

Sepsis Management in Medical-Surgical Nursing: A Multidisciplinary Approach

Sukanya, V^{1*}, Neetha Dalvi, S¹, Renukadevi, D. N²

¹Nursing Tutor, JSS School of Nursing, Mysore, Karnataka State, India

²Principal, JSS School of Nursing, Mysore, Karnataka State, India

DOI: <https://doi.org/10.36348/sjnhc.2025.v08i02.005>

| Received: 15.01.2024 | Accepted: 20.02.2025 | Published: 24.02.2025

*Corresponding author: Sukanya, V

Nursing Tutor, JSS School of Nursing, Mysore, Karnataka State, India

Abstract

Sepsis is a life-threatening condition resulting from an extreme immune response to infection, leading to organ dysfunction and high mortality rates. Early identification and timely intervention are crucial for improving patient outcomes. This review explores evidence-based strategies in sepsis management, including early recognition, fluid resuscitation, antimicrobial therapy, hemodynamic support, and nursing interventions. The role of a multidisciplinary healthcare team in sepsis care is also highlighted, emphasizing the importance of adherence to international guidelines such as the Surviving Sepsis Campaign. Strengthening nursing protocols and adopting advanced monitoring techniques can significantly reduce sepsis-related morbidity and mortality.

Keywords: Sepsis, septic shock, infection control, early recognition, fluid resuscitation, antimicrobial therapy, nursing interventions.

Copyright © 2025 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Sepsis is a systemic inflammatory response to infection that can lead to tissue damage, organ failure, and death if not treated promptly. It remains a global health concern, contributing to significant morbidity and mortality, particularly in critically ill and immunocompromised patients. According to the World Health Organization (WHO), sepsis affects over 49 million people annually, with an estimated 11 million deaths. Medical-surgical nurses play a pivotal role in early detection, timely intervention, and continuous monitoring of sepsis patients.

Pathophysiology of Sepsis

Sepsis is triggered by a dysregulated immune response to infection, resulting in widespread inflammation, endothelial dysfunction, and microvascular thrombosis. The progression of sepsis involves:

- **Systemic Inflammatory Response Syndrome (SIRS):** Characterized by fever, tachycardia, tachypnea, and altered white blood cell count.
- **Severe Sepsis:** Marked by organ dysfunction such as acute kidney injury, respiratory failure, or altered mental status.

- **Septic Shock:** Defined by persistent hypotension despite adequate fluid resuscitation, requiring vasopressor support.

Risk Factors and Early Recognition

Risk Factors:

- Advanced age and immunosuppression
- Chronic conditions (diabetes, renal failure, liver disease)
- Recent surgery or invasive procedures
- Prolonged hospitalization and use of indwelling catheters
- Multidrug-resistant infections

Early Recognition:

Early diagnosis is key to reducing sepsis mortality. Nurses should assess patients using validated screening tools such as:

- **qSOFA (Quick Sequential Organ Failure Assessment):** Includes altered mentation, respiratory rate ≥ 22 /min, and systolic blood pressure ≤ 90 mmHg.
- **NEWS (National Early Warning Score):** Helps identify deterioration in hospitalized patients.

- **Biomarkers:** Procalcitonin and lactate levels aid in early diagnosis.

Management of Sepsis in Medical-Surgical Settings

1. Fluid Resuscitation

- Early aggressive fluid therapy (30 mL/kg crystalloid within the first three hours).
- Monitoring fluid responsiveness using passive leg raise test and dynamic parameters.

2. Antimicrobial Therapy

- Empirical broad-spectrum antibiotics initiated within one hour of suspected sepsis.
- De-escalation based on culture sensitivity results.

3. Hemodynamic Support

- Vasopressors (e.g., norepinephrine) for persistent hypotension.
- Inotropic agents for myocardial dysfunction.

4. Infection Source Control

- Removal of infected devices and surgical intervention if necessary.

5. Nursing Interventions in Sepsis Care

- **Vital Signs Monitoring:** Continuous assessment of temperature, heart rate, respiratory rate, and blood pressure.
- **Fluid Balance Monitoring:** Daily weight measurement, urine output tracking, and assessment of signs of fluid overload.
- **Oxygen Therapy:** Maintaining adequate oxygenation and preventing respiratory distress.
- **Patient Education:** Informing patients and caregivers about sepsis warning signs and infection prevention.

Role of a Multidisciplinary Team in Sepsis Care

- **Nurses:** Provide frontline care, monitoring, and rapid intervention.
- **Physicians:** Diagnose and initiate treatment plans.

- **Pharmacists:** Optimize antimicrobial therapy.
- **Respiratory Therapists:** Assist with ventilatory support.
- **Dietitians:** Ensure adequate nutritional support to promote recovery.

Challenges and Future Perspectives

Despite advancements in sepsis management, challenges such as antibiotic resistance, delayed recognition, and resource limitations persist. Future research should focus on:

- Development of novel biomarkers for early detection.
- Personalized sepsis management protocols.
- Integration of artificial intelligence for early warning systems in hospital settings.

CONCLUSION

Sepsis remains a significant challenge in medical-surgical nursing, requiring prompt recognition, timely interventions, and a collaborative approach to improve patient outcomes. Nurses play a crucial role in early identification and adherence to evidence-based management protocols. Strengthening sepsis awareness, infection prevention strategies, and multidisciplinary teamwork can reduce mortality rates and enhance patient recovery.

REFERENCES

- Surviving Sepsis Campaign Guidelines (2021).
- World Health Organization (WHO) Sepsis Report (2020).
- Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C. M., French, C., ... & Levy, M. (2021). Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021. *Intensive Care Medicine*, 47(11), 1181-1247.
- Vincent, J. L., & Martin, G. S. (2020). Sepsis: A Roadmap for Future Research. *The Lancet Infectious Diseases*, 20(7), e274-e283.