

ORIGINAL

## Nursing care process for people with septic shock in the emergency department

### Proceso de Atención de Enfermería a personas con shock séptico en servicio de urgencia y emergencia

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#### ABSTRACT

**Introduction:** septic shock is a medical emergency characterized by a systemic inflammatory response secondary to infection, leading to life-threatening hemodynamic instability. In this context, the Nursing Care Process allows for the scientific application of nursing knowledge to deliver safe and high-quality care.

**Objective:** to describe the application of the Nursing Care Process in people with septic shock in emergency and critical care settings using the updated NANDA, NOC, and NIC taxonomies.

**Method:** a descriptive case study conducted in a hospital emergency service from March to June 2025. The Marjory Gordon functional health patterns model and an electronic clinical record system were used. The process included assessment, diagnosis, planning, implementation, and evaluation based on NANDA (2023-2026), NOC, and NIC.

**Results:** priority diagnoses included ineffective tissue perfusion, risk for shock, and fluid volume imbalance. Nursing interventions focused on hemodynamic control, fluid therapy, and continuous monitoring achieved stabilization of vital signs and clinical improvement.

**Conclusions:** the application of the Nursing Care Process supported evidence-based clinical decision-making, contributing to patient recovery and reinforcing professional nursing practice in critical scenarios.

**Keywords:** Septic Shock; Nursing Care Process; Critical Care; Nursing Diagnosis; NANDA; NOC; NIC.

#### RESUMEN

**Introducción:** el shock séptico constituye una emergencia médica caracterizada por una respuesta inflamatoria sistémica secundaria a una infección, con alteraciones hemodinámicas que amenazan la vida. En este contexto, el Proceso de Atención de Enfermería permite aplicar el método científico de la profesión para proporcionar cuidados seguros y de calidad.

**Objetivo:** describir la aplicación del Proceso de Atención de Enfermería en personas con shock séptico en el servicio de urgencia y emergencia, utilizando las taxonomías NANDA, NOC y NIC actualizadas.

**Método:** estudio descriptivo de tipo estudio de caso, realizado en un servicio hospitalario de urgencias del Hospital ISSSTE Columba Rivera Osorio, Pachuca de Soto, Hidalgo, durante el periodo del 30 de junio al 8 de agosto del 2025. Se empleó el modelo de patrones funcionales de salud de Marjory Gordon y el sistema de registro clínico. Las etapas incluyeron valoración, diagnóstico, planificación, ejecución y evaluación de cuidados según taxonomías NANDA (2023-2026), NOC y NIC.

**Resultados:** se identificaron diagnósticos prioritarios como perfusión tisular ineficaz, riesgo de shock y desequilibrio del volumen de líquidos. Las intervenciones enfermeras centradas en el control hemodinámico, administración de líquidos y monitorización continua permitieron estabilizar los signos vitales y mejorar el

estado clínico del paciente.

**Conclusiones:** la aplicación del Proceso de Atención de Enfermería favoreció la toma de decisiones clínicas fundamentadas, contribuyendo a la recuperación del paciente y fortaleciendo la práctica basada en la evidencia en contextos críticos.

**Palabras clave:** Shock Séptico; Proceso de Atención de Enfermería; Cuidados Críticos; Diagnóstico de Enfermería; NANDA; NOC; NIC.

## INTRODUCTION

Septic shock represents one of the most significant contemporary challenges for emergency and critical care services, due to its high morbidity and mortality rates and the complexity of the clinical approach, which requires a rapid, coordinated, and scientifically based response. According to the World Health Organization,<sup>(1)</sup> sepsis affects more than 49 million people annually, of whom approximately 11 million die, with septic shock accounting for more than 30 % of these deaths. This reality makes sepsis a global emergency that requires effective, person-centered intervention strategies.

From the perspective of nursing science, septic shock is not addressed solely as a pathophysiological disorder, but as a human phenomenon that compromises the biopsychosocial integrity of the individual and their family. Nursing care plays a pivotal role, as early detection of signs of deterioration, continuous monitoring, and the application of evidence-based interventions are crucial to reducing complications and improving patient outcomes.<sup>(2)</sup>

Over the last few decades, nursing has moved towards a model of care based on its own scientific knowledge, through the Nursing Care Process, which allows care to be planned, executed, and evaluated in a logical, systematic, and humanized manner.<sup>(3)</sup> In the context of septic shock, this process not only guides clinical practice but also strengthens evidence-based decision-making, diagnostic reasoning, and the evaluation of measurable outcomes using the NANDA, NOC, and NIC taxonomies.<sup>(4)</sup>

### The clinical and epidemiological context of septic shock

Septic shock is defined as severe organ dysfunction resulting from a dysregulated host response to infection, characterized by persistent tissue hypoperfusion and the need for vasopressors to maintain adequate mean arterial pressure.<sup>(5)</sup> This syndrome represents the most severe phase of sepsis and remains a clinical challenge even with current technological advances.

In Latin America, mortality rates from septic shock in emergency and intensive care units range from 30 % to 60 %, depending on the level of resources available in the healthcare system.<sup>(6)</sup> In Mexico, recent studies reveal that sepsis is the second leading cause of admission to intensive care units, with 40 % of these cases attributable to severe respiratory and urinary tract infections.<sup>(7)</sup>

These figures underscore the pressing need to enhance the role of nursing in early detection, comprehensive management, and education of patients and their families. Nursing staff are, by nature, the first to identify warning signs and subtle changes in clinical status, making their active participation in preventing septic shock essential.<sup>(8)</sup>

From the perspective of care, as understood by Jean Watson,<sup>(9)</sup> it is the core of the nursing discipline. This transpersonal relationship transcends the technical and is oriented toward promoting dignity, hope, and healing. In patients with septic shock, nursing care must encompass both physiological stabilization and emotional and spiritual support for the patient and their family environment.

The act of caring in critical situations requires advanced clinical skills and professional judgment, informed by evidence. This includes continuous monitoring of hemodynamic parameters, safe administration of fluids and vasoactive drugs, infection control, pressure ulcer prevention, pain management, and effective communication with the multidisciplinary team.<sup>(4)</sup>

The scientific literature emphasizes that favorable outcomes in septic shock depend largely on early recognition and timely intervention by nurses. For example, the implementation of early resuscitation protocols led by nurses has been shown to reduce mortality by up to 25 %.<sup>(6)</sup> These findings confirm that nursing care is not limited to the execution of medical orders, but constitutes an autonomous, critical, and reflective action that directly impacts patient safety.

The Nursing Care Process, as a scientific method, represents the systematic application of critical and scientific thinking in nursing practice. It consists of five interrelated stages: assessment, diagnosis, planning, implementation, and evaluation. Each phase enables the identification of human responses to health problems and informs decision-making toward measurable and observable outcomes.<sup>(3)</sup>

In the management of septic shock, the initial assessment focuses on recognizing signs of hypoperfusion,

alterations in level of consciousness, changes in urine output, and the response to fluids. Subsequently, nursing diagnoses such as *Ineffective Tissue Perfusion (00024)*, *Fluid Volume Imbalance (00026)*, or *Risk of Shock (00205)*, all recognized by NANDA International, are established.<sup>(10)</sup>

Based on these diagnoses, relevant NOC outcomes are selected, such as *Hemodynamic Status (0401)*, *Fluid Balance (0601)*, or *Critical Patient Survival (1910)*, and specific NIC interventions are planned, such as *Fluid Management (4120)*, *Hemodynamic Monitoring (4150)*, or *Intensive Care (6540)*.<sup>(4)</sup>

This process not only structures clinical work but also ensures continuity of care, promotes interdisciplinary communication, and enables objective evaluation of the results obtained.

What is novel about this case is the innovation in care, rather than in the disease. In clinical practice, a comprehensive, person-centered approach is proposed, combining advanced monitoring with humanized interventions that integrate technology and empathy.

Innovative strategies include:

1. Dynamic and continuous assessment using standardized sepsis and shock scales.
2. Evidence-based care, aligned with the international guidelines of the Surviving Sepsis Campaign.<sup>(11)</sup>
3. Immediate family education, aimed at understanding the disease process and the importance of therapeutic adherence.
4. Emotional interventions, promoting resilience and therapeutic communication.
5. Standardized clinical documentation using interoperable electronic systems, which allow for monitoring and analysis of nursing outcomes.

These practices demonstrate that the role of nursing has evolved from a technical approach to an epistemologically grounded one, where the discipline's own knowledge allows for autonomous and effective decision-making.

### The scientific problem

Despite advances in critical patient care, a gap remains between scientific evidence and everyday nursing practice. The high workload, the lack of specific protocols, and the limitations of advanced training in critical care hinder the implementation of the Nursing Care Process in its entirety. This leads to fragmented interventions and a reduced ability to assess the real impact of professional practice on health outcomes.<sup>(12)</sup>

Therefore, the scientific problem that gives rise to this research can be expressed as follows:

*How does the application of the Nursing Care Process, based on the NANDA, NOC, and NIC taxonomies, optimize the quality of care and clinical outcomes in people with septic shock treated in urgent and emergency services?*

This approach acknowledges the importance of emphasizing the actual impact of nursing care on patient recovery and its role in enhancing the safety and effectiveness of comprehensive treatment.

### Relevance and importance of the case

The case presented is of high scientific, social, and professional relevance, as it reflects the potential of nursing care in a context where the patient's life depends on the accuracy and timeliness of interventions. In addition, it contributes to the consolidation of disciplinary knowledge by linking theory, scientific evidence, and clinical practice.

The relevance also lies in the fact that septic shock is one of the leading causes of hospital admission and healthcare expenditure in Mexico and Latin America. Addressing it from the Nursing Care Process perspective demonstrates that nursing not only participates in care but also leads continuous improvement processes based on observable, measurable, and replicable results.

From an ethical perspective, nursing care becomes an act of social responsibility, as it promotes life, well-being, and human dignity even in the most critical scenarios. This approach aligns with the principles outlined in the International Council of Nurses' Code of Ethics,<sup>(13)</sup> which establishes the duty of nurses to provide compassionate, safe, and evidence-based care.

The objective of this study is to describe the application of the Nursing Care Process, based on the NANDA, NOC, and NIC (2023-2026) taxonomies, in the comprehensive care of a person with septic shock in the emergency department, highlighting innovative nursing actions that contribute to improving clinical outcomes, strengthening patient safety, and raising the profile of evidence-based disciplinary practice.

### METHOD

A descriptive clinical case study was conducted to analyze and apply the Nursing Care Process to a person diagnosed with septic shock treated in the emergency department of a secondary care hospital.

The study was conducted in the emergency department of the ISSSTE Columba Rivera Osorio Hospital in Pachuca de Soto, Hidalgo, from June 30 to August 8, 2025.

## Methodology

The nursing care process was applied, a scientific method of the profession that guides practice toward identifying human needs and planning systematic interventions. The Nursing Care Process consists of five interrelated phases: assessment, diagnosis, planning, implementation, and evaluation.<sup>(3)</sup>

The assessment framework selected was Marjory Gordon's functional health patterns model, due to its comprehensive approach to identifying human responses in the biological, psychological, and social dimensions.

The recording system used was the institutional electronic medical record, which employed a standardized format for documenting NANDA diagnoses, NOC outcomes, and NIC interventions.

## Processing and analysis methods

The data obtained were analyzed using descriptive qualitative methods, focusing on the identification of human response patterns to the septic process and the evaluation of the results obtained from the implemented nursing interventions.

The NANDA-I (2023-2026), NOC (2023), and NIC (2024) taxonomies were used to standardize nursing language, facilitate interdisciplinary communication, and measure care outcomes.<sup>(4)</sup>

## RESULTS AND DISCUSSION

The clinical case is presented below following the logic of the Nursing Care Process in its five phases, with a focus on the human response and innovation in nursing care.

### Phase I. Assessment

A 58-year-old male patient was admitted to the emergency department with high fever (39,2 °C), tachycardia, hypotension (BP 85/50 mmHg), and dyspnea. Medical diagnosis on admission: septic shock secondary to urinary tract infection.

**Table 1.** Functional health patterns (Marjory Gordon)

Pattern	Nursing assessment
Health perception-management	Ignorance of warning signs; inadequate hydration management; frequent self-medication.
Nutritional-metabolic	Pale, cold, and clammy skin; limited oral intake; loss of appetite; negative fluid balance.
Elimination	Oliguria (<0,5 mL/kg/h); concentrated urine; patent urinary catheter.
Activity-exercise	Fatigue, generalized weakness, partial dependence for mobility.
Sleep-rest	Frequent interruptions due to noise and anxiety.
Cognitive-perceptual	Partially oriented in time; reports abdominal pain (VAS: 6/10).
Self-perception-self-concept	Expresses fear of death and frustration.
Role-relationships	Husband and father; family present and supportive.
Coping-stress	Limited coping strategies; requires emotional support.
Values-beliefs	Expresses religious faith as a source of hope.

### Phase II. Nursing Diagnosis (NANDA-I 2023-2026)

**Table 2.** Nursing Diagnosis (NANDA-I 2023-2026)

NANDA Code	Nursing Diagnosis	Related factors	Defining characteristics
00024	Ineffective tissue perfusion.	Alterations in blood volume; systemic vasodilation	Hypotension, cold skin, slow capillary refill, oliguria
00026	Fluid volume imbalance.	Excessive fluid loss due to fever and vasodilation	Tachycardia, hypotension, decreased turgor
00205	Risk of shock.	Systemic infection, decreased intravascular volume	Signs of hypoperfusion
00146	Anxiety.	Changes in health status, unfamiliar environment	Restlessness, verbalization of fear
00004	Risk of infection.	Decreased immune defenses, invasive procedures	Presence of catheters and probes

### Phase III. Planning

The expected outcomes (NOC) were established with their indicators and corresponding interventions (NIC), prioritizing the maintenance of tissue perfusion, hemodynamic stability, and emotional well-being.

**Table 3.** Expected outcomes (NOC) with their indicators and corresponding interventions (NIC)

Diagnosis (NANDA)	Outcome (NOC)	NOC code	Indicators	Intervention (NIC)	NIC Code	Primary Activities
Ineffective tissue perfusion (00024)	Hemodynamic status stabilized	0401	Mean arterial pressure $\geq$ 65 mmHg; capillary refill $<$ 2 s.	Fluid management	4120	Administer IV fluids according to protocol; assess hemodynamic response hourly
				Hemodynamic monitoring	4150	Monitor vital signs, CVP, and urine output
Fluid volume imbalance (00026)	Water balance	0601	Neutral water balance; moist and turgid skin.	Fluid regulation	4125	Adjust infusion rate; record water balance every 4 hours
Risk of shock (00205)	Shock prevention	1902	Sustained hemodynamic stability.	Intensive care	6540	Monitor response to fluids, use of vasopressors, continuous monitoring
Anxiety (00146)	Decreased anxiety level	1211	Decreased verbalization of fear, calm breathing.	Emotional support	5270	Active listening, informing procedures, facilitating family support
Risk of infection (00004)	Infection risk control	0703	No signs of secondary infection.	Infection control	6545	Aseptic technique in procedures, catheter and wound monitoring

### Phase IV. Implementation

- During implementation, the planned interventions were carried out in accordance with clinical priorities:
  - Administration of intravenous fluids (crystalloids) and broad-spectrum antibiotics according to protocol.
  - Continuous monitoring of vital signs, urine output, and laboratory parameters (serum lactate, creatinine).
  - Temperature control using physical and pharmacological means.
  - Emotional support for the patient and their family through empathetic communication and therapeutic presence.
  - Application of rigorous aseptic technique in all procedures.
- Coordination with the medical team for treatment adjustments and transfer to the intensive care unit once stabilized.

### Phase V. Evaluation

- After 72 hours of comprehensive nursing care, the patient showed significant improvement:
  - Mean arterial pressure maintained at 70 mmHg without vasopressors.
  - Adequate diuresis (1 ml/kg/h).
  - Normalized temperature (37 °C).

Decreased anxiety and active participation of the family in the recovery process.

NOC indicators were achieved at 90 %, demonstrating the effectiveness of the interventions implemented.

## DISCUSSION

The results obtained are consistent with recent scientific literature, which highlights the importance of the nursing role in the early detection and comprehensive management of septic shock. Jiménez-García *et al.*<sup>(6)</sup> point out that interventions focused on hemodynamic control, continuous monitoring, and family education significantly reduce hospital mortality.

Likewise, Rodríguez-Pérez *et al.*<sup>(2)</sup> highlight that the application of the Nursing Care Process allows for personalized and measurable care, which coincides with the findings of the present case, where the patient was stabilized within the first 72 hours through evidence-based care.

The integration of NANDA, NOC, and NIC taxonomies facilitated interdisciplinary communication and



objective evaluation of results, contributing consistency and quality to the care process.<sup>(4)</sup>

As limitations, it is acknowledged that the study involves a single case, so its results cannot be generalized; however, it provides practical evidence applicable to other emergency contexts and constitutes a basis for future research.

The main contribution lies in demonstrating the direct impact of systematized nursing care on the clinical and emotional stability of patients with septic shock, strengthening disciplinary identity and evidence-based practice.

## CONCLUSIONS

The application of the Nursing Care Process in individuals with septic shock in emergency services enables comprehensive, safe, and high-quality care.

The use of the NANDA, NOC, and NIC taxonomies (2023-2026) contributed to the planning and objective evaluation of nursing interventions, showing improvements in tissue perfusion, fluid balance, and the patient's emotional well-being.

The case reaffirms the importance of critical thinking, systematic assessment, and the humanization of care as fundamental pillars of contemporary nursing.

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## CONFLICT OF INTEREST

None.

## **AUTHOR CONTRIBUTION**

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