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Educating Nurses on Failure to Rescue due to Treatment Delay

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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MSN, The Catholic University of America, 2015

BSN, University of District of Columbia, 2004

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Studies have found a shortfall in nurses' skills in caring for patients with a significant risk of failure to rescue in an acute care setting. The practice gap the healthcare facility was experiencing today, was a gap in relation to failure to rescue with increase rate of sentinel cases. There was a knowledge deficit among critical care nurses. The importance of providing nursing staff with education is to increase their knowledge and help decrease the occurrence of failure to rescue in an acute care setting. The practice-focused question for this education project asked if educating nursing staff with a medical-surgical competency module would increase their knowledge on failure to rescue and close the gap. The purpose of the DNP project was to educate the nursing staff using the medical-surgical competency plan to improve their ability to identify patients at risk. The Model for Evidence-Based Practice in the acute clinic was utilized as a conceptual framework. There was a total of 35 nursing staff participants who volunteered and attended the education program. Six nurse panelists approved the content. A pre and post-test were administered with an assigned code for matching, and the data obtained were analyzed using descriptive statistics on the aggregate data. Findings showed a change with increased posttest scores of participants. Presurvey results showed an average score of 50% and post-education survey results showed an average score of 96%. This change of condition triggering an urgent response to rescue the patient. This could include calling a code. Nurses can prevent complications, reduce risk of morbidity, mortality and increase positive patient outcomes.

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Dedication

Thank you to my wife, Dr. Jibike Oseyemi Adewale, my son and daughter, Sarah and Joshua Adewale, and my in-law, Mrs. Ronke Ogunmakinwa, for your patience, support, and tolerance during my DNP process. I know this is something I'll never forget.

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Section 1: Nature of the Project

Introduction

Adverse medical events are increasingly common in health care facilities, which result in patient harm and are the most common indicators of inefficiencies in care quality and patient-safety practices. These events may result from the patient's comorbidities and harm caused by specific medical errors (Berwick et al., 2006). Understanding the origin of such adverse events is critical to developing effective strategies for resolving them. One of the evidence-based approaches to reducing the prevalence of adverse events in health care settings is the education/training of health care workers, especially nurses. Enabling nurses to comprehend the nature of adverse events and the possible solution to resolving them can improve their working efficiency, preventing adverse clinical events.

Failure to rescue (FTR) is one of the adverse events in health care practice. FTR is when a healthy patient in the hospital develops complications, deteriorates, and suffers an adverse outcome (Ghaferi, 2017) such as death resulting from medical care complications or complications related to underlying illness or surgery (Rodziewicz et al., 2022). FTR is the inadequate or delayed response to clinical deterioration in hospitalized patients (Subbe & Welch, 2013), which results from a failure to promptly identify and respond to a hospitalized patient who undergoes difficulties from the disease process or preceding medical intervention (Berwick et al., 2006). However, such injury is preventable by implementing improvement efforts integrated into clinical practice, health systems, and organizational requirements such as further diagnostic testing, hospital readmissions, and the unintended use of scarce health care resources (Slawomirski et al., 2017).

Accordingly, identifying workable solutions for recognized adverse events is imperative for sustainable patient safety and health care quality.

Despite the importance of preventing patient harm through more effective professional practice, there are still challenges in realizing the desired quality and patient safety objectives. FTR due to treatment delays is associated with the caregivers' knowledge deficiency regarding the patient's condition. The lack of early detection of a patient's condition, particularly in an acute care setting, can lead to severe illness that makes the transfer of the patient to the level of care (intensive care unit [ICU]) unavoidable. If the caregivers understand the requisite knowledge, FTR can be prevented through prompt response to patient condition changes, preventing patient deterioration. This project aimed to determine whether educating nurses on FTR is due to delayed treatment. I developed and implemented a comprehensive medical–surgical competency education plan for acute care nurses to detect deterioration in a patient's state using the triad of the assessment model. The project centered on physical examination, vital sign checks, laboratory data analysis, and the associated conceptual processes of surveillance, early recognition, vigilance, and FTR concerning critical thinking skills among nurses. Nurses received education on patient assessment, the introduction and application of a triad of assessment education plans (Schubert, 2016), and how and when to notify a physician or rapid response teams (RRT), among other things. The education model was developed utilizing the Addie framework, which included the triad model of assessment, design, planning, implementation, and evaluation, and the conceptual process application to the medical-surgical education plan.

Additionally, the education explained how surveillance, early detection, and vigilance are related to FTR. Vigilance is the psychological and physiological readiness to act and the ability to recognize and react to any threat (Hirter & Van Nest, 1995). Surveillance involves frequent assessments and the nurse's ability to promptly analyze patient information and respond to the implications (Meyer & Lavin, 2005). The triad of the assessment mode allowed nurses to effectively correlate specific assessment findings to develop the ability to clinically analyze and manage a patient's status as it deteriorates. Based on the assessment results, nurses may devise a treatment strategy. There are also discussions about the nurse's ability to notify the physician using Situation, Background, Assessment, Recommendation (SRAR) tools, clinical reports of the patient's conditions, and early interventions in this project. The conversation in this project enhances the chances of improving the patients' conditions, reducing FTR numbers.

Problem Statement

More than 45 million people in the United States receive inpatient surgical treatment yearly (Hall et al., 2007), and at least 100,000 Americans die due to surgery and FTR each year (Ghaferi et al., 2010; Rodziewicz et al., 2012). FTR due to delayed treatment is a persistent problem in many health care facilities. This project aimed to increase nurses' knowledge, skills, and patient satisfaction with their care while in the hospital. Patients' physiological signs, such as changes in respiratory rate (RR) and blood pressure (Cuthbertson et al., 2017; Goldhill & McNarry, 2014) or physiological findings, such as a deteriorating mental status (Jacques et al., 2016), can be used to detect deterioration in most cases. The patient's physiological decline may occur unexpectedly

in patients receiving acute care, leading to the development of critical illness and the need for transfer to the ICU (Odell, 2010). It is possible for nurses in the hospital setting unit to monitor and see changes in the patient's conditions, but it is also possible for these findings to be missed or misinterpreted (NCEPOD, 2015; NPSA, 2010a).

In most cases, treatment delays are attributable to the failure of caregivers to understand their patients' conditions or to conduct the necessary diagnostic tests to determine the source of the patients' problems (Hall, 2007). The primary cause of FTR due to delayed treatment is an educational deficiency (IHI, 2016). Thus, hospitals aim to reduce FTR by increasing patient monitoring in critical care units using early detection protocols and rapid response systems. The National Institute for Health and Clinical Excellence (NICE) clinical guideline for recognition and response to acute illness in adult patients (Armitage et al., 2017) has focused renewed attention on FTR in most acute care facilities. This guideline was created in response to reports that deteriorating patients are subject to frequent delays in receiving appropriate care, resulting in avoidable deaths (NPSA, 2017). FTR is reliant on nursing care and early recognition of deteriorating patients' conditions (Griffith et al., 2018). The RRT comprises expert critical care nurses who monitor the patients' physiological signs and report any deviations to the care provider (DeVito et al., 2014; Goldhill et al., 1999; Lee, 1995; Morgan et al., 1997).

This doctoral project expands opportunities to lead collaborative improvement efforts and improve knowledge and leadership to improve nursing practice and patient outcomes (IOM, 2010; AACN, 2006). The goal of this project is to fill the knowledge gap that exists at the site and is implicit in the IOM goal of assessing, designing, and

evaluating practice environments to improve health outcomes, including maximizing the use of health or medical devices and health information technology (IOM, 2010).

Local Practice Problem

The intended setting for this doctoral project is the inpatient surgical ICU setting of a local teaching hospital with a 250-bed capacity in suburban Maryland. According to data from the quality improvement department on FTR, the complication rate related to treatment delay reported cases in the ICU patient population is about 25%. One manager manages the ICU and the intermediate units, and two assistant managers coordinate the ICU day-to-day tasks and intermediate unit (IMC) activities. One clinical practice specialist and one certified nurse specialist oversee staffing education. For 12-hour shifts, there are typically 12–14 registered nurses (RNs) for the ICU, and there are six to seven registered nurses for the IMC. Having four patient care technicians (PCTs) on duty in the IMC is typical. When the need arises, the ICU nurses assist each other. There are 35 RNs and 12 PCTs covering the units; therefore, there were 35 registered nurses included in the project training. Stakeholders like the float pool manager and the units' managers supported this educational effort. These units have seen an influx of patients with FTR related to treatment delay injuries who are adults ranging from 45–75 years old. The nurses in these units received education and training on treatment delay and disease management to prevent FTR-associated risk and better manage their patients.

Purpose Statement

Staff nurses in the ICU and step-down unit at a local hospital in suburban Maryland were unaware of current evidence-based findings related to FTR, indicating a

gap in nursing practice at the facility. Furthermore, nurse–patient ratios, nursing surveillance, early warning systems, and rapid response teams are nursing and organizational factors that significantly impact the FTR (Williams et al., 2019). This doctoral project addressed a significant gap in practice by addressing a knowledge deficit among nurses on the most recent evidence in health care and the concepts behind diagnosing and treating diseases and other conditions. The question guiding this project was "Will educating staff nurses about FTR due to treatment delay enhance their knowledge about the clinical problem?"

The goal of the DNP project was to (a) improve patient outcomes (decrease adverse events, transfers to the ICU, and death) by implementing a comprehensive critical care competencies plan/education along with a post-test evaluation; (b) focus on critical thinking among nurses; (c) facilitate early recognition of changing patient status by nurses; and (d) instruct on how to use the RRTs. Primarily, nurses must understand the basics of FTR and its relation to treatment delay, which includes quick recognition and rapid response or intervention to the situation presented at that moment. They should also be aware of the dangers of failing to respond quickly when a patient's condition deteriorates. Furthermore, nurses must understand the disease or illness complications that can cause rescue failure due to treatment delay. This project improved nurses' knowledge, skills, and confidence and can improve patient outcomes, lower the risk of FTR-related mortality, and provide a reassuring experience for patients and their families. Patient satisfaction can improve as the risk of mortality and morbidity is reduced, as the staff spends more time providing quality direct patient care to their patient (Whalen et al.,

2014).

Nature of the Doctoral Project

CINAHL, MEDLINE, PubMed, ProQuest, Ovid, and the Cochrane database of systematic reviews are just some of the databases available through Walden University and the hospital that are appreciable to use to begin the project. Permissions and approvals were sought from Walden University's Institutional Review Board (IRB) and, if necessary, from the facility's IRB. Conducting a needs assessment before developing a nursing education curriculum was essential. After this, I developed an education module on a comprehensive medical–surgical education plan on assessment to increase nurses' knowledge and ability to recognize early signs of clinically deteriorating patients in collaboration with clinical nurse specialists, physicians, and unit managers at the project site.

The education and training of nurses play an essential role in equipping them with safety skills for improving patients' health (American Association of Colleges of Nursing [AACN], 2006). The AACN's Patient Safety Practice (PSP) guidelines includes nurse staff education and training, a risk scoring system, RRT, and clinical decision support (Hall et al., 2020). Several strategies are used to reduce the risk of FTR (Risk Management Foundation [RMF], 2014). First, it is important to train nursing staff to identify signs of deteriorating patient conditions and effectively use modified early warning scores [MEWS]. Training nursing staff through simulations of communication skills, situational awareness, utilization of chain command, and debriefing is also important. The simulation training equips the nursing staff with practical skills and

knowledge of the procedures that should be applied when a patient's condition deteriorates (Hall et al., 2020). Employing multidisciplinary rounds improves the nurse-patient relationship, enhancing the nurses' knowledge of the patients' medical history and reducing the likelihood of FTR through improved vigilance (Friese & Aiken, 2008; (RMF, 2014). Creating systems for ongoing surveillance of chronically ill patients ensures early detection of the patient's physical behavior, reducing the likelihood of FTR situations. Lastly, structuring the methods and means for communication ensures a free and rapid flow of information within the health care organization, preventing delays in providing critical care services (RMF, 2014). These strategies ensure that RRTs are alerted of any patient health deviation in time, minimizing the likelihood of FTR.

The pretest to the nursing staff was developed to examine the nurses' existing knowledge of the triad assessment concept, FTR, RRT processes, and surveillance of chronically ill patients. The second step involved providing education modules on the triad of an assessment concept and accompanying the surveillance, early recognition, vigilance, and rescue, including how to use the RRT system. Using the ADDIE method of analysis, design, development, implementation, and evaluation, curriculum was developed to meet the needs of nurses and, if necessary, provide additional training. The class was designed as a 60-minute session using PowerPoint and other resource materials, but the learners' needs determined the actual length of the seminar. Nurses were given a follow-up evaluation (posttest) assessment to identify any discrepancies or contradictions in the curriculum or the learners' performance using pre/post-test. Pre- and post-test results were then analyzed using inferential statistics. Data were displayed utilizing

appropriate graphs and tables.

Significance/Relevance to Practice

Nurses are frontline workers in any health care setting, and there is a link between their work and positive and negative healthcare outcomes. Therefore, nurses are expected to enhance the quality of care delivered and patient safety initiatives. Nurses must be vigilant regarding the patient under their care and identify problems as soon as possible to take appropriate and timely action (Agustin et al., 2017; Reinhart et al., 2017; Rudd et al., 2020). The stakeholders of this project include the patients on the unit, the organization, the staff, and physicians. The staff nurse will benefit from the knowledge that they are enhancing their ability to provide quality patient care to prevent FTR and demonstrate themselves as safer practitioners. The physicians may have increased confidence and trust in the nursing staff for giving excellent care to their patients.

Nurses can help patients and their families recognize subtle signs and symptoms that could lead to FTR by educating them about disease management. Reducing incidents of harm to patients is an indicator of the quality of care provided by medical facilities. FTR rate reduction would improve health care quality and patient satisfaction and reduce costs of treating complications resulting from this clinical problem—FTR (Hodgetts et al., 2002). In the United States, FTR is a significant indicator of nursing care, and its presence is linked to the nurse's education, experience, and level of preparedness (Friese & Aiken, 2008).

This project's potential contributions to nursing practice include its transferability to other settings. The project can also support research suggesting that increasing

knowledge and ability lowers the likelihood of patient mortality due to treatment delays. One of the essential roles in nursing is to educate nurses who will, in turn, educate or inform their patients about self-management and self-care (Bergh et al., 2015). The nurses will also help patients understand their role in managing health care issues. Educating patients about managing their health to prevent FTR can positively affect health care systems and reduce hospital readmission. Nurses will be the first to benefit from this project, as they can pass on their newfound knowledge to patients and their families. Patients, their families, and health care administrators will benefit from learning about the risks of treatment delays associated with injuries caused by FTR. Additionally, patients will benefit from the project to better understand the dangers of delaying or noncompliance with medical recommendations.

Summary

FTR has been and is still a significant problem in nursing practice. Early recognition of a declining change in patient status, adequate surveillance, and vigilance are necessary for reducing ICU transfers. A more significant effect is the reduction of untimely and avoidable deaths among chronic disease patients. The physicians at the practicum site designated for this DNP project had expressed a lack of confidence in the care provided to their patients in the medical-surgical nursing units. However, with other contributing factors present, most physicians perceived that nursing staff failed to adequately assess and monitor patients, resulting in unnecessary transfers to the ICU and unexpected deaths.

Section 2: Background and Context

Introduction

Early detection of patients' status changes remains challenging in acute care settings and can lead to FTR. FTR depends on how the providers respond to adverse events during a shift and may reflect the quality of assessment, the effectiveness of actions taken once early complications are identified, or both variables (AHRQ, 2015). This chapter focuses on the scientific literature published in peer-reviewed journals and reputable websites that discuss how critical skills, assessment tools, and nurse education affect adverse patient events.

Literature Search

I used Medline, EBSCOhost, PubMed, Embase, and the Cochrane Database of Systematic Reviews to conduct a systematic literature review. A total of 106 journal articles, books, and websites with relevant study information were discovered. I used the following search terms: *nursing practice*, *nurse learning models*, *primary care models*, *chronic illnesses*, *models of care*, *medical assessment models*, *nursing professional development*, *clinical competence*, *continuous education*, *critical thinking in patient care*, and *quality improvement initiatives*. After identifying relevant journal articles and books, I manually selected relevant studies published between 2015 and 2021. However, I limited the discussion to 70 studies for this study.

Specific Literature

The safety of patients with chronic conditions is paramount to health care institutions. Failure to provide adequate patient care can significantly affect their health

and lead to death. Numerous publications and recommendations have identified patients with chronic conditions with the highest likelihood of receiving poor care (Clarke & Aiken, 2003; Francis, 2013 NCEPOD, 2005; Silber et al., 2007). This section reviews the literature on FTR, early recognition models, and medical competency plans nurses apply in chronic care provision to illustrate the association between FTR.

Failure to Rescue

As defined earlier, FTR refers to the failure to prevent a patient's deteriorating condition from resulting in death or further complication of an underlying illness (Bucher, 2013; Silber et al., 2007). FTR may also define the clinician's inability to save a patient's life in case of a complication that is not present on admission (Clarke & Aiken, 2003). Nurses are responsible for constant patient assessment and monitoring to determine any probable escalation of disease symptoms (Clayton, 2019), meaning there is a link between optimal patient care outcomes, early detection of subtle changes in the patient's symptoms, and subsequent speedy action by bedside nurses (Hall et al., 2020). Timely recognition of increased disease symptoms requires vigilance to patient conditions and quick assessment by bedside nurses (Burke et al., 2021). But there are challenges to identifying the signs of deterioration in a patient during health care service delivery and subsequent activation of the rapid response team for patient care (Dobuzinsky , 2017). FTR is a critical area of nursing care because it is the nurse's responsibility to identify any deterioration in the patient's condition in its initial stages and initiate any action to stabilize the patient (Griffiths et al., 2008).

Concepts, Models, and Theories

Model for Evidence-Based Practice

Different models or frameworks can help guide the execution of best practices. Models based on evidence give a framework for organizing and transforming knowledge into action (White et al., 2016). Like the ADDIE framework, Rosswurm and Larrabee's model for evidence-based practice in the acute clinical context aided in the organization and analysis of this project (White et al., 2016). The model guides researchers by integrating evidence-based practices discovered/found in the literature into practice standards (Rosswurm & Larrabee, 1999). Rosswurm and Larrabee's Model has six steps:

1. Assessing the need for change in practice.
2. Linking the problem with interventions and outcomes.
3. Synthesizing the best evidence.
4. Designing and developing learning content, resources, and experiences to increase nurses' knowledge.
5. Implementing and evaluating the impact of a knowledge and skill increase for nurses in the area of practice.
6. Integrating and maintaining the practice change.

For this project, the model's initial phase involved assessing the need for practice change, including identifying the issue, collecting data, and involving stakeholders (Rosswurm & Larrabee, 1999). The problem identified by the need assessment and quality improvement department data was the nurses' lack of knowledge regarding FTR treatment delay. The situation generated sufficient concern and brought together all

stakeholders (the ICU manager, the float pool manager, the director of nursing, the unit lead doctor, and the charge nurses). The complication rate related to treatment delay reported cases in the ICU patient population was about 25%.

The model's second step connects the problem to possible interventions and selects outcome indicators (Rosswurm & Larrabee, 1999). After identifying the need for nurses to develop sharpened skills in accurately assessing their patients through education to avoid FTR, the unit educator and I created an education curriculum using the ADDIE model and Walden Education manual. There is an alignment between the literature search for this doctoral project's practice-focused issue and its educational goals: Will educating staff nurses about FTR due to treatment delay enhance their knowledge about the clinical problem? Nurses should also be aware of the dangers of failing to respond quickly when a patient's condition deteriorates. Furthermore, nurses must understand the disease or illness complications that can cause rescue failure due to treatment delay. Additionally, nurses must be aware of the resources and tools available to educate others about treatment delays to avoid a rescue failure. After understanding the issues mentioned, nurses can educate their patients about the dangers of failing to save related illnesses and discuss ways to prevent the situation. The expected outcome is improving the nursing staff's knowledge and skill to identify troubling patient deterioration and act on them promptly or call for help. With the increase in knowledge and skill, staff confidence increases, followed by patient and family satisfaction.

The third step describes how the literature review will integrate best practices into patient safety, as evidenced by nurse education. The literature review within a publication

date of 5 years yielded 20 articles supporting this project to educate staff on FTR related to medical recommendation delay. The findings indicated increased FTR prevention, improved patient safety, and reduced prolonged hospitalization and death. The necessity to address the knowledge gap addressed in this project is supported by relevant sources of evidence in the literature. Providing education on FTR will enhance the clinician nurses' knowledge and intervene appropriately, preventing FTR incidence and promoting patient safety.

The fourth phase of Rosswurm and Larrabee's model for evidence-based practice is to create a change in practice by utilizing clinical practice guidelines, procedures, or standards to match the evidence-based practice suggestion (Rosswurm & Larrabee, 1999). This project involved creating a practice change by addressing the education of nursing staff. To reduce the risk of mortality related to this clinical problem, nurses must understand the basics of FTR and its relation to treatment delay, including quick recognition and rapid response or intervention to the situation presented. The unit assessment shows that educational reinforcement is necessary for nurses to recognize the critical element associated with FTR. The feedback from the unit educator is that the nurses lack adequate knowledge on evidence-based intervention when faced with a patient whose condition changes and deteriorates. Nurses should also be aware of the dangers of failing to respond quickly when a patient's condition worsens.

Step 5 of the model involves implementing and evaluating the change in practice, which includes education on critical areas such as quick patient assessment and homing in on any elusive cues of comfort alteration in the patient; this should not be taken lightly

or overlooked. The nurses were given a pretest and a posttest of the material, with the expectation that their knowledge would improve. The confidence evaluation included a Likert-style question to determine the nurses' confidence in their assessment skills to detect symptoms that are not visible to the naked eye. According to one study, there is an expectation that nurses should improve their self-confidence to be safer caregivers and demonstrate that other clinicians, patients, and families have confidence in the staff and patient/family satisfaction with quality service (Oliveira et al., 2018).

Stage 6 is the final step in the approach, which is concerned with integrating and preserving the increased knowledge gained by the nurses and incorporating it into daily practice. This project aimed to increase the frontline nurses' knowledge and skills in performing quick assessments of patients with changes in conditions to reduce the incidence of FTR and death. The secondary objective was to make FTR-related treatment delay education a mandatory component of new nurse orientation and to develop an annual educational plan for all hospital nurses that includes FTR refresher courses. For the organization's leadership, continuous communication of the practice change and statistics proving improvement will raise stakeholders' trust in the change's efficacy and offer the tools to sustain the practice by monitoring the outcomes (Rosswurm & Larrabee, 1999).

Definition of Terms

In this project, the following terms were used.

Care quality: Care structures and processes that result in positive patient outcomes are under the health care system's control (AHRQ, 2020). Care quality

comprises multiple domains, including care effectiveness, efficiency, equity, safety, patient-centeredness, and timeliness of care (AHRQ, 2020).

Early recognition: Promptly identifying the signs of a patient's deteriorating conditions supports treatment and response (Burke et al., 2022).

Failure to rescue: Failure to support a patient's survival-to-discharge following a clinically significant deterioration; the outcome may be either death or a permanent disability (Burke et al., 2022; Morgan, 2016). The term is also used to measure patients' quality of care due to hospital characteristics (Friese & Aiken, 2008).

Patient safety: Absence of actual or potential bodily harm to a patient receiving care within a health care setting (AHRQ, 2020).

Prevention: Deterrence of a negative outcome in the healthcare process. In this project, this term used concerns the deterrence of FTR following delayed treatment.

Rapid response: The speedy execution of care in such a way as to help a patient whose health is rapidly or suddenly deteriorating (Clayton, 2019).

Treatment delay: Deferment of needed medical treatment due to failure to recognize the need for treatment, unawareness of treatment approaches, or unavailability of the health care practitioner (Kuo et al., 2017).

Indicators of FTR and data limitations

The most used indicators of FTR are the mortality rates among patients who experience life-threatening complications, which appropriate and timely interventions can correct. These are indicators derived from hospital administrative data that indicate which patients encountered difficulties. In addition, researchers have found associations

between high staffing levels and low incidences of FTR in surgery, but evidence of a similar association for medical patients is unavailable (Clarke and Aiken, 2013; Kane et al., 2017). As a result, data viability is likely compromised in cases of poor secondary diagnosis (Garvey, 2015). Due to this limitation, two alternative approaches exist. The first approach assumes that all deaths after surgery are cases of FTR, and in most cases, death during surgery results from complications, regardless of whether there is documentation of the problems in the administrative data (Silber et al., 2007). As a result, providers with poor coding are not given leeway to exclude deaths from such cases during consideration for FTR. The second approach recognizes that not all FTR cases lead to death and that complicated recoveries take longer than uncomplicated ones. Therefore, if there is a severe deterioration due to FTR, which results in an extended stay in a hospital, the stay can be used as an indirect indicator of FTR (Rafferty et al., 2017). There is more validation of FTR indicators for surgical patients compared to medical patients (Kane et al., 2007). However, in the past, FTR patient safety indicators from the AHRQ included medical patients. These were later set aside due to failure to identify adequate FTR cases using administrative data sets (Stanton & United States, 2003).

How nurses can address FTR Surveillance, early recognition, and vigilance could remind nurses to monitor patients adequately and assess for subtle changes in physical assessment findings, laboratory data, and vital signs/triad of assessment (Meyer & Lavin, 2005). Surveillance, which involves frequent evaluation/assessments, is the ability to analyze information and react to the implications of the analysis in an efficient and timely manner (Clarke & Aiken, 2003). Responding to assessment findings and intervening

appropriately due to professional nursing vigilance frequently requires independent nursing action and mobilization of health care team members such as RRTs and providers. When nurses care for too many patients, their ability to monitor and evaluate recorded information may fail (Friese & Aiken, 2008). Novice nurses are usually vulnerable and overwhelmed by excessive patient load (Meyer & Lavin, 2005). Therefore, more experienced nurses should be available for consultation and provide support to the novice nurses while they observe patients for early signs of deteriorating status (Clarke & Aiken, 2003).

Challenges to addressing FTR

FTR cases are preventable (Risk Management Foundation [RMF], 2014). However, physicians and nurses may encounter various unrelated symptoms during the diagnosis of a chronic disease, which makes treatment difficult. These challenges include poor team performance, lack of clear roles, poor communication, and lack of proper training of nursing staff (Jones et al., 2006; Leonard et al., 2010). As physicians continue to express concerns about the quality of nursing care, nurses have also expressed their lack of power and authority when attempting to advocate for their patients at the practicum site. The lack of teamwork leads to poor communication between physicians and nursing staff, which may result in death (see Acquaviva et al., 2013). Diagnostic challenges can also arise from poor diagnostic, overreliance on diagnostic tests in place of physical assessment, lack of conveying a sense of urgency in critical situations, and variations in knowledge, skills, and willingness to escalate general clinical inexperience risk (RMF, 2014).

Strategies to address challenges

Numerous strategies are available to help mitigate the risk of FTR (RMF, 2014). First, it is essential to teach nursing staff how to look for signs that a patient's health worsens and use MEWS properly. Training of nursing staff ensures that the affected patients receive prompt medical attention to prevent the risk of developing complications, which may lead to FTR (RMF, 2014). Training nursing staff through simulations based on communication skills, situational awareness, utilization of chain command, and debriefing is also crucial in imparting new skills. Simulation training equips the nursing staff with practical skills and improves their grasp of critical patient conditions and the procedures that should be applied when a patient's condition deteriorates. Employing multidisciplinary rounds improves the nurse-patient relationship, thus, enhancing the nurses' knowledge of the patients' (RMF, 2014). Creating safe environments and ongoing surveillance of chronically ill patients is also crucial, which ensures early detection of the patient's physical behavior. Lastly, structuring the methods and means for communication is vital for all health care institutions because effective communication ensures a free and rapid flow of information within the health care organization, thereby preventing delays in critical care (RMF, 2014). These strategies ensure that RRTs are alerted of any patients' health deviation in time, minimizing the likelihood of FTR.

Early Recognition Models

Research shows that early signs and symptoms, such as changes in pulse rate and irregular breathing patterns, are perceptible whenever a patient's condition deteriorates.

(Bergeron, Dubois, Dumont, Dial, & Skrobik, 2011). If there is a delay in treating these patients, there is a greater likelihood of having problems leading to death or admission to an ICU. One way to identify and treat patients whose conditions worsen is by using outreach services like Early Warning Score (EWS), which records the patients' physiological observations. However, despite being effective, the EWS is not always the best option for every hospital (Gardner-Thorpe, Love, Wrightson, Walsh, & Keeling, 2006). A patient's condition usually deteriorates before nurses notice significant physiological changes, typically occurring 6 to 24 hours before several adverse events (Kause et al., 2004). The clinical staff's failure to oversee basic vital signs and symptoms relates to a lack of consultation, poor supervision, a gap in response to urgency, and ineffective or lack of basic skills such as resuscitation techniques (Subbe & Welch, 2013). Though little evidence favors the sensitivity, specificity, and importance of EWS, its introduction has reduced the nurse's workload by providing alerts whenever a patient's condition starts deteriorating (Goldhill & McNarry, 2004). However, other researchers doubt the effectiveness of EWS in predicting patient outcomes and critical illnesses (McCrossan, Peyrasse, Vincent, Burgess, & Harper, 2006; Massey, Aitken, & Chaboyer, 2010). The EWS tools are primarily concerned with objective data obtained through typical signs, with little or no regard for the patient's qualitative characteristics. Thus, healthcare providers should consider the problematic nature of EWS and realize that its adoption does not necessarily guarantee improved clinical outcomes (Subbe & Welch, 2013).

The use of MEWS ensures that the patient's health condition is salvaged at an

early stage, thus, preventing deterioration arising from delays and preventing FTR. On the other hand, using MEWS is beneficial for nurses working in busy clinical areas because it can aid in the early detection of patients at risk of deterioration and when immediate attention is required (McCrossan et al., 2006). Gardner-Thorpe et al. (2006) also evaluated the importance of MEWS in surgical inpatients. Gardner-Thorpe et al. recorded the MEWS of 334 ward patients by transferring to the Intensive Therapy Unit (ITU) or High Dependency Unit (HDU). The MEWS algorithm consists of an escalation pathway that records values greater than or equal to 5 for patients at considerable risk of FTR and any deviations of two points from the previous score. A patient's vital signs check is done after four hours if the score is less than or equal to 4. The patient's reassessment twice an hour is in order, and so are the vital signs checks simultaneously.

Another thing to note is calling the doctor when the score is greater than or equal to 5. The nurse will seek help by calling the RRT, or the patient will be transferred elsewhere for better care. Gardner-Thorpe et al. (2006) argued that MEWS is a crucial and effective risk management tool when used collaboratively with the call-out algorithm system. Therefore, it should recommend its application to all surgical patients. According to the findings, about 17% of the patients had more than four scores on MEWS, which caused the call-out algorithm to start. Only able to facilitate the transfer of 5% of those patients to the ITU or HDU (Gardner-Thorpe et al., 2006).

Education Competency Plans

Educators and supervisors have expressed concerns about developing sound primary patient care standards (Scalese, Obeso, & Issenberg, 2008). Nursing education

entails a rigorous schedule that includes clinical experiences with patients and simulations of real-world situations under the supervision of qualified and licensed professionals who evaluate their performance (Brown et al., 2012). Therefore, clinical faculties must educate future nurses and other professionals on overcoming career obstacles, emphasizing critical thinking and decision-making abilities (Davies, 2008). As the mode of delivery of health care services changes, both locally and internationally, so does the role of nurses (Scalese et al., 2008). Nurses must develop competencies that will enable them to assume leading roles in health promotion, education, counselling, and caregiving (Batalden, Leach, Swing, Dreyfus, & Dreyfus, 2002). Education programs for nurses must ensure that they acquire the essential competencies that will enable them to provide quality patient care ethically (Batalden et al., 2002).

The nursing practice framework has hugely influenced the assessment plans for nurses due to its problem-solving nature (Scalese et al., 2008). Healthcare institutions prioritize assessing needs over establishing eligibility criteria (Department of Health (DOH), 2003). Batalden et al. (2002) argued that nurses could improve the quality of assessments if clients and caregivers collaborate throughout the care process, prioritizing the client's needs. This project's objective was to raise awareness of improved patient assessment through education and diligent follow-up to reduce FTR situations.

Critical Thinking in Patient Care

There has been a significant rise in the need for critical thinking in patient care because of how quickly the United States healthcare system has changed. Nurses must think critically to ensure effective patient care while coping with the challenges of the

current healthcare system. Registered nurses (RNs) comprise most hospital workforce and provide most patient care (Simpson & Courtney, 2002). Therefore, a hospital's overall satisfaction is related to patient satisfaction. In the past, nursing was not concerned with the administrative aspects of health care (Ahmed et al., 2014). As the health care system undergoes notable change, nurses must sharpen their analytical and critical thinking skills to be held more accountable (Luetz et al., 2010). Because nurses are constantly required to be responsible for the quality-of-care patients receive, they must use their critical thinking skills to guide effective quality improvement initiatives to improve nursing care.

Quality improvement is one of the areas in which critical thinking has gained popularity. Like critical thinking, quality improvement is a continuous process; hence a mutual relationship exists between effective quality improvement initiatives and critical thinking (Cronenwett et al., 2007). Cronenwett et al. (2007) discussed quality improvement initiatives such as identifying clinical indicators in detecting problems and implementation and evaluation actions that, together with critical thinking skills, encourage evidence-based activity from the nurses, safer care, improved decision making, and diagnostic predictions in cases of FTR. Practical essential thinking skills critically improve the nurses' ability to identify clinical indicators, evaluate their significance, and identify areas that may require improvement (Robert & Petersen, 2013). Critical thinking skills can help nurses develop creative and effective solutions for patients with many health problems (Ahmed et al., 2014). Practical clinical reasoning skills positively impact patient outcomes (Aiken, Clarke, Cheung, Sloane, & Silber,

2003). Conversely, poor clinical reasoning skills often fail to detect impending patient deterioration, thus, resulting in FTR (Aiken, Sloane, Lake, Sochalski, & Weber, 1999). Therefore, there is a need for all nurses to prepare for lifelong learning, improvement of critical thinking skills, and proper organization of patient information to provide solutions to complex problems.

Use of Assessment Tools in Patient Care

Health service systems aim to improve the quality of health, both in the curative and rehabilitative aspects of health care (Rothman & Wagner, 2003). With evidence that primary care does contribute to patient outcomes, there is a need to put extra effort into evaluating the quality-of-care services delivery (McIlrath et al., 2010). As a result of the increasing burden of chronic illnesses, there is a development of multiple approaches toward improving primary health care (McIlrath et al., 2010). Examples of direct/primary care assessment tools include consumer-client surveys, facility surveys, provider surveys, and health system surveys help assess the adequacy of care given to patients and their family members from both the patient's and practitioner's perspectives. Faced with the growing demand to counter the shortage of family doctors in most countries, people have resorted to affordable providers like nurse practitioners to maintain the quality of care and reduce the cost of health care (Rothman & Wagner, 2003). In addition, caring for chronically ill patients is provided amidst high demand, thus placing much pressure on nurses to perform rapid diagnosis and assessment of a patient in case of a deviation. Due to congestion in healthcare institutions, nurses spend limited time with each patient, increasing the likelihood of poor patient outcomes due to FTR.

Nurse Education and Training in Patient Care

The education and training of nurses play a vital role in equipping them with safety skills critical to improving patients' health (American Association of Colleges of Nursing [AACN], 2006). Aspden, Corrigan, Wolcott, and Erickson (2004) argue that education and training are essential strategies for improving patient safety in primary care. Quality and safety education provides nurses with the necessary competencies to continuously improve the existing healthcare systems (Cronenwett et al., 2007). Some nurses in the United States do not get enough training in patient safety strategies like event analysis and quality improvement methods. Therefore, nurses must demonstrate that healthcare interventions improve the quality of patient care and recommend interventions with the best patient outcomes. In addition, nurses must observe, evaluate, and interpret the patient's conditions and quickly make clinical decisions and judgments to prevent adverse patient events (Carroll, 2004).

There are several issues with the safety and quality of the United States healthcare system brought up by national commissions in the last few years. (Saxe, Janson, Dennehy, & Stringari-Murray, 2007). Additionally, they lack training in human factors and general patient care (Minick, 1995). Consequently, numerous reports from various committees suggest that for health care in the United States to improve, providers must be equipped with different competencies from those developed in the current educational programs (Luetz et al., 2010). Therefore, health professionals using scientific evidence should be able to define diligent care, identify existing gaps, and be conversant with the initiatives necessary to close any gaps (Saxe et al., 2007). A report from the Institute of

Medicine in 2003 called “Health Professions Education” calls for changes in the learning experiences that form the core of professional identity formation to ensure that graduates can provide patient-centered care while focusing on evidence-based practice, informatics and quality improvement methods. Hence, this will help them become better health professionals (Williams, 2000). Saxe et al. (2007) noted the need for improved training for nurses within the CCM. Therefore, to prepare advanced practice nurses to provide quality care and effect change in the changing healthcare system, training and education must focus on clinical practices with patient-based, result-oriented settings that employ innovative technology (Haas, Ann Swan & Haynes, 2013). It is also essential to perform a root cause analysis to find the causes of errors in the system to ensure that future systemic problems are controlled and minimize FTR. Finally, healthcare institutions should equip nurses with the knowledge and practical skills to prevent FTR and ensure patient stability.

Significance/Relevance to Practice

Nurses are frontline workers in any healthcare setting, and their work is intricately linked to positive and negative healthcare outcomes. Therefore, nurses are expected to apply specific efforts to enhance the quality of care delivered and patient safety initiatives. Furthermore, nurses play a critical role in influencing the performance and decisions of the inter-professional team in healthcare; hence, they have a clear understanding of the healthcare context and system, their patients, and the conditions of their clients. FTR due to treatment delay is a healthcare outcome that has grown increasingly in diverse acute care settings, and it directly involves nursing practice

(Williams et al., 2019). The objective of any preventive initiative is to help slow this growing epidemic. Nurses must, therefore, understand the phenomenon of FTR, including the identification of deterioration in patients, the need to prevent treatment delays, the dangers of slow response to deteriorating patient conditions, and the need for rapid response or intervention when patients experience declined health. The nurses should also know the possible causative effect of illness complications on FTR due to treatment failure. Nurses need to understand what is going on and teach their patients and other healthcare workers about FTR because of treatment delays. Therefore, the project is necessary as it provides resources for nurses to accomplish their caring, teaching, patient management, and advocacy roles in diverse healthcare settings where patients need extra support. With this information, nurses will become more skilled at working with other healthcare professionals to help patients.

Local Background and Contents

The intended setting for this doctoral project is the inpatient surgical ICU setting of a local teaching hospital with a 250-bed capacity in suburban Maryland. According to data from the Quality Improvement department on FTR, the complication rate related to treatment delay reported cases in the ICU patient population in this urban, mid-size, academic medical center, a teaching hospital located in Silver Spring, Maryland, is about 25%. So, this makes it imperative to address the delay in treatment delivery within this setting. The intensive care (ICU) unit comprises twenty-eight beds, fourteen on each side of the unit. The intermediate unit is separated from the ICU with a revolving door and has about thirty beds. One manager manages the ICU and the intermediate units, while two

assistant managers coordinate ICU and intermediate (IMC) unit activities. One clinical practice specialist and one certified nurse specialist oversee staffing education. For 12-hour shifts, there are typically 12-14 registered nurses (RNs) for the ICU, and 6-7 registered nurses for the IMC. It is a common practice to have four patient care technicians (PCTs) on duty in the IMC. When the need arises, the ICU nurses assist each other. On both units, there are 35 RNs and 12 PCTs, and while in the floating pool, 17 RNs and 10 PCTs float between the departments and will take part in the training. Therefore, there will be fifty-two registered nurses included in the project training. Stakeholders like the float pool manager and the unit's managers willingly support the educational effort. These units have seen an influx of patients with FTR related to treatment delay injuries who are adults ranging from 45-75 years old. The nurses in these units will receive education and training on treatment delay and disease management to prevent FTR-associated risk and better manage their patients.

My Role as the DNP Student

Since the start of this DNP journey, I've witnessed my charismatic transformation from novice thinker to expert professional scholar-practitioner and agent of social change. Additionally, my characteristics have evolved as I transition from a follower to a leader of evidence-based best practice efforts (AACN 2006). As a result of my expertise in evaluating evidence-based best practices, I can apply these findings to my professional work. There has been significant progress in the following areas:

- Leading advanced nursing practice.
- Giving support to quality improvement.

- Improving/enhancing health outcomes.
- Informing health care policy are all things that spring to mind when thinking about leadership.

For advanced nursing practice doctoral programs, the American Association of Colleges of Nursing (AACN) specifies eight competencies as necessary. There's a strong fit between the AACN paradigm and Walden University's goal to transform career professionals into scholar-practitioners capable of making a positive social impact (Walden 2018). Walden University's goal is to provide a "diverse community of career professionals with the opportunity to become scholar-practitioners capable of influencing constructive social change," The AACN framework is consistent with this goal (Walden 2018). Nursing students at Walden University's School of Nursing have been taught the AACN essentials as part of their coursework to prepare them for leadership positions in the healthcare field and to help shape their communities as scholars and practitioners. During this and other similar courses, it has become more apparent that leadership in organizations and systems is critical to improving healthcare and patient outcomes. Healthcare quality improvement and professional leadership are other areas of growth. I have honed my skills in using informatics, data, and technology to improve processes and implement change in healthcare systems and organizational models, policy development, and practice management. The DNP essential #2. Corporate and Systems Leadership for Quality Improvement and Systems Thinking: The AACN describes dissemination and integration of research as crucial for DNP graduates' capability. My second area of transformation is to use clinical settings as the primary incentive for evidence integration,

practice change, and early internal distribution of research results, which I am doing through the Walden University DNP program. Thus, I can say that I can now apply the element of my DNP project as a model. Then, share their findings with peers, faculty, and industry leaders in the next month's local chapter of the nurse practitioner association's annual conference and peer-review journal publications. The DNP essential #3 - Clinical Scholarship and Analytical Methods for Evidence-Based Practice (McCauley et al. 2020).

DNP essential #7: Clinical Prevention and Population Health for Improving National Health. I also learn to investigate and evaluate approaches for promoting health, preventing disease, and lowering the risk of sickness in individuals, communities, and large populations. In addition, I understand how to navigate and adapt to the environmental, socioeconomic, and cultural dimensions affecting community health, allowing for better care.

Motivations and Biases

The National Patient Safety Guidelines are the driving factor behind patient care protocol adherence, and I recognize that I can improve patient safety in the unit. My ambition is to develop an efficient and educated team about FTR and treatment delays. I want to ensure that all nurses know patient safety and are well-versed in dealing with clinical difficulties. Training makes me more willing to talk about how a patient could have been hurt because they didn't get treatment quickly enough. Overall, completing my DNP program will provide me with the confidence to become a more vocal advocate for my patients, nursing staff on the unit, and the organization by understanding practice management principles, balancing productivity with quality of care, and analyzing the

financial aspects of practice change (AACN, 2006).

My possible impediment to completing this doctoral project is a lack of time. I am a single parent with three teenagers. Additionally, I am a nurse practitioner, responsible for 60% of clinical and 40% of administrative responsibilities. As a nurse, I make every effort to advocate for the patient. I was heavily involved in the practice initiative to reduce FTR mortality by promoting patient safety through nursing education and enabling nurses to respond appropriately and timely to a patient's deteriorating condition. Also, I strive for patient and staff safety when implementing education in the unit.

Summary

In the specific literature, I addressed the issue of FTR and subscribed/supported that hospital administrators should maintain diligence in implementing programs/processes to enable nurses and care providers to respond efficiently to patients whose conditions are deteriorating. The DNP project required implementation, long-term follow-up, and continued education/training on the problem. In addition, evidence-based models can help nurses recognize changes in patients' statuses earlier and ensure early intervention. FTR is still a concern in many acute care settings. There is an implementation of various early recognition tools and early warning processes in response to cases of FTR. Educating nursing staff is a stage of implementing any strategy, model, or early recognition tools. Therefore, it requires a conscientious follow-up and documentation to ensure adequate education. There must be evidence-based practice, conceptual frameworks, and processes to ensure that process outcomes are as high as possible and that cases of FTR are as rare as possible.

Section 3: Collection and Analysis of Evidence

Introduction

The objectives of this project included determining (a) how to educate staff using a comprehensive medical–surgical competency plan on assessment increases a nurse's knowledge and ability to recognize early signs of a patient who is clinically deteriorating; (b) whether a comprehensive medical-surgical competency plan increases a nurse's ability to think critically and intervene appropriately; and (c) whether the posttest findings confirm a nurse's understanding of definitive criteria indicating an increase/enhancement in the nurses' knowledge, their understanding of how and when to notify the RRT, and the ability to recognize unforeseen variables that have contributed to inadequate assessment and may have led to FTR. In this section, I describe the methods that I adopted to evaluate the effectiveness of the educational medical–surgical intervention and the development of post-competency evaluations. I also focus on the project design and method, data collection tools and procedures, sampling techniques, and data analysis methods the project leader employed to execute the improvement initiative.

Practice-Focused Question

The practice-focused question is related to increasing nurses' knowledge to reduce the growing problem of FTR due to treatment delays in the hospital. Nurse–patient ratios, nursing surveillance, early warning systems, and rapid response teams are just a few nursing and organizational factors that significantly impact the FTR (Williams et al., 2019). FTR is avoidable by identifying and treating the underlying causes early

(Williams et al., 2019). The question guiding this project was thus "Will educating staff nurses about FTR due to treatment delay enhance their knowledge and skills about the clinical problem?" Nurses must understand the basics of FTR and its relation to treatment delay, which includes quick recognition and rapid response or intervention to the situation presented at that moment. Furthermore, nurses must understand the disease or illness complications that can cause rescue failure due to treatment delay as well as the resources available to educate others about treatment delays to avoid a rescue failure. After understanding the issues mentioned, nurses can educate their patients about the dangers of failing to save related illnesses and discuss ways to prevent the situation.

Sources of Evidence

In this project, data and information were collected from various journal articles published within the past 5 years. The sources for the research evidence include Medline, EBSCOhost, PubMed, Bioline International, Embase, Cochrane Database of Systematic Reviews, CINAHL, and Google Scholar. Searching and using datasets from these sources was relevant to the evidence-based practice (EBP) project. The search keywords used include *nursing practice*, *medical assessment models*, *guidelines recommendation*, *treatment*, *failure*, *delay*, *rescue outcomes*, *rapid response*, *failure to rescue*, and *nonadherence to medical approval/recommendation*.

Procedure/Project Design and Method

A pretest-and-posttest methodology was used to evaluate the impact of learning modules on the clinical staff's critical thinking understanding and vigilance during the procedures designed to lower the risks of FTR. A pretest measures knowledge before

implementing instructional training activities or programs, and a posttest refers to evaluating individuals after a period of instruction to determine what they have learned (Delucchi, 2007). I selected the pretest and posttest assessment for the DNP project to assess the nurses' learning and development after the instructional period and their new skills (Roediger et al., 2011). A pretest was given to nursing staff to assess their baseline knowledge of medical–surgical interventions and care given to chronically ill patients. I administered the educational modules/sessions to the entire staff over the course of 2 days (see Appendix A). The education sessions were scheduled to capture the attention of the entire nursing staff. The intervention included education on (a) patient assessment, (b) a simulated code blue review, (c) review procedures, (d) professional development concerning patient advocacy and empowerment, (e) clinical content, and (f) a hospital sepsis protocol (Appendix B). Following the modules, I administered post-competency tests to the nursing staff for 10 to 15 minutes to assess the effectiveness of the medical–surgical competency education sessions.

Participant/Population and Sampling

The staffing education project targeted only nursing staff from a suburban teaching hospital's critical care setting. The critical care nurses were given pretests, education modules, and posttests to evaluate the effectiveness of the education intervention. I gathered data for analysis from 30 participating nurses in the hospital medical–surgical settings. The participants' years of experience ranged from 1 year to 25 years, and the ages of the participants ranged from 22 to 64 years. The clinical staff in the facility was composed of 50% Caucasians, 45% Hispanics, and 5% African Americans.

The staff diversity provided me with diverse perspectives from the clinical staff due to the disparity in education and experience, enhancing the project's reliability (Hlebec et al., 2012).

Data Collection

The data collection procedure consisted of four significant steps. Participants were required to complete a demographic survey before taking the pretest. A pretest was administered to the nursing staff to assess their knowledge of the triad assessment tool, FTR, RRT processes, and chronically ill patient surveillance. The second step consisted of providing education modules using the assessment tool's triad (Carroll, 2014), and accompanying observation processes, early recognition, vigilance, and rescue, as well as how to use the RRT system. The participants were educated in a room provided by the hospital for 2 days. In the third step, 10 to 15 minutes after the education modules the participant were approached, and a posttest were administered to determine the efficacy of the educational intervention. The fourth step involved assessing the staff's performance following the educational intervention using the summative evaluation survey.

Instruments

A demographic form, a pretest questionnaire, and an evaluation survey were used to collect information regarding participant comprehension of the project's triad assessment education plan. The demographic form was filled out with the staff's names, certifications, experience levels, gender, and educational levels. The pretest consisted of open-ended questions about the nursing staff's six modules. Therefore, the pretest was to

evaluate the nurses' baseline knowledge of how the components of the triad relate to patients' conditions (Module 1), surveillance, early recognition, and vigilance (Module 2), Oxy-Heme Dissociation Curve, and oxygen saturation (Module 3), Orthostatic Blood Pressure and Mean Arterial Pressure (MAP; Module 4), SEPSIS (Module 5), and pneumonia (Module 6).

Following the module, nurses took a pretest like the posttest. Typically, the evaluation survey series to verify the performance of the staff following the educational intervention (Appendix B). The questionnaires consisted of eight questions: six for RNs. The instrument's scoping scale ranges from *absolutely disagree* to *absolutely agree*. The tools used in the DNP project do not have Cronbach's alpha.

Protection of Human Subjects

The site IRB and the Walden University with the approval # is 08-05-22-1045755, gave an endorsement before participants recruitment began. The goal of the project initiative was explained to the participants and they were provided them with assurances regarding their data privacy. To protect the nursing staff's privacy, only the unit nurse educators, the project leader, the nurse managers from post-surgical, medical, and intensive care nursing units, and the director of nursing, could view pre- and post-competency test results. The collected data is stored securely in my password-protected file cabinet and computer files.

Data Analysis and Synthesis

The data collected were analyzed to address the project's questions by comparing each participant's pretest and posttest scores. A descriptive analysis was used to compare

the participants' average mean scores. This was useful in evaluating staff performance and creating a medical–surgical competency plan.

The first project question was "Will educating nurses on assessment through a comprehensive medical-surgical competency plan enhance their ability to recognize early signs of clinical deterioration in patients?" The post test result was analyzed to determine whether a comprehensive medical-surgical competency education plan can enhance a nurse's ability to recognize early signs of clinical deterioration. A medical–surgical competency plan to recognize early symptoms would be required if nurses demonstrated a low level of competence in identifying early signs of deteriorating patient conditions.

The second question was "Will a comprehensive medical–surgical competency plan enhances a nurse's critical thinking and intervention skills?" The posttest result was analyzed to determine whether nurses were able to think critically and provide an appropriate response to this question. The educational modules benefited the nursing staff if their posttest scores were significantly higher than their pretest scores. If most nurses could apply the knowledge they gained from the education modules, then a medical–surgical competency plan would be required to enhance nurses' critical thinking skills and readiness to provide essential patient care.

The final project question was "Will the post-test results confirm a nurse's (a) comprehension of the criteria indicating a patient's deteriorating condition, (b) understanding of how and when to notify the RRT, and (c) ability to recognize random/unanticipated variables that have contributed to inadequate assessment and may have led to FTR?" Also, the posttest result was analyzed to determine the nurses'

understanding of definitive criteria indicating a patient's deteriorating condition, their knowledge of when and how to notify the RRT, and their ability to identify unanticipated variables contributing to the inadequate assessment. The project leader used a scale of 1–5 to assign scores to each team member based on their answers to the survey questions. Comparing the pre- and post-test scores for each team member helped to determine how much knowledge the nurses gained from the education intervention (modules). Participants demonstrated their ability to put what they learned from the modules into practice in the posttest.

Project Evaluation Plan

The DNP project was evaluated using a 5-point Likert scale (Appendix C), with 1 indicating *absolutely disagree* and 5 designating *absolutely agree*. The survey contained eight evaluation questions for the nursing staff. I then used the evaluation survey to determine how well the team performed as a group after the educational intervention. Subsequently, the survey data examined to see if the education intervention significantly impacted nurses' knowledge, critical thinking skills, and ability to prevent adverse patient events.

Summary

In this project, the posttest method was employed to evaluate the efficacy of an educational intervention on the clinical staff's critical thinking and vigilance during procedures intended to reduce FTR risks. Data was collected for analysis in two medical–surgical inpatient units at this teaching hospital in a suburb area. In addition, a needs assessment was conducted and posttests for each module to determine the collective

performance of the staff following the educational intervention. Moreover, a strict adhered to ethical standards regarding protecting human subjects' rights during the project's execution was maintained. Lastly, I evaluated this DNP project using a Likert-scale. I also observed ethics related to protecting the rights of human subjects during the project.

Section 4: Findings and Recommendations

Introduction

Staff nurses in the ICU and step-down unit at a local hospital in suburban Maryland were unaware of current evidence-based findings related to FTR, indicating a gap in nursing practice at the facility. The doctoral project aimed to close this significant practice gap by ensuring nurses know about the latest developments in health care evidence and understand how to diagnose and treat diseases and other conditions. The question guiding this project was "Will educating staff nurses about FTR due to treatment delay enhance their knowledge and skill about the clinical problem?"

In Section 4, focus was placed on the results of the pretest and posttest questionnaires, which were used to test how effective the quality improvement intervention was also provide arguments for the central concepts and findings that arose from this DNP project. The project's target population was the critical care RNs in a suburban hospital with patient care responsibilities who voluntarily enrolled to participate in the QI project.

Module 1 had the highest number of participants in the educational program with 33, while Module 3 (28), and Module 5 had the lowest turnout (28). A descriptive statistics and percentages were used to present the results of the pretest and posttest scores. In this section, a summary and evaluation of the DNP project's findings, a discussion of the findings in the context of the literature and conceptual model, implications for practice, implications for social change, project strengths and limitations, recommendations for limitations remediation, an analysis of self, and a summary were all

addressed.

Summary of Sources of Evidence

The evidence gathered for this doctoral project includes publications demonstrating that FTR prevention is a patient safety concern. Walden Library aided this research by providing access to various databases (Walden University, 2018). The most current database for collecting literature is the Cumulative Index to Nursing & Allied Health Literature (CINAHL). Google Scholar, EBSCOhost, PubMed, Embase, and the Cochrane Database of Systematic Reviews. MEDLINE is an additional helpful resource. The evidence supports the claim that this project addresses a critical practice problem in the nursing profession by improving nurses' knowledge and clinical reasoning to appropriately able to recognize symptoms of changes in patient status and act promptly to increase patient safety, prevent FTR, reduce morbidity, build staff confidence, and change negative attitudes (Ruppel et al., 2019).

Summary and Evaluation of Findings

The practice initiative aimed to address the following practice-focused questions:

1. Did conducting a comprehensive medical-surgical competency plan on the assessment improve a nurse's ability to detect early signs of a clinically deteriorating patient?
2. Did the comprehensive medical-surgical competency plan improve a nurse's critical thinking and intervention skills?
3. Did the post-test results confirm a nurse's (a) understanding of definitive criteria indicating a patient's declining status, (b) comprehension of how and

when to notify the RRT, and (c) ability to recognize unforeseen variables that have contributed to inadequate assessment and may have resulted in FTR?

I gave the nursing staff the pretests and posttests before and after they went through the six educational modules to help them answer the three questions. The average scores from each participant's pretest and posttest were paired for the analysis. Because the pretests and post-tests were administered immediately before and after the educational intervention, all nursing staff who participated in the educational modules completed the pretests and posttests questionnaires. Table 1 shows the distribution of pretest and posttest scores.

Table 1

Average Scores for Pretests and Posttests Scores for RNs

Module	N	Pretest	Posttest
Component of the triads assessment	33	3	5
Surveillance, Early recognition, and vigilance competency	31	2	4
Oxyhemoglobin dissociative curve	28	2	5
Orthostatic hypertension and mean arterial pressure	29	2	5
Sepsis	28	3	4
Pneumonia	30	3	5
Total Average score		2.5	5.6

Project Question 1

The first question was "Will a comprehensive medical-surgical competency plan on the assessment increases a nurse's ability to recognize early signs of a patient who is clinically deteriorating?" The primary objective of Module 1 questions was to assess the nursing staff's knowledge of the assessment triad components, including physical

examination, vital signs, and laboratory values. In addition, Module 1 was intended to equip the nursing staff with knowledge of utilizing the triad of assessment model components when assessing patient conditions. The average scores on the pre- and post-tests for Module 1 indicated that the nursing staff's knowledge of the triad of assessment model's components increased because of the educational modules. Improving the nursing staff's knowledge of the triad will increase their ability to recognize patients whose conditions are deteriorating, thereby reducing the likelihood of FTR.

The second educational module assessed the nursing staff's competence in surveillance, early detection, and vigilance. Lessons in Module 2 focused on the crucial steps of collecting, interpreting, and assembling data for clinical decision-making. Module 2 was designed to inform the nursing staff of the procedures they should avoid reducing the risk of FTR. The average scores on Module 2 pre- and post-tests were 3 and 5, respectively. Comparing the pre- and post-tests revealed an improvement in the nurse's ability to detect early clinical deterioration in patients. Additionally, the nursing staff learned the significance of early diagnosis in reducing FTR and enhancing patient outcomes.

Project Question 2

The second question was "Will a comprehensive medical-surgical competency plan increase a nurse's ability to think critically and intervene appropriately?" The objective of Module 3 was to improve the nursing staff's comprehension of the oxyhemoglobin dissociation curve, which measures oxygen's affinity for hemoglobin. The questions were designed to evaluate the nursing staff's ability to apply knowledge of

the Oxyhemoglobin Dissociation curve to recognize the earliest stages of hypoxia, which may lead to FTR. The average pre- and post-test scores were, respectively, 3 and 5 points.

Similarly, the objective of Module 4 was to improve the nursing staff's knowledge of orthostatic blood pressure and mean arterial pressure (MAP). The nursing staff should be able to define orthostatic hypotension and its accompanying psychological manifestations after completing Module 4. In addition, the nursing staff must comprehend the causes of low blood pressure or hypotension, the conditions that can lead to orthostatic hypotension, and the complications associated with low blood pressure or hypotension. The nursing staff's average scores on the pre- and post-tests were 3 and 5 points, respectively. The increase in points indicates that the medical–surgical plan enhanced the nursing staff's knowledge of orthostatic blood pressure and their ability to recognize symptoms and signs of hypotension or low blood pressure, as well as the conditions that can lead to hypotension.

The objective of Module 5 was to educate the nursing staff on sepsis, severe sepsis, and septic shock. After completing Module 5, I anticipated that the nursing staff would be better able to recognize the signs and symptoms of systemic inflammatory response syndrome (SIRS) using the triad of the assessment model. Moreover, I expected the nursing staff to comprehend the significance of MAP. The pretest and posttest scores for Module 5 were 2 and 4, respectively. The increase in points demonstrates that nurses are now better able to recognize symptoms and signs of sepsis in patients and intervene appropriately using their clinical knowledge.

Module 6 aimed to increase nursing staff knowledge of pneumonia, its complications, and nursing medical interventions used in the care of pneumonia patients. The nurses' ability to detect symptoms and signs of SIRS criteria using the triad format and the three critical nursing interventions that are useable in caring for patients with pneumonia was expected to improve. The average scores on the Module 6 pretests and posttests were 3 and 5, respectively, indicating an improvement in the nurses' ability to identify signs and symptoms of pneumonia and use critical thinking skills to intervene appropriately. These findings suggest that the nursing staff's ability to think critically and intervene appropriately when patients' conditions deteriorate has improved.

Project Question 3

Did the post-test education results reflect an increase in nursing understanding and confirm the nurse's (a) grasp of the criteria indicating a patient's declining status, (b) understanding of how and when to notify the RRT, and (c) ability to recognize unforeseen variables which have contributed to inadequate assessment and may have led to FTR? The third question is addressed by comparing the results of all six educational modules' pretests and posttests. The average pretest score for all six modules was 2.5 out of 5 points, while the average post-test score was 5.6. The increase in average scores indicates that the medical-surgical competency plan improved the nursing staff's grasp of definitive criteria that indicate patients' deteriorating statuses, understanding when to notify RRT, and identifying hidden variables that may lead to FTR. After completing the educational intervention, I assigned scores for all the participants based on a Likert scale rating ranging from 1 (Absolutely Disagree) to 5 (Absolutely Agree). The results of the

initial assessment survey of the RNs participating in the educational intervention are provided in Table 2. The purpose of the assessment survey was to test how the staff performed as a group after the educational intervention.

Table 2

Average Score of Posttests

Module	N	Average Test
1. Components of the triad of assessment	33	5.6
2. surveillance, early recognition, vigilance competency	31	5.7
3. Oxyhemoglobin dissociation curve	28	5.6
4. Orthostatic blood pressure and mean arterial pressure	29	5.6
5. Sepsis	28	5.6
6. Pneumonia	30	5.8

The DNP project successfully showed how staff education could advance nursing expertise and raise the standard of patient care. The post-test results show a significant improvement in RNs' knowledge of FTR following the education module training. Therefore, a 30-minute classroom training session successfully enhanced nursing knowledge and provided a solution to the DNP project's question.

The two variables of participant pre-and post-test scores could be compared using an Inova Single Factor analysis test. The difference was determined by calculating the mean and variance of the pretest and posttest scores (M = 5.5, Var = 0.3), which revealed a significant difference in standard deviation. The p-value was 0.00022, highlighting the importance of educating the nurses to lower the incidence of FTR. Table 3 contains the statistical comparisons.

Table 3

Single Factor ANOVA for Clinical Decision-Making Self-Confidence Scale

Groups	Count	Sum	Avg.	Variance
3	5	12	2.4	0.3
5	5	23	4.6	0.3

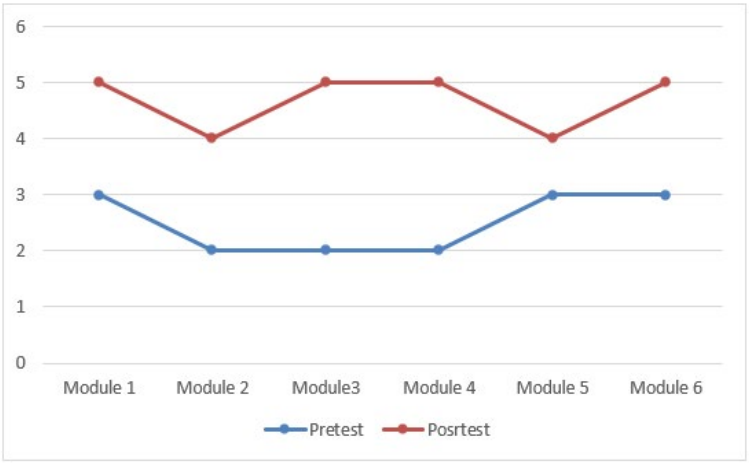
Table 4

Between and Within Groups ANOVA for Clinical Decision-Making Self-Confidence Scale

Sources of variance	SS	df	MS	F	P value	F crit
Between groups	12.1	1	12.1	40.3333	0.00022	5.317655
Within groups	2.4	8	0.3			
Total	14,5	9				

Figure 1

Run Chart: Pre- and Post-test Result



Discussion of Findings in the Context of Literature and Frameworks

Identifying patients' deteriorating conditions can be difficult and time-consuming for nursing staff in acute care settings. Early detection of a patient's symptoms before deterioration is critical to ensuring patient safety and improving patient outcomes (Griffith et al., 2008). According to Bell-Gordon, Gigliotti, and Mitchell (2014), there is a growing disregard for indicators of deteriorating patient conditions in the acute care setting. Previous research suggests that implementing new interventions, such as the medical-surgical competency plan described in this project, can reduce FTR rates while improving the quality of care provided to acute care patients (Wakeham et al., 2014). The results of the competency plan's pretests and posttests revealed an improvement in medical-surgical competencies and critical thinking skills among nursing staff at the acute care setting of the suburban Maryland hospital. According to Aiken et al. (2003), practical clinical reasoning skills are critical in achieving positive patient outcomes.

Healthcare institutions can improve patient satisfaction and health outcomes among critically ill patients by reducing FTR rates using the triad of assessment and similar models (Lunney, 2013). In contrast, poor clinical reasoning skills frequently fail to detect patients' deteriorating health conditions, leading to FTR (Aiken et al., 2003). Therefore, adopting interventions such as the triad of assessment model utilized in the DNP project can enhance acute care nurses' critical thinking and reasoning skills by adopting the triad of the assessment model. Furthermore, the triad of assessment tools can

be disseminated and used to educate nurses and other settings on assessing patients, performing interventions, and evaluating health outcomes.

The DNP project was a quality improvement effort to improve the nursing staff's medical-surgical competencies regarding the triad components of the assessment model. The post-test scores showed encouraging signs of progress in terms of knowledge and critical thinking. The improvement in post-test scores was most likely due to the educational intervention, emphasizing the importance of continuous education and training of nurses on various medical-surgical plans to improve the quality of care. Furthermore, I concluded that the nursing staff improved significantly in critical thinking skills and medical-surgical competencies after receiving the educational intervention. There is substantial empirical evidence supporting the effectiveness of educational interventions in improving nurses' knowledge and skills for patient outcomes in various healthcare settings (Lunney, 2013; Oja, 2011). The high posttest scores in the DNP project demonstrated the excellent application of knowledge from the six educational modules provided to the nursing staff on the triad of assessment, surveillance, early recognition, and vigilance.

It is essential in today's healthcare system to ensure proper nurse education and training to maximize CMS reimbursements (Hain & Fleck, 2014). According to Kane, Shamliyan, Mueller, Duval, and Wilt (2007), the presence of nurses at the patient's bedside implies that nurses should be empowered and given ownership of the care quality provided to the patients. As demonstrated in this project, nurses' education and training improved their knowledge of medical-surgical competencies and critical thinking skills.

As a result, implementing new healthcare education innovations may improve nurses' performance in acute care settings. The DNP project participants demonstrated improved knowledge of the six modules. The response rate indicated that the nursing staff was taking the initiative to improve their medical-surgical competencies and critical skills. The most important implication of this project's findings is the importance of developing an essential thinking competency plan to ensure continuous education of nursing staff on evidence-based practices that can reduce the frequency of FTR situations. The value and efficacy of educational interventions in enhancing nurses' clinical practice and critical thinking abilities have been examined by numerous researchers (Tschannen, Aebersold, McLaughlin, Bowen, & Fairchild, 2012; Lunney, 2013; Oja, 2011). Tschannen et al. (2012) discovered that simulation-based nursing education improved nursing students' practice skills. Furthermore, Tschannen et al. (2012) reasoned that nursing students who were educated on patient safety, priority setting, and conflict management using the Capacity to Rescue Instrument (CRI) were better able to transfer classroom knowledge than nursing students who did not take part in simulations. Therefore, it is essential to implement new educational interventions to enhance nurses' critical skills, such as conflict management, communication, and setting priorities (Tschannen et al., 2012).

The findings of the DNP project indicate that the educational modules benefited the nursing staff. Therefore, healthcare institutions should prioritize the education and training of nurses in medical-surgical competencies to improve early recognition of clinical deterioration in patient health conditions and reduce FTR rates.

Based on the project's findings, it is evident that the participants' knowledge of patient monitoring, vigilance, and surveillance has increased. Like the triad of assessment, the CCM model provided a framework for implementing the medical-surgical competency plan. The project's findings demonstrate that participants' understanding of patient monitoring, vigilance, and surveillance has improved. The CCM model provided a framework for implementing the medical-surgical competency plan as part of the assessment triad.

According to the Department of Health (2003), the CCM is ideal for improving the quality of care (abate deterioration of FTR) for acute care patients through enhanced vigilance, surveillance, and patient monitoring. According to the DNP project's findings, it is possible to use educational interventions effectively in conjunction with the CCM. The results are consistent with previous research on the effects of nurse training and education on the early detection of clinical deterioration in patients' health conditions. Overall, the educational initiative improved patient monitoring and clinical thinking skills in the care of chronically ill patients.

Implications

Implications for Policy Change

The DNP project was a quality improvement initiative to improve nurses' critical thinking abilities and medical-surgical competencies. The effectiveness of the triad of assessment model implies that healthcare institutions and policymakers should develop educational interventions for improving nurses' medical-surgical competencies and critical thinking skills. The project findings suggest that every educational intervention

should be evaluated using outcomes. Despite their expertise in acute care, nursing staff can effectively collaborate with other healthcare organizations to implement educational interventions such as the triad of assessment model across the country. However, the interventions are based on recent evidence-based guidelines and empirical evidence relating to FTR that all healthcare institutions can access.

The CMS uses quality improvement as a reimbursement criterion for medical facilities. To reduce the financial burden on their institutions, healthcare administrators should improve the quality of care, particularly for acute care patients. Implementing the medical-surgical plan in other medical units at the local Hospital in Maryland will also allow for the effective rescue of patients with severe complications and enable nurses to intervene in real time when patients' conditions deteriorate. Furthermore, educational policies to reduce FTR rates through nursing student education make a lot of sense.

Practice Implications

Training nurses on medical-surgical competencies enhance nurses' abilities to recognize complications and improves their critical thinking, communication, and teamwork skills. Therefore, bedside nurses should be able to take the initiative whenever they recognize deterioration in a patient's condition. Through this project, I indicated that introducing new educational interventions in health care, such as the triad of assessment model, can enhance nurses' critical thinking skills and medical-surgical competencies, thus, reducing the cases of FTR. In addition, using effective interventions to improve care quality in acute care settings through early recognition of patients' deteriorating conditions will reduce the likelihood of complications, morbidity, mortality, and FTR.

Further, education and training of nursing staff using the medical-surgical competency plan can improve their clinical skills and simplify the nurses' tasks while providing care for acute care patients due to improved clinical decision-making ability. As a result, nurses can effectively prevent complications from developing into FTR.

Project/Research Implications

According to the findings of the DNP project, enhancing nurses' critical thinking and medical-surgical competencies is essential for reducing the incidence of FTR and FTR-related mortality. In acute care settings, nursing staff can utilize data collection and research skills to address future health cases. Using current data on evidence-based practice, nursing staff can play a significant role in ensuring the continuation of research on the most effective educational interventions for enhancing nurses' competencies and skills. Nevertheless, the need for more research on risk reduction in acute care settings cannot be overstated. In addition, there is a need for research on more precise FTR indicators that can accurately confirm deterioration in patient conditions. Finally, additional research is required to determine the effects of applying the triad of assessment model to patients receiving acute care.

Social Change Implications

This quality improvement initiative contributes to social change by identifying an educational program that improves the acute care nursing staff's medical-surgical competencies and critical thinking skills in the outpatient community clinic. Implementing the medical-surgical plan will facilitate early recognition of patients' deteriorating conditions and, consequently, prompt intervention by the physicians.

The timely intervention in the local Maryland Hospital setting and the community outpatient setting will improve patient outcomes, patient satisfaction, and trust between medical doctors and nurses. The medical-surgical unit's culture changed after sharing data from the education program and implementing the medical-surgical plan. The unit nurses' engagement in the teaching sessions increased as the education intervention progressed. The nursing staff's confidence grew as they were encouraged to participate.

Furthermore, the social change implications for this project relate to community involvement in enhancing patient care and reducing the rates of FTR. According to the conceptual model developed for this study and the underlying theoretical frameworks, social aspects of the patients' environments, including the rates of criminal activity, ecological stability, neighborhood support, relationships, education, social equity and justice, and access to healthcare resources, influence the health outcomes of any individual (Wold & Mittlemark, 2018). Maintaining FTR prevention, therefore, requires changes towards consistent delivery of a supportive ecological system and being around people who encourage such environments. Continuous availability of healthcare resources, or community health fare, can help prevent treatment delays attributed to a lack of healthcare resources.

The nurses know that their hard work to stop FTR in their patients and signs that they are appreciated make them feel good about the work they do for their patients. The quality improvement initiative can also assist acute care nurses in increasing their participation in effecting change in chronically ill patient care provision by giving them the confidence to notify the physician more readily when a patient's status is

deteriorating. Educators for medical-surgical units could use the assessment triad components to evaluate their nursing staff's educational needs and medical-surgical competencies in caring for patients with chronic illnesses and making society healthy.

Recommendations for Future Projects

Given the limitations of the project, the DNP candidate will recommend a more robust methodology for future research. Some of the changes that could use a makeover include the current design, the project timeline to fit a proper longitudinal study, expanding the scope of the project beyond a single hospital environment, and expanding the types of data collected for application during the analysis stage. Developing the project scope will help as several hospitals will give different perspectives concerning the contributions of factors beyond individual education to preventing FTR. Since this project focused on educating nurses as an approach to FTR prevention, it is prudent to note that effective implementation of quality improvement initiatives in the healthcare system is a process that requires diverse inputs from different sectors. Future projects should emphasize the diversity of barriers to the effective prevention of FTR due to treatment delays. Evidence-based research should consider the myriad variables that all contribute to outcomes in healthcare.

Moreover, expanding the timelines for monitoring project performance can help attain more remarkable conclusions and accuracy. In the same way data on FTR incidents before the educational intervention were collected for three months and only averaged to estimate the monthly rate, a comparative approach for the post-intervention data is plausible. Expanding the data collection duration following the intervention will increase

the probability of attaining greater accuracy in data. However, it will also support examining the sustainability of changes realized through the educational initiative.

Project Strengths and Limitations

Strengths

The project's main strength was its reliance on the holistic hospital environment as its context and robust methodological approach. Being based on a natural hospital environment and working with RNs with schedules in the real hospital provided an opportunity to discover more information than was provided by the formal structure of the project through observations and asking questions. For instance, it was possible to understand specific organizational characteristics contributing to FTR or prevention. In some organizations, culture is the most significant impediment to implementing continuous improvement strategies. In such an environment, educating the nurses on concepts related to FTR can only result in adverse outcomes, including resistance to changes such as implementing techniques for preventing FTR. However, this project's organizational structures and support systems were adequate.

Limitations

The main limitation of this project was the scope of outcomes monitoring. The purpose of the project was to determine the project's effects on nurses' knowledge one week after the educational intervention and the impacts of the education on FTR one month after the intervention.

The changes in the number of FTR cases could have been due to fewer patients admitted to the ICU within that month. Therefore, to determine whether the observed

reduction in FTR due to treatment delays was indeed an outcome of the project, it would have been necessary to prolong the data collection process or compare patient influx during the period before the project with that after the project completion. In this way, it could have been possible to determine what proportion of the patients who came into the hospital's ICU had complications.

Section 5: Dissemination Plan

Staff education and training are ongoing processes in health care organizations to improve the quality of patient care (Chaghari et al., 2017). The organization must train nurses to ensure they are competent and confident in delivering high-quality patient care. FTR staff education will promote positive organizational change by increasing RNs' knowledge and self-esteem about their patient care responsibility. Comparison and analysis of data collected in this project showed that FTR education improved posttest scores, indicating the RNs' more significant understanding of FTR assessments and better patient outcomes.

The approaches utilized for this project's dissemination aim to spread knowledge and related evidence-based interventions to many end-users, like patients and health care providers, within or across geographic locations, practice settings, or social or other networks. The dissemination plan includes presenting the project's results in the Nursing Quality Forum. The audience will be the chief nursing officer, nursing directors, nurse managers, nurse educators, and the performance improvement team. I will also present my findings during the staff meeting in the pilot unit. Upon implementing the project throughout the organization, I plan to collect 6 months' postimplementation data on the number of RRTs, Code Blues, ICU transfers, and sepsis identifications and compare them to the pre-implementation data. I plan to publish my findings in the *Journal of Nursing Care Quality*.

Analysis of Self

Through my engagement in this project, I have undergone various experiences

that instilled in me diverse qualities both as a student and a healthcare professional. As a scholar, I have had to engage in an in-depth review of literature, obtaining information from previous literature and applying research skills. skills gained in the research process have enhanced my abilities as a practitioner in health care. There is a clear understanding of the educational role of the nurse in a health care setting and the need for continuous learning to implement evidence-based practice. I have learned that as a practitioner, the knowledge gained in school is never sufficient for addressing all clinical practice problems. Instead, one must continuously learn to enhance skills for better performance, not only because of possible skills erosion but also because of the dynamic nature of the healthcare environment.

I have also been able to build myself up as a project developer and as a professional. As a project manager, I have learned how to seek the support of critical administrative functions toward implementing change in an organizational setting. I was required to collaborate with nurses in the hospital when initiating the project. I must communicate with an interprofessional team, fostering individual development and considering diverse participant opinions. I also had to be directly engaged in identifying and developing resources for use in the educational project. Through this activity, I developed teamwork and communication skills, which will be essential for me in any other future project and professional development. As a professional, I actively manage diverse aspects of the professional environment. I have communicated with other professionals, developed skills for interprofessional collaboration, handled past medical records, become aligned with the regulations on patient privacy and confidentiality, and

actively participated in a patient safety improvement initiative. I expect to replicate these activities even in my professional practice in the future. Therefore, the project has been instrumental in building my proficiency not only as a scholar and practitioner but also as a health care professional

Summary and Conclusions

The primary purpose of this project was to determine whether educating nurses on FTR can help advance their knowledge and subsequently reduce the incidence of FTR attributable to treatment delay. The literature review developed a conceptual model comprising the nurse/healthcare provider on one end and the patient on the other. The conceptual model represented the need to practice patient-centered care to reduce the possibility of treatment delay and the resulting FTR. The conceptual model links the health care provider to the patient through a series of other factors categorized as organizational, ecological, and disease factors, all of which influence the possibility of patient deterioration and the need for a speedy response from healthcare providers. Therefore, using an interpretive paradigm and a longitudinal project methodology, the study findings show that educating nurses in a metropolitan hospital in Suburban Maryland can enhance their knowledge of FTR prevention, resulting in lower FTR rates in the hospital. Still, having answered the project question, it is concluded that the project has been successful.

The project has implications across several areas: research, practice, policy-making, and social change initiatives. In practice, for instance, the implications are for organizations to recognize their barriers to implementing strategies that help in

preventing FTR. In research, implications point to the need for a more expansive exploration of the FTR phenomenon, including suggesting new approaches to preventing its occurrence due to treatment delays. Some possible areas of focus include organizational cultures, nurse-to-patient ratios, clinical support, and the availability of resources for health care service delivery. Extensive evidence is provided on the impacts of nurse education, thus creating a need for social adjustment towards organizational cultures that support continuous learning and implementation of evidence-based practices in nursing.

The project's major strength that has supported the realization of its objectives is its dependence on a longitudinal study approach and focus on a natural hospital environment. Despite its limitation, this project has been effective in building my professional, scholarly, project control, and practice capabilities. The project has contributed to intellectual growth due to the need to implement research skills. I must interact with the interprofessional team at various levels, which helps me build the skills that I require in teamwork, critical thinking for health care decision-making, and support capability to enhance patient safety and well-being. In other areas, I have also developed skills that will help me now and in the future.

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Appendix A: Objectives of Education Modules

1) Triad of Assessment

   a. Nursing staff will recognize the components, importance, and relevance of the Triad of Assessment (VS, Assessment, Labs) in correlation to patient acuity and outcomes.

2) Recognition, Surveillance, Vigilance, and Failure to Rescue

   a. Nursing staff will verbalize the importance and relevance of early symptom recognition, surveillance, and vigilance concerning positive patient outcomes.

3) Oxyhemoglobin Assoc-Disassociation Curve

   a. Nursing staff will understand the relationship of oxygen saturation to the oxyhemoglobin association-disassociation curve and how this relates to our patient assessment and outcomes.

   b. Nursing staff will understand the correct procedure for collecting pulse oximetry measurements.

4) Orthostatic and MAP and what this means when related to the Triad and Surveillance

   a. Nursing staff will articulate the variables involved in orthostatic hypotension and the MAP and how this correlates to patient outcomes and treatments.

   b. Nursing staff will understand the accurate technique for collecting orthostatic hypotension measurements.

5) Sepsis – exemplar

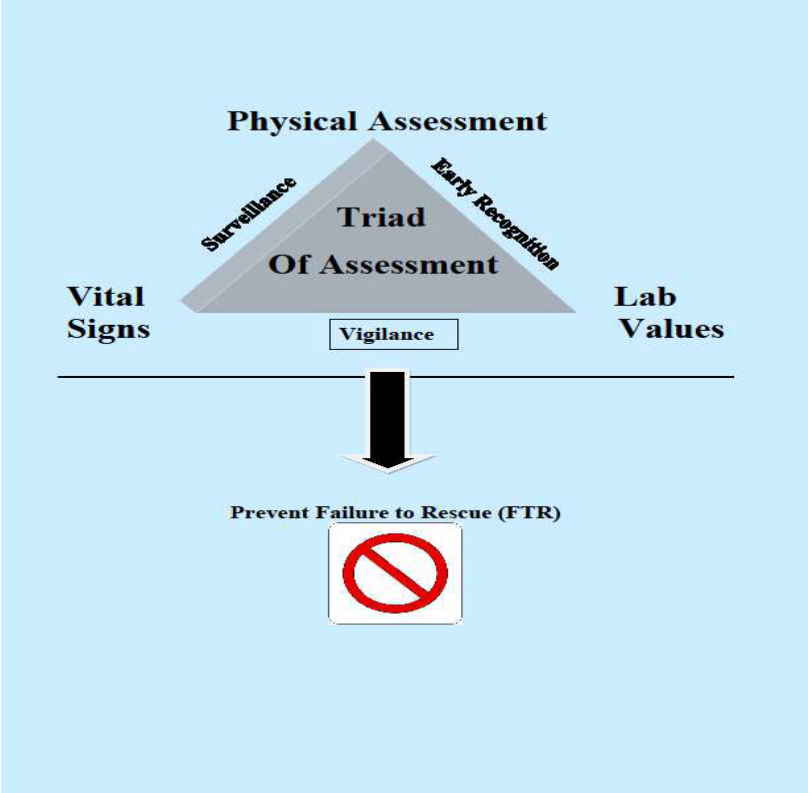
   a. Nursing staff will articulate the S/S of sepsis and how this correlate to patient acuity and tied into the triad of assessment and early recognition.

6) Pneumonia – exemplar

   a. Nursing staff will articulate the S/S of pneumonia and how this correlate to patient acuity and tied into the triad of assessment and early recognition.

Appendix B: Medical-Surgical Competency Modules 1–6 and Pretest and Posttests

Module 1



The components of the triad of assessment (Physical assessment, vital signs, and lab values) are all like pieces in a puzzle; they are interconnected and should all be considered when assessing patient status. As Florence Nightingale stated, "a nurse' role is to put the patient in the best condition for nature to act upon him." To do this, nurses must have an in-depth understanding of strengthening a person's internal and external environment. Advocacy and a thorough assessment of the patient's condition are our responsibility. The triad of evaluation/assessment is a tool to support you in this role.

When assessing a patient's status, you may ask questions: "What is going on here?" "What does it mean?" "Is it significant?" and "How should I follow up?" If a patient is symptomatic or you find an abnormal assessment, combining these three assessment findings can help you determine what may be going on.

Use the Triad to:

1. Consider and compare new data with baseline.
2. Explore all variables of change in status (could be simple) but meaningful.
3. Improve patient outcomes.
4. Provide a framework for nurses to fully assess patients and make correlations of findings for each of the components of the Triad.
5. Increase nurses' ability to recognize deterioration of patient status early.
6. Help determine appropriate understanding/acuity to fit the nursing unit via specific indicators and assessment data.
7. Decreased transfers to ICU (improve early recognition, intervention, and rapid response, thus preventing unnecessary transfers to ICU and code blues).
8. Decrease morbidity and mortality.

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***For Triad Competency*: The nursing staff will review how the three components of the Triad and align them to a patient's condition: A case study.**

You have a patient with an internal defibrillator. He becomes increasingly agitated and slumps over and passes out while sitting up in a chair, and he is found pulseless. The patient regained consciousness following a brief round of compressions. P-110, BP 145/114, O2 Sat 94%:

You can consider the possibilities of what led up to the event. What do you believe happened, and how would the three triad components work together to help you formulate an assessment? There could be more than one answer.
Additional pt. findings: T-99, P-88-134, B/P 114/84 to 164/88, RR-22-32, PE on CT, Lactate 3.9-2.9, Troponin .02-.7, Diagnosis: PE, active infection, AMS
- Low-grade temp - increased WBC, secondary to PE/Sepsis.
- Tachycardia - hypotension, or decreased air exchange due to PE, and agitation, pain
- Hypertension – agitation, pain.
- Increased WBC – trending up due to PE, infection, and sepsis.
- Increased lactate – trending to Sepsis/SIRS.
- Troponin – unremarkable
- ICD interrogation – unremarkable

Lactate is a marker for cellular hypoxia:
- Above 4.0 mmol/L is associated with a 27% mortality rate (likely due to a significant perfusion problem due to tissue failure, anaerobic metabolism, and cellular hypoxia)
- A level of 2.5-4.0 mmol/L has a 7% mortality rate
- Below 2.5 mmol/L, the mortality rate is below 5% (Strehlow 2007).

Questions:
1. What is his cardiovascular assessment? Could his AICD have any meaning here?
2. How would pulse oximetry contribute to your assessment?
3. What would make this picture look like early recognition of sepsis?

Making these correlations is to help us use our clinical judgment to think, prepare, anticipate interventions, and prevent possible complications.

Module 2: Surveillance, Early Recognition, and Vigilance Competency

Surveillance:
• The surveillance process includes data collection, interpretation, and synthesis for decision-making. This research proposes that nursing surveillance comprises five dimensions: actions, expertise, early recognition, intuition, and decision-making.
• Harmer and Henderson (1939): "The habit of observation is one of the most (if not the most) essential qualities in nursing. The responsibility [to observe] is distinctly that of the nurse, for during the greater part of the time they are the only one present to care for the patient and thus to observe and report" (Minick 1995).

Early Recognition:
• Because nurses' early recognition of patient problems is a crucial aspect in producing positive patient outcomes in acute care settings, the skill of early recognition is critical to quality care.
• A vital aspect of clinical judgment is the early recognition of patient problems.
• Without exception, caring and concern threads were involved whenever nurses identified patient status changes
• While the warning signals in each situation include data such as the heart rate, blood pressure and level of consciousness, the small changes in these values alone may be clinically insignificant.
• When the nurse combined data with the changes in color and the patient's overall presentation, their significance became new. Missing the connection here ties into the triad of assessment and anticipating "what might be going on."

Vigilance:
• Vigilance "a state of watchful attention, of maximal physiological and psychological readiness to act and of having the ability to detect and react to danger" (Hirter & Van Nest, 1995, p. 96). Drawing upon and adding to the precision of this definition, professional nursing vigilance may be defined as a state of scientifically, intellectually, and experientially grounded:

- Attention to and identification of clinically significant observations/signals/cues:
- Calculation of risk inherent in nursing practice situations.
- Readiness to act appropriately and efficiently to minimize risks and respond to threats.

Failure to Rescue (FTR) (AVOID this!):
• The definition of FTR is "a clinician's inability to save a hospitalized patient's life when they experience a complication (a condition does not present at admission).
• To "rescue" a patient appropriately, the nurse must be able to anticipate when complications are likely to occur and rapidly recognize cues that indicate that problems are beginning (Clarke & Aiken, p. 43).
• Surveillance, involving frequent assessments, is required, as is the ability to analyze information and react to the implications of that analysis promptly • Reacting to information and intervening accurately/appropriately are the result of professional

nursing vigilance and will often include both independent nursing action and mobilization of other members of the health care team.
• FTR results in preventable deterioration, severe disability, or death.
• Between 2014 and 2016, Health Grades determined FTR claimed more than 188,000 lives.
• Subtle reactions can escalate from mild concern to severe within minutes or hours. To prevent FTR, one must focus on breathing, circulation, and bleeding (ABC).

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For surveillance, early recognition, and vigilance competency, the nursing staff will be able to answer the following:

1. Give an example of how surveillance, early recognition, vigilance, and failure to rescue are all interconnected.
2. How do these four concepts relate to the triad of assessment?
3. These concepts go deep. Write a sentence about how the above impressions relate to the following phrases:
    - Communication and teamwork
    - Handoff report
    - Surveillance, Early recognition, Vigilance of each other!
    - Professional practice

Module 3: Oxyhemoglobin Dissociation Curve

• The Oxyhemoglobin Dissociation curve (hemoglobin binding curve) describes the tendency for oxygen to bind to hemoglobin: below a SaO2 of 90%, slight differences in hemoglobin saturation reflect significant changes in PaO2.
•Reflects how hemoglobin acquires and releases oxygen molecules into the plasma. What is the Pa02 (Oxygen pressure)?
• This is the amount of oxygen that is dissolved in the blood. The average PaO2 level should be between 80to100 mmHg. If it is below 80, there is evidence of hypoxemia. Therefore, no compensation is done to restore the pH balance.
• PaO2 determines the oxygen saturation of hemoglobin.
• The Oxy-Heme Dissociation curve indicates how PO2 affects oxygen binding to hemoglobin, delivered to cells.

What is Oxygen Saturation (Sa02)?
• Amount of oxygen in blood plasma that is attached to hemoglobin.
• Oxygen saturation measures how much oxygen the blood is carrying as a percentage of the maximum it can carry.

Why is it relevant to nursing care?
There are four oxygen binding sites on the Iron (Fe++) part of the hemoglobin of red blood cells. Once one oxygen molecule drops off the hemoglobin, the other three molecules more readily drop off. Once one molecule binds, the other three more readily bind. So, the effect/cascade of desaturation can be near exponential (as reflected in the dissociation curve). When a patient is de-saturating, the P02 level **can reflect levels consistent with systemic hypoxemia and an imbalance in pH, leading to death or non-quality life.**

Hebert, P.C. (1998) Transfusion requirements in critical care (TRICC): A multicenter, randomized, controlled clinical study. Transfusion Requirements in Critical Care Investigators and the Canadian Critical care Trials Group. *British Journal of Anesthesia, 81* (1), 25-33.

For the Oxy-Heme Dissociation Curve and Oxygen Saturation Competency **graph, the following values (Items 1 and 2) on the Curve of the subsequent page:**
1. Locate a pulse saturation value of 90% and 95% on the curve below (left axis). Identify the PaO2 levels on the bottom (pressure of free oxygen in the plasma) axis.
2. Locate a pulse saturation value of 90% and 85% on the curve below. Identify the PaO2 levels of each on the bottom axis.
3. Notice how the curve drops sharply after 90% oxygen saturation. Hence, this is when hypoxia starts to develop. Relate this to being vigilant with your patients. Think of your patients that have had low O2 Saturation. Think of what they looked like and how poorly they could recover following any activity causing increased oxygen demand.

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Mosby's Nursing Consult

Books

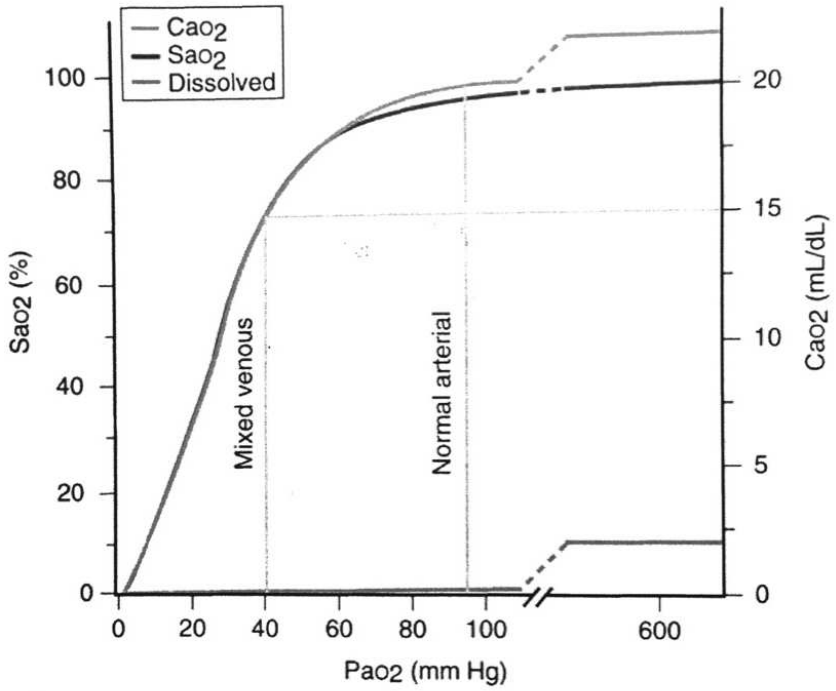

FIGURE 104-1 Oxyhemoglobin association-dissociation curve.The axis for oxygen saturation in the arterial blood (Sao
the left, and the axis for arterial content of oxygen (Cao_2) is on the right. Cao_2 is the sum of the oxygen dissolved in pl
(denoted as ?Dissolved? in the figure) plus the oxygen bound to hemoglobin. At a normal hemoglobin, most of the oxyg
carried in combination with hemoglobin, with only a relatively small amount of oxygen dissolved in plasma. When the va
the arterial partial pressure of oxygen (Pao_2) is on the ?flat? portion of the curve (Pao_2 ?60 to 65 mm Hg, normal partı
pressure of carbon dioxide [Pco_2], and normal pH), raising the Pao_2 further has relatively little effect on total oxygen c
Increases in temperature, Pco_2, hydrogen ion concentration, or 2,3-diphosphoglycerate cause a rightward shift in the
oxyhemoglobin association-dissociation curve.

Module 4: Orthostatic Blood Pressure and Mean Arterial Pressure (MAP)

• Orthostatic hypotension is defined as:
- a decrease of at least 20 mm Hg in systolic blood pressure
- or 10 mm Hg decrease in diastolic blood pressure
- or a rise in the pulse rate of 20 bpm or more.

So, this occurs within 1 - 3 minutes of standing. Orthostasis means upright posture, and hypotension means low blood pressure.

What is happening physiologically?
- Vasodilation (vessels are not constricting adequately in response to change in position) or hypovolemia. The typical response is vasoconstriction when moving to a sitting or standing position.
- You might see dizziness, faintness, or lightheadedness caused by low blood pressure.

Why does this happen:
• Dehydration, fever, vomiting, severe diarrhea, and strenuous exercise with excessive sweating led to dehydration. When you become dehydrated, your body loses blood volume. Mild dehydration can cause symptoms of orthostatic hypotension, such as weakness, dizziness, and fatigue.
• Heart problems can lead to low blood pressure, including shallow heart rate (bradycardia), heart valve problems, heart attack, and heart failure. These conditions may cause orthostatic hypotension because they prevent your body from responding rapidly enough to pump more blood when needed, such as standing up.
• Endocrine problems: Thyroid conditions, adrenal insufficiency (Addison's disease), low blood sugar (hypoglycemia), and in some cases, diabetes can trigger low blood pressure. Diabetes can also damage the nerves that help send signals regulating blood pressure.
• Nervous system disorders such as Parkinson's disease, multiple system atrophy, Lewy body dementia, pure autonomic failure, and amyloidosis can disrupt your body's typical blood pressure regulation system.
• After eating: Some people experience low blood pressure after eating meals (postprandial hypotension). This condition is more common in older adults.
• S/p cardiac catheterization or any procedure with conscious sedation • Medications: diuretics, levodopa, beta-blockers, calcium-channel blockers, nitrates (and other vasodilators).
• Hypovolemia (including that caused by dehydration, over diuresis, diarrhea, bleeding, burns, fever, and a hot environment)
• Decreased baroreceptor sensitivity - most common in the elderly
• Common general neuropathies affecting the peripheral autonomic nervous system, including diabetes mellitus, alcohol abuse, and amyloidosis
• Prolonged bed rest
• Salt-free diet
• Also: anemia, sympatholytic drugs, diuretics, nitrates, narcotics, antihistamines,

psychotropic agents, barbiturates, antihypertensive,
• Anticholinergic—can predispose a patient to orthostatic hypotension without hypovolemia.
Consider: Safety issues – especially FALLS
Anticipated treatments: Midodrine, fluid bolus, treatment depending on the cause.

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Module 5: Sepsis

Sepsis is a potentially life-threatening complication of a known or suspected infection plus two or more systemic inflammatory response syndrome (SIRS). Chemicals released into the bloodstream to fight the infection trigger inflammatory responses throughout the body; this inflammation can trigger a cascade of changes that can damage multiple organ systems, causing them to fail.

SEPSIS (See SEPSIS protocol on next page):

• *SIRS Criteria*: 1) Temp > 101 or 96.8^{O}F, 2) HR > 90 bpm, 3) RR > 20 or PaCO2<32, mmHg, and/or 4) WBC > 12k or < 4k

• *Sepsis*: Known or suspected infection with two or more of the above SIRS criteria. Notify MD and be prepared to check serum Lactate, obtain cultures (blood, urine, etc.) before beginning antibiotics, and assess for organ dysfunction (hypotension, oliguria, elevated lactate).

• *Severe Sepsis*: Sepsis plus the failure of one or more organ systems, hypotension, or perfusion abnormalities such as peripheral edema, pulmonary congestion, tissue necrosis, DIC, thrombocytopenia, lactic acidosis, decreased systemic vascular resistance, and decreased cardiac contractility.

• *Septic Shock*: Severe sepsis associated with refractory hypotension (BP<90/60) despite adequate fluid resuscitation, plus the failure of two or more organ systems. Death is the culmination of unresolved multiple organ dysfunction syndromes (MODS).

It can all happen VERY QUICKLY – Surveillance, early recognition, and vigilance are KEY.

What is happening physiologically?

Microorganisms release toxic substances that trigger progressive, complex protagonist/antagonist host defenses that become maladaptive if not controlled.

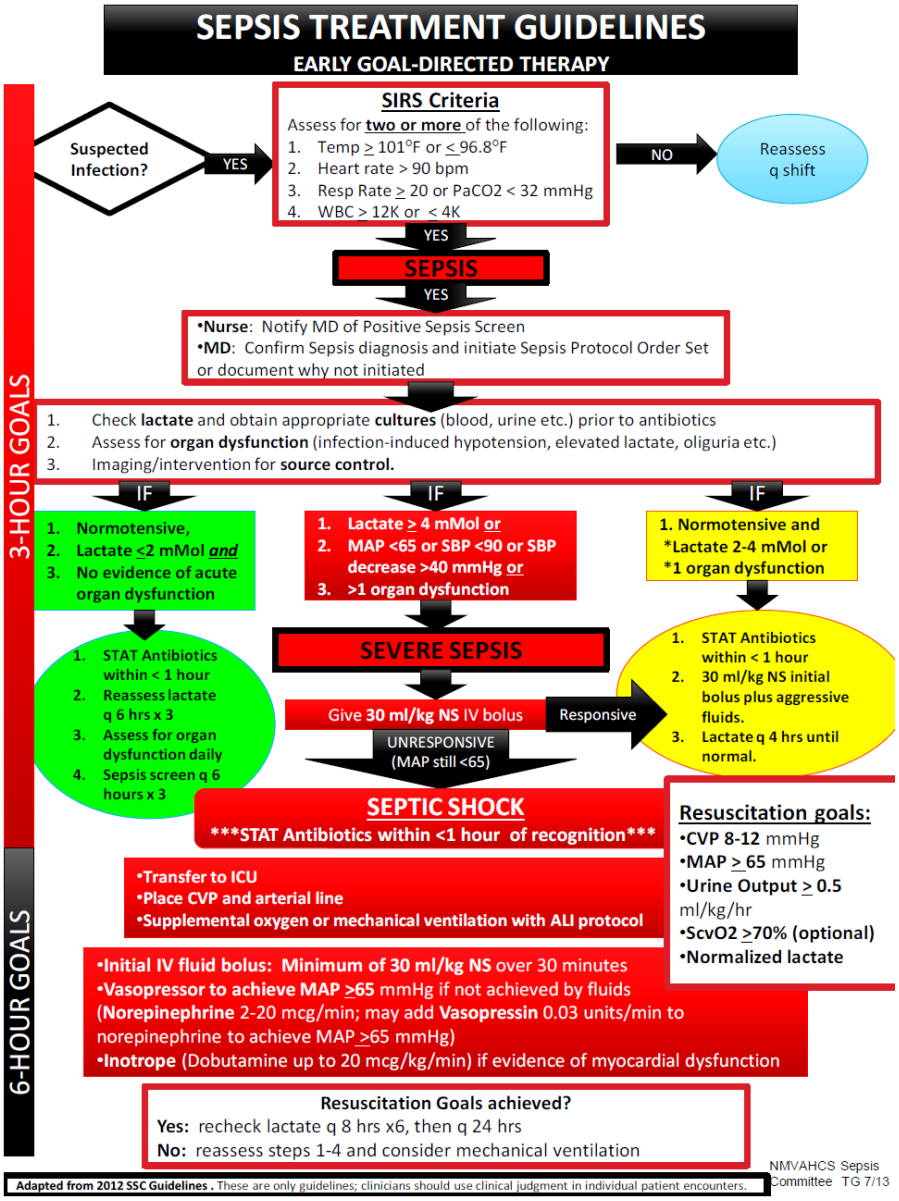
- Pro-inflammation vs. anti-inflammation: WBCs activated, endothelial cells activated, histamines and bradykinins are released, causing further vasodilation and vascular permeability.
- Pro-coagulation vs. anti-coagulation
  - Coagulation cascade stimulated, and microvascular thrombi formed to trap microorganisms.
  - Delayed release of counteracting anticoagulation factors allows time for the destruction of microorganisms
  - However, pro-coagulation is favored as sepsis progresses and DIC is precipitated.

Endothelial damage results from excess inflammation and unresolved coagulation, systemic dysfunction amplifies, and sepsis becomes increasingly severe, advancing to Severe Sepsis and then to Septic Shock.

- The result of this cascade of events is the massive **widening of the lumen of blood vessels** and lactic acidosis (due to tissue anorexia and thus anaerobic metabolism, secondary to the lack of perfusion because of the vasodilation.
- There is a short window to catch this cascade of events (*think surveillance, early*

recognition, and vigilance to prevent failure to rescue) and implement stat measures. The protocol is to catch the early symptoms within an hour (see above and relate to the *triad of assessment – physical assessment, VS, and labs*). Patients have died of sepsis within a half hour! Nursing vigilance is imperative with sepsis.

- The treatment measures for sepsis are fluid boluses for the hypovolemia, cultures, and immediate antibiotics. Monitoring the MAP, the lactate, and then transfer to critical care.



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After the education, the nursing staff will be able to list:
Early recognition signs and symptoms of SIRS Criteria, identify these criteria in the format of the Triad listed here:
Potential VS findings:
Likely physical assessment findings:
Anticipated lab findings (at least 2):
2. Describe the role of the MAP:
    a. How do you measure the MAP (use 90/50 as the example - remember diastolic x 2 + systolic 3)
    b. What is the MAP number that is one indicator of sepsis?
    c. What does the MAP mean; what is it telling you?
3. What is the time frame for acting (see above protocol) and describe a consequence of not early recognizing sepsis?

Dellinger et al. Surviving Sepsis Campaign: International guidelines for managing severe sepsis and septic shock: 2008. Critical Care Medicine. 2008; Vol. 36, no.1.
Mosby's Nursing Consult: Sepsis and Septic Shock Introduction to Clinical Health Problem: Pathophysiology.

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Module 6: Pneumonia

Pneumonia is an acute infection in one or both of your lungs. Fluid and pus fill the air space in the alveoli, obviously impairing gas exchange and preventing oxygen from reaching the bloodstream. Bacteria, viruses, parasites, and fungi can cause pneumonia. Complicating, related factors such as HF, COPD, smoking, and pulmonary hypertension are often prevalent in our Veteran population. Aspiration is a potential cause.

What does it look like clinically?
Typical symptoms are:

- Cough-usually productive yellow or green and maybe blood-stained,
- Shortness of breath, tachypnea, chest tightness, crackles, rhonchi, and abnormal breath sounds
- Fever, fatigue, weakness, chills /sweats /shivers.
- They may be malnourished and immunocompromised.
- Aches and pains, especially in the side of the chest, are frequent.
- Increased WBCs and infiltrates in CXR

Complications include:

- Respiratory failure,
- Bacteria in the bloodstream (bacteremia),
- Sepsis,
- Acute respiratory distress syndrome (ARDS), Lung abscesses, pleural effusion, or empyema

Nursing interventions:
Nursing interventions can positively impact and make a significant difference in/for pneumonia patient. Hence, this means that we directly affect the outcome of this disease process!
- Improving airway, suctioning as needed
- Head of Bed up 30 degrees or higher, prevent and monitor for aspiration
- Monitoring V/S and taking action to normalize (temp, tachypnea, SOB)
- Monitoring oxygen saturation, trending, applying oxygen as ordered
- Maintain mobility – turn, cough, deep breathe – may use incentive spirometry, ambulate
- Promoting rest and conserving energy (while maintaining mobility)
- Daily oral assessment and care *(brushing teeth and tongue can reduce pneumonia by 37 %!)*
- Providing adequate nutrition and hydration
- Early recognition of symptoms, reporting complications, and vigilant monitoring of them
- Promoting patient knowledge
- Promoting Home and Community Based care
- Monitor for side effects of ABX (diarrhea, candidiasis, etc.)

Medical interventions:
- Oxygen

- Antibiotics
- RT/PT interventions (such as chest PT)
- Analgesics for pleuritic pain (can help increase mobility)
- Vaccinations: pneumococcal (anyone >65 years old with high-risk factors) and influenza
- Sputum and blood cultures

American Lung Assoc. (2014) Understanding pneumonia: http://www.lung.org/lungdisease/pneumonia/ understanding-pneumonia.html

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The nursing staff will be able to answer the following questions.

1. What complication do you see in our veteran population that contributes to them getting pneumonia?

2. List early recognition signs and symptoms of SIRS Criteria, identify these criteria in the format of the Triad listed here:
Potential VS findings:
Likely physical assessment findings:
Anticipated lab finding(s):

3. What are three essentials NURSING Measures that we can do for our patients with pneumonia?

Appendix C: Planning Grid for Curriculum

Learning Outcome(s):
Demonstrate competencies in the use of medical surgical triad assessment plan in the following areas

- Physical assessment
- Understanding patient vital signs
- Understanding Laboratory values
- Failure to rescue

Nursing Professional Development

Topical Content Outline	Time frame	References	Teaching method/learner engagement and Evaluation method
Pre-test	15 minutes	Completed pre-test during a 2week period	Not applicable
Education	60 minutes	Self-study review of material for one week before simulation Lecture and assessment of educational material will take place over a 3week period	PowerPoint includes case studies, a graphic display of content materials
Simulation	30 minutes	After completing the lecture. Hands-on simulation practice of code RRT of a patient in distress	Competency
Post-test and Return demonstration	15 minutes	Complete post-test during a 2week period	Not applicable

Appendix D: Evaluation Tools

Demographic and Confidence Questionnaire
Nurses' Confidence about Navigating Clinical Monitoring System

1. What is your gender?

☐ Male ☐ Female ☐ I prefer not to answer

2. What is your age?

☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60+

3. How long have you been in practice as a registered nurse?

☐ < 1 year ☐ 2-4 ☐ 5-7 ☐ 8-10 ☐ 11-15 ☐ 16+

4. How many years have you worked on the ICU?

☐ < 3 months ☐ 6-9 months ☐ 1-2 year ☐ 3-4 years ☐ 5+years

		Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Strongly agree
5	I am comfortable with navigating assessment triad	1	2	3	4	5
6	I am able to address all physical assessment in a timely manner.	1	2	3	4	5
7	I know which vital signs are troubling.	1	2	3	4	5
8	I am comfortable individualizing my patient(s) lab values parameters.	1	2	3	4	5
9	I am able to complete care for my patients without missing any important variables .	1	2	3	4	5
10	I can troubleshoot the assessment triad plan and call for help when the need arises.	1	2	3	4	5