VER
Vascular & Endovascular Review

Role of Critical Care Nurses in Managing Sepsis: Aligned with SDG 3

Dr Samuel Ernest[1], Chamaipron Janjuy[2], Dr. R. Babu[3], Mrs. V. P. Nivedhini[4]

[1]Prof. Malla Reddy Director Strategy & Regulatory Affairs - Nursing & Medical, Dental Health Sciences Vishwavidyalaya India
Samuel_ernest@hotmail.com
[2]Faculty of Nursing, Shinawatra University, Thailand
chamaipron.j@siu.ac.th
0009-0002-1006-4959
[3]Manager Nursing Quality & Education Department of Nursing Sakra World Hospital Bangalore India
babufranklin@gmail.com
[4]Tutor, Department of Biochemistry, Sree Balaji Medical College and Hospital.
nivedhini.v.p@gmail.com
ORCID: 0000-0001-9382-4313

ABSTRACT

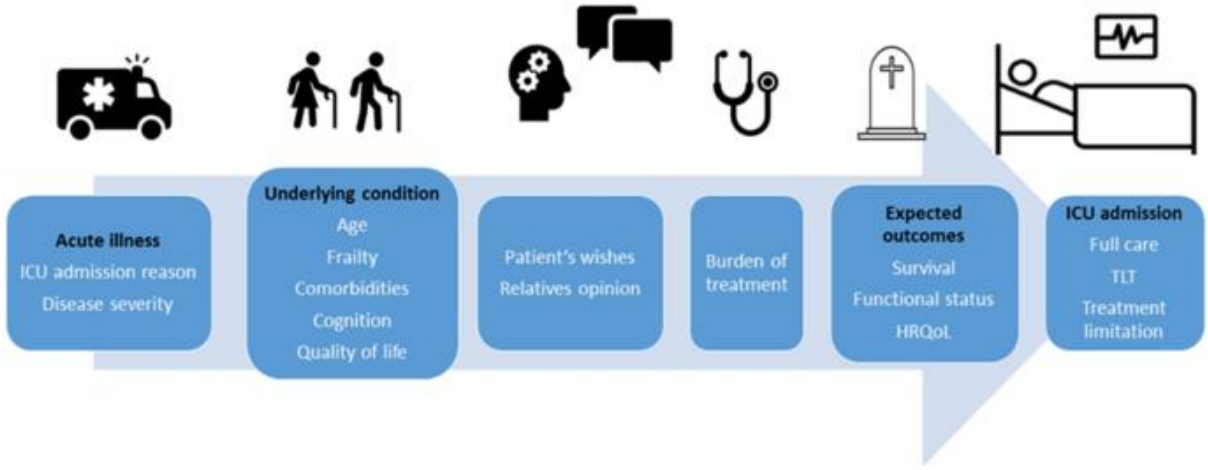
Sepsis is a life-threatening organ dysfunction caused by a dysregulated host response to infection and remains one of the leading causes of morbidity and mortality in critical care units worldwide. Early recognition and rapid implementation of evidence-based interventions are crucial for improving patient outcomes, with the Surviving Sepsis Campaign (SSC) providing globally recognized guidelines to standardize care. The role of critical care nurses in the timely identification, post-identification monitoring, and management of sepsis is proposed to be of great essence, but, by virtue of being at the bedside of patients 24/7 with clinical experience and expertise over the subject matter, critical care nurses are best poised to attribute. This paper presents a literature review of the role of critical care nurses in sepsis care with respect to early recognition, provision of interventions, SSC bundle adherence, multidisciplinary efforts, and support of patients. Results show that although sepsis protocols are.

KEYWORDS: Sepsis management, Critical care nursing, Early recognition, Patient outcomes, Evidence-based practice, Interprofessional collaboration, SDG 3 (Good Health and Well-being).

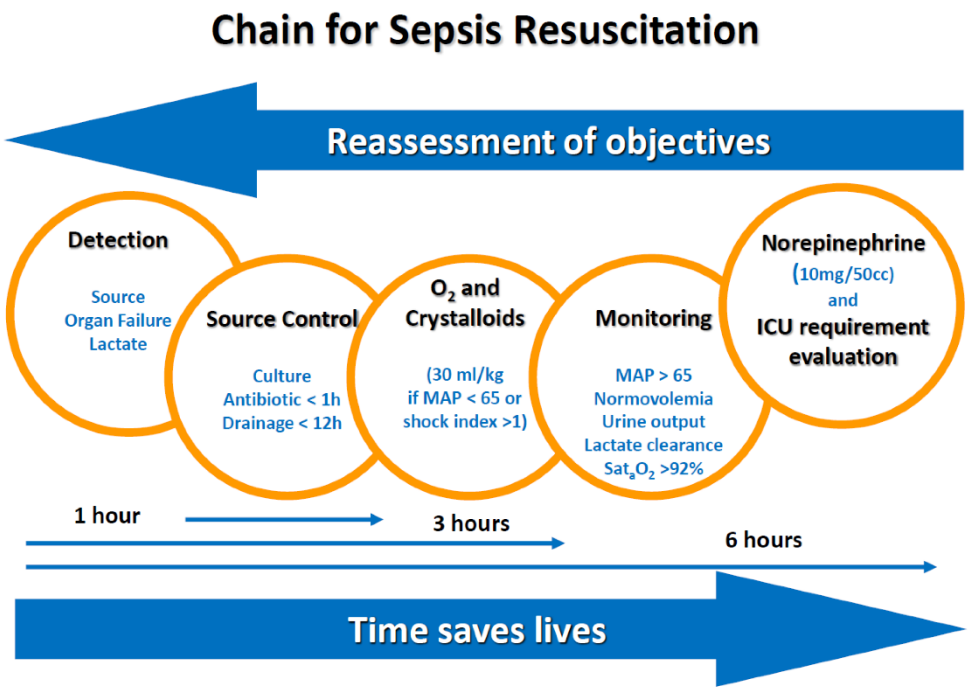
How to Cite: Samuel Ernest, Chamaipron Janjuy, R. Babu, Mrs. V. P. Nivedhini, (2025) Role of Critical Care Nurses in Managing Sepsis: Aligned with SDG 3, Vascular and Endovascular Review, Vol.8, No.4s, 12-20.

INTRODUCTION

Sepsis has become one of the principal causes of morbidity and mortality among the critically ill patients globally, and it has emerged to be a challenge to the health care systems. Sepsis is a life-threatening organ dysfunctional process caused by a dysregulated host response to infection, and as such requires early recognition and timely intervention to improve patient outcomes. Even with recent innovations in medical technology and standardization of protocols like the Surviving Sepsis Campaign, delayed recognition and improper treatment are still widespread reasons that lead to a dismal end result. Critical care nurses can be of great help in the initial identification, surveillance, and treatment of sepsis in intensive care units (Branco et al. 2020). By being at the patient bedside, nurses are also in a position to detect the slight changes in clinical condition, including vital signs, mental status or laboratory data. They are able to recognize these changes, implement sepsis procedures, and organize multi-disciplinary care immediately, a factor that can lead to recovery or. In addition, critical care nurses take an active part in the administration of evidence-based treatment, such as fluid resuscitation, antimicrobial therapy, and hemodynamic monitoring. In addition to clinical care, they ensure compliance with infection control procedures and educate patients and families, as well as participate in the continuous quality improvement activities to decrease sepsis deaths. The combination of clinical experience, attention, and judgment make the critical care nurses a first line of defence against this epidemic.



Sepsis is a serious worldwide health problem and leads to high mortality and morbidity in critically ill patients. Sepsis is defined as life threatening organ dysfunction due to a poorly regulated hosts repsonse to infection, and not diagnosed and treated early, may develop into septic shock, several organ failure and death. The unpredictable nature of the condition and its complexities make evidence-based, timely and skilled management essential during critical care management. Critical care nurses have the opportunity to serve as the primary role in treating sepsis (Bleakley and Cole, 2020). Being always near their patients allows them to notice the first signs of an oncoming sepsis, including fluctuations in temperature, heart rate, respiratory rate, mental status, and blood pressure, the main indicators of which trigger the process of sepsis activation. It is also crucial to realize and treat sepsis at its earliest stage because it has been repeatedly demonstrated that delays in the application of treatment, especially antibiotics in a timeframe over the first hour of recognition, greatly increase the risk of death. Beyond early detection, evidence-based interventions are led by the critical care nurses. This is done through administration of a broad-spectrum antibiotic, appropriate fluid resuscitation, instituting oxygen therapy and a close monitoring of the hemodynamic status with invasive and non-invasive monitoring. They are also entrusted with the role of coordinating with physicians, pharmacists and other members of the multidisciplinary team towards ensuring that the bundle of interventions recommended under the Surviving Sepsis Campaign guidelines are followed so as to improve the survival of patients. Due to the global trend in increased burden of sepsis illness and the ever-increasing focus on timely sepsis treatment, it is important to understand the role of critical care nurses. The paper will also attempt to understand how their competencies, roles, and collaborative behaviors help manage sepsis, which ultimately saves more lives, and delivers on quality in regards to critical care provision (Urden et al. 2019).



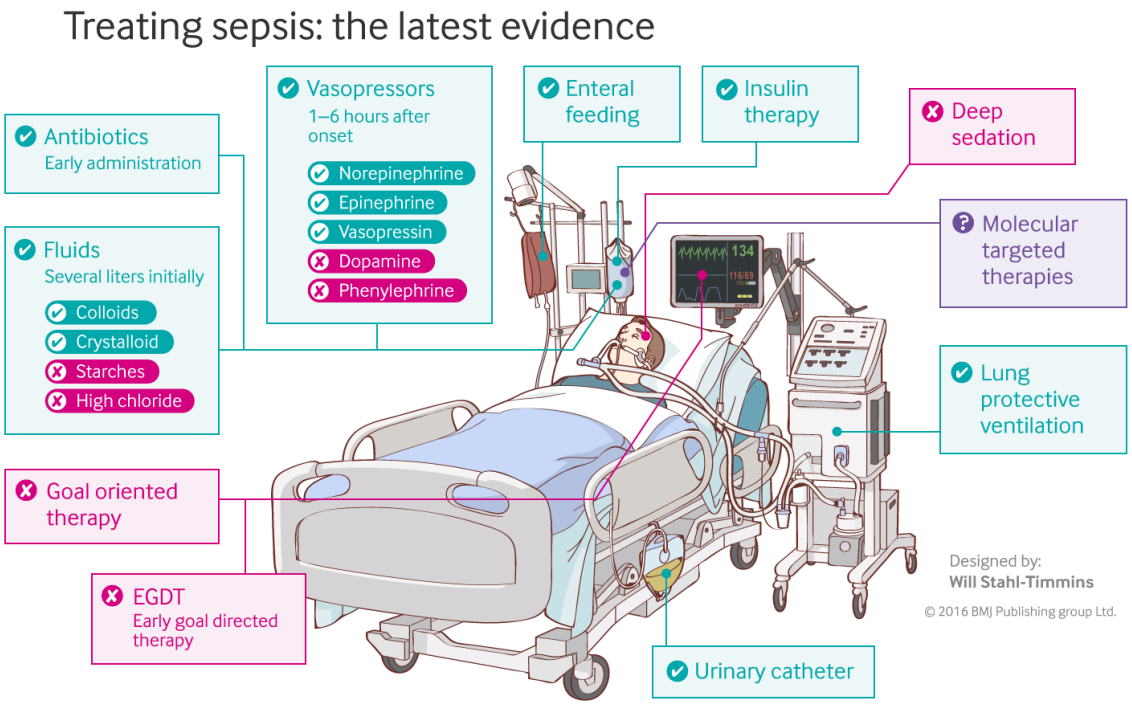
RATIONALE OF THE STUDY

Sepsis remains a critical care threat, a leading cause of death, long-term hospital stay and high health expenditures. Multiple initiatives to improve the medical technology and unify the standards of care have been developed, but the effective performance of the patient with sepsis remains affected by the factors of the bedside care quality and timeliness. In this regard, it is also critical that critical care nurses are considered the first responders in terms of detection of sepsis but the main providers in the application

of life-saving interventions. This study is justified by the fact that there is an urgent need to improve the understanding and role of critical care nurses in dealing with sepsis (Arabi et al. 2020). The clinical judgment, level of vigilance, and timely actions of nurses directly determine the disease trajectory in the case of sepsis as it tends to be acute and unpredictable because of the spread. Since sepsis protocol is a time-sensitive entity that covers time criteria of medication management, particularly application of antibiotics, fluid augmentation, as well as, close checking of hemodynamics, the availability of highly trained and responsive critical care nurses cannot be overestimated.

Additionally, the proposed study can be argued by the fact that sepsis management is being increasingly recognized as a team effort, rather than a medical task only, where nurses can be construed as a hub of coordination. They play a broader role than just clinical interventions to include infection prevention, patient advocacy, integration of care, patient education, and psychosocial support. Dedicating attention to such labor as that of critical care nurses, this study underlines the concept that the human factor plays a crucial role in defeating sepsis without which the advanced medical, device-centered procedures cannot perform well without being accompanied by the skilled, compassionate, and proactive nursing care (Weiss et al. 2020). Moreover, the evidence is buttressed by the existing practice gap, which is as follows, even though international guidelines exist, including Surviving Sepsis Campaign, which offer the structured pathways, the extent to which they are adopted and succeeded benefits frequently relies on empowerment, knowledge, and training of nurses who are working in critical care units. That is why their role in the early discovery and treatment of sepsis needs to be evaluated and improved. The study can be relevant in the clinical practice as well as in nursing education. The results of this research can be used to support evidence-based training, enhance compliance with protocols, and eventually decrease mortality caused by sepsis, by observing how critical care nurses can assist with care in the sepsis setting. The study would highlight that more investments in nursing education, advanced practice competencies, and nurturing healthcare policies that would give nurses the power as front line defense against sepsis would be essential.

Sepsis has become a major health concern on the global scene, because of its high occurrence, intricate mechanisms and severe outcomes to both patients and the health sector. This study is significant due to the understanding of the need to identify sepsis early and administer its management immediately as the measure of time. Per patient death tolls grow as each hour passes without used of proper antimicrobial treatment or resuscitative services. Although the diagnostic and therapeutic directions are given by physicians, the nurse is usually the first to notice the slight physiological changes, activate the sepsis screening tools, take the blood cult, use antibiotics, and regulate the fluid therapy (Branco et al. 2020). Therefore, the early interventions and close observation given by the critical care nurses is the key in effective sepsis management.



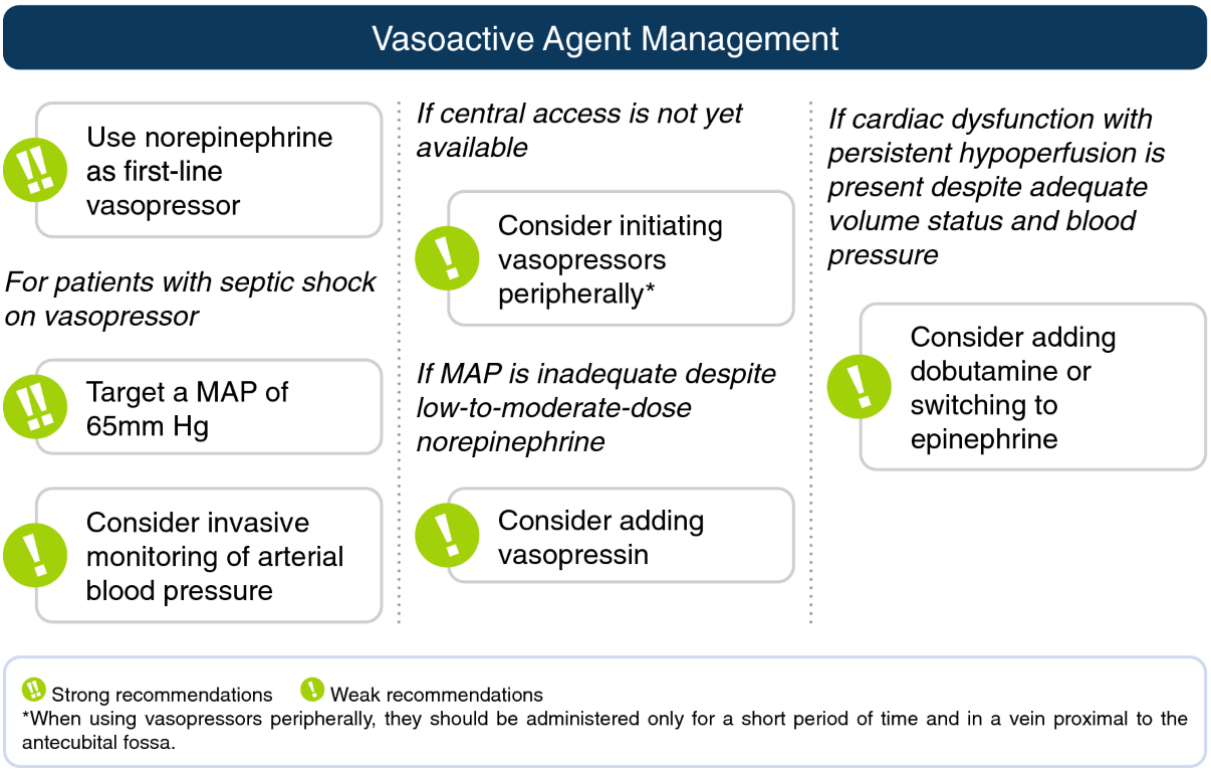
LITERATURE REVIEW

3.1 Overview of Sepsis in Critical Care

Sepsis is a potentially life-threatened pathologic condition that is conditioned by the systemic organ dysfunction as a result of the dysregulated host response to the infection. It is considered as one of the most crucial health problems in the intensive care units (ICUs) due to its severity with rapid evolution and complex mechanisms of pathology and high mortality rates. Pathophysiology of septic syndrome Observed at the inflammatory and immune responses level, that cascade during infection and occur profoundly with septic syndrome. The body responds to the presence of pathogens by mounting a protective reaction in the first place to eradicate the causes, but when the body becomes septic, the reaction becomes excessive and out of control, causing tissue damage,

endothelial dysfunction, poor oxygen delivery, and multi-organ failure (Gauer et al. 2020) Signs and symptoms of sepsis are alarming, so timely detection and treatment are the keys to avoiding the worst outcomes. Sepsis is a common cause of ICU admissions in critical care, which is linked to increased length of hospital stay, healthcare expenses, long-term morbidities among survivors and it can lead to physical disability, cognitive impairment, and poor quality of life. Sepsis is highly unpredictable since its clinical progress can be unconquerable, which is why it is defined as a highly essential practice to diagnose and offer evidence-based management as early as possible.

The complexity of sepsis also makes it difficult to distinguish between the condition and other critical conditions since signs and symptoms of sepsis can be vague with hyperthermia, increased heart rate, decreased blood pressure and confusion being common among the signs and symptoms of sepsis. This is why the structured screening tools, standardized protocols including those ones followed in the Surviving Sepsis Campaign are essential as well as skilled care providers to make timely decisions regarding the treatment of patients. Sepsis is deemed to be among the most complicated and life-threatening diseases faced in the critical care. It is what the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) are, a potentially fatal organ dysfunction that occurs due to an unbalanced reaction to an infection in the host (Eaton and Taylor, 2023). In contrast to localized infections, sepsis is a crucial systemic inflammatory and immune response that escalates out of the room where the infection is taking place, ultimately undermining a variety of organ systems. The burden of sepsis is tremendous because it has a high morbidity and mortality rate and leads to long-term disability of the patient, creating an enormous burden on the patient, the patient family and the healthcare systems across the world.



In a global health context, sepsis is a leading cause of death claiming about 49 million cases and 11 million deaths each year or 40 percent of all deaths across the world (Rudd et al., 2020). These numbers place sepsis as one of the leading preventable causes of death world wide. In general, the burden is out-pacing the low- and middle-income countries, where limited health resources, late recognition, and inaccessible intensive care facilities add to the worse outcomes. Sepsis is one of the primary contributions to ICU admissions, length of stay, and costs of care and it has been estimated that approximately one third of all individuals in an ICU develop sepsis during their respective hospitalizations. Sepsis pathophysiology is very multidimensional, and it comprises an interaction of pro-inflammatory and anti-inflammatory phenomena (Carlton et al. 2022). Messages from infection activate the immune system to stimulate a protection process that can rid the organism of the offending pathogen. This immune reaction is, however, hyperactivated in sepsis, and contributes to systemic inflammation, endothelial damage, microvascular dysregulation, and altered tissue perfusion. This causes failure of organs like lungs, kidney, liver, and the heart. In septic shock, a significant circulatory and cellular aberrations are seen and are characterized by continuous hypotension, poor perfusion, and high lactic acid levels, which also associate with high mortality.

3.2 Clinical Guidelines for Sepsis Management

Clinical guidelines have evolved and improved significantly in the last 20 years, becoming key instruments in the standardization of arresting sepsis and consequences of a pleasing outcome. The one most well-known is the one offered by the Surviving Sepsis Campaign (SSC), a team-based program started up in 2002 by the Society of Sharp Care Medicine (SCCM) and the European Szfernic Care Medicine (ESICM). The SSC guidelines offer evidence-centered recommendations that are focused on early detection, timely treatment, and well-structured care bundles to minimize sepsis-related mortality (Srzić et al. 2022). The latest

pack is the Hour-1 bundle, which focuses on necessary steps to take after suspecting sepsis or septic shock are taken immediately. Among those are the determination of the levels of serum lactate, blood cultures followed by the administration of the antibiotics as promptly as possible, broad-spectrum antibiotics, intravenous fluids in the case of hypotension or an increased level of lactate, or vasopressors to induce a minimum of mean arterial pressure of 65 mmHg when it is insufficient with fluid administration alone. The fact that there is considerable evidence that delays in intervention, especially in the administration of antibiotics and fluid resuscitation is strongly linked to higher mortality.

Although it is clear that these guidelines have immense advantages, research studies have revealed that at best compliance rate of these guidelines can vary between 20-60 percent depending on the health care setting. There are specific barriers to implementation that include: high clinical workloads and limited resources, inadequate training and communication problems in multidisciplinary teams. Such challenges are worsened by a limited access to diagnostics, suitable antibiotics, and monitoring paraphernalia in resource-limited countries. Moreover, the redefining of sepsis (the change between Sepsis-2 and Sepsis-3) also affected the diagnostic sensitivity and generated difficulties in rapid identification and following guidelines (Rababa et al. 2022). Also, the inflexible policy of daily administration of antibiotics within one hour brought up questions of overuse of antibiotics and resistance to antimicrobials, highlighting the vulnerability of promptness and due care.

Critical care nurses are essential in assuring the compliance to these guidelines since they are in most cases the first to detect a slight change in the status of the patient and prompt action is of the essence at this stage. Their duties include but are not limited to rapid evaluation of patients, the collection of blood culture, administration of antibiotics, and can control hemodynamic response to fluid resuscitation or vasopressor (Srzić et al. 2022). Nurses will become the pivot of getting sepsis care on time and will have an impact on patient outcomes through their vigilance and presence at the bedside. Outside the SSC, similar frameworks have been developed by another organization, the National Institute for Health and Care Excellence (NICE) in the United Kingdom and Centers for Disease Control and Prevention (CDC) in the United States which also point towards the significance of early-recognition, risk-stratification and especially multidisciplinary collaboration. Taken together, these guidelines make a point in saying that the management of sepsis is not solely a medical necessity but a multifaceted project based on the competency and sensitivity of the critical care nurses.

3.3 Role of Critical Care Nurses in Early Recognition of Sepsis

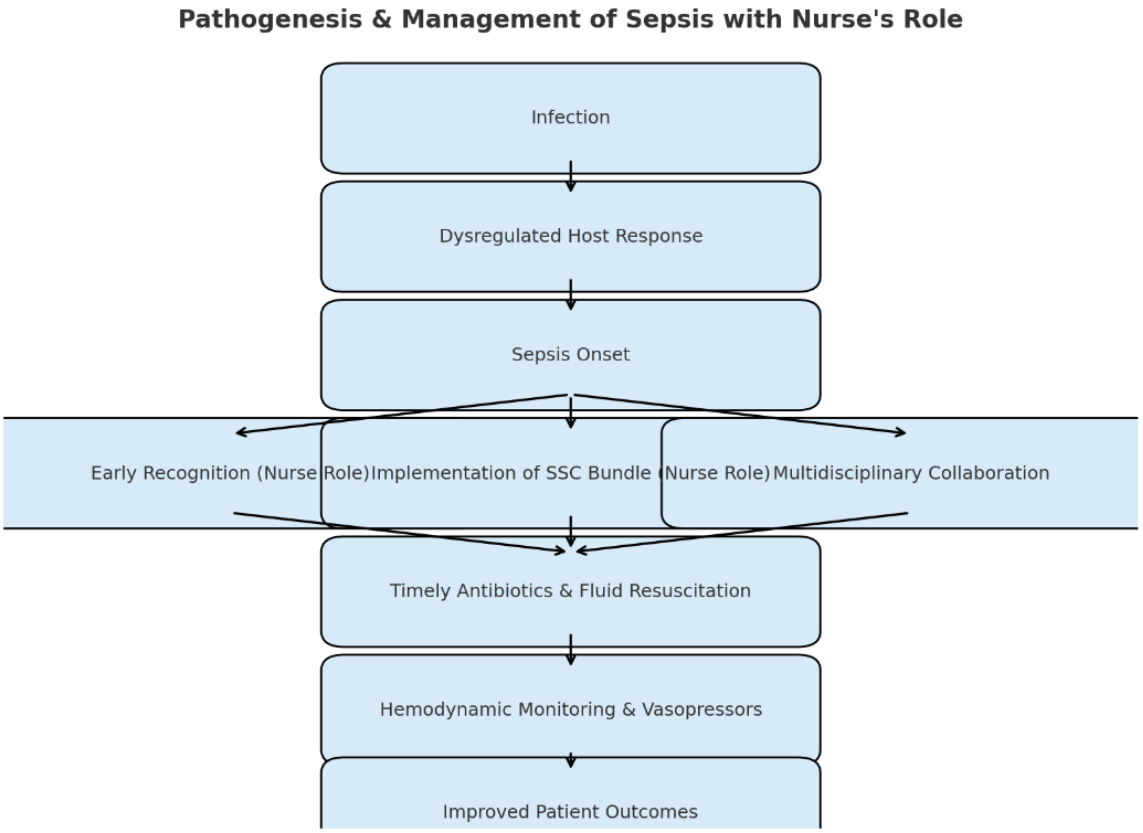
The timely detection of sepsis is amongst the most pivotal predictors of patient survival and critical care nurses play a significant role in the early detection of sepsis onset by virtue of their unremitting bedside attendance and close monitoring of patients. In contrast to physicians, who might check on patients periodically, a nurse monitors vital signs, laboratory data, and the slightest shifts in the patient condition and has more opportunity to diagnose early warning signs, including fever, tachycardia, tachypnea, hypotension, and changes in mental status (Cranston et al. 2023). The following clinical observations are critical to prompt the screening of sepsis and initiate time-sensitive interventions prior to decline into septic shock or multi-organ dysfunction. In clinical studies, it is always indicated that a delay of identifying sepsis may contribute to a sharp rise in mortality; the longer the hours of delay in antibiotics provision, the higher the chances of a patient dying. In this way, the level of diligence and clinical judgment nurses can demonstrate acts as the first line of defence in fighting this time-sensitive disease.

Part of the work of nurses in intensive care facilities working directly with sepsis screening tools to monitor and detect physiological deterioration, the quick Sequential Organ Failure Assessment (qSOFA) and the National Early Warning Score (NEWS). Their capability to understand the associated tools and their knowledge as a result of their experience of change at the patient level allows them to promptly escalate care to the medical team (Baxi et al. 2024). In addition, the establishment of rapid response systems at hospitals is frequently initiated by nurses by recognizing its activation, thus making it the first step in the chain of survival in septic patients. In addition to the technical skills, critical thinking, communication, and representing the advocacy characterize the role of nurses in the early recognition. The nurse needs not only to recognize abnormal findings but also to report their concerns to physicians and multidisciplinary teams in a manner that sepsis protocols are initiated without the delay. In resource-poor environments, prompt actions on the part of nurses who may proactively advocate to start antibiotics or intravenous fluids may even be life-saving. Training and education are critical to building such capacity, with literature showing that simulation-based training and sepsis-specific education show great promise in increasing knowledge and confidence and improving the accuracy of early recognition among nurses. The foundation of early identification of sepsis is critical care nurses (Cranston et al. 2023). Monitoring, efficient application of screening tools, quick judgement and communication are all essential attributes required by them to diagnose and intervene in time. Empowering nursing practices by maintaining competencies, standardization of protocols, and integration of nurses in a multidisciplinary team is what should be done repeatedly to optimize outcomes in sepsis patients in the critical care setting.

3.4 Critical Care Nurses in the Implementation of Sepsis Interventions

After sepsis recognition, evidence-based intervention used within the shortest timeframe will facilitate the most important aspect of mortality reduction and, in this regard, critical care nurses play the pivotal role. Being frontline caregivers, they directly apply all principle parts of the core of the Surviving Sepsis Campaign (SSC) bundles such as providing broad-spectrum antibiotics and intravenously resuscitating fluids, monitoring of hemodynamics, and using vasopressors in cases where they are essential (Chua et al. 2023). Their tasks are more than just implementing physician directives; it is more about prioritizing critically and initiating clinical actions and coordinating various activities during conditions of urgency. As an illustration, antibiotic therapy needs to be provided during the so-called golden hour of recognition and the literature has always demonstrated that a delay in this treatment component results in huge contributions to mortality. Real-time delivery of antibiotics following the collection of blood cultures allows the nurses to close the gap between diagnosis and the treatment itself, which has an immediate survival effect. When

dealing with fluid management, the critical care nurses have to initiate and titrate resuscitation plans making an initial use of a 30 mL/kg bolus of crystalloid solution as suggested by SSC.



They monitor the hemodynamic response of the patient by recording constant blood pressures, urine output, central venous pressure and serum lactate levels and will adjust treatment in consultation with the physicians. When hypotension is persistent in spite of fluid volumes, nurses are critical in establishing a vasopressor therapy like norepinephrine, and sustaining the mean arterial pressure (MAP) levels at or above 65 mmHg (Trivedi et al. 2023). They are invaluable in the safe management of central lines, infusion pumps, and complex monitoring devices to meet those therapeutic outcomes and avoid complications.

In addition to the hemodynamic stabilization, nurses have the onus of instituting prevention of infections and this is important in reducing the further complications. Among them are the adherence to the aseptic techniques used when working invasively, taking special care of central venous catheters and ventilators, observance of hand hygiene and isolation practices. These preventive measures greatly minimize secondary infections, which are known to be prevalent among the septic patients that are critically ill. Besides, critical care nurses play a role in holistic application of sepsis interventions in the form of educating the patients and their families, assuring them and psychologically supporting them. The high-intensity of the ICU usually frustrates families, and nurses become part of the communication loop because they can explain the steps of treatment, prognosis, and the need to follow the rules of infection prevention (Iqbal et al. 2024). Other than improving clinical performance, the proposed patient-centered approach can promote the satisfaction of overall care. Thus, critical care nurses who deploy sepsis interventions also provided mixed functions of technical skills, clinical judgment, infection control, and human kindness. The reason is that they can incorporate the guidelines of the practice into the real-time practice at the bedside in an at-times high stakes environment, which makes them invaluable components of the sepsis care team. Their role needs to be optimized by keeping them educated on sepsis management protocols, completely training with simulations and supporting them with the institutions so that sepsis management protocols are applied equally and with success.

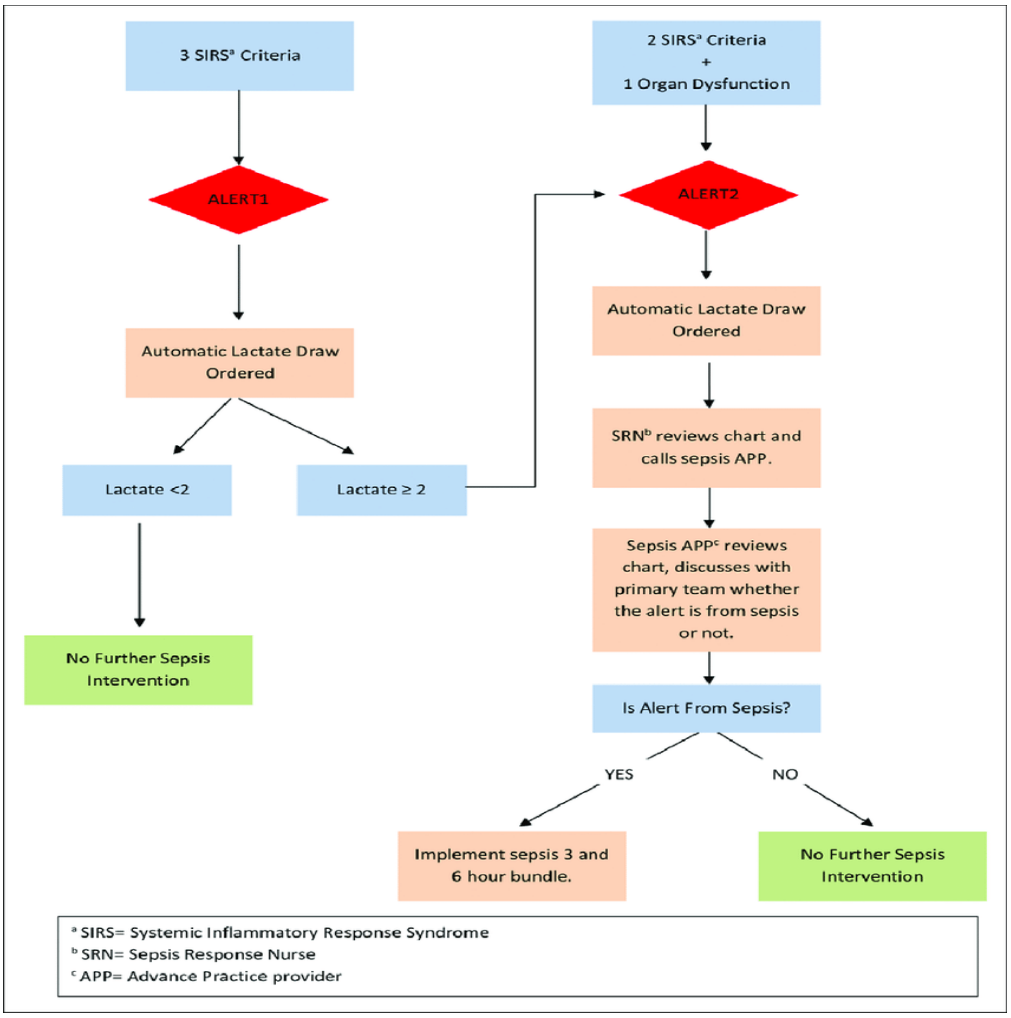
METHODOLOGY

The methodology of this study was a literature review that utilized the reviews of research on the role played by critical care nurses in treating sepsis. Articles that were used in inclusion were concerned with the role of nursing in sepsis management, adherence to guidelines, early identification, application of measures, and multidisciplinary cooperation. The chosen studies critically were analyzed and synthesized within the dome of thematic categories in accordance with the purposes of the review, including the global burden of sepsis, clinical guidelines, early recognition, applying interventions, challenges that nurses undergo, and educational interventions. Results were presented in the form of findings, and discussion section synthesized the evidence against the current practices, challenges and implications to nursing education and policymaking.

RESULTS AND DISCUSSION

The study reports that sepsis continues to be one of the major causes of morbidity and mortality in the critical care units, the early

identification and early institution of intervention is vital in enhancing outcomes. The Surviving Sepsis Campaign (SSC) and its Hour-1 bundle have now become the most popular sepsis management framework in use across the world, focusing on early antibiotic delivery, fluid resuscitation, hemodynamic While vasopressors are used when needed, this bundle does not provide explicit criteria or steps (Cranston et al. 2023). There is a constant evidence that the time to recognize and treat sepsis is a major contributor to mortality with mortality risk rising 710% for every hour of delayed antibiotic administration. Research notes also that SSC bundle compliance is poor, between 20-60 percent, depending on settings in healthcare, and shaped by resource constraints, staff expertise and culture.



Another emerging theme in the reviewed literature is the fact that critical care nurses are important both in early detection and treatment. The constant presence of the nurse at the bedside gives them the opportunity to observe early indications of sepsis, deploy screening tools like qSOFA and NEWS and deploy rapid response systems. Their roles include the implementation of evidence-based practices which include the administration of antibiotics, fluid management, initiation of vasopressors, prevention secondary infections by observing infection control practices. The review further discovered that education and training plays a profound role in the capacity of nursing practitioners in identifying and treating sepsis successfully (Iqbal et al. 2024). Sepsis education programs based on simulation have been indicated to enhance the knowledge, response time, and confidence of the nurses. Also, the multidisciplinary collaboration was emphasized in the studies, with nurses being the key communicating points between physicians and other specialists, pharmacists included, in order to provide coordinated care in a timely manner. Issues like personnel shortage, extensive workload, poor availability of resources and emotional stress were the common reported problems as hindrances to giving good sepsis treatment. Nevertheless, the body of literature is clear the interface of the critical care nurses can be substantially improved by empowering them through education, institutionalizing the support, and protocol-based practice.

Table: Role of Critical Care Nurses in Sepsis Management

Nursing Role	Key Interventions/Actions	Impact on Outcomes
Early Recognition	Continuous patient monitoring, assessment of vital signs, use of sepsis screening tools, timely communication with physicians	Earlier sepsis detection, reduced time to treatment, decreased mortality
Implementation of Sepsis Bundles	Administering antibiotics within 1 hour, initiating IV fluids, drawing blood cultures before antibiotics	Improved compliance with protocols, faster initiation of life-

		saving therapy
Hemodynamic Monitoring & Support	Monitoring MAP, urine output, central venous pressure; titrating fluids and vasopressors	Prevention of organ failure, stabilization of patient hemodynamics
Multidisciplinary Collaboration	Coordinating with intensivists, pharmacists, respiratory therapists; ensuring timely interventions	Reduced ICU length of stay, improved survival rates
Patient & Family Education	Educating families about warning signs, treatment steps, and care goals	Enhanced patient-centered care, improved satisfaction
Barriers & Challenges	Staffing shortages, inconsistent training, delayed lab results, limited resources	Variable outcomes, missed opportunities for timely interventions
Strategies for Improvement	Simulation training, continuous education, use of electronic sepsis alerts	Increased adherence to guidelines, better sepsis outcomes

The study also highlights the importance of workforce issues such as inadequate staffing, overworking and burnout that can undermine the success of sepsis initiatives. These opportunities indicate that institutions must find solutions that aim at providing proper nurse-to-patient ratios, benevolent working environments, and continual professional growth. The capacity of nurses to follow time-sensitive sepsis regulations can therefore be impaired in the absence of such structural support (Srzić et al. 2022). Based on the literature, it is possible to note that one cannot optimize the management of sepsis entirely without the acknowledgment and reinforcement of the role of critical care nurses. With unique presence at the bedside whereby they have developed through specialized training and power within multidisciplinary teams, they are invaluable in early recognition and the implementation of interventions as well as patient outcomes. Filling the gaps in guideline adherence, workforce issues, and educational programs are the essential and necessary steps to improve the sepsis care in the world.

CONCLUSION

Sepsis has been a significant challenge to the world health and major contributor to intensive care unit avoidable deaths. This review shows that critical care nurses play cardinal roles in the treatment of sepsis, especially when it comes to early identification, early application of evidence-based interventions, and the use of standardized guidelines, e.g. the Surviving Sepsis Campaign. They are the first line of defense in the management of sepsis because they are always in bedside vigilance and provision of clinical expertise, multidisciplinary care coordination. Nevertheless, the review also highlights serious barriers such as the inconsistent adherence to sepsis bundles, the lack of resources, workforce, and knowledge gaps and training. These challenges should be addressed by institutional investment in ongoing education, simulation training, favorable staffing practices, and adoption of technology to support, including sepsis monitor systems. The reinforcement of the role of critical care nurses with

REFERENCES

1. Arabi, Y. M., Fowler, R., & Hayden, F. G. (2020). Critical care management of adults with community-acquired severe respiratory viral infection. Intensive care medicine, 46(2), 315-328.
2. Baxi, V. V., Banerjee, S., Patel, M. A., Sinha, R., & Khan, S. (2024). Enhancing Patient Safety in Critical Care: Challenges, Strategies, and Emerging Innovations. Journal of Medical and Dental Frontiers, 2(1), 16-24.
3. Bleakley, G., & Cole, M. (2020). Recognition and management of sepsis: the nurse's role. British Journal of nursing, 29(21), 1248-1251.
4. Branco, M. J. C., Lucas, A. P. M., Marques, R. M. D., & Sousa, P. P. (2020). The role of the nurse in caring for the critical patient with sepsis. Revista brasileira de enfermagem, 73, e20190031.
5. Carlton, E. F., Gebremariam, A., Maddux, A. B., McNamara, N., Barbaro, R. P., Cornell, T. T., ... & Prescott, H. C. (2022). New and progressive medical conditions after pediatric sepsis hospitalization requiring critical care. JAMA pediatrics, 176(11), e223554-e223554.
6. Chua, W. L., Teh, C. S., Basri, M. A. B. A., Ong, S. T., Phang, N. Q. Q., & Goh, E. L. (2023). Nurses' knowledge and confidence in recognizing and managing patients with sepsis: A multi-site cross-sectional study. Journal of advanced nursing, 79(2), 616-629.
7. Cranston, T., Thompson, K., & Bowles, K. H. (2023). The role and initiatives led by the sepsis coordinator to improve sepsis bundle compliance and care across the continuum. Critical Care Nursing Clinics of North America, 35(4), 413-424.
8. Eaton, T. L., & Taylor, S. P. (2023). Health system approaches to providing posthospital care for survivors of sepsis and critical illness. Current Opinion in Critical Care, 29(5), 513-518.
9. Gauer, R., Forbes, D., & Boyer, N. (2020). Sepsis: diagnosis and management. American family physician, 101(7), 409-418.
10. Iqbal, F., Chandra, P., Lewis, L. E. S., Acharya, D., Purkayastha, J., Shenoy, P. A., & Patil, A. K. (2024). Application of artificial intelligence to predict the sepsis in neonates admitted in neonatal intensive care unit. Journal of Neonatal Nursing, 30(2), 141-147.
11. Rababa, M., Bani Hamad, D., & Hayajneh, A. A. (2022). Sepsis assessment and management in critically Ill adults: A systematic review. PLoS One, 17(7), e0270711.
12. Srzić, I., Adam, V. N., & Pejak, D. T. (2022). Sepsis definition: what's new in the treatment guidelines. Acta clinica croatica, 61(Suppl 1), 67.

13. Trivedi, K. K., Schaffzin, J. K., Deloney, V. M., Aureden, K., Carrico, R., Garcia-Houchins, S., ... & Berenholtz, S. (2023). Implementing strategies to prevent infections in acute-care settings. Infection Control & Hospital Epidemiology, 44(8), 1232-1246.
14. Urden, L. D., Stacy, K. M., & Lough, M. E. (2019). *Priorities in critical care nursing-E-Book*. Elsevier Health Sciences.
15. Weiss, S. L., Peters, M. J., Alhazzani, W., Agus, M. S., Flori, H. R., Inwald, D. P., ... & Tissieres, P. (2020). Surviving sepsis campaign international guidelines for the management of septic shock and sepsis-associated organ dysfunction in children. Intensive care medicine, 46(Suppl 1), 10-67.