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Optimizing Sepsis Care in a Medical Surgical Telemetry Unit

Rezart Chili

University of San Francisco, rezartcili@gmail.com

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University of San Francisco

NURS 653-01 Internship

Dr. Nneka Chukwu

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Section I

Abstract

Problem: Sepsis is a potentially fatal condition that must be identified and treated immediately. Sepsis is a significant concern at Hospital X in California, as it is in many healthcare facilities worldwide. Sepsis is a life-threatening condition that occurs when the body's response to infection becomes dysregulated, leading to widespread inflammation and organ dysfunction. At Hospital X, efforts are made to identify and treat sepsis promptly and effectively. The hospital employs various strategies, such as implementing early recognition protocols, educating healthcare providers on sepsis identification, and utilizing evidence-based interventions to improve patient outcomes. By enhancing sepsis awareness, providing timely interventions, and fostering a culture of continuous improvement, Hospital X aims to address the sepsis problem and to improve patient safety and care within its facility.

Context: Clinical Nurse Leader (CNL)students from the University of San Francisco led this quality improvement project. The students started constructing a comprehensive and long-lasting plan of transformation that would benefit the patients and employees through a microsystem evaluation and strengths, weaknesses, opportunities, and threats (SWOT) analysis. The interdisciplinary team collaborated to form a unit-based and facility-wide sepsis committee that convened daily to discuss any challenging patients and monthly to discuss the ongoing management of patients suffering from sepsis. It's important to note that the specific individuals involved in a clinical study on sepsis can vary depending on the study's objectives, design, and the resources available within the hospital or research institution. key stakeholders involved in this project include, Unit Manager, data analyst, and Registered Nurses.

Intervention: This intervention involved multiple components aimed at improving sepsis bundle compliance within the microsystem. Firstly, active and passive observational data were

collected, allowing for a comprehensive understanding of the current practices and challenges related to sepsis management. Additionally, anonymous questionnaires were administered to the nurses, with participation incentivized to encourage engagement and gather valuable feedback on sepsis bundle adherence. The healthcare providers received sepsis bundle training, which aimed to enhance their knowledge and skills in sepsis prevention and management. The effectiveness of the training method was assessed to determine its impact on improving bundle compliance. Furthermore, the accessibility of the electronic cardiac arrest risk triage (eCART) system was evaluated, considering its role in facilitating efficient and accurate risk assessment for sepsis. Identified barriers to sepsis bundle adherence were examined to understand the factors hindering compliance and develop targeted interventions. The significance of the rapid response process in managing sepsis cases was also explored, highlighting its role in timely interventions. Based on the findings, recommendations were formulated to improve bundle compliance, addressing identified barriers and optimizing the rapid response process. This multifaceted intervention aimed to enhance sepsis bundle adherence and ultimately improve patient outcomes in the medical-surgical unit.

Measures: Collaborated with Hospital X leadership team regarding sepsis among multiple medical-surgical units. Developed a specific aim statement on the unit of choice. Generated a PICOT question. Produced a proposal for Hospital X leadership approval. Created data collection questionnaires. Assessed the microsystem using the %ps. Conducted a SWOT analysis. Ran a root cause analysis. Collected data on the Medical-surgical unit: Passive and active observational data in the microsystem, administered questionnaires to the nurses. Analyzed data from observations and questionnaires. Reviewed the results from the gathered data. Developed recommendations based on the study's findings. Presented the recommendation plan to Hospital X leadership on April 17, 2023

Section II
Introduction

A problem brought on by the body's excessive and sometimes fatal reaction to a viral infection is sepsis. Sepsis can cause organ damage, tissue damage, and death. The most common reason for death in American hospitals is sepsis. Sepsis fatality escalates by 8% for each hour that treatment is postponed. Sepsis claims 258,000 lives in the United States every year. Rapid diagnosis and treatment could save up to 80% of sepsis-related fatalities (Dellinger et al., 2023). This initiative aims to enhance the transfer unit's capacity for patient screening, early identification and evaluation of best practices, and connection to a physician for care consultation. Through the early detection of sepsis and the use of best practices, this research can significantly impact patient results, including death and the allocation of individuals to the proper level of care. An increased risk of sepsis can be determined by using a screening procedure to find abnormal patient factors such as raised serum lactate, lowered blood pressure, increased respiration rate, and changed psychological position.

Problem Description

From January 1, 2021, to April 30, 2022, 24,766 patients were transferred to the John Muir from other hospitals. When studied retrospectively, these patient transfers included 2,147, representing 8.6% of individuals diagnosed as having sepsis present at arrival (Dellinger et al., 2023). Using a sepsis screening procedure may have improved the prompt discovery and care of these individuals with the disorder. Introducing a sepsis assessment procedure in the transfer division offers chances to enhance patient care and sepsis treatment results.

Sepsis is regarded as an emergency at Hospital X, and they have a dedicated team of medical specialists ready to respond immediately to any case of sepsis. Doctors, nursing professionals, and other healthcare providers comprise the team, collaborating to offer

comprehensive care to sepsis patients. Clients at Hospital X are also eligible for several sepsis-specific medical services, like intravenous fluids, antibiotics, and other drugs. In addition, the hospital maintains a sepsis research program in which they examine new therapies and medications for sepsis to offer its clients the most effective care possible. Hospital X is dedicated to providing exceptional care for sepsis patients and assisting in reducing sepsis-related mortality. They are assisting in ensuring that all individuals get the most appropriate diagnosis and treatment for sepsis through their sepsis protocol, research program, and devoted team of medical specialists. Hospital X is dedicated to providing exceptional care for sepsis patients and assisting in reducing sepsis-related mortality. They are assisting in ensuring that all individuals get the most appropriate diagnosis and treatment for sepsis through their sepsis protocol, research program, and devoted team of medical specialist

Rationale

The American College of Chest Physicians/Society of Critical Care Medicine developed the SIRS criteria in a 1991 consensus conference after being entrusted with developing clinical parameters for early disease detection. The SIRS criteria described four clinical indicators that can be utilized in the assessment of sepsis, which includes body temperature superior to 37°C or less than 35°C; a heart rate prominent than ninety beats per minute; tachypnea, demonstrated by a breathing rate above twenty breaths every minute, as shown by a PaCO2 of less than 32 mm Hg; and a variation in the white blood cell count (Dellinger et al., 2023)**.** Since this consensus conference, this criterion has been the accepted definition of sepsis. Nevertheless, according to a 2016 American Medical Association report, the SIRS standards are now universally regarded as ineffective. Irritation, the host's reaction to "danger" in contamination or other improprieties, is reflected by white blood cell count,

temperature, and heart rate variations (Appendix C). The SIRS parameters do not essentially imply a dysregulated, severe reaction. The SIR's principles may not always suggest an uncontrolled, potentially fatal response. SIRS criteria are evident in several hospitalized patients and those who never acquire infections and never experience bad results.

PICOT question

The PICOT question for this study is: "Does increased sepsis education provided to Registered Nurses improve sepsis bundle compliance and decrease sepsis-related morbidity/mortality rates for patients admitted to the Medical-Surgical/Telemetry unit compared to no sepsis education in a three-month period?" This study aims to investigate the impact of enhanced sepsis education on registered nurses and its potential effects on sepsis bundle compliance, as well as sepsis-related morbidity and mortality rates within a specific timeframe. By comparing the outcomes between a group of nurses who receive increased sepsis education and a group without sepsis education, the study aims to determine the effectiveness of educational interventions in improving patient care outcomes in terms of sepsis prevention and management. The findings from this study will provide valuable insights into the role of education in enhancing sepsis bundle compliance and reducing the burden of sepsis-related morbidity and mortality in the Medical-Surgical/Telemetry unit.

Search Strategy

The search strategy of this study focused on gathering relevant information related to sepsis bundle compliance septicemia-related morbidity and mortality rates, sepsis education and quality improvement projects. The search aimed to identify studies, articles, and resources that could provide insights into effective strategies for improving sepsis prevention and bundle

compliances in a Medical-Surgical unit. Various databases such as PubMed, MEDLINE, and CINAHL, were utilized to search for relevant literature. Key search terms included "sepsis bundle compliance', septicemia-related morbidity and mortality rates", "sepsis education", "quality improvement projects", and "Medical-Surgical unit". Additionally, references from retrieved articles were examined to identify additional relevant resources. The search strategy also involved reviewing research studies, case reports, and guidelines related to sepsis prevention, education, and quality improvement in healthcare settings.

Literature Review

The Improving Nurses' Confidence in Early Identification of Sepsis research aimed to discover if the execution of informational meetings for nurses boosts self-confidence in recognizing the disorder promptly. Sepsis transpires when an individual already has a contagion in the lungs, skin, urinary tract, or other body parts, activating a chain reaction throughout the entire body. It has been acknowledged that practitioners lack early acknowledgment of sepsis in individuals and immediately follow through once accepted. For the safety of the patients, the frontline nurses in the ED needed to be well-versed in identifying the indicators and indications of sepsis, accompanied by the health care professional launching appropriate interventions after recognition. Science Direct, Pub Med, Wiley Online Library, and Directory of Open Access Journals are some resources used to perform this research review. The researcher used the university's online library to look at works published within the previous five years. Sepsis nursing education was a term used in the evaluation process.

Arrival is the first stage of ED patient treatment. Emergency medical services transfer 50% of ED patients who have severe sepsis. Evans et al. (2021) assert that better comprehending the expression of sepsis calls during emergency medical communication may

enable earlier detection of sepsis patients. According to the study's findings, three essential phrases can be used to identify sepsis. Nevertheless, further studies are required before these terms can be added to the emergency medical dispatcher's decision-making tool to improve sepsis diagnosis. For years, regulators and policymakers have placed a high premium on the cost of healthcare, accessibility, and population health outcomes (Danna, 2018). The highest portion of the US gross domestic product comprises healthcare and hospital care costs. The healthcare sector is paying close attention to sepsis, which has taken centre stage in hospitals. Sepsis is one of the most expensive disorders that annually impact the US healthcare system, according to Danna (2018), who compared hospital expenditures for those suffering from sepsis and those with other medical problems. Sepsis definition is still being contested and changed, according to a 2015 publication by Bateson and Patton. The SIR's recommendations lack the sensitivity and specificity necessary to identify sepsis accurately and do not provide a precise definition (Danna, 2018). Competent execution of care bundles, indicated by adherence rates at organizations, is one of the difficulties mentioned. Additional issues raised involve readmission rates after a sepsis diagnosis and concentrating on death as an objective while ignoring the potential long-term consequences sepsis may have on a patient. It is advised to consider long-term sepsis care because it lasts long beyond the initial hospital admission. The administration of sepsis patients in the ED continues to be fraught with difficulties regarding successful adoption and adherence to practice guidelines (CPGs) (Reich Then & Rankin, 2018). It has been demonstrated that following clinical practice guidelines reduces in-hospital morbidity and enhances patient results. According to Reich Then & Rankin (2018), the execution of CPGs might be changed using the "Knowledge-to-Action" paradigm. The results proved that extensive research was required to determine the typical barriers to adopting sepsis CPGs and the most efficient strategies to overcome these challenges. Schorr (2018) identified

the failure to recognize or suspect sepsis as a barrier to sepsis community treatment. The nurse might only be capable of identifying an infection after it progresses to sepsis, dependent on how often home health patients are seen. Although patients are primarily responsible for their health, many do not seek assistance early enough in developing sepsis. The research reveals that although using assessment and diagnostic instruments in community health would be beneficial and enable nursing practitioners to consider sepsis in their evaluations, they have yet to be available. Evans et al. (2021) provided background information and recommendations highlighting the absence of early sepsis detection in a study publication. NICE has released its rules for healthcare professionals to effectively recognize and treat sepsis in susceptible patient groups. Per the various age groups of individuals who satisfy high-hazard categories or have a probable infection, the NICE guidelines provide various managerial recommendations. The article recommends providing routine diagnostic updates on the evaluation and treatment of sepsis to frontline nursing workers, like triage or early patient care. This covers regional customs, educational options, and rules. Early diagnosis and treatment are essential for the patient's survival and prognosis when sepsis is present (Walters, 2018). Every time a patient interacts, screening for sepsis at initial engagement or during triage for nursing professionals is essential. Prompt detection and recognition allowed the swift implementation of customary directives and procedures, such as laboratory tests, fluid resuscitation, and antibiotic therapy (Walters, 2018). To guarantee correct utilization, effectiveness, and reliability under the guidelines offered by the Surviving Sepsis Campaign, this study report advised triage nurses to review the screening instruments and treatment bundles available. Triage and ED nurses' work may save many lives through screenings, early intervention, and treatment. A sepsis screening tool was used in research on a medical-surgical unit, which helped identify sepsis early and get patients started on treatment more quickly. The study compared paper-based

assessment tests to electronic medical record-based assessment apparatuses. It used the Knowledge-to-Action cycle paradigm in seven phases in two hospital environments. Its goals were to shorten the time between sepsis manifestation and provider alert. It was discovered that while standardized assessment instruments can aid nurses in spotting sepsis, more is needed to improve sepsis outcomes. It was found that identification and provider notification can be enhanced when personnel have the right resources and assistance. Overall, nevertheless, routine sepsis screening and sepsis-related nurse education did increase the early detection of sepsis.

Specific Aim Statement

The aim of this study is to enhance sepsis bundle compliance in order to decrease septicemia-related morbidity and mortality rates within a Medical-Surgical unit. The study will focus on evaluating the impact of sepsis education initially provided to the nurses, aiming to determine its effectiveness in preventing sepsis. Data collection will extend over a month, allowing for a comprehensive assessment of the nurses' knowledge gaps concerning sepsis prevention. By identifying these knowledge gaps, the study seeks to develop targeted interventions to address them effectively and improve sepsis bundle compliance. Ultimately, the goal is to enhance patient outcomes by reducing the incidence and severity of septicemia in the Medical-Surgical unit.

Section III

Methods

To support this quality improvement (QI) project, several methods were employed. Firstly, the microsystem was assessed using the 5 P's framework, which includes evaluating the people, purpose, processes, patterns, and physical components within the healthcare system. This comprehensive assessment provided a holistic understanding of the microsystem

and identified areas for improvement related to sepsis bundle compliance. Additionally, questionnaire data was collected from February 2023 to March 2023. This data collection allowed for the gathering of valuable insights and feedback from healthcare providers involved in the project. Furthermore, a range of analytical tools were utilized, including a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, a root-cause analysis, and a Plan-Do-Study-Act (PDSA) cycle. These methods facilitated a deeper examination of the current practices and barriers to sepsis bundle compliance, leading to the development and implementation of targeted interventions. By utilizing these methods, the project team was able to systematically analyze, plan, and improve sepsis prevention strategies in the medical-surgical unit.

Project Overview

This project aims to address the issue of sepsis bundle compliance in a Medical-Surgical unit with the goal of reducing septicemia-related morbidity and mortality rates. The first step involves providing sepsis education to the nurses, and the effectiveness of this training will be evaluated to determine its impact on sepsis prevention. The data collection phase will span over a month, during which the nurses' knowledge gaps regarding sepsis prevention will be assessed. To gain a comprehensive understanding of the microsystem, the study will utilize the "5 P's" framework, which examines the People, Processes, Patterns, Places, and Products involved in sepsis management within the unit. This analysis will provide insights into the strengths, weaknesses, opportunities, and threats associated with sepsis bundle compliance. In addition to data collection, the study will employ various quality improvement methodologies. These include conducting a root-cause analysis to identify the underlying causes of low sepsis bundle compliance, as well as utilizing a Plan-Do-Study-Act (PDSA) cycle to implement and test interventions aimed at improving compliance. This iterative cycle allows for continuous

improvement and refinement of the interventions based on real-time feedback and analysis. By combining sepsis education, data collection, and quality improvement methodologies, this project seeks to enhance sepsis bundle compliance and ultimately improve patient outcomes in the Medical-Surgical unit. The findings from this study will inform targeted interventions and strategies to address knowledge gaps, overcome barriers, and promote better adherence to sepsis bundle protocols.

Root Cause Analysis

Root Cause Analysis (RCA) is a systematic process used to identify the underlying causes of problems or events in healthcare settings. It involves investigating the contributing factors that led to an undesired outcome and aims to prevent similar incidents from occurring in the future. By analyzing the root causes, healthcare organizations can implement targeted interventions to improve patient safety and quality of care.

SWOT Analysis is a strategic planning tool used to evaluate the strengths, weaknesses, opportunities, and threats associated with a particular initiative or situation. In the context of implementing best practices for sepsis patients, conducting a SWOT analysis can provide valuable insights.

Strengths include the potential for improved patient outcomes, such as reduced fatalities and shorter hospital stays, through the implementation of best practices for sepsis patients. Additionally, raising awareness through quality improvement initiatives can increase knowledge among the general public and medical professionals, leading to earlier diagnosis and treatment. It is important to note that the strength of best practices lies in their evidence-based nature, which ensures that patient outcomes are enhanced.

Weaknesses that may be encountered when implementing best practices for sepsis patients include resistance to change among healthcare workers, who may be reluctant to modify long-

standing behaviors. Furthermore, putting optimal procedures into practice may require additional resources, such as staff time and tools. The absence of standardized procedures can also hinder consistent care for sepsis patients. Opportunities arise from the potential for collaboration among medical professionals in a quality improvement initiative focused on best practices for sepsis patients. By working together, healthcare providers can contribute to the development of cutting-edge treatment philosophies that can be applied in various healthcare settings. Moreover, implementing these best practices can enhance the reputation of healthcare organizations, showcasing their dedication to patient safety and quality of care.

Threats that need to be considered include regulatory compliance. Adhering to best practices for sepsis patients is essential to avoid regulatory compliance problems for healthcare organizations. Additionally, the cost of implementation may pose a challenge for smaller healthcare organizations or those with limited resources. Time constraints and competing objectives may also impede the successful implementation of best practices for sepsis patients. In conclusion, applying best practices for sepsis patients offers numerous benefits and opportunities for innovation and collaboration. However, healthcare organizations must be mindful of potential risks related to budget limitations, time constraints, and regulatory compliance. By conducting a thorough analysis of the strengths, weaknesses, opportunities, and threats, healthcare organizations can make informed decisions and develop strategies to effectively implement best practices for sepsis patients, ultimately improving patient outcomes and ensuring high-quality care.

5Ps Assessment-

The purpose of this project is to improve staff compliance with the sepsis bundle and ultimately enhance the overall outcomes of care for patients with diagnosed sepsis in the

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Medical-Surgical/Telemetry unit. Patients who are typically diagnosed with sepsis, CHF, electrolyte imbalance, and withdrawal, will benefit from this project which involves various professionals including; registered nurses, nursing assistants, nurse managers, unit secretaries, physicians, physical therapists, respiratory therapists, phlebotomists, and rapid response team (RRT) nurses. The process involves; online new-hire sepsis training, nursing assessments, eCART documentation, and sepsis protocol. To ensure the success of the project, it will be integrated during the nurse shift handoff report, shift huddles, RRT, physician rounds, interdisciplinary communication, and electronic health record (HER) documentation. By following these patterns, the project aims to improve the quality of care for patients with sepsis and other related conditions.

Intervention

The purpose of this study was to evaluate the effectiveness of a quality improvement intervention aimed to enhancing sepsis bundle compliance and improving patient outcomes. The intervention involved the collection of both active and passive observational data within the microsystem, as well as the distribution of anonymous questionaries to nurses. To encourage participation, incentives were provided to those who completed the survey. The questionnaire assessed various factors, including the effectiveness of sepsis bundle training, the accessibility of the electronic cardiac arrest risk triage (eCART), barriers to sepsis bundle adherence, the significance of the rapid response process, and recommendations for improving bundle compliance. The findings from the survey served as a valuable guide for implementing targeted interventions aimed at improving sepsis bundle and, ultimately, enhancing patient outcomes. By addressing identified barriers and incorporating recommendations, the study aimed to promote better adherence to sepsis bundle protocols, thereby potentially septicemia-related morbidity and mortality rates in the Medical-Surgical unit. This quality improvement

project involved collecting both active and passive observational data within the microsystem, as well as administering anonymous questionnaires to the nurses. To increase participation, incentives were provided to those who completed the survey. The survey assessed several factors, including the effectiveness of sepsis bundle training, the accessibility of the electronic cardiac arrest risk triage (eCART), barriers to sepsis bundle adherence, the significance of the rapid response process, and recommendations for improving bundle compliance. This data was analyzed to identify areas of improvement and to develop a plan to enhance sepsis bundle compliance. The finding from the survey was used to guide the implementation of interventions to improve the sepsis bundle and ultimately improve patient outcomes. The results of the analysis revealed a response rate of 67%, indicating a reasonably high level of participation and engagement among the nurses. However, 16.7% of the nurses indicated that they did not receive a sepsis bundle, suggesting a potential gap in distribution or implementation within the microsystem. It is crucial to promptly address this issue to ensure all nurses have access to the necessary tools for sepsis management. Regarding the effectiveness of sepsis bundle training, the majority of respondents rated it positively. 50% of nurses rated the training as 8-10 out of 10, indicating a significant level of knowledge gained. However, there is room for improvement, as 11.1% rated it as 1-4, suggesting a lower level of knowledge acquired. Ongoing education and reinforcement of the training content may be necessary to bridge this gap and ensure consistent knowledge acquisition among healthcare providers. The accessibility of the eCART system was not specifically addressed in the data provided, highlighting the need for further analysis. Understanding its level of accessibility and integration within the microsystem is essential in evaluating its impact on sepsis bundle adherence and overall sepsis management. Barriers to sepsis bundle adherence were not identified in the given data. Identifying and addressing these barriers is critical for improving bundle compliance and

enhancing patient outcomes. Further investigation focused on factors such as time constraints, workflow challenges, or resource limitations will provide valuable insights for targeted interventions. A positive finding from the survey was that 88.9% of respondents expressed the effectiveness of the rapid response process in managing the care of patients admitted with sepsis. This emphasizes the importance of the rapid response process in identifying and initiating timely interventions for sepsis cases within the microsystem. In conclusion, the data analysis provides valuable insights into sepsis bundle adherence and areas for improvement within the microsystem. Addressing the identified barriers and implementing the recommended strategies will help promote better adherence to sepsis bundle protocols, ultimately leading to improved patient outcomes.

Cost-Benefit Analysis

The cost-benefit analysis of the planned project intervention indicates that the feasibility and benefits outweigh the associated costs.

Costs:

Software System Adaptation: The integration of sepsis screening warning into the MARS transfer procedure will require the adaptation of the existing software system. This may involve costs for system development, testing, and implementation.

Benefits:

Improved Patient Outcomes: By strengthening and broadening sepsis screening instruments and treatment regimens, the project aims to enhance patient outcomes, including reduced septicemia-related morbidity and mortality rates. Utilization of Existing Resources: The project leverages the expertise and capacities of internal doctors on call and current MARS line throughput nurses. No additional human resources are required, minimizing costs

associated with hiring and training new staff. Minimal Training Requirements: The necessary training for throughput nurses and sepsis expert consultation can be completed during regular working hours with little additional time required. This reduces the need for additional resources and associated costs. Alignment with Current Organizational Processes: The project builds upon current clinical recommendations and approved screening and consultation procedures, minimizing the need for major organizational adjustments or investments.

Enhanced Workflow: Although each MARS transfer call may take slightly longer due to the added screening process, modifications to the organizational workflow can compensate for the increased wait times, ensuring efficient operations.

Overall, the project demonstrates a favorable cost-benefit ratio. The costs associated with software adaptation and potential slight increases in transfer call durations are outweighed by the potential benefits of improved patient outcomes, optimal resource utilization, minimal training requirements, and alignment with existing organizational processes.

Measures

This study involved a comprehensive set of measures to address sepsis in multiple medical-surgical units at Hospital X. The first step was to collaborate with the hospital's leadership team to gain their support and involvement in tackling the issue. A specific aim statement was developed, outlining the desired outcomes and objectives of the study. A PICOT (Population, Intervention, Comparison, Outcome, Time) question was generated to guide the research process. A proposal was then created and submitted to the Hospital X leadership for approval, ensuring the study aligned with the organization's goals and priorities.

Data collection questionnaires were designed to gather information from the healthcare providers on the unit of choice. The microsystem was assessed using the %ps framework to

identify strengths, weaknesses, opportunities, and threats related to sepsis management. A SWOT analysis was conducted to further understand the internal and external factors influencing sepsis outcomes. A root cause analysis was performed to identify the underlying causes contributing to sepsis-related issues.

Active and passive observational data were collected within the microsystem, providing a comprehensive understanding of the current practices and challenges related to sepsis. In addition, questionnaires were administered to the nurses to gather their perspectives and insights on sepsis management. The data from both observations and questionnaires were analyzed to identify patterns, trends, and areas for improvement.

The results from the gathered data were thoroughly reviewed and analyzed to identify key findings and areas requiring attention. Based on the study's findings, recommendations were developed to address the identified issues and improve sepsis outcomes. The recommendation plan was then presented to the Hospital X leadership on April 17, 2023, highlighting the proposed strategies and interventions to enhance sepsis management in the medical-surgical units.

Ethical Considerations

Lack of explicit norms can cause ethical issues to be disregarded, skipped over, or addressed half-heartedly, causing more harm or damaging trust and responsibility in healthcare settings. Nurse leaders must ensure that moral standards govern the workplace. This endeavour to increase quality is consistent with the social justice ideals of the Jesuits in healthcare. Many patients who require this operation will benefit from earlier diagnosis and interventions, if necessary, and from reducing treatment cancellations and postponements for patients who could need a process to avoid sepsis and emergency admissions, thanks to the project's successful conclusion. Additionally, this quality improvement project is consistent with

Provision 7 of the American Nurses Association (ANA) Code of Ethics, which states that nurses should advance their profession by using the best available evidence through academic research to promote health and deliver high-quality care.

The University of San Francisco School of Nursing and Health Professions' supervising faculty has reviewed this quality improvement project to hasten the eradication of sepsis and confirmed that it is a quality improvement project that does not need authorization. Patient privacy was safeguarded by withholding personal information when obtaining data from the participant's electronic medical record or audit sheet. Funding still needs to be accepted or provided for this endeavour to improve the quality. The project manager says there are no competing interests.

Section IV

Discussion

The study's quantitative data collection from a substantial number of nurses yielded a response rate of 67%. It was surprising to discover that 16.7% of nurses reported not receiving a sepsis bundle, indicating a gap in the implementation of this critical preventive measure. However, the majority of respondents rated the effectiveness of sepsis prevention training positively, with 50% rating it as 8-10 out of 10 and 36.1% rating it 5-7 out of 10. This suggests that the training has been generally effective but also highlights the need to address the knowledge gap identified by the 11.1% who rated the training 1-4 out of 10. It is encouraging to note that 88.9% of the nurses believe in the effectiveness of rapid response in managing sepsis. These findings indicate the importance of focusing on improving knowledge gaps and ensuring all nurses receive the sepsis bundle, while also harnessing the existing belief in the effectiveness of rapid response. To enhance sepsis prevention and management in healthcare

settings, several interventions can be implemented. Visual aids such as posters, cards, and printouts can serve as practical guides, providing step-by-step protocols for sepsis management on the floor. A badge buddy displaying the sepsis protocol can serve as a visual reminder for healthcare providers to follow the recommended procedures. Regular refresher training sessions, scheduled monthly, biannually, or annually, can help healthcare providers stay updated on the latest knowledge and skills in sepsis prevention and management. Appointing sepsis champions within the healthcare team can promote adherence to the protocol and offer additional support and mentoring to other providers. Offering more hands-on training opportunities will instill confidence in healthcare providers' ability to effectively manage sepsis cases. Simplifying the sepsis bundle can streamline the process, making it easier for healthcare providers to follow. Additionally, early intervention in the Emergency Department and strict enforcement of sepsis document completion before transfer can ensure prompt identification and treatment, leading to improved patient outcomes. During the project, suggestions for the site were taken into consideration for its continuation and the implementation of future projects. The Plan Do Study Act (PDSA) model, also known as the Deming Cycle, provided a practical conceptual framework for the implementation at the site, offering guidance for future projects of a similar nature. By adopting these recommendations and utilizing the PDSA model, healthcare organizations can make significant strides in improving sepsis prevention and management, ultimately reducing septicemia-related morbidity and mortality rates.

Nursing Relevance

The data collected from a substantial number of nurses provides valuable insights into the current state of sepsis prevention and management. It is concerning that 16.7% of nurses indicated not receiving a sepsis bundle, indicating a gap in the implementation of this crucial

preventive measure. This highlights the need for improved dissemination and accessibility of the sepsis bundle to ensure that all nurses receive the necessary resources for effective sepsis management. The positive ratings given by the majority of respondents regarding the effectiveness of sepsis prevention training demonstrate its potential in enhancing nurses' knowledge and skills in sepsis management. However, the presence of a knowledge gap, as indicated by the 11.1% who rated the training poorly, emphasizes the importance of addressing educational needs and providing ongoing training opportunities. This could involve regular refresher training sessions to ensure that nurses stay updated on the latest evidence-based practices in sepsis prevention and management. The high belief in the effectiveness of rapid response in managing sepsis among nurses is encouraging. This finding suggests that nurses recognize the value of timely intervention and the role of rapid response teams in improving patient outcomes. It reinforces the importance of fostering a collaborative and responsive healthcare environment to ensure the prompt identification and treatment of sepsis cases. Based on these findings, several recommendations can be made to improve sepsis prevention and management in healthcare settings. Visual aids, such as posters, cards, and printouts, can serve as practical tools to guide healthcare providers through the step-by-step protocol for sepsis management. Implementing a badge buddy for the sepsis protocol can serve as a visual reminder for healthcare providers to follow the established guidelines. Regular refresher training sessions can help maintain nurses' knowledge and skills, ensuring they are equipped with the latest information and best practices. The appointment of sepsis champions can provide additional support, mentorship, and advocacy for sepsis prevention and management within the healthcare team. Hands-on training opportunities can enhance nurses' confidence in their ability to effectively manage sepsis cases. Simplifying the sepsis bundle can facilitate its implementation and reduce the likelihood of errors or omissions. Finally, early intervention in

the Emergency Department and the enforcement of sepsis document completion before transfer can help ensure timely identification and treatment of sepsis, leading to improved patient outcomes.

In conclusion, these recommendations, supported by the study findings, provide valuable insights for nursing practice and offer practical strategies to enhance sepsis prevention and management. By implementing these interventions, healthcare organizations can strive towards reducing sepsis-related morbidity and mortality rates and improving overall patient outcomes.

Lessons Learned

It is crucial to ensure that all nurses receive the necessary resources and training to effectively manage sepsis cases. The positive ratings for sepsis prevention training indicate its overall effectiveness; however, continuous efforts should be made to enhance the training and bridge the remaining knowledge gaps. This project underscores the need to maintain a collaborative and responsive healthcare environment to facilitate timely interventions for sepsis cases. Lessons can be learned from the project's implementation using the Plan Do Study Act (PDSA) model as a conceptual framework. This model can guide future projects of similar nature at the same site, promoting a systematic approach to improvement and ongoing evaluation. Based on the study's findings, several interventions can be implemented in healthcare settings to enhance sepsis prevention and management. Utilizing visual aids, such as posters and printouts, can serve as practical tools to guide healthcare providers in following the step-by-step protocol for sepsis management. Implementing a badge buddy for the sepsis protocol can serve as a visual reminder to ensure protocol adherence. Regular refresher training sessions can be scheduled to keep healthcare providers updated with the latest knowledge and skills in sepsis prevention and management. Appointing sepsis champions can foster adherence

to the protocol and provide support and mentorship to other healthcare providers. Hands-on training should be prioritized to enhance healthcare providers' confidence in managing sepsis effectively. Simplifying the sepsis bundle can streamline the process and facilitate its implementation. Additionally, early intervention in the Emergency Department and enforcing sepsis document completion before transfer can ensure prompt identification and treatment of sepsis cases. By incorporating these lessons and recommendations, healthcare settings can enhance their sepsis prevention and management strategies, leading to improved patient outcomes and reduced sepsis-related morbidity and mortality rates

Conclusion

The clinicians must have the necessary training, resources, and plan of action to step in quickly and enhance the patient's outcome. The personnel can increase their confidence in recognizing and treating sepsis patients by offering them training, including case studies and interactive experiences. Depending on the patient's condition, underlying medical issues, and the severity of the infection, several best practices for managing sepsis may be used. Nevertheless, some typical approaches include early detection and diagnosis, brief antibiotic therapy, fluid resuscitation, and careful observation of vital signs and laboratory values. A multidisciplinary approach comprising healthcare providers, nurses, pharmacists, and other medical experts is crucial to ensure sepsis patients receive the best care possible. Programs for ongoing training and education can also advance the expertise of health professionals in identifying and successfully treating sepsis. Overall, implementing evidence-based best practices and quality improvement projects can enhance sepsis clinical outcomes, including decreased mortality, fewer stays in the hospital, and improved quality of life.

Section VI

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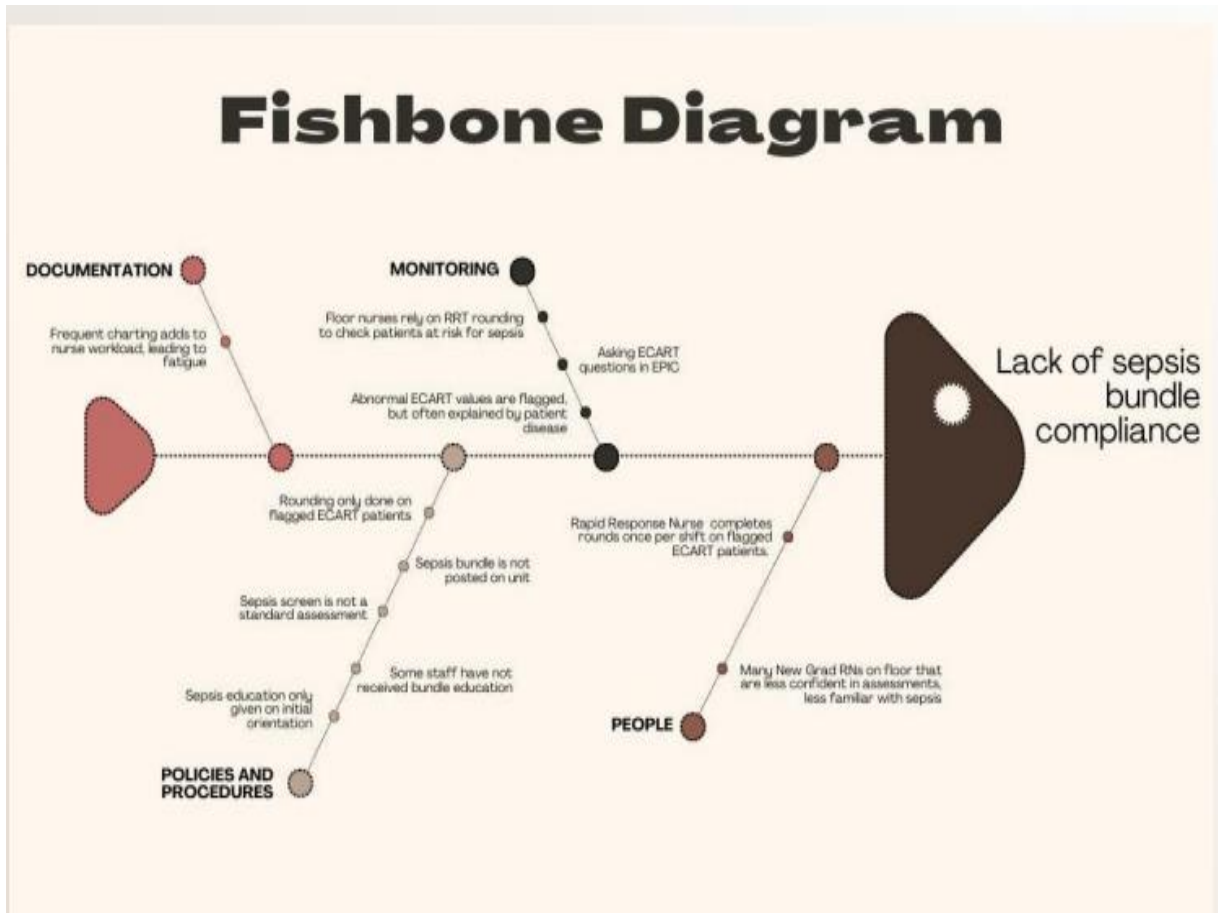Emergency Nursing, 44(6), 552-562. doi: 10.1016/j.jen.2018.04.004

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Section VII

Appendix A: PLAN DO STUDY ACT
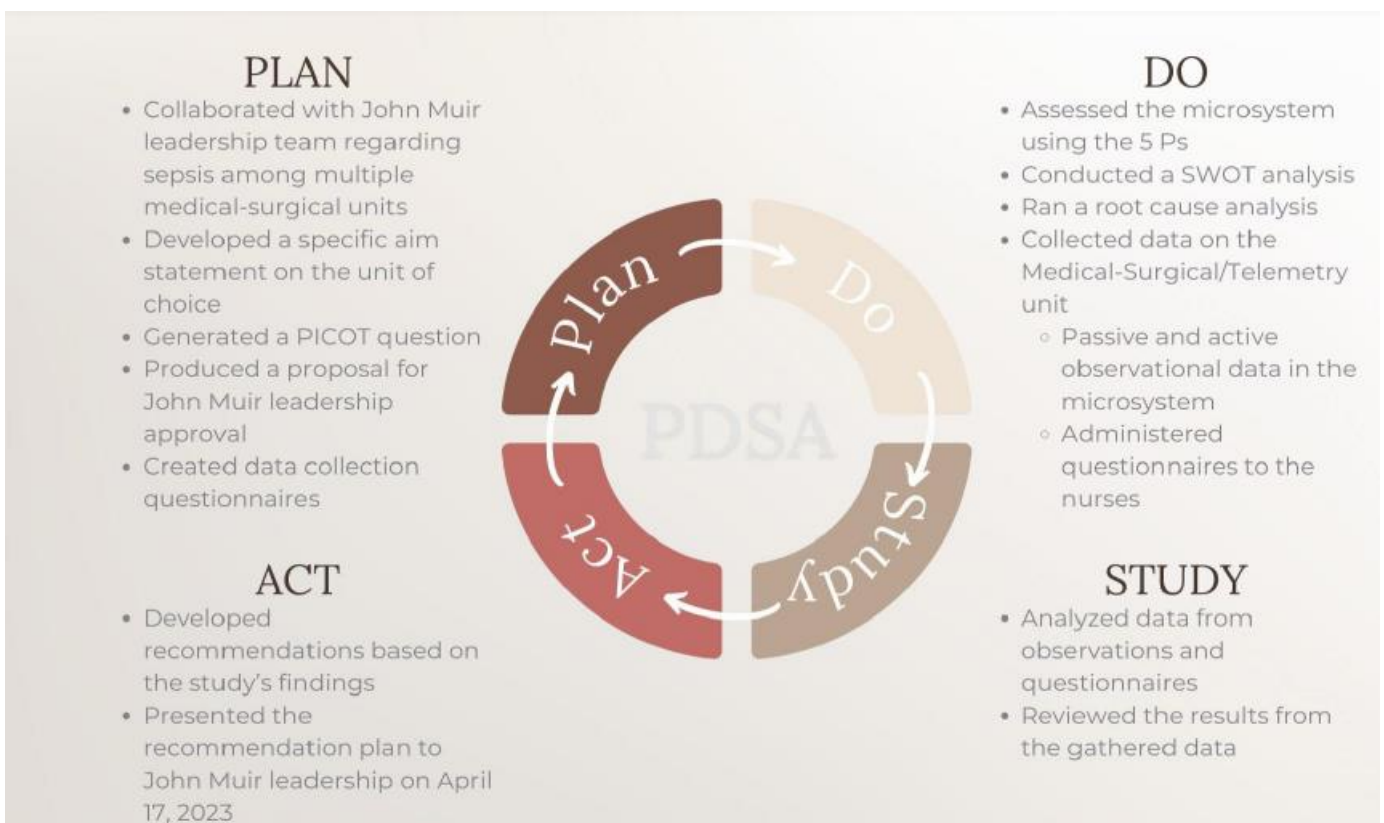
Appendix B: Root Cause Analysis

Appendix C: SWOT Strength/weakness

SWOT ANALYSIS

STRENGTHS

- Sepsis bundles are available as a resource on the unit
- Easily accessible eCART in EPIC
- Long-term cost savings
- Implementation of online sepsis education

WEAKNESSES

- Some staff have not received education on the sepsis bundle
- Lack of annual sepsis bundle compliance training and re-education
- Ineffective communication on the patient's care plan upon transfer
- Resistance to change among staff nurses
- Lengthy sepsis bundle

OPPORTUNITIES

- Increased compliance with sepsis protocol
- Reduced long-term hospital costs
- Increased infection control
- Increased efficiency and quality of care
- Decreased sepsis mortality/morbidity rate

THREATS

- Time and cost allocated for re-education
- Documentation fatigue
- Staff burdened

Appendix D: GANTT chart

GANTT CHART

TASK TITLE	START DATE	DUE DATE	FEBRUARY WEEK				MARCH WEEK				APRIL WEEK				MAY WEEK			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Project Initiation																		
Literature Review	2/1/23	3/1/23	■	■	■	■												
Project Initiation Meeting with Leadership	2/9/23	2/9/23		■														
Project Planning																		
On-Site Walkthrough	2/15/23	2/15/23			■													
Questionnaire Development	2/15/23	2/23/23			■	■												
Project Proposal to Leadership	2/23/23	2/23/23				■												
Microsystem Assessment	2/28/23	2/28/23				■												
Project Implementation																		
Questionnaire Administration	3/1/23	4/8/23					■	■	■	■	■							
Passive and Active Microsystem Observation	3/1/23	4/8/23					■	■	■	■	■							
Project Evaluation and Synthesis																		
Data Analysis	4/8/23	4/16/23									■	■						
Recommendation Presentation to Leadership	4/17/23	4/17/23											■					
Project Poster Creation	4/17/23	4/25/23											■	■				
Project Poster Presentation	5/17/23	5/17/23																■

Appendix E: Sepsis Questionnaire

1. Have you received training on the sepsis bundle?

    a. Yes

    b. No

2. If you answered "no" to receiving training on the sepsis bundle, why not?

3. On a scale of 0-10, how would you rate the effectiveness of the training method? (0 indicating no knowledge, 10 indicating a high level of knowledge).

4. Explain your rating for the effectiveness of the training method.

5. How accessible is the eCART?

6. What challenges or barriers prevent nurses from adhering to the sepsis bundle?

7. Do you feel the rapid response process is effective when managing the care of patients admitted with sepsis?

8. If you answered "no" to effective rapid response process for sepsis, what actions can be implemented to improve the process?

9. What recommendations do you have for improving bundle compliance in your unit?

Appendix F: Staff Comments

- Sepsis bundle module is not provided to experienced nurses.

  - *"Trained when new hire"*

  - *"A long time ago"*

- Nurses felt that the Knowledge Center sepsis module provides effective training.

  - *"Knowledge center modules supported the effectiveness of sepsis training"*

- eCART is very accessible on EPIC and simple to use.

  - *"Very accessible"*

  - *"User friendly"*

- Barriers to sepsis bundle adherence: time constraints, documentation burden, MD response time

  - *"Late documentation"*

  - *"Lack of knowledge of an acute septic patient"*

  - *"Too busy"*

- Nurses felt the need for refresher sepsis training.

  - *"Not enough training"*

  - *"Should be done in person"*

- The rapid response team (RRT) is effective in managing the care of patients admitted with sepsis but is not always available due to current acuity in the hospital.

  - *"Sometimes - only one rapid RN"*

  - *"We have RRT nurses who round on pts w/ high evaluated ecarts…Maybe need an in-person service"*

- **Suggestions from nurses:** visual aids on the floor (e.g., poster, cards, printouts), badge buddy for sepsis protocol, refresher training (monthly, biannually, or annually), appointing sepsis champions, more hands-on training, simplifying sepsis bundle, additional support/mentoring

- ○ *"Having posters of a badge added to our reel"*

- ○ *"More hands-on training. Not computer training."*

- ○ *"Making it simple and clearer"*

- ○ *"Refresher trainings"*

Appendix G: Recommendations

- Visual aids for step-by-step protocol on the floor (poster, cards, printouts)

- Badge buddy for sepsis protocol

- Refresher training (e.g., monthly, biannually, or annually) (Rababa et al., 2022)

- Appointing sepsis champions (Taj et al., 2022)

- More hands-on training (Rababa et al., 2022)

- Simplifying sepsis bundle (Taj et al., 2022)

- Additional support/mentoring

- Early intervention in the Emergency Department and enforcement of sepsis document

  completion before transfer

Optimizing Sepsis Care in a Medical Surgical Telemetry Unit

Appendix H: Cost Benefit Analysis

The cost-benefit analysis of the planned project intervention suggests that the benefits of the project outweigh the associated costs. The costs primarily involve the adaptation of the existing software system for sepsis screening, including system development, testing, and implementation. However, the benefits of the project are significant. Firstly, it aims to improve patient outcomes by strengthening sepsis screening instruments and treatment regimens, leading to reduced septicemia-related morbidity and mortality rates. Secondly, the project utilizes existing internal resources, such as doctors on call and current MARS line throughput nurses, without requiring additional hiring or training costs. The necessary training for nurses and sepsis expert consultation can be completed during regular working hours, minimizing the need for extra resources. Additionally, the project aligns with current organizational processes and clinical recommendations, reducing the need for major adjustments or investments. Although the screening process may slightly increase the duration of MARS transfer calls, workflow modifications can ensure efficient operations. Overall, the project demonstrates a favourable cost-benefit ratio, as the potential benefits of improved patient outcomes, optimal resource utilization, minimal training requirements, and alignment with existing processes outweigh the associated costs of software adaptation and potential slight increases in transfer call durations.

Optimizing Sepsis Care in a Medical Surgical Telemetry Unit

Appendix I: Statement of Determination

Project: Statement of Determination and Non-Research Determination Form

<u>Student Name</u>: **Rezart Chili**

<u>**Title of Project: Improving Early Sepsis Management Compliance in the Emergency Care Setting**</u>

Brief Description of Project

- **Data that Shows the Need for the Project**

Sepsis fatality escalates by 8% for each hour that treatment is postponed. Sepsis claims 258,000 lives in the United States every year. Rapid diagnosis and treatment could save up to 80% of sepsis-related fatalities (Dellinger et al., 2023). This initiative aims to enhance the transfer unit's capacity for patient screening, early identification and evaluation of best practices, and connection to a physician for care consultation.

- **Aim Statement**

The initiative introduces an assessment method and a practitioner discussion to steer care for sepsis patients when transferring to the John Muir medical center. The vetting procedure was set up through the medical access referral system telephone line, which is the primary hub for all incoming, incoming requests into the John Muir medical center from external amenities.

- **Description of Intervention(s)**

To ensure best practices are followed, hospitals should track and monitor the care of sepsis patients. This involves keeping track of the intervals between a diagnosis and the start of therapy, that point and discharge, and the fatality rates. Last, institutions should work to

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enhance communication between medical staff, patients, and their families. Making sure that patients and their families are aware of the diagnosis and proposed course of therapy can be accomplished through open communication

- **Desired Change in Practice**

A call management structure or a similar call recording procedure would be crucial for the process assessment. A critical factor for another environment for data collection throughout the examination of screening results, finest practices, time imprints, and patient results would be the electronic health record system. Also, a reliable technological framework and procedure for verifying patients' admission diagnoses are crucial for assessing the screening tool.

- **Outcome measurement(s)**

With the resources required to monitor and deliver care already in place, the enhanced patient allocation to the proper level of care also made it possible to begin adequate care interventions as soon as a patient showed up at the facility.

Optimizing Sepsis Care in a Medical Surgical Telemetry Unit

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management of sepsis and septic shock 2021. *Intensive care medicine*, *47*(11), 1181-

1247.

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

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

This project involves research with human subjects and must be submitted for IRB approval before project activity can commencements:

Optimizing Sepsis Care in a Medical Surgical Telemetry Unit

STUDENT NAME (Please Print):

                          Rezart Chili
_____

Signature of Student:
_____ DATE___05/25/2023

SUPERVISING FACULTY MEMBER   Dr. Nneka Chukwu

_____

_____DATE_05/25/2023__