Archives of Current Research International

Archives of Current Research International

Volume 25, Issue 4, Page 73-79, 2025; Article no.ACRI.131226 ISSN: 2454-7077

The Role of the Nurse Regulator in the Mobile Emergency Care Service: A Literature Review

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Gleyce Pinto Girard a,
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Adriete Malato Ferreira Cordovil dos Santos b,

Joubert Fontenelle Souza Leite c,

Thamyris Abreu Marinho Rodrigues d,

Simone do Socorro de Souza Ribeiro e,

Allan Kardec Lima Brandão a, Andressa Torres Oliveira f,

Sandy Costa dos Santos f, Andreza Sena Machado a,

Lis Ferreira Barbosa f.

Kélia das Graças de Paiva Macias Nakai g,

Mayk Kevin Lobo Moraes h,

Joneson Matheus do Vale Bezerra a,

Joiley Nazaré Queiroz da Silva d,

Darlete Godinho da Veiga i, Elem Gabriela Reis Pinheiro d,

Nice Renata Sanches Campos j, Annely Barros Góis k,

Letícia Dias Pena ¹, Andreza Santos dos Reis ^e,

Thiago Simplício Costa a

and Ana Caroline Guedes Souza Martins a*

^a State University of Pará (UEPA), Belém, Pará, Brazil.

^b University of the Amazon (UNAMA), Belém, Pará, Brazil.

° Vale do Acaraú University and Paulista University, Belém, Pará, Brazil.

d Federal University of Pará (UFPA), Belém, Pará, Brazil.

e Amazon University Center (UNIESAMAZ), Belém, Pará, Brazil.

f Empresa Brasileira de Serviços Hospitalares (EBSERH), Belém, Pará, Brazil.

⁹ Instituto Oráculo de Psicanálise (IOP), Belém, Pará, Brazil.

h Faculdade Paraense de Ensino FAPEN, Belém, Pará, Brazil.

¹ Faculdade Pan da Amazônia (FAPAN), Belém, Pará, Brazil.

^{*}Corresponding author: Email: assistenteacademico09@gmail.com;

Juniversidade Paulista (UNIP), Belém, Pará, Brazil.
 Fundação Santa Casa de Misericórdia do Pará (FSCMPA), Belém, Pará, Brazil.
 Faculdades Integradas Brasil Amazônia (FIBRA), Belém, Pará, Brazil.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: https://doi.org/10.9734/acri/2025/v25i41137

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here:

https://pr.sdiarticle5.com/review-history/131226

Received: 02/01/2025 Accepted: 22/02/2025 Published: 22/03/2025

Systematic Review Article

ABSTRACT

This study aims to evaluate the scientific literature on the role of nurse regulators in the mobile emergency care service (SAMU). This is a qualitative study of the narrative literature review type. carried out through a search in the BVS, PubMED, and Google Scholar databases, which selected texts published between 2019 and 2024. The results show that nurse regulators perform functions in SAMU such as receiving and evaluating emergency calls, performing triage and risk classification of cases, in order to direct care appropriately; providing pre-hospital guidance to callers; recording and documenting all care information, contributing to the continuity of care and the assessment of the quality of the service provided, in addition to the need for effective communication and decisionmaking skills. These skills include technical knowledge and resource management. They must have a solid knowledge of SAMU protocols and guidelines, given that they need to guickly analyze the available information and direct the team accurately and efficiently. It is concluded that the nurse regulator is essential in the SAMU triage and regulation system, ensuring that medical care is directed efficiently and effectively. The complexity of their functions reflects the importance of robust and continuous training, aimed at improving technical skills and rapid decision-making. However, they face significant challenges such as work overload, which requires resilience and adequate organizational support to sustain the quality of care amid high demand.

Keywords: Nurse regulator; mobile emergency care service.

1. INTRODUCTION

The role of the nurse regulator in the Mobile Emergency Care Service (SAMU) plays a fundamental role in the management and coordination of health resources, ensuring rapid response to emergency situations and saving lives. SAMU, created to offer pre-hospital care in urgent and emergency cases (UE), is an extremely important service in Brazil, integrating health care networks with a focus on interventions that prevent injuries and ensure continuity of care (Cambreiro & Teixeira, 2021).

Within this structure, the nurse regulator assumes a strategic role, since he or she is responsible for triaging emergency calls, analyzing patient needs, and deciding on the appropriate dispatch of teams and resources for care (Alves et al., 2013).

In recent years, the regulation and expansion of the responsibilities of nurse regulators in SAMU have been widely discussed topics in the literature. These professionals face significant challenges, such as the high demand for services, the need for quick and accurate decision-making, and the use of

communication technologies to ensure efficient care (Ghussn & Souza, 2016).

In addition, the training and qualification of these nurses are essential aspects, since technical knowledge and the ability to manage complex situations directly influence the quality and safety of care (Pinheiro & Blank, 2018).

The role of the regulatory nurse also goes beyond the simple allocation of resources. He or she is responsible for assessing the severity of incidents and prioritizing care, contributing to the optimization of ambulance use and avoiding unnecessary overloads in hospital services. His or her performance can improve quality indicators in pre-hospital care, reducing response time and increasing patient and family satisfaction (Pinheiro, 2019).

Given the importance of this role, it is imperative to evaluate the contributions of the scientific literature on the subject in recent years. This article aims to evaluate the scientific literature on the role of the regulatory nurse in the mobile emergency care service, highlighting the challenges, responsibilities and relevance of this professional in the coordination of pre-hospital emergency care.

2. MATERIALS AND METHODS

This study is characterized as an integrative literature review (ILR), which adopts systematic search methods and rigorous sample selection criteria to analyze the results, seeking to correlate previous studies, provide new perspectives and interpretations, identify gaps and flaws in existing studies, and promote an in-depth discussion on the topic (Galvão & Ricarte, 2019).

The review was conducted in six stages, as described by Sousa et al. (2017): (1) definition of the research question; (2) creation of the data source and establishment of inclusion and exclusion criteria; (3) definition of the information to be extracted from the selected studies (categorization of the studies); (4) evaluation and critical analysis of the results, identifying differences and conflicts; (5) interpretation of the results; and, finally, (6) synthesis of the evidence found.

The guiding question of the study was: "What is the current scientific evidence on the performance of the regulatory nurse in the mobile emergency care service?" To answer this question, searches were conducted in the Virtual Health Library (BVS), SciELO, PubMed and Google Scholar databases. Descriptors validated in DeCS/MeSH in Portuguese and English were used, such as: "Enfermagem; Regulação em Saúde; Serviços Médicos de Urgência" or "Nursing; Health Regulation; Emergency Medical Services". The combination of Boolean operators "AND" and "OR" was used to refine the data collection in the mentioned descriptors.

The inclusion criteria included full articles, theses and dissertations from institutional repositories, freely available, written in Portuguese, English and Spanish, published in the last five years (2019 to 2024). Duplicate articles, incomplete publications or other types of documents were excluded, as well as studies that did not directly address the research questions.

For data analysis, Laurence Bardin's "Content Analysis" (2011) was used, allowing the classification and grouping of studies according to their themes and main elements.

3. RESULTS

The results of the analysis of the studies were summarized in the following Table 1.

3.1 Profile and Training of the Nurse Regulator

The role of the nurse regulator in SAMU requires a highly qualified professional profile, composed of technical skills and interpersonal abilities, which ensure efficiency and safety in emergency care. The nurse regulator must have in-depth knowledge of emergency conditions, as well as the ability to use communication systems and manage health resources in real time. The complexity of the demands requires that these professionals be constantly updated on specific protocols and guidelines for the area of Emergency Department (ED) (Luchtemberg & Pires, 2016).

Table 1. Classification of results

Category	Evaluated aspects	Key elements	References
Profile and training of the regulator	Initial training, specialization, and prior experience	Technical knowledge, continuous updating, and experience in emergency settings	Luchtemberg & Pires (2016); Costa & Gaspar (2017); Acosta, Duro and Lima (2012)
Challenges in decision-making	Urgency, call overload, incomplete information, and stress	Rapid assessment, effective triage, risk of error, and decision fatigue	Santana et al. (2021); Silva, Franco & Santana (2024); Araújo et al. (2020)
Impact on care and clinical outcomes	Response time, care effectiveness, and resource optimization	Prioritization of critical cases, pre-arrival guidance for families, and rational resource usage	Mendonça et al. (2022); Pinto et al. (2021); Araújo et al. (2021); Goulart (2021)

Category	Evaluated aspects	Key elements	References
Regulator's	Technical, cognitive,	Technical-scientific	Morais Filho et al. (2016);
skills	and interpersonal	knowledge, assertive	Celeste, Maia & Andrade (2021);
	competencies	communication, leadership,	Hoelz et al. (2024); Cielo,
		and emotional resilience	Camponogara & Pollion (2013)

Authors (2025)

The initial training of nurses, although solid, is not always sufficient to fully prepare them for the responsibilities of the position of regulator. Emergency regulation requires specific training, generally acquired through specialization courses in ED or through training provided by the health service itself. These courses are essential for the nurse to develop skills such as risk assessment, triage of serious cases, fast and effective communication, and decision-making under pressure conditions, crucial elements in regulation (Costa & Gaspar, 2017).

Recent literature highlights the importance of practical experience and continuous learning for the development of this profile. Acosta, Duro, and Lima (2012) emphasize that many nurses who enter emergency regulation bring previous experience in areas such as ICU, hospital emergency rooms, or ambulance services. This practical experience is highly valued, as it enhances the professional's clinical judgment capacity, essential in triaging emergency calls

3.2 Challenges and Difficulties in Decision-Making

Quick and effective decision-making is one of the main challenges faced by nurses in charge of emergency services. These professionals deal with complex situations, in which they need to make immediate assessments of urgency and allocate limited resources, ensuring that emergencies are handled appropriately. The overload of calls received daily is one of the biggest obstacles to efficient triage, requiring nurses to perform a severity analysis of each case in a few seconds (Santana et al., 2021).

Another challenge involves triaging complex cases. The nurse in charge must identify, based on descriptions provided over the phone, the cases that require immediate care and those that can wait or receive guidance for referral to conventional health units. This task is even more difficult when there is incomplete or contradictory information from requesters, which can lead to an inaccurate judgment, with the risk of sending resources to less serious cases while more critical emergencies await care (Silva, Franco & Santana, 2024).

3.3 The impact of Regulation on Care and Clinical Outcomes

The quality of regulation performed by nurses in SAMU has a direct impact on patient care and clinical outcomes. The role of the regulatory nurse is essential to ensure that emergency resources are appropriately

allocated, influencing the efficiency of the service, the speed of care, and consequently, the chances of patient survival. Proper regulation can reduce the response time of care teams, resulting in better clinical evolution of cases, especially in critical emergencies such as cardiorespiratory arrests, serious accidents, and traumas (Mendonça et al., 2022).

One of the main impacts of regulation on care is the reduction in response time. Effective triage by the regulatory nurse ensures that the most serious cases receive priority, avoiding delays that could worsen the clinical condition of patients. In regions with high demand and limited resources, this prioritization process is vital to ensure that emergency teams are directed to patients at the highest risk of death or serious complications (Pinto et al., 2021).

3.4 Skills Required for the Role of a Nurse Regulator in SAMU

The role of a nurse regulator in SAMU requires a combination of specific technical, cognitive, and behavioral skills to ensure quality care and real-time decision-making. These professionals play a critical role in triaging incidents and managing available resources, demanding enhanced clinical assessment, efficient communication, and leadership skills (Morais Filho et al., 2016).

One of the primary skills required is technical-scientific knowledge. The nurse regulator must have solid training in emergencies, mastering clinical protocols for handling serious situations, such as cardiorespiratory arrests, multiple traumas, and strokes (Celeste, Maia & Andrade, 2021).

4. DISCUSSION

The findings indicate that the nurse regulator must possess a robust skill set, blending technical proficiency with strong interpersonal abilities. The continuous education requirement for and specialization highlights the dynamic nature of emergency care. Despite foundational nursing education, additional training through specialization courses remains essential to adequately prepare nurses for the role. These findings align with previous research emphasizing the necessity of practical experience in ICU and ambulance services to enhance clinical judgment (Acosta, Duro & Lima, 2012).

Furthermore, the necessity of interpersonal skills, such as leadership, communication, and stress management, reinforces the complexity of the role. Given the high-stakes nature of emergency regulation,

professionals must balance technical expertise with emotional intelligence to navigate high-pressure environments effectively (Silva et al., 2014).

The results demonstrate that decision-making in emergency regulation is fraught with challenges, including the need for rapid assessments and resource allocation under constraints. Studies highlight that incomplete or contradictory information from callers exacerbates these difficulties, potentially leading to misjudgments in triage (Silva, Franco & Santana, 2024). This underscores the need for advanced decision-making training and support mechanisms to assist regulators in high-stress scenarios.

Additionally, the findings reveal that stress and emotional burden significantly impact decision quality. Decision fatigue, a phenomenon where prolonged exposure to complex decision-making reduces cognitive performance, has been identified as a key risk factor for regulators (Araújo et al., 2020). Addressing this requires institutional support, including stress management programs and workload regulation.

The study highlights that efficient regulation directly affects response times and clinical outcomes. Effective triage prioritizes severe cases, improving survival rates and reducing complications. The guidance provided by regulatory nurses during emergency calls also plays a crucial role in patient stabilization before ambulance arrival, showcasing the importance of clear and direct communication (Araújo et al., 2021).

Moreover, optimizing resource allocation through precise regulation is essential for healthcare efficiency. The rational use of ambulances and medical teams prevents resource wastage and ensures that critical cases receive timely intervention. These findings support existing research advocating for structured regulatory protocols and enhanced coordination between SAMU and referral hospitals (Goulart, 2021).

The necessity of continuous training in new technologies and emergency protocols reinforces the evolving nature of the nurse regulator's role. As healthcare technology advances, professionals must adapt to new tools and strategies for incident assessment and resource management (Celeste, Maia & Andrade, 2021).

Furthermore, the study confirms that quick and accurate decision-making remains fundamental. Given pressure under which nurse operate, developing structured assessment models and decision-support systems could enhance efficiency and reduce cognitive regulatory overload. Future research could explore interventions aimed at improving regulatory performance and reducing stress-related impairments among professionals.

The results of this study underscore the critical need for enhanced training and support for nurse regulators mobile emergency care services. demonstrating the importance of both technical proficiency and strong interpersonal skills, the findings suggest that healthcare practices should incorporate more targeted, continuous professional development programs to ensure that nurse regulators are fully equipped to handle high-pressure situations. Moreover, from a policy perspective, the evidence supports the adoption of standardized protocols and integration of advanced communication technologies to optimize resource allocation and improve response times. Such initiatives could not only enhance the overall quality of care but also contribute to more efficient and effective emergency services, ultimately leading to better patient outcomes and a reduction in preventable complications.

5. CONCLUSION

The role of the nurse regulator in SAMU is essential for the efficient and effective functioning of the emergency system in Brazil. This professional performs multiple functions, such as triage and risk classification, providing pre-hospital guidance and coordinating available resources, ensuring that care reaches the patients who need it most in an appropriate and timely manner. Their ability to make quick and accurate decisions, in an environment marked by constant pressure and the need for clear communication, highlights the importance of solid technical training and continuous improvement of their skills.

The challenges faced by nurse regulators, such as work overload, lack of resources and the need for support technologies, demand attention from health institutions and managers. The lack of adequate organizational support and the structural limitations of the public health system directly impact the quality of the service provided, making it imperative to invest in ongoing training, infrastructure and emotional support for these professionals.

Therefore, the nurse regulator is an essential part of ensuring the quality and safety of pre-hospital care at SAMU, and their role is decisive in coordinating and regulating resources in emergency situations. Strengthening working conditions and developing refresher and psychological support programs are essential measures to ensure the continuity and excellence of this service. Thus, the relevance of this role in the UE care chain must be continually valued and improved.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative Al technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image

generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:

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