MULTIPROFESSIONAL PERFORMANCE IN SEPSIS PROTOCOLS IN EMERGENCY SETTINGS AND ITS IMPLICATIONS FOR MORTALITY REDUCTION AND CARE QUALIFICATION

https://doi.org/10.63330/aurumpub.044-024

Aislan Ramalho Bezerra Santos[1], Giovani Serpa Baio[2], Jason Willer Rodrigues de Jesus[3], Cauã Gabriel Marin da Silva[4], Lavínia Braga Peres[5], Raquel Santana Rocha Quadros[6], Paula Carolina Mariano Carvalho[7], Leonardo Pimentel Galesco[8], Kamilla Dias do Nascimento[9], Carolina Isabela Romão Pretto[10], Élder Jonata dos Santos Medeiros[11], Ana Carolina Buchegger Marcelino Moura[12], Maria Eduarda Bandeira Sales Raso[13], Ana Caroline Silva Rezende[14] and Vinicius de Lima Lovadini[15]

Abstract

Sepsis is one of the leading causes of hospital mortality worldwide, especially in emergency departments, urgent care services and intensive care units. Early recognition and rapid implementation of evidence-based care protocols are decisive factors for reducing mortality and improving the quality of care

[1] Specialist in Aesthetic Health from the Federal University of Pernambuco - UFPE
ORCID: https://orcid.org/0009-0004-7977-2608
[2] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0003-2522-8220
[3] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0001-9563-8001
[4] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0005-0255-4984
[5] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0008-4146-2291
[6] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0006-7787-4082
[7] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0005-8643-6853
[8] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0000-2383-4559
[9] Physician - UFAM
ORCID: https://orcid.org/0009-0004-1641-0263
[10] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0003-1241-3400
[11] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0002-3195-8206
[12] Dental Student at the Federal University of Paraíba
ORCID: https://orcid.org/0009-0001-9829-6545
[13] Dental Student at the Federal University of Paraíba
ORCID: https://orcid.org/0009-0006-7549-5097
[14] Medical Student at Universidade Brasil
ORCID: https://orcid.org/0009-0005-8975-9711
[15] PhD in Sciences from the University of São Paulo – USP
ORCID: https://orcid.org/0000-0001-9066-2160

provided to critically ill patients. This chapter aimed to discuss multiprofessional performance in sepsis protocols in emergency settings and its implications for mortality reduction and care qualification. This is a narrative literature review based on international guidelines, scientific articles and institutional documents related to sepsis management. It was observed that the integration between nursing, medicine, physiotherapy, clinical pharmacy and other healthcare professionals favors early recognition of organ dysfunction, greater adherence to therapeutic bundles, reduced time to antibiotic administration and strengthening of patient safety. In addition, strategies related to continuing education, interprofessional communication and technological incorporation demonstrated positive impacts on care quality and hospital clinical outcomes. It is concluded that multiprofessional performance is an essential element for the effectiveness of sepsis protocols and for the consolidation of safer, more effective and humanized healthcare practices.

Keywords: Sepsis, Emergency, Multiprofessional team, Patient safety, Hospital mortality.

INTRODUCTION

Sepsis corresponds to a highly complex clinical syndrome, defined as a potentially fatal organ dysfunction resulting from a dysregulated host response to an infectious process (Singer et al., 2016). This condition currently represents one of the leading causes of hospital morbidity and mortality worldwide, especially in urgent care services, emergency departments, and intensive care units, constituting an important challenge for contemporary health systems. Its pathophysiology involves inflammatory, immunological, hemodynamic, and metabolic alterations capable of triggering progressive impairment of multiple organs and systems, frequently culminating in septic shock, multiple organ failure, and death.

In addition to its high clinical severity, sepsis has a significant epidemiological, economic, and social impact. Data from the World Health Organization (2023) indicate that millions of individuals develop sepsis annually, with substantial mortality associated with the syndrome, particularly in middle-

and low-income countries. In these settings, factors such as structural inequalities, limitations in access to health services, organizational weaknesses, and difficulties in implementing care protocols contribute to the worsening of clinical outcomes and to increased mortality rates. In the hospital environment, septic patients frequently require prolonged hospitalizations, intensive use of technological resources, advanced life support, and continuous multiprofessional follow-up, which results in a significant financial and operational burden for health services (Machado et al., 2017; World Health Organization, 2023).

In recent decades, sepsis has come to be recognized as a time-dependent emergency, in which the interval between clinical recognition and the implementation of therapeutic measures exerts a direct influence on the patient's prognosis. Classic studies have demonstrated that delays in the adequate administration of antimicrobials are significantly associated with a progressive increase in hospital mortality among patients with septic shock, reinforcing the need for rapid and systematized interventions (Kumar et al., 2006). In this context, structured clinical protocols have become part of institutional strategies aimed at patient safety, standardization of care pathways, and qualification of care for critically ill patients.

From this movement, the Surviving Sepsis Campaign consolidated international recommendations grounded in robust scientific evidence, promoting greater organization of care and reducing therapeutic variability in sepsis management (Evans et al., 2021). Among the main recommended interventions are early recognition of organ dysfunction, measurement of serum lactate, collection of blood cultures before antibiotic therapy, rapid administration of broad-spectrum antimicrobials, adequate fluid resuscitation, and continuous monitoring of tissue perfusion. The systematic implementation of these measures has demonstrated a significant impact on reducing hospital mortality and improving care indicators related to intensive care (Rhodes et al., 2017).

However, the effectiveness of sepsis protocols does not depend exclusively on the existence of clinical guidelines, but also on the organizational capacity of institutions and the integration among the

different professionals involved in care. The management of septic patients requires simultaneous interventions, continuous clinical monitoring, rapid decision-making, and effective interprofessional communication, making coordinated action among nursing, medicine, physiotherapy, clinical pharmacy, laboratory services, and other care sectors indispensable. In this scenario, the multiprofessional approach constitutes a central element for early recognition of clinical deterioration, timely implementation of therapeutic measures, and strengthening of patient safety.

Given the epidemiological magnitude of sepsis and the need for rapid, organized, and resolutive care responses, it is essential to discuss multiprofessional practice in sepsis protocols in hospital emergency settings and its implications for mortality reduction, care qualification, and strengthening of patient safety. In addition, understanding the challenges related to the implementation of these protocols contributes to the consolidation of more efficient, humanized care practices aligned with contemporary principles of care for critically ill patients.

METHODOLOGY

This is a narrative literature review, developed from the analysis of scientific articles, international consensuses, and institutional documents related to sepsis and multiprofessional practice in urgent and emergency care services. Publications indexed in the PubMed, SciELO, and Google Scholar databases were consulted, prioritizing studies published between 2016 and 2025. Documents from the Surviving Sepsis Campaign and the Latin American Sepsis Institute were also used.

The material was analyzed descriptively and critically, seeking to identify evidence related to the role of nursing, medicine, physiotherapy, and clinical pharmacy in the sepsis protocol, as well as its implications for reducing hospital mortality and qualifying care.

RESULTS AND DISCUSSION

Nursing plays a strategic and central role in the early recognition of sepsis due to its continuous presence with the patient and its capacity for systematic and longitudinal clinical monitoring. In many hospital contexts, especially in urgent care, emergency, and intensive care units, the nurse is the first professional to identify clinical alterations suggestive of hemodynamic deterioration and organ dysfunction. Signs such as arterial hypotension, persistent tachycardia, fever or hypothermia, tachypnea, oliguria, reduced peripheral oxygen saturation, and changes in mental status are often initially detected by the nursing team, enabling early activation of institutional sepsis protocols and rapid mobilization of the multiprofessional team (Machado et al., 2017; Evans et al., 2021).

In this context, the Systematization of Nursing Care (SNC) assumes fundamental relevance for organizing care and strengthening clinical reasoning. The use of the nursing process enables continuous assessment of compromised basic human needs, identification of care priorities, and implementation of interventions based on scientific evidence. In addition, the SNC contributes to standardizing care, improving communication among professionals, and strengthening the safety of critically ill patients. Nursing also participates directly in the collection of laboratory tests, administration of antimicrobials, hemodynamic monitoring, rigorous fluid balance control, and fluid resuscitation, favoring adherence to the therapeutic bundles recommended by the international guidelines of the Surviving Sepsis Campaign (Evans et al., 2021; Rhodes et al., 2017).

The early implementation of therapeutic measures proves decisive for reducing mortality associated with sepsis. Studies show that delays in clinical recognition and in the initiation of antibiotic therapy are directly related to the worsening of organ dysfunction and to increased hospital mortality rates. Thus, the nursing team’s ability to recognize subtle signs of clinical deterioration becomes essential for the effectiveness of care protocols and for reducing response time in hospital emergency settings (Kumar et al., 2006; Machado et al., 2017).

Medical practice in sepsis management involves diagnostic definition, stratification of clinical severity, and therapeutic decision-making based on clinical and laboratory parameters. Prognostic tools such as the Sequential Organ Failure Assessment (SOFA) and quick SOFA (qSOFA) have become widely used after the publication of the Sepsis-3 consensus, assisting in the early identification of patients at higher risk of unfavorable progression. The use of these instruments allows greater sensitivity in identifying organ dysfunction and supports faster and more targeted interventions, contributing to the reduction of complications associated with septic shock and multiple organ failure (Singer et al., 2016; Evans et al., 2021).

Early antibiotic therapy remains one of the main strategies for reducing mortality associated with sepsis, especially when administered within the first hour after clinical recognition of the septic condition. However, the inappropriate choice of antimicrobial agent or therapeutic delay may contribute to failure in infection control, progression to septic shock, and increased microbial resistance. In this scenario, integration among the medical team, nursing staff, and clinical pharmacy becomes indispensable for rationalizing antimicrobial therapy and ensuring greater care safety (Kumar et al., 2006; Rhodes et al., 2017).

Physiotherapy has growing relevance in the multiprofessional management of septic patients, especially in individuals with acute respiratory failure and acute respiratory distress syndrome (ARDS). The physiotherapist acts directly in ventilatory support, adjustment of mechanical ventilation parameters, bronchial hygiene, early mobilization, and prevention of complications associated with prolonged immobility. These interventions contribute significantly to reducing mechanical ventilation time, preventing muscle weakness acquired in the intensive care unit, and improving functionality after hospital discharge, strengthening the comprehensive approach to care for critically ill patients (Rhodes et al., 2017; Evans et al., 2021).

Clinical pharmacy plays a fundamental role in medication safety and in rationalizing the use of antimicrobials during sepsis management. The clinical pharmacist participates in the evaluation of

medical prescriptions, dose adjustment according to renal and hepatic function, identification of drug interactions, and therapeutic monitoring. Furthermore, the pharmacist acts in antimicrobial stewardship strategies, which are essential for controlling bacterial resistance and promoting the rational use of antibiotics in the hospital environment. The integrated work of clinical pharmacy and the care team favors the reduction of adverse events, therapeutic optimization, and strengthening of the quality of care provided to septic patients (Evans et al., 2021; World Health Organization, 2023).

Another central aspect in the effectiveness of sepsis protocols concerns multiprofessional communication. Communication failures represent an important factor associated with therapeutic delays, care errors, and compromised patient safety. In this context, strategies such as multiprofessional rounds, care checklists, standardized protocols, and electronic alert systems favor greater integration among professionals and increased institutional adherence to therapeutic bundles. Effective communication strengthens continuity of care, reduces care variability, and contributes to the construction of an organizational culture oriented toward patient safety and care quality (Rhodes et al., 2017; Machado et al., 2017).

Continuing education in health constitutes an indispensable strategy for strengthening professional competencies related to sepsis management. The periodic implementation of training programs, clinical audits, realistic simulations, and interdisciplinary capacity-building activities favors early recognition of organ dysfunction and improves the effectiveness of therapeutic interventions. In addition, institutional continuing education programs contribute to the scientific updating of teams and to the strengthening of evidence-based practices, reducing care inconsistencies and promoting continuous improvement of clinical and care indicators (Evans et al., 2021; World Health Organization, 2023).

Brazilian studies demonstrate that hospitals that implement managed sepsis protocols associated with multiprofessional practice show a significant reduction in hospital mortality, a decrease in length of stay, and improvement in care indicators. In addition, the incorporation of digital technologies and

computerized early warning systems enables the rapid identification of clinical and laboratory alterations suggestive of sepsis, contributing to reduced door-to-antibiotic time and greater standardization of care. However, the effectiveness of these technologies depends directly on team training and on the existence of an institutional culture committed to patient safety and quality of care (Machado et al., 2017; Evans et al., 2021).

CONCLUSION

Multiprofessional practice in sepsis protocols constitutes an essential element for reducing hospital mortality, qualifying care, and strengthening patient safety in urgent care, emergency, and intensive care services. The pathophysiological complexity of sepsis requires rapid, coordinated interventions grounded in scientific evidence, making effective integration among nursing, medicine, physiotherapy, clinical pharmacy, laboratory services, and other professionals involved in the care of critically ill patients indispensable. Collaborative practice favors early recognition of organ dysfunction, greater adherence to therapeutic bundles, reduced time to administration of antibiotic therapy, and optimization of hemodynamic and ventilatory support measures, factors directly associated with improved clinical outcomes and reduced hospital mortality rates.

In addition to impacts related to survival, the implementation of managed sepsis protocols contributes significantly to the standardization of care pathways, reduction of clinical variability, and strengthening of the institutional safety culture. In this context, strategies related to continuing education in health, qualified interprofessional communication, clinical auditing, and incorporation of digital technologies demonstrate important potential for the continuous improvement of care indicators and the consolidation of practices based on scientific evidence.

Nursing stands out in this process due to its capacity for continuous monitoring, early recognition of clinical deterioration, and articulation among the different professionals of the team. In parallel, medical practice guides therapeutic decision-making, while physiotherapists and pharmacists contribute

to adequate ventilatory support, rationalization of antimicrobial use, and prevention of complications associated with intensive care. Thus, comprehensive care for septic patients depends directly on the construction of collaborative practices and the consolidation of organizational models centered on interdisciplinarity and clinical resolutiveness.

Additionally, it is essential to understand that sepsis management goes beyond exclusively biomedical aspects, also involving ethical, humanistic, and organizational dimensions of health care. The reception of critically ill patients and their families, clear communication between the team and service users, and care centered on human dignity represent fundamental components of comprehensive and humanized care. Thus, strengthening multiprofessional practices in sepsis protocols should be understood not only as a strategy for reducing mortality, but also as an instrument for qualifying care, rationalizing hospital resources, and promoting care excellence in contemporary health systems.

REFERENCES

EVANS, Laura et al. Surviving Sepsis Campaign: international guidelines for management of sepsis and septic shock 2021. Critical Care Medicine, Philadelphia, v. 49, n. 11, p. e1063-e1143, 2021.

KUMAR, Anand et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Critical Care Medicine, Philadelphia, v. 34, n. 6, p. 1589-1596, 2006.

MACHADO, Flávia Ribeiro et al. The epidemiology of sepsis in Brazilian intensive care units. The Lancet Infectious Diseases, London, v. 17, n. 11, p. 1180-1189, 2017.

RHODES, Andrew et al. Surviving Sepsis Campaign: international guidelines for management of sepsis and septic shock: 2016. Intensive Care Medicine, Berlin, v. 43, n. 3, p. 304-377, 2017.

SINGER, Mervyn et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA, Chicago, v. 315, n. 8, p. 801-810, 2016.

WORLD HEALTH ORGANIZATION. Sepsis. Geneva: WHO, 2023.