Journal of Pain and Symptom Management*, *62*(4), 796–804. https://doi.org/10.1016/j.jpainsymman.2021.03.023

Zhuang, Yang, G. M., Neo, S. H.-S., & Cheung, Y. B. (2019). Validity, reliability, and diagnostic accuracy of the respiratory distress observation scale for assessment of dyspnea in adult palliative care patients. *Journal of Pain and Symptom Management*, *57*(2), 304–310. https://doi.org/10.1016/j.jpainsymman.2018.10.50

## Appendix A: SWOT Analysis

| | **Helpful**<br>To achieving the objective | **Harmful**<br>To achieving the objective |
|---|---|---|
| **Internal Origin**<br>{Attributes of the organization} | **Strengths**<br>• Multidisciplinary collaboration within the organization<br>• Staff are engaged and committed, such as through the unit council and shared governance<br>• Administration (at all levels) actively engages with staff members<br>• Providers are approachable and open to ideas from bedside RNs<br>• Interdisciplinary consultations to ensure needs of patients are met<br>• Patient-centered care environment<br>• Palliative care team is active and utilized | **Weaknesses**<br>• Staff burn-out and high workload demands<br>• High amount of travel nurses<br>• Lack of EOL care order set/policy/procedure<br>• Knowledge deficit in nurses regarding EOL care that leads to inadequately managed patient distress and/or distress to their loved ones<br>• Lack of standardized assessment tool (SAT) for medication administration to alleviate symptoms of distress |
| **External Origin**<br>{Attributes of the organization} | **Opportunities**<br>• Creation of an order set with a SAT and correlating PRN medications<br>• Use of technology to provide an easy method for providers to place orders for the EOL patient population<br>• Provide evidence of the interdisciplinary collaboration culture within the organization as part of “The Pathway to Excellence” journey<br>• Education to staff about distress symptom management in EOL care | **Threats**<br>• Discrepancies among providers on set medication type, dosage, and/or timing for the order set<br>• Opposed feelings towards the “change culture”<br>• EMR issues in creation and implementation<br>• Travel nurses not being properly educated on the order sets and/or new projects<br>• Providers forgetting to place the orders<br>• Bedside RNs not ensuring the interventions are properly utilized |

## Appendix B: Table of Evidence

| Article # | Author, Date, & Title | Type of Evidence | Population, Size, Setting | Intervention | Findings that help answer EBP Question | Measures Used | Limitations | Evidence Level & Quality | Notes |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Birkholz, L. & Haney, T. (2018). Using a dyspnea assessment tool to improve care at the end of life. | Qualitative Study | n=39<br><br>Hospice and medical nurses at an inpatient acute-care hospital facility in Norfolk, VA. | The researchers compared an end-of-life dyspnea assessment tool with a correlating educational program. | 97.4% of participants responded that the RDOS is "easy to complete" and "they recommend it as an assessment tool". 89.7% of participants responded that the RDOS tool improves end-of-life management and improves their personal dyspnea assessment skills. | Satisfaction surveys | Small sample size of 39 participants and one area of practice. | III, B | Provide evidence how the tool is useful for those at the bedside and the ease of use. |
| 2 | Baker, K. M., Vragovic, N. S., & Banzett, R. B. (2020). Intensive care nurses' perceptions of routine dyspnea assessment. | Qualitative study | 48 critical care nurses in an acute inpatient teaching hospital Boston, MA | Data collection through focus group interviews and random anonymous surveys to assess nurses' perceptions of using a standardized assessment tool for dyspnea. | 92% of nurses found the assessment tool easy to administer, 68% reported it did not interfere with workflow, 57% of nurses stated it would be helpful to have an algorithm with specific options for treatment of dyspnea. | Satisfaction surveys, and rates (through questionnaires) | Potential bias as the researchers at this location work directly with the researchers in the dyspnea lab, leading to hyperawareness of dyspnea not present in all facilities. | V, B | Nurses stated assessing dyspnea with a standardized tool routinely can positively impact patient outcomes and lead to improved patient-centered care. |
| 3 | Campbell, M. L. (2017). Dyspnea. | Clinical Practice Guidelines | Patient's experiencing dyspnea in the critical care setting | Recommendations for managing dyspnea. | Recommendation of RDOS as it is the only behavioral scale of respiratory distress and medication administration recommendations. | N/A | Author is also creator of RDOS so potential for bias | V, B | Internal consistency across RDOS studies shows range of a=0.64-0.86 |
| 4 | Cooney-Newton, K. & Hare, E. C. (2022). Palliative care and population management compassionate extubation of the ICU patient and | Quality Improvement Report | End-of-life patients in a 24-bed MICU in Newark, DE | Respiratory Distress Observation Scale and Compassionate Extubation Guideline | Implementation of a standardized approach/policy to EOL care for patients being terminally extubated with staff surveys showing ease of use and applicability. This included the use of the RDOS and a CE algorithm. | RDOS scores, time from extubation to death in pre- and post-implementation groups, and hospital length of stay, and | Short implementation period of 2 months and limited generalizability, as only implemented in ICU units. | V, B | Useful, specific information and guidelines to assist in creating a standardized approach to EOL care including: |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | the use of the Respiratory Distress Observation Scale. | | | | | pre- and post-implementation surveys to staff. | | | RDOS, specific guidelines for protocol (i.e. IDR, provider and nurse checklists, and medications for symptom management with dosing and frequency recommendations). |
| 5 | Gelinas, C., Arbour, C., Michaud, C., Vaillant, F., & Desjardins, S. (2010). Implementation of the critical care pain observation tool on pain assessment/management nursing practices in an intensive care unit with nonverbal critically ill adults: A before and after study. | Mixed methods | N=90<br><br>ICU of a university affiliated hospital in Monteregie, Canada | A standardized assessment tool for pain assessment in the non-verbal, critically ill patient: Critical Care Pain Observation Tool (CPOT) | Interrater reliability for patients during procedures post-CPOT implementation improved 86-100%, pain assessments were documented four times more frequent than pre-implementation, 80% of pharmacological interventions were effective post administration with the use of the CPOT (in comparison to 65% pre-CPOT). | CPOT, satisfaction surveys | Pre-study was limited to retrospective analysis on pain assessments, which did not utilize the same pain assessment measure making comparison difficult. | III, B | Evidence of increased documentation with SAT implementation. |
| 6 | Georgiou et al. (2018). The effectiveness of a systematic pain assessment on critically ill patient outcomes: A randomized controlled trial. | Randomized controlled trial | N=117 (n1=61; n2=56)<br><br>17 bed academic med/surg ICU in Australia. | Standardized pain assessment scale (Critical Pain Observation Tool [C-POT] and Behavioral Pain Scale [BPS]) | Incidence of pain during turning in the intervention group was statistically significant ($p<0.001$), the intervention was statistically significant on pain intensity ($p=0.01$), and morphine dosing in the intervention group was higher than the control group ($p=0.045$). | Primary: Pain incidence and intensity<br>Secondary: Daily dose of analgesics, daily dose of sedation, ICU length of stay, duration of mechanical ventilation, survival, and | Inability to double-blind the intervention with potential biases from clinicians | II, B | 12 month intervention period. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | occurrence of complications | | | |
| 7 | Mansouri et al., (2013). Implementation of a protocol for integrated management of pain, agitation, and delirium can improve clinical outcomes in the intensive care unit: A randomized clinical trial. | Randomized controlled trial | n=201 (n1=96; n2=105)<br><br>Adult patients admitted to the ICU in a university-affiliated hospital in Shiraz, Iran. | PAD (pain, agitation, and delirium) standardized protocol | ICU length of stay was longer in the control group (170 hours vs 97, p<.001), mean ventilator time was longer (40 hours in the control vs. 19 in the intervention group; p=.038), mortality rate was higher in the control group and statistically significant at the .05 CI (p=.046), 84% of the patients were pain-free (BPS<4) in the intervention group, during 65% of the their stay subjects in the intervention group were at the desirable RASS level, and only 8.5% of subjects in the intervention group had occurrences of delirium | Pain scores (per the BPS), level of agitation (per the RASS), delirium (per CAM-ICU), length of ICU stay, duration of ventilatory support, mortality rate, and incidence of self-extubation. | Patients and clinicians were not blinded to study groups, leading to questionable biases. | I, B | Inability to have pain control group as not possible to measure/compare. |
| 8 | Olsen et al. (2016). Results of implementing a pain management algorithm in intensive care unit patients: The impact on pain assessment, length of stay, and duration of ventilation. | Quasi-experimental (Quantitative non-randomized) | N=650 (n1=398; n2=252)<br><br>Adult patients in 3 units (1 med/surg ICU, 1 surgical ICU, 1 post-anesthesia care unit) at 2 Norwegian hospital locations. | Pain management algorithm with the BPS or BPS-NI (SATs) | Pain assessment documentation adherence in the intervention group was 74.6% vs 7.3% adherence in the control, the intervention group had shorter ventilation times (p=.01), shorter length of ICU stay (p=.04), and fewer agitation events (p=.02). | Number of documented pain assessments per day, mechanical ventilation times (in hours), length of ICU stay (in days), agitation events, and use of analgesic and sedative agents. | Lack of pain assessments documented in the control group=inability to compare with intervention group and no randomization of patients for pain assessment as it is a practice requirement. | II, B | The use of analgesics and sedatives was similar in the two groups. |
| 9 | Persichini, R., Gay, F., Schmidt, M., Mayaux, J., Demoule, A., Morelot-Panzini, C., & Similowski, T. (2015). Diagnostic accuracy of respiratory distress observation scales as surrogates of dyspnea self- | Quasi-experimental | N=220<br><br>Adult ICU patients at a single center, 16 bed ICU within a large University hospital in France. | RDOS assessment tool implementation for comparison to the D-VAS assessment tool (dyspnea visual analog scale). | The RDOS is a reliable intervention to assess dyspnea in patient's who are unable to self-report (as common with EOL patients). | Counts, validated tools, and subscales. | The patients were studied only once, upon admission to the ICU. The researchers point out a timeline approach with multiple assessments would have been beneficial. | III, B | This article can be useful to show comparison evidence of the strength of the RDOS assessment tool. |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | report in Intensive Care Units | | | | | | | | |
| 10 | Stacy, Magdic, K., Rosenzweig, M., Freeman, B., & Verosky, D. (2019). Improving Knowledge, Comfort, and Confidence of Nurses Providing End-of-Life Care in the Hospital Setting Through Use of the CARES Tools. *Journal of Hospice and Palliative Nursing*, *21*(3), 200–206. https://doi.org/10.1097/NJH.0000000000000510 | Quasi-experimental | 9 nurses within an ICU in PA | CARES Tool education for caring for the EOL patient. | Nurses who receive additional EOL education are more comfortable communicating with dying patients and their families and improve EOL care. | Pre- and post-intervention surveys | Small sample size | II, B | The use of the Cares Tool for education on EOL patient care. |
| 11 | Topolovec-Vranic et al. (2010). Patient satisfaction and documentation of pain assessments and management after implementing the adult non-verbal pain scale. | Mixed methods | For the NVPS intervention, N=66 (40 nonverbal, 26 verbal); for the questionnaire, n=53 | The NVPS | The proportion of documented pain assessments post NVPS implementation was statistically significant with an increase from 131 to 297 (p<.001), number of pain assessments per patient per ICU Day was statistically significant (p=.02). | Pain assessment documentation frequency, type and amount of analgesics, nurses' confidence in assessing pain in the nonverbal patient, and practice changes with having a standardized pain assessment tool | Number of pre- and post-questionnaires did not match, causing inability to fully compare data. | III, B | 78% of staff ranked the tool as easy to use with confidence in assessment 81% (from 56%) post implementation. |
| 12 | Zhuang, Q., Yang, G. M., Hui-Shan Neo, S., & | Quantitative study: | N=122 | RDOS assessment tool inter-rater | This study shows the strengths and inter-rater reliability of the use of the respiratory distress observation | Counts, numeric rating scales, and the | Lack of one rater being blind which could | Level II A | Evidence of the strengths and inter-rater |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Cheung, Y. B. (2018). Validity, reliability, and diagnostic accuracy of the respiratory distress observation scale for assessment of dyspnea in adult palliative care patients | Controlled clinical trial | Adult palliative care patients in Singapore General Hospital | reliability, convergent validity, and divergent validity were measured in correlation with two other dyspnea assessment tools and one pain scale tool. | scale. The results conclude "moderate-to-strong relationship with dyspnea self-report, establishing convergent validity with standard dyspnea severity scales". It also supports the generalizability of use of the RDOS tool that can be utilized with standardized training. | four validated assessment tools. | result in potential biases. | | reliability of the use of the RDOS help promote the assessment tool in practice. |

## Appendix C: The Respiratory Distress Observation Scale

Respiratory Distress Observation Scale © (Margaret L. Campbell, PhD, RN 2/19/09)

| Variable | 0 points | 1 point | 2 points | Total |
|---|---|---|---|---|
| Heart rate per minute | <90 beats | 90-109 beats | ≥110 beats | |
| Respiratory rate per minute | ≤18 breaths | 19-30 breaths | >30 breaths | |
| Restlessness: non-purposeful movements | None | Occasional, slight movements | Frequent movements | |
| Paradoxical breathing pattern: abdomen moves in on inspiration | None | | Present | |
| Accessory muscle use: rise in clavicle during inspiration | None | Slight rise | Pronounced rise | |
| Grunting at end-expiration: guttural sound | None | | Present | |
| Nasal flaring: involuntary movement of nares | None | | Present | |
| Look of fear | None | | Eyes wide open, facial muscles tense, brow furrowed, mouth open, teeth together | |
| Total | | | | |

Instruction for use:

1. RDOS is not a substitute for patient self-report if able.
2. RDOS is an adult assessment tool.
3. RDOS cannot be used when the patient is paralyzed with a neuromuscular blocking agent.
4. RDOS is not valid in bulbar ALS or quadriplegia.
5. Count respiratory and heart rates for one-minute; auscultate if necessary.
6. Grunting may be audible with intubated patients on auscultation.
7. Fearful facial expressions:

(Campbell et al., 2010, p. 69)

**Appendix D: Nurse Pre-study Survey**

Please note that this survey is completely voluntary as a part of a DNP Project to be conducted within this organization. All information obtained is anonymous and will be kept confidential. Data collected will be used to evaluate the outcomes of a future quality improvement project.

***I sincerely appreciate your time in filling out this survey!***

***What department do you work on?***

**ICU** **PCU** **Medical** **Float Pool**

**Part 1: Caring for the End-of-Life Patient**

*Please answer the questions below utilizing the following scale and circle your answer:* ***1. Very low (no understanding/knowledge), 2. Low (some/little understanding/knowledge), 3. Moderate (know about, but more to learn), 4. High (good understanding of), 5. Very high (know nearly everything about topic)***

| How would you rate your: | Very low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Knowledge addressing symptom management of shortness of breath/dyspnea in the "comfort care" patient | 1 | 2 | 3 | 4 | 5 |
| Confidence in managing shortness of breath/dyspnea in the "comfort care" patient | 1 | 2 | 3 | 4 | 5 |
| Knowledge about administering opioids and benzodiazepines to the "comfort care" patient. | 1 | 2 | 3 | 4 | 5 |
| Confidence in administering the appropriate pharmacological intervention to the "comfort care" patient based upon your assessment skills. | 1 | 2 | 3 | 4 | 5 |

**PART 2**

*Please answer the questions below utilizing the following scale and circle your answer:* ***1, strongly disagree; 2, disagree; 3, unsure; 4, agree; 5, strongly agree***

| | STRONGLY DISAGREE | DISAGREE | UNSURE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|
| I am satisfied with how medications are currently ordered for "comfort care" patients within the organization. | 1 | 2 | 3 | 4 | 5 |
| I often feel unsure as to which medication implemented in the eMAR to administer to the "comfort care" patient. | 1 | 2 | 3 | 4 | 5 |
| I feel an assessment tool to assess distress in the comfort care patient would be beneficial in current practice to provide reasoning for medication intervention and dosage (such as done in current practice with the pain assessment tool). | 1 | 2 | 3 | 4 | 5 |

**Appendix E: Nurse Post-study Survey**

Please note that this survey is completely voluntary as a part of a DNP Project to be conducted within this organization. All information obtained is anonymous and will be kept confidential. Data collected will be used to evaluate the outcomes of a future quality improvement project.

***I sincerely appreciate your time in filling out this survey!***

***What department do you work on?***

**ICU** **PCU** **Medical** **Float Pool**

**Use of the RDOS**

Over the past 3 months, have you directly utilized the *Respiratory Distress Observation Scale* in caring for an end-of-life/comfort care patient? Circle yes or no.

**YES** **NO**

Over the past 3 months, have you witnessed the use of the *Respiratory Distress Observation Scale* (such as with a coworker) in caring for an end-of-life/comfort care patient? Circle yes or no.

**YES** **NO**

**Part 1: Caring for the End-of-Life Patient**

*Please answer the questions below utilizing the following scale and circle your answer:* ***1. Very low (no understanding/knowledge), 2. Low (some/little understanding/knowledge), 3. Moderate (know about, but more to learn), 4. High (good understanding of), 5. Very high (know nearly everything about topic)***

| How would you rate your: | Very low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Knowledge addressing symptom management of shortness of breath/dyspnea in the "comfort care" patient | 1 | 2 | 3 | 4 | 5 |
| Confidence in managing shortness of breath/dyspnea in the "comfort care" patient | 1 | 2 | 3 | 4 | 5 |
| Knowledge about administering opioids and benzodiazepines to the "comfort care" patient. | 1 | 2 | 3 | 4 | 5 |
| Confidence in administering the appropriate pharmacological intervention to the "comfort care" patient based upon your assessment skills. | 1 | 2 | 3 | 4 | 5 |

**Part 2**

*Please answer the questions below utilizing the following scale and circle your answer:*

***1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree***

| | STRONGLY DISAGREE | DISAGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|
| I feel the use of the RDOS has increased my confidence in providing specific medications interventions to the "comfort care" patient. | 1 | 2 | 3 | 4 |
| I found the RDOS easy to use. | 1 | 2 | 3 | 4 |
| I found the RDOS helpful in assessing the "comfort care" patient. | 1 | 2 | 3 | 4 |
| I would like to see the RDOS continued as part of future practice. | 1 | 2 | 3 | 4 |

**Part 3: Feedback**

*Please provide any feedback, comments, or suggestions you have regarding the Respiratory Distress Observation Scale (RDOS) and the education module on the RDOS and caring for the EOL patient in the space below:*

## Appendix F: Provider Pre-study Survey

Please note that this survey is completely voluntary as a part of a DNP Project to be conducted within this organization. All information obtained is anonymous and will be kept confidential. Data collected will be used to evaluate the outcomes of a future quality improvement project.

***I sincerely appreciate your time in filling out this survey!***

What is your specialty?

**Hospitalist** **Intensivist/Pulmonary** **Palliative Care** **Other (please specify):**

What is your current role as a provider?

**PA** **NP** **MD** **DO**

**Implementing Orders for the "Comfort Care" Patient**

*Please answer the questions below utilizing the following scale and circle your answer:* ***1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree***

| | STRONGLY DISAGREE | DISAGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|
| I feel satisfied with the current process of implementing orders for patients transitioned to "comfort care". | 1 | 2 | 3 | 4 |
| I find the current process of this transition time consuming. | 1 | 2 | 3 | 4 |
| I would support the implementation of a standardized assessment tool for measuring distress in end-of-life patients for bedside nurses. | 1 | 2 | 3 | 4 |

**Appendix G: Provider Post-study Survey**

Please note that this survey is completely voluntary as a part of a DNP Project to be conducted within this organization. All information obtained is anonymous and will be kept confidential. Data collected will be used to evaluate the outcomes of a future quality improvement project.

***I sincerely appreciate your time in filling out this survey!***

What is your specialty?

**Hospitalist** **Intensivist/Pulmonary** **Palliative Care** **Other (please specify):**

What is your current role as a provider?

**PA** **NP** **MD** **DO**

**Recent End-of-life Patient Care**

Over the past 3 months, have you directly placed orders for an end-of-life/comfort care patient to include the Respiratory Distress Observation Scale (RDOS)? (Circle yes or no)

**YES** **NO**

**Implementing Orders for the "Comfort Care" Patient**

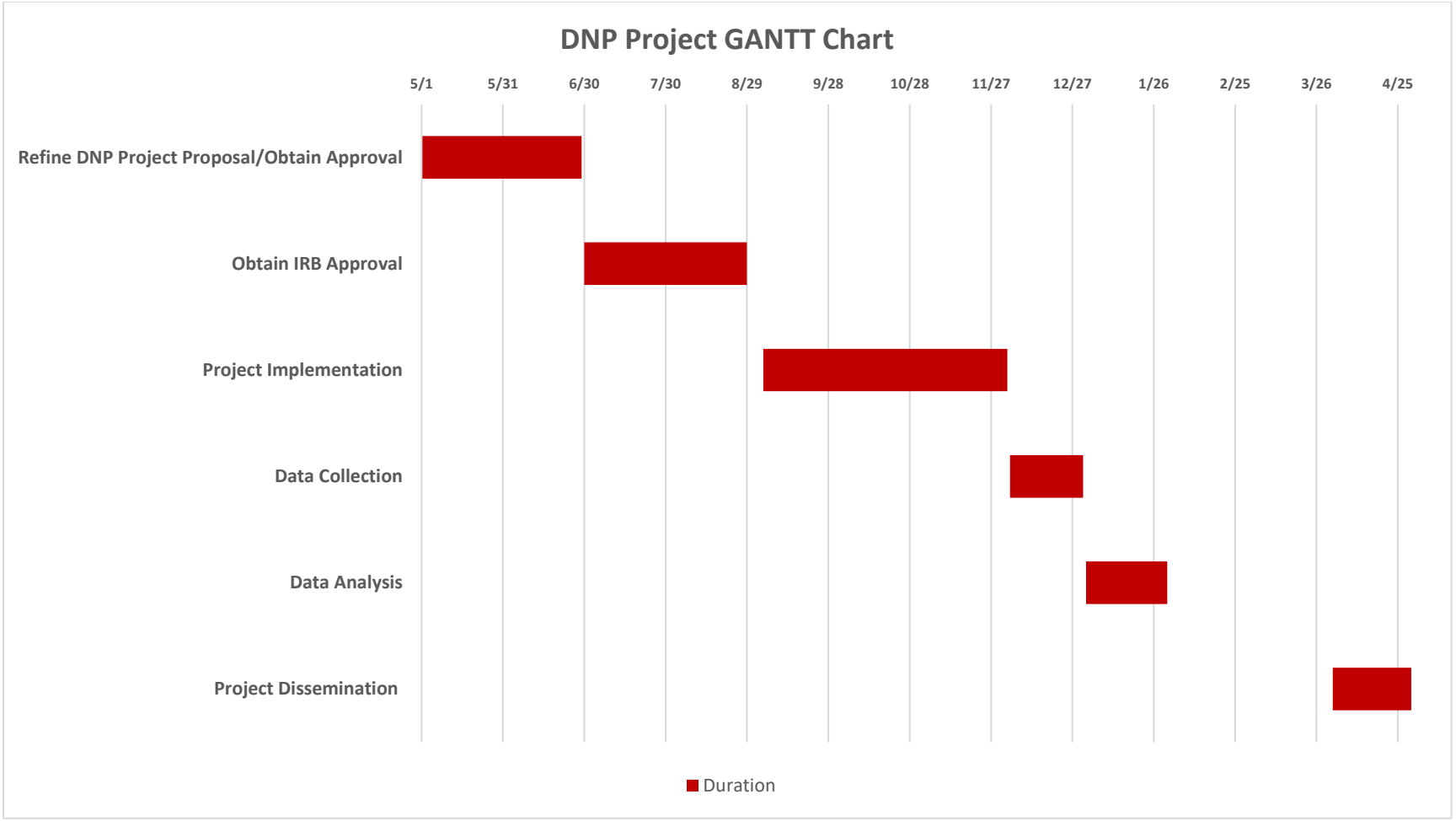
*Please answer the questions below utilizing the following scale and circle your answer:* ***1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree***

| | STRONGLY DISAGREE | DISAGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|
| I feel satisfied with the ***changes*** made in implementing orders for patients transitioned to "comfort care" with the Respiratory Distress Observation Scale intervention for bedside nurses with correlating medications and support its continuation as part of future practice. | 1 | 2 | 3 | 4 |
| I find the ***new*** process of placing orders for end-of-life/comfort care patients less time consuming than before. | 1 | 2 | 3 | 4 |
| I feel the Respiratory Distress Observation Scale is beneficial to bedside RNs by providing them a standardized assessment tool to validate medication interventions. | 1 | 2 | 3 | 4 |

**Part 2: Feedback**

*Please provide any feedback, comments, or suggestions you have regarding ordering the Respiratory Distress Observation Scale (RDOS) and/or the correlating pharmacological interventions included with this assessment tool in the space below:*

## Appendix H: GANTT Chart



**Appendix I: Outcome Measures Table**

**Aim #1: Improve bedside nurses' confidence in caring for the EOL patient population.**

| Measure | Measure Type* | Data Source | Sampling Method | Timing/Frequency |
|---|---|---|---|---|
| **Increase in mean average of knowledge and confidence in post-study assessments for nurses by at least one point on the 5-point Likert scale.** | **Outcome** | ***Pre-study and post-study surveys.*** | **Convenience sample: Bedside RNs within the ICU, PCU, and Medical units who voluntarily participate in the surveys.** | **Administered once; 6 weeks pre-implementation and 2 weeks post-implementation period.** |

| | |
|---|---|
| **Standard Measure?**** | *No* |
| **Numerator** | **Mean rating of survey questions** |
| **Denominator or Population***** | **Bedside nurses who participate in the survey** |
| **Exclusions** | **N/A** |
| **Calculation/Statistic(s)** | **Mean of completed survey questions** |
| **Goal/Benchmark** | **Increase in mean of post-intervention surveys by one or more points on the Likert Scale.** |

| Data Elements | Variable Name | Definition | Data Type* | Data Values & Coding | Restrictions/ Validation |
|---|---|---|---|---|---|
| Department of employment | Dept_emp | What department do you work on? | Categorical | **1, ICU; 2, PCU; 3, medical; 4, float pool** | Required |
| Knowledge in dyspnea management | Know_dys_pre | How would you rate your knowledge addressing symptom management of dyspnea in the "comfort care" patient? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Confidence in dyspnea management | Conf_dys_pre | How would you rate your confidence in managing dyspnea in the "comfort care" patient? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Knowledge about administering | Know_meds_pre | How would you rate your | Categorical | **1, very low; 2, low; 3,** | Required |

| | | | | | |
|---|---|---|---|---|---|
| opioids and benzos to the EOL patient | | knowledge about administering opioids and benzodiazepines to the “comfort care” patient? | | **moderate; 4, high; 5, very high** | |
| Confidence in administering appropriate pharmacological interventions | Conf_meds_pre | How would you rate your confidence in administering the appropriate pharmacological intervention to the patient based upon your assessment skills? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Knowledge in dyspnea management | Know_dys_post | How would you rate your knowledge addressing symptom management of dyspnea in the “comfort care” patient? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Confidence in dyspnea management | Conf_dys_post | How would you rate your confidence in managing dyspnea in the “comfort care” patient? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Knowledge about administering opioids and benzos to the EOL patient | Know_meds_post | How would you rate your knowledge about administering opioids and benzodiazepines to the “comfort care” patient? | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |
| Confidence in administering appropriate pharmacological interventions | Conf_meds_post | How would you rate your confidence in administering the appropriate pharmacological intervention to the patient based | Categorical | **1, very low; 2, low; 3, moderate; 4, high; 5, very high** | Required |

| | | | | | |
|---|---|---|---|---|---|
| | | upon your assessment skills? | | | |

**Aim #2: Provide bedside nurses with a SAT, the RDOS, to increase their confidence in administering pharmacological interventions to the EOL patient.**

| Measure | Measure Type* | Data Source | Sampling Method | Timing/Frequency |
|---|---|---|---|---|
| **Mean average in the reported level of confidence in providing pharmacological interventions using the RDOS** | **Outcome** | **Post-study surveys provided to bedside nurses** | **Convenience sample: Bedside RNs within the ICU, PCU, and Medical units who voluntarily participate in the surveys.** | **Once; two-weeks post intervention period** |

| | |
|---|---|
| **Standard Measure?**** | *No* |
| **Numerator** | **Mean average of responses to the survey question** |
| **Denominator or Population***** | **Bedside nurses who participate in the survey** |
| **Exclusions** | **N/A** |
| **Calculation/Statistic(s)** | **Mean of completed survey question** |
| **Goal/Benchmark** | **Mean average of 3 or greater in the reported level of confidence in providing pharmacological interventions using the RDOS** |

| Data Elements | Variable Name | Definition | Data Type* | Data Values & Coding | Restrictions/ Validation |
|---|---|---|---|---|---|
| Level of agreeance that confidence has increased through the RDOS tool. | Conf_RDOS | I feel the use of the RDOS has increased my confidence in providing specific pharmacological interventions to the "comfort care" patient | Categorical | **1, strongly disagree; 2, disagree; 3, agree; 4, strongly agree** | Required |

**Aim #4: Assess providers' approval and recommendation of the RDOS and correlating pharmacological interventions for future practice.**

| Measure | Measure Type* | Data Source | Sampling Method | Timing/Frequency |
|---|---|---|---|---|
| **% of providers who recommend the RDOS with correlating** | **Outcome** | **Post-study surveys for providers** | **All providers within the acute care facility who** | **Once; 2-weeks post-study period.** |

| | | | | |
|---|---|---|---|---|
| **pharmacological interventions for future practice** | | | **utilized the new order set for EOL patients** | |

| | |
|---|---|
| **Standard Measure?**** | *No* |
| **Numerator** | **# of providers who respond 3 or 4 on the Likert scale** |
| **Denominator or Population***** | **Total completed provider post-study surveys** |
| **Exclusions** | **None** |
| **Calculation/Statistic(s)** | **Percent** |
| **Goal/Benchmark** | **75%** |

| **Data Elements** | **Variable Name** | **Definition** | **Data Type*** | **Data Values & Coding** | **Restrictions/ Validation** |
|---|---|---|---|---|---|
| Specialty | Spec | What is your speciality? | Categorical | **1, hospitalist; 2, intensivist/pulmonary; 3, palliative care; 4, other** | |
| Role | Role | What is your current role as a provider? | Categorical | **1, PA; 2, NP; 3, MD; 4, DO** | |
| Exposure to intervention | Provid_exp | Over the past three months, have you directly placed orders for an end-of-life patient? | Dichotomous | **1, Yes; 2, No** | Required |
| Approval | Provid_app | I approve of the Respiratory Distress Observation Scale and correlating standard medication interventions and support its continuation as part of current practice. | Dichotomous | **1, Yes; 2, No** | Required |