

University of Nevada, Reno

Bettering Patient Outcomes in the ICU with the ICU Liberation Bundle (A-F): A Thesis

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science

in Nursing

by

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THE GRADUATE SCHOOL

We recommend that the thesis
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Abstract

Four million people get admitted to the ICU every year in the United States (Marra et al., 2017). These patients need life saving measures that can include mechanical ventilation, vasopressor medications, invasive procedures, as well as administration of sedation and analgesia. Many patients can leave the ICU with anxiety, PTSD, and depression (Marra et al., 2017). In 2018 the PADIS (Pain, Agitation/Sedation, Immobility, and Sleep Disruption) guidelines were updated and gave even more evidence of the best practices for patients in the ICU (Devlin et al., 2018). These best practices were assembled into the ICU Liberation Bundle (A-F) to help the health care teams provide the best care possible. This study examines the baseline knowledge of bedside ICU nurses of the bundle, as well as the facilitators of, and barriers to the ICU Liberation Bundle (A-F) in order to better the outcomes of our ICU patients.

Table of Contents

List of Tables.....	iii
List of Figures.....	iv
Introduction.....	1
Methodology.....	8
Results.....	10
Discussion.....	14
Recommendations	17
Appendix A: Questionnaire.....	21
Appendix B: Cover Letter for IRB.....	22
Appendix C: IRB Approval Letter.....	24

List of Tables

Table 1. Demographics of the study

List of Figures

- Figure 1. Distribution of individual questions of the questionnaire
- Figure 2. Compilation of free responses.

Chapter 1

Bettering Patient Outcomes in the ICU with the ICU Liberation Bundle (A-F): A Thesis

Within the United States, the focus and care of the critically ill patients is becoming more and more important. Each year approximately 4 million people are being admitted to the Intensive Care Unit (ICU) in order to receive the lifesaving treatment they need (Marra et al., 2017). Some of these life saving measures include the use of mechanical ventilation, vasopressor medications, central venous catheters, and the administration of sedation and analgesia. Many of these interventions, although absolutely necessary, are distressing in nature. Thus, the use of sedatives and analgesia is required to promote comfort to both the patient, and to those witnessing these interventions take place. Subsequently, many patients leave the ICU and are discharged home with anxiety, PTSD, and depression (Marra et al., 2017). One in four patients experiences cognitive decline similar to mild Alzheimer's Disease and moderate traumatic brain injury (TBI) independent of their admitting diagnosis (Marra et al., 2017). With staggering statistics such as these, the healthcare community needs to apply the latest evidence-based research to help achieve better outcomes for patients.

The American College of Critical Care Medicine is the authority on critical care, and has published the ICU pain, agitation, and delirium (PAD) guidelines (Devlin et al., 2018). These extensive guidelines are aimed at the adult ICU patient population, both intubated and non-intubated, and provide a list of recommendations to better patient outcomes post ICU stay (Barr & Pandharipande, 2013). These PAD guidelines were updated in 2018 from a previous 2013 version, adding immobility and sleep, forming the new and recently updated PADIS (Pain, Agitation/Sedation, Immobility, and Sleep Disruption) guidelines (Devlin et al., 2018). A mainstay of these guidelines is the importance of managing pain, agitation/sedation, as well as

delirium in critically ill patients using an integrated and interdisciplinary method (Barr & Pandharipande, 2013). The final result is a collection of patient care guidelines and interventions called a care bundle. These guidelines were followed by the creation of the ICU Liberation Bundle (A-F), a multidisciplinary approach to best *implement* the aforementioned PAD guidelines (Marra et al., 2017).

The ICU Liberation Bundle (A-F) strives to give health care workers guidelines for treating the acutely ill. This bundle provides a multimodal approach to care for the ICU patient. The ICU Liberation Bundle (A-F) includes: **Assess, Prevent, and Manage Pain, Both Spontaneous Awakening Trials (SAT) and Spontaneous Breathing Trials (SBT), Choice of analgesia and sedation, Delirium: Assess, Prevent, and Manage, Early mobility and Exercise, and Family engagement and empowerment** (Marra et al., 2017). This model was implemented in response to the focus of critical care changing from simply surviving the critical illness, to the quality of care during the ICU stay, *and* quality of life post discharge (Ramnarain et al., 2015). It helps guide care and promotes optimal resource utilization, resulting in ICU patients being more interactive, have adequately managed pain, and safely participate in higher-order cognitive and physical activities at the earliest point in their critical illness (Marra et al., 2017).

The empirical literature was examined in order to better understand the implementation and the importance of the ICU Liberation Bundle. Here, three major themes were analyzed:

- 1.) Persistent Cognitive Dysfunction post ICU discharge.
- 2.) Depression and PTSD post discharge.
- 3.) Decreased Health Related Quality of Life.

Persistent Cognitive Dysfunction post ICU discharge

There was overwhelming literature supporting a relationship between patients being admitted to the ICU and cognitive dysfunction. This was manifested by the fact that post-ICU patients have global cognition scores similar to those of people with moderate TBI and mild Alzheimer's Disease, with delirium being a major risk factor (Hughes et al., 2012; Marra et al., 2017; Pandharipande et al., 2013). 60% to 80% of ICU patients experience delirium at some point in their hospitalization (Bounds et al., 2016). Other studies found profound deficits in memory, attention, concentration, and executive function as far after discharge as 12 months, longer periods of time where not feasible to study (Wilcox et al., 2013).

Depression and PTSD post discharge

Depression is a common finding in post-ICU patients. One study found that even at 12 months post discharge, 33% of patients admitted to the ICU still had depression, and 7% had PTSD related to their time in the ICU (Jackson et al., 2014), with early depressive symptoms being a strong risk factor (Davydow et al., 2009). As many as 1 in 10 ICU patients experiences PTSD even 1-year post discharge (Patel et al., 2016). This PTSD can be linked to a delusional memory of painful stimuli (Wyler et al., 2018). Some studies found that implementing a follow-up program helped to decrease rates of PTSD, and elevate quality of life (Granja et al., 2012).

Decreased Health-Related Quality of Life

Many patients experience significant long-term morbidity from their time spend in the ICU. Reduced physical function, reduction of quality of life, and increased psychological symptoms are direct consequences of both their critical illness and their critical care therapies (Ehlenbach et al., 2010). They can also experience abrupt loss of cognitive function as opposed to a gradual decline, with a major contributor of this cognitive dysfunction being delirium (Brummel et al., 2014).

Purpose

The purpose of this exploratory study was to ascertain (a) the baseline knowledge of the ICU Liberation Bundle (A-F), (b) the inherent barriers to the implementation of the bundle, and (c) the different variables that facilitated the implementation of this bundle.

Significance to Nursing

The significance of this exploratory study is multifaceted. First, there is a potential for significant reduction in ICU-related mortality, length-of-stay, delirium and agitation, and inability to ambulate at discharge. There is also a potential for improvements in quality of life of patients post-ICU, such as the reduction in post-ICU cognitive decline, depression, and PTSD. 4 million people are being admitted to the ICU each year, but the significance of the ICU Liberation Bundle (A-F) impacts more than just these numbers. The innate altruism of the healthcare profession demands that healthcare professionals provide the best care possible. Saving a life only to sentence that individual to reduced mental capacities and PTSD confers no beneficence whatsoever.

Significance to Adult Gerontology Acute Care Nurse Practitioners

As Adult Gerontology Acute Care Nurse Practitioners (AG-ACNP) it is important that we move this profession forward, not only with the innate altruism that our nursing background provides, but also with a medical repertoire that matches the gold standard of care that our physician counterparts have been trained in as well. As AG-ACNPs we are tasked with moving the perception of our profession forward backed by evidence, expertise, and excellence of care. This study helped to develop the baseline knowledge of the nursing staff in the Intensive Care Units that we will frequent as practitioners. Armed with this knowledge we are better suited to change the variables that hinder the best care for patients.

Research Question

In ICU nurses, what is the baseline knowledge of the ICU Liberation Bundle (A-F), and what are the barriers and facilitators to its implementation?

Framework

The framework of this study was based on Roy's Adaptation Model to better understand the baseline knowledge of ICU nurses. Roy's model emphasizes the fact that nurses use specialized skills to contribute to the needs of society for health and well-being (Roy & Frederickson, 2009). ICU nurses are one of the best examples of possessing specialized skills even more so with the addition of ventilated patients in the ICU. It is for this reason this model is best for understanding the data collected.

Chapter 2

Methodology

This study was not designed to argue the benefit of the ICU Liberation Bundle, as the supporting evidence is both abundant and irrefutable. Instead, it was designed to assess the ICU nurse's knowledge of the bundle itself, as well as the barriers to implementing every aspect of this bundle. In other words, what are things that may prevent its implementation, such as poor staffing or the knowledge deficit of the health care provider, and what are things that promote and facilitate its implementation, such mobility teams or appropriate nurse-patient ratios. Many of the individual aspects of the bundle are already being implemented; however, the ICU Liberation Bundle in its entirety has not been achieved.

Study design

This study was a simple descriptive cross-sectional study that will assess the knowledge surrounding the ICU Liberation Bundle in ICU nurses, as well as the limitations and facilitators of the bundle. The ICU nurses filled out a questionnaire (see Appendix A) with 10 evidence-based questions regarding the ICU Liberation Bundle. This serves as a knowledge assessment. Demographics were collected to include experience level, educational background, age, gender, which type of ICU they work in, fill in the blank section will be for each part of the bundle (A through F) as well as the barriers and facilitators.

Sample

The sample consisted of 29 registered nurses who all work in the ICU obtained with snowball sampling and referrals.

Setting

The Intensive Care Units at Renown Regional was the setting.

Analysis of data

The quantitative data was analyzed using both Measures of Central Tendency. Demographics were also collected; experience level, gender, age, and level of education. The level of knowledge was determined by overall percentage correct. Narrative analysis was used for the free response portion of the questionnaire. Central themes were deciphered and expanded upon.

Review of the Literature

A comprehensive literature review was conducted using online databases in order to find the prevailing evidence in support of the ICU Liberation Bundle (A-F) and its effect on ICU patient outcomes. Search terms were *ABCDEF Bundle, effects of the ABCDEF Bundle, delirium, ICU Liberation Bundle, ICU Liberation Bundle outcomes, ICU Bundle, ICU Liberation Bundle implementations, PADIS guidelines, ICU related PTSD, ICU related cognitive dysfunction, and cognitive dysfunction post ICU*. Additional studies found in the reference lists of the articles examined during the literature review were also examined. Below are the three purposes of this study and their respective review of the Literature.

ICU Nurse's baseline knowledge of the ICU Liberation Bundle (A-F)

There was a paucity of evidence related to the ICU Nurse's baseline knowledge of the ICU Liberation Bundle (A-F).

Facilitators of implementation of the bundle

Many factors influence the level of care in the ICU. When reviewing the literature, it was found that implementation of the ICU bundle varies by region as well as the individual bundle components implemented (Shay, 2018). Some studies found that with higher compliance to the bundle, the number of days spent on the ventilator and spent in delirium decreased (Shay, 2018).

Some facilitators of implementation were stable ICU leadership, a culture of quality improvement and patient safety, empowered ICU clinical champions that conducted regular team meetings, and access to training materials (Carrothers et al., 2013). Having executives involved who have both the authority and means to prioritize and allocate resources (Balas et al., 2019). Another facilitator was to start the process with implementing a single aspect of the bundle (Carrothers et al., 2013), as well as starting with a patient with a high probability of success to be the example for the unit (Shay, 2018). Daily interdisciplinary rounds and sustained educational efforts were also found to be beneficial (Balas et al., 2013). Implementation of the bundle into the electronic health record workflow was also helpful (Balas et al., 2019). Implementation of mobility teams significantly increase compliance (Ratcliffe & Williams, 2019) Possibly the biggest variable was the nursing staff. Their direct role in patient care gives them an unique ability to translate evidence in to clinical practice, to teach and motivate on the subject, and to advocate for their patients (Balas et al., 2019).

Barriers of implantation of the bundle

The barriers to the implantation of the ICU Liberation (A-F) bundle, while some were location specific, had common themes as well. The first was the perceived workload increases put upon the staff with limited resources (Balas et al., 2013; Balas et al., 2019; Boehm et al., 2017). Knowledge deficits, communication and coordination errors, documentation burden, excessive staff turnover, lack of respect among disciplines, perceived safety concerns including self extubation etc., and the lack of delirium assessment were also noted (Balas et al., 2013; Balas et al., 2019; Boehm et al., 2017; Shay, 2018)

Chapter 3

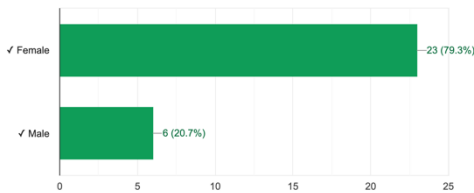
Results

Description of sample

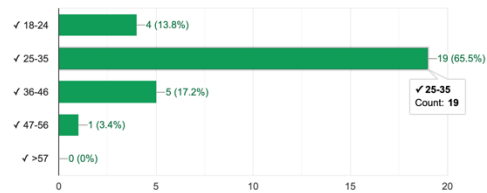
The summary of demographics can be found in the following table 1. The sample size consisted of 29 ICU nurses of which are 9.3% female, 20.7% male who all worked at a regional hospital. 13.8% were between the ages of 18-24, 65.5% were between the ages 25-35, 17.2% were between 36-46, and 3.4% were between the ages of 47-56. 31% had 0-2 years of ICU experience, 44.8% had 3-5 years ICU experience, 17.2% had 6-10 years ICU experience, and 6.9% had greater than 11 years ICU experience. 93.1% of the sample size held Bachelor of Science in Nursing, while 3.4% had an associate degree, and 3.4% had a Master of Science in Nursing.

Table 1
Demographics of the study

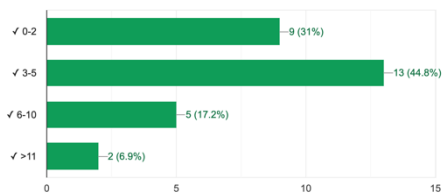
What is your gender?
29 / 29 correct responses



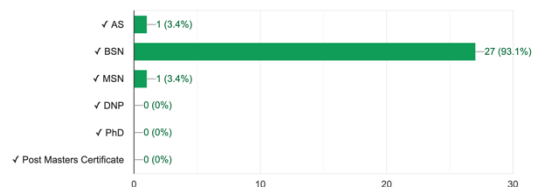
What is your age?
29 / 29 correct responses



Years of ICU experience
29 / 29 correct responses



What is the highest level of education you have completed?
29 / 29 correct responses

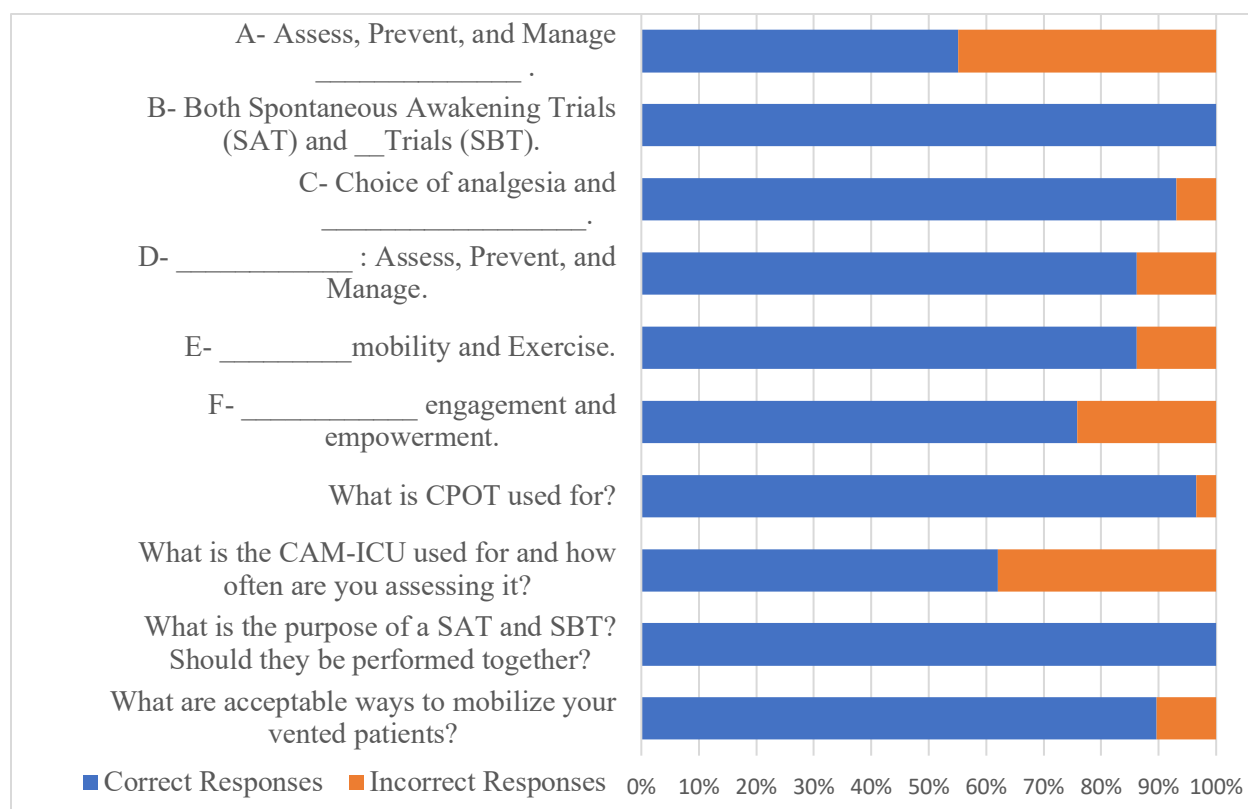


Findings

There was a total of 29 responses spanning over a four-month period where the questionnaire was open to public access. The average score on the ten-question questionnaire was 84.5% correct, the median was 90% correct, and the range was a total of 50%-100% correct. The individual questions are listed below in Figure 1.

Figure 1

Distribution of individual questions of the questionnaire



Other qualitative data was obtained in the form of two free response questions. The answers are listed in Figure 2.

Figure 2

Compilation of free responses. Staffing, collaboration, and time were the top three mentioned facilitators. The two major barriers were inadequate staffing and lack of knowledge regarding the importance of the bundle.

What things are needed to facilitate the implementation of the	N/A. Education, adequate staffing. Interdisciplinary team support.
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<p>ICU Liberation Bundle (A-F)?</p>	<p>Having better staffing, especially extra CNA's on the floor to help with mobility. Finding the appropriate amount of staff to mobilize is often hard, making mobility feel unsafe. IDT collaboration. Standardized protocol/orders. Pt's stability. Coordination with other team members – I.e. RT, MD. Collaboration with RN, RT, MD and patient and family So many things. Nurse knowledge, patient cooperation and stability Cooperation from all staff and patient. Mobility plan, pain and sedation management, team. Education, Cooperation, Teamwork, Dedication. Staff. Staffing, education of bundle and availability of lifts. Assertive nursing staff willing to engage in the process consistently. Effective interdisciplinary communication, collaboration, education, staff (lol). Education, resources (mobility teams), interdisciplinary collaboration. Friends to help with mobility, coordination with RT, an RN with an appropriate assignment (ie time). Critical thinking, time, help from neighbor nurses. Collaboration, protocols, appropriate staffing. Teamwork: Staff, family, patient, RN, RT. Time, staff, MD orders. Collaboration with team. Coordination between shifts and disciplines (respiratory and nursing, etc), enough support staff to mobilize vented patients each shift. A not lazy nurse and RT. Compliance with a-f. Sheer willpower of you and your nurse mates! Pairing sat and sat, Rn and RT participation in mobilizing ever shift, Family participation. Patient, patient family, MD(s), RN(s).</p>
<p>What are things that hinder the implementation of the ICU Liberation Bundle (A-F)?</p>	<p>Staffing for mobility. Understaffed, people not aware. Not enough team support and resources. Staffing and lack of knowledge when it comes to the importance of vent mobility and reasoning behind it. No collaboration with SAT and SBT. Need mobility teams and more transport vents. Lack of the above. Nurses that don't want to do it.</p>

	<p>Patient readiness.</p> <p>Lack of nurse education and significant AMS of patient or instability.</p> <p>Staff not doing what is suggested such as mobilizing.</p> <p>Failing SAT.</p> <p>Staffing, Resources, Stuck in old ways.</p> <p>Staff.</p> <p>Burn out poor staffing and crappy exclusion criteria.</p> <p>Unwillingness to mobilize and lighten sedation.</p> <p>Lack of education/knowledge,</p> <p>Lack of knowledge, lack of nursing time, poor staffing for mobility,</p> <p>Lack of interdisciplinary collaboration.</p> <p>If pt is hemodynamically unstable, an RN that is burnt out.</p> <p>Number of nurses needed, time.</p> <p>Charting appropriately, staffing, willingness to try “new” things, collaboration between staff/ timing.</p> <p>Staffing, time in the RN’s day.</p> <p>Lack of knowledge, time, staff.</p> <p>Lack of communication about lifting sedation during SBT and whether doctors are okay with being completely off.</p> <p>Doctors holding off on extubating when they are appropriate because they are worried about re-intubation.</p> <p>Poor communication between staff members, over-sedating patients at night, not enough staff to safely mobilize patients each shift.</p> <p>Pt not being ready (e.g. ICPs elevated, increased agitation, increased sedation needs, unstable hemodynamics).</p> <p>Nurses not understanding what the a-f bundle is.</p> <p>Lack of sheer willpower and poor nurse mates.</p> <p>Lack of buy in from staff.</p> <p>Certain patient presentations and possibly ethical dilemmas.</p>
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Chapter 4

Discussion

A-Assess, Prevent, and Manage pain.

55% of participants answered this question correctly. Most of the incorrect answers were relating to delirium. This, coupled with the data retrieved on the question focused on the CAM-ICU tool, suggests a possible mistake made by a majority of the ICU Nurses confusing the tools needed for assessing and differentiating between pain and delirium. This is significant due to the reality of how different the treatments are from each other and the impact that untreated pain can cause delirium (Balas et al., 2013; Balas et al., 2019; Boehm et al., 2017; Shay, 2018).

B- Both Spontaneous Awakening Trials (SAT) and Spontaneous Breathing Trials (SBT).

100% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

C- Choice of analgesia and sedation.

92% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

D- Delirium : Assess, Prevent, and Manage.

86% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle. The participants who answered this incorrectly put blank or “x” as their answer indicating a lack of knowledge.

E- Early mobility and Exercise.

86% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

F- Family engagement and empowerment.

75% of participants answered this question correctly. This indicates a need for further education of the ICU Nurses regarding the involvement of family. One factor that could have played a role in this aspect of the study is the COVID-19 pandemic. At the time of the survey, there were no visitors allowed due to the risk of exposure to the COVID-19 virus.

What is CPOT used for?

95% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

What is the CAM-ICU used for and how often are you assessing it?

62% of participants answered this question correctly. This demonstrates a knowledge gap regarding the identification of delirium in the ICUs at this hospital. This is consistent with many other studies stating the identification of delirium as a major barrier to the success of the ICU Liberation (A-F) bundle (Balas et al., 2013; Balas et al., 2019; Boehm et al., 2017; Shay, 2018).

What is the purpose of a SAT and SBT? Should they be performed together?

100% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

What are acceptable ways to mobilize your vented patients?

89% of participants answered this question correctly. This shows a strong correlation to the baseline knowledge of this aspect of the bundle.

What are things needed to facilitate the implementation of the ICU Liberation Bundle (A-F)?

Staffing, collaboration, and time were the top three mentioned facilitators (Ratcliffe & Williams, 2019). Education was the next leading facilitator (Balas et al., 2019). Of the participants who mentioned education of the staff as a facilitator 100% of them answered the corresponding questions correctly. This would suggest that education is the reason they

themselves implement the bundle, as well as the reason why those who do not implement the bundle struggle.

What are things that hinder the implementation of the ICU Liberation Bundle (A-F)?

60% of participants noted that inadequate staffing was the major contributing factor as to why the ICU Liberation Bundle does not get implemented, which is consistent with what was found in the literature review (Balas et al., 2013; Balas et al., 2019; Boehm et al., 2017). The next most common response was the lack of knowledge regarding the importance of the bundle as a whole. This would suggest an opportunity for education of the ICU nurse staff as the ICU Liberation Bundle has been the gold standard of care for nearly two decades. Another barrier was the coordination of SBT and SATs as they fall during busy times of the shift (Balas et al., 2013).

Implications for Nursing

As healthcare workers, we willingly bear some of the burdens that our patients face. It is this very action that forces us to strive to be the best each and every day. Evidence-based practice, altruism, and beneficence are some of the tools that we use in order to not just make a difference, but to make the most significant and best difference we can for our patients. This study aims to do just that. By combining beneficence and evidence-based practice, this study will begin the process of identifying the baseline knowledge, barriers, and facilitator of the ICU Liberation Bundle, not because it is easier or more comfortable, but because the lives we save are worth saving with a measurable quality of life as well.

Limitations of Study

Because this study took place during the global pandemic related to COVID-19 the availability of the survey was very limited. There was no ability to survey the ICU units in order to hand out hard copy versions of the survey which limited the total number of participants to

those who were core staff, had an email address through their employer, and routinely checked that email. Most of the staff that populated the units available to survey are traveling nurses who do not have access, some units are made up of 75% traveling nurses, which greatly limits the number of participants when email is the only way to contact them. This limits the results ability to be applied holistically due to the limited sample size.

The results of this study are also inappropriate for determining the baseline knowledge of ICU nurses related to the ICU Liberation Bundle (A-F) in other hospitals due to the varying level of experience, hospital policies, and educational programs that were not able to be quantified due to the lack of dispersion.

Chapter 5

Recommendations

The baseline knowledge of the sample size was relatively high with the average score of 84.5% on the questionnaire. The free response portion shed light on the most pertinent recommendations as this portion reveals the perception of the ICU Liberation Bundle through the eyes of the bedside ICU nurse. This perception is one that has overarching themes of lack of staff, over worked nurses, and a lack of knowledge of the importance of the bundle in its entirety.

Recommendations for Research

The research is overwhelmingly supportive of the ICU Liberation Bundle. What this study has found is that the bedside ICU nurse's perception of that evidence is where room for improvement can be implemented. Further research should be done to further assess the perception of the bedside ICU nurse as these are the individuals who coordinate and implement these changes. Further research should also be done to capture a larger sample size and thus a more accurate representation of the total ICU nurse population. By defining where the disconnect is between the ICU Liberation Bundle and the implementation of said bundle is where the problem lies.

Recommendations for Practice

The free responses showed insight as the reason to why the ICU Liberation bundle is hindered, and these responses echo the literature review of not enough staff, lack of education, and not enough time in the busy shift of a bedside nurse. There has been success seen in the literature of dedicated mobility teams, specific interdisciplinary team rounding focused on the ICU Liberation Bundle, as well as scheduled times for mobility and family engagement.

Implementing these evidence-based protocols could address the shortcoming found from this study.

Recommendations for Education

Education should be given to bolster the understanding of the ICU Liberation bundle. A common theme was also the confusion between clinical tools for assessing delirium and pain. Further education on the CAM-ICU and CPOT would help to remedy this. There has been great effort already put forth from critical care organizations to educate their community, referencing them in orientation for both students and employees would allow for greater distribution and understanding as to why these protocols are in place.

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APPENDIX A
QUESTIONNAIRE

Please list the components of the ICU Liberation Bundle (A-F)

7- Assess, Prevent, and Manage _____.

B- Both Spontaneous Awakening Trials (SAT) and _____ Trials (SBT).

C- Choice of analgesia and _____.

D- _____: Assess, Prevent, and Manage.

E- _____ and Exercise.

F- _____ engagement and empowerment.

2.) What is CPOT used for?

3.) What is the CAM-ICU used for and how often are you assessing it?

4.) What is the purpose of a SAT and SBT? Should they be performed together?

5.) What are acceptable ways to mobilize your vented patients?

6.) What things facilitate the implementation of the ICU Liberation Bundle (A-F)?

7.) What are things that hinder the implementation of the ICU Liberation Bundle (A-F)?

Demographics:

Age: Gender: M/F/Other Hospital: Regional / Private / Federal / Other

Years of ICU Experience: Additional Certifications: CCRN / CMC / TNCC / CSC

Level of Education: AS / BSN / MSN / DNP / PhD

**APPENDIX B
COVER LETTER
FOR**

Bettering Patient Outcomes in the ICU with the ICU Liberation Bundle (A-F): A Thesis

You are being asked to participate in a research study. Evan Fox RN., BSN., from the School of Nursing at the University of Nevada-Reno (UNR) is conducting the study. The purposes of this study are to (a) evaluate the baseline knowledge of ICU nurses regarding the ICU Liberation Bundle (A-F), (b) determine the facilitators of the bundle and (c) determine the barriers that nurses encounter to the implementation of the bundle.

You were selected as a possible participant because (a) you are an ICU nurse aged 18 or older. If you decide to participate in this study, you will be asked to complete a survey that will take about around 5 minutes. The survey includes a mixture of true/false questions, fill in the blank, as well as free response portions. You will be asked to voluntarily put down some demographic information regarding the years of experience you have had in the ICU, any certifications that you poses, and level of your education. All information you give is completely voluntary.

Participation is completely voluntary and confidential. You are free to withdraw from the study at any time simply by not submitting your information. There may be some inconvenience to you in spending the time necessary to complete the questionnaire. You may feel uncomfortable answering questions regarding you experiences. If, for any reason, you feel uncomfortable, you may discontinue your participation, or skip to the next question. Your responses will be anonymous and no personal identifiable information will be collected about you. Once the information has been collected for the study, your information cannot be withdrawn, as there will be no subject identifiers (e.g., name, e-mail address) attached to any of the surveys. Your survey responses will be saved in a USB flash drive and stored in a locked drawer in my office. Only the investigators and UNR Social Behavioral Institutional Review Board have access to the data. Results of this study may be used for possible presentations and publications, but only group data will be analyzed and presented. Individuals in the study will not be identified in any way.

You will be contributing toward a better understanding of the knowledge and attitudes of the ICU nurse as it pertains to the ICU Liberation Bundle (A-F).

There are no costs to you other than your time and effort in completing the study. Your decision whether or not to participate will not affect your relationship with the UNR. If you have questions about this study, please contact Evan Fox at (775) 971-7101 (evanfox@unr.edu).

You may ask about your rights as a research participant. If you have questions, concerns, or complaints about this research, you may report them (anonymously if you so choose) by calling the University of Nevada, Reno Research Integrity Office at 775.327.2368.

Completion and return of the data collection instruments imply that you have read the information in this letter and consent to take part in the research. Please keep this form for your records or future reference.

APPENDIX C IRB APPROVAL LETTER



University of Nevada, Reno

Research Integrity
218 Ross Hall / 331,
Reno, Nevada 89557
775.327.2368 / 775.327.2369 fax
www.unr.edu/research-integrity

DATE: September 14, 2020
TO: Wei-Chen Tung, PhD
FROM: University of Nevada, Reno Institutional Review Board (IRB)

PROJECT TITLE: [1631155-2] Assessing the baseline knowledge of the ICU Liberation Bundle of ICU nurses.
REFERENCE #: Social Behavioral
SUBMISSION TYPE: Revision
ACTION: DETERMINATION OF EXEMPT STATUS
REVIEW TYPE: Exempt
DECISION DATE: September 14, 2020
REVIEW CATEGORY: Exemption Category # 2

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An IRB member has reviewed this project and has determined it is EXEMPT FROM IRB REVIEW according to federal regulations. Please note, the federal government has identified certain categories of research involving human subjects that qualify for exemption from federal regulations.

Only the IRB has been designated by the University to make a determination that a study is exempt from federal regulations. The above-referenced protocol was reviewed and the research deemed eligible to proceed in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46.101).

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Reviewed Documents

- Application Form - Evan.Fox-IRB Application- Exemption Core Application Research with Participants.docx (UPDATED: 07/25/2020)
- Letter - reply to submission #1.docx (UPDATED: 09/4/2020)
- Cover Sheet - information letter-ewanfox.doc (UPDATED: 07/29/2020)
- Letter - recruitment email.docx (UPDATED: 07/29/2020)
- Letter - information letter-ewanfox.doc (UPDATED: 09/4/2020)
- Questionnaire/Survey - ICU Liberation Survey V-3.0.docx (UPDATED: 07/25/2020)
- Training/Certification - Fox, Evan THOR 09.20.10.docx (UPDATED: 09/4/2020)
- University of Nevada, Reno - Part I, Cover Sheet - University of Nevada, Reno - Part I, Cover Sheet (UPDATED: 07/25/2020)

If you have any questions, please contact Nancy Moody at 775.327.2367 or at nmoody@unr.edu.

NOTE for VA Researchers: You are not approved to begin this research until you receive an approval letter from the VASNHCS Associate Chief of Staff for Research stating that your research has been approved by the Research and Development Committee.

Sincerely,