

The role of the nurse, specialist and emergency technician in emergency cases: Strategies for Effective Patient Management: systemic review

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Abstract

Effective management of emergency cases requires the coordinated efforts of nurses, emergency technicians, and specialists, each playing a critical role in patient care. Nurses are essential for triage, monitoring, and providing ongoing care in emergency departments, while emergency technicians serve as frontline responders, delivering prehospital care and stabilizing patients. Specialists, including emergency physicians and surgeons, contribute advanced medical expertise to manage complex conditions and interventions. This systematic review explores the roles, strategies, and challenges associated with these healthcare professionals in emergency care settings. It highlights the importance of interdisciplinary collaboration, continuous education, and the integration of technology to enhance patient outcomes. The review also identifies key challenges, such as resource constraints, mental health stressors, and the need for improved communication. By analyzing current literature, this review provides valuable insights into optimizing the roles of nurses, emergency technicians, and specialists in managing emergency cases and suggests strategies for improving emergency care through better training, teamwork, and support systems.

Keywords: Emergency care, nurses, emergency technicians, specialists, patient management, interdisciplinary collaboration, healthcare professionals

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Introduction

Emergency cases often represent critical moments in healthcare where swift and effective patient management can mean the difference between life and death. Nurses, specialists, and emergency technicians play pivotal roles in these scenarios, collaborating to deliver timely and high-quality care. Each professional brings a unique set of skills and responsibilities, contributing to the overall success of patient outcomes in emergency settings. Emergency nurses experience occupational stressors resulting from exposures to critical clinical events [1].

The complex and dynamic nature of emergencies demands a multifaceted approach to patient management [2]. Emergency Departments (EDs) are critical components of healthcare systems worldwide, functioning as the primary point of care for acute and urgent medical needs. However, the increasing patient load and complex healthcare demands have put a significant strain on ED infrastructures, leading to challenges like overcrowding, prolonged wait times, and resource limitations [3]. High occupancy levels in EDs often correlate with prolonged waiting times, adversely impacting patient care quality and satisfaction [4].

Nurses often act as the frontline caregivers, providing initial assessments, monitoring vital signs, and ensuring continuity of care. Emergency technicians are typically the first responders, delivering prehospital care and stabilizing patients during transport. Specialists, on the other hand, offer advanced medical interventions and expertise in diagnosing and treating specific conditions [5].

This systematic review aims to explore the roles and strategies employed by these healthcare providers in managing emergency cases. By analyzing existing literature, the review seeks to identify effective practices, challenges, and areas for improvement in emergency patient care. The findings will provide valuable insights for enhancing collaboration, training, and patient outcomes in emergency medical services.

Literature Review

Emergency medical services (EMS) are a cornerstone of healthcare systems, with nurses, emergency technicians, and specialists forming an integral team in managing critical cases. The effectiveness of patient outcomes in emergency scenarios often hinges on the coordinated efforts of these professionals [6]. This literature review examines their roles, challenges, and strategies in delivering optimal care during emergencies. Nurse-initiated interventions potentially provide an opportunity for earlier responses for time sensitive presentations to the Emergency Department, and may improve time-to-treatment, symptomatic relief and patient flow through the department.

The Role of Nurses in Emergency Care

Nurses are often the first point of contact in hospital emergency departments. Their responsibilities include patient triage, monitoring vital signs, administering medications, and providing emotional support to patients and their families. Studies highlight the importance of clinical decision-making skills and effective communication in managing the high-stress environment of emergency care. Training programs focusing on evidence-based practices and simulation exercises have been shown to improve nurses' confidence and competence in handling critical cases [7].

Safe and effective emergency care services have been linked to the availability of clear nurse competency. Competencies are generally understood as a complex integration of

knowledge, professional judgement, skills, abilities, attitudes and values, as well as special attributes that define the profession and professional skills [8].

Emergency nursing is an indispensable component of critical care within the healthcare system. These dedicated professionals are the first responders within the hospital, providing immediate assessment, stabilization, and interventions for patients in critical conditions. They excel in multitasking, making rapid decisions under pressure, and advocating for patients' needs. Emergency nurses also engage in preventive care, resource management, and ongoing professional development to deliver the highest level of care. Despite the emotional challenges they face, their commitment to saving lives and improving patient outcomes makes emergency nursing a truly heroic profession in the world of healthcare [9].

Role of Emergency Technicians: Frontline Responders

An emergency medical technician (EMT) is a medical professional who gives emergency care to people outside of or on the way to the hospital. They can give basic medical and first-aid care until a person can get help at a hospital or other medical facility. An EMT is not a type of doctor, nurse, or physician's assistant. They're also different from paramedics, another type of emergency medical professional. The main difference is that paramedics have more training and can perform a wider variety of procedures [10].

Emergency technicians, often the first responders at the scene, are crucial in providing prehospital care and ensuring patient stabilization during transport. EMT's job is associated with performing CPR, assessing the medical needs of the patient, and providing aid during medical emergencies, traumatic injuries, and accidents [11]. Their scope of practice includes basic life support, airway management, and trauma care. Literature emphasizes the importance of real-time decision-making, adaptability, and the use of mobile health technologies to enhance the efficiency and accuracy of care. Challenges such as resource constraints and the mental toll of high-stakes situations are frequently reported, highlighting the need for robust support systems [12].

Role of Specialists: Advanced Medical Interventions

Specialists, including emergency physicians and surgeons, play a vital role in diagnosing and treating acute conditions. Their expertise is critical in trauma management, advanced cardiac life support, and surgical interventions. Collaborative decision-making with nurses and technicians ensures a seamless transition from prehospital to hospital care. Research points to the effectiveness of multidisciplinary teams in improving patient outcomes, particularly in complex cases requiring specialized care [6].

Interdisciplinary Collaboration and Training

The synergy between nurses, emergency technicians, and specialists is fundamental to effective emergency care. Studies underscore the importance of interdisciplinary communication and teamwork in reducing errors and enhancing patient safety. Continuous professional development, including joint training programs and simulation-based learning, has been identified as a key strategy for fostering collaboration and preparedness among emergency care providers [13].

Professional collaboration is more than simply working on a shared client case with other care providers. To be truly collaborative, one must observe and apply several specific behaviors that embody this concept. Collaboration, by common definition, is the process of working directly with at least one other person toward a mutual goal. In the context of interdisciplinary treatment, collaboration can be defined as a cooperative process among

members of a team, requiring trust and respect, clearly defined and equitable roles, with shared responsibility, commitment, and accountability among all team members [14].

Challenges in Emergency Care

Worldwide, nurses employed in the ED face many challenges that negatively influence their well-being and their ability to provide high-quality patient care. Changing population health trends, particularly increasing multi-morbidity, have been putting pressure on emergency care services, especially on hospital EDs and ambulance services, which are often the most accessible points in the system. Despite their critical roles, healthcare professionals in emergency settings face numerous challenges. These include high patient volumes, limited resources, and the psychological burden of dealing with life-threatening situations. Research highlights the need for organizational support, mental health resources, and technological innovations to alleviate these pressures and improve care delivery [15].

Other challenges include:

- **High Patient Acuity** – When patient acuity is high, patient safety demands more care and attention.
- **Patient Boarding** – Boarding patients in the ED due to a lack of available beds only stresses emergency rooms further.
- **Behavioral Health Concerns** – ED patients with behavioral health concerns can be particularly demanding on emergency department resources. Such patients often require more specialized care.
- **Staff Turnover** – Because EDs are such high-stress environments, staff turnover is a continuing problem for most hospitals. High turnover rates only exacerbate staff shortages [16].

The literature consistently emphasizes the value of well-trained and coordinated emergency care teams. Nurses, technicians, and specialists each bring unique strengths that, when integrated, lead to better patient outcomes. Effective strategies include continuous education, the use of technology, and fostering a culture of collaboration. Addressing systemic challenges is essential to empower these professionals and enhance the quality of emergency care.

This review provides a foundation for further exploration into best practices and strategies for optimizing the roles of nurses, emergency technicians, and specialists in managing emergency cases.

Conclusion

In emergency medical settings, the roles of nurses, emergency technicians, and specialists are essential for ensuring effective patient management and improving outcomes. Each professional brings a unique set of skills to the table, and their collaboration is critical in managing acute and life-threatening situations. Nurses are integral to patient assessment, stabilization, and ongoing care, while emergency technicians are crucial as first responders, providing prehospital care and stabilizing patients during transport. Specialists bring advanced knowledge and expertise to diagnose and treat complex conditions, ensuring comprehensive care upon arrival at the hospital.

This systematic review underscores the importance of interdisciplinary collaboration, highlighting that coordinated care between these professionals significantly enhances patient outcomes. Training programs, particularly those focused on simulation and

evidence-based practices, are vital in preparing healthcare workers for the fast-paced, high-pressure environment of emergency care. Moreover, addressing challenges such as resource limitations, mental health support, and the integration of technology can further optimize care delivery.

In conclusion, while significant strides have been made in the field of emergency medical services, continuous efforts in improving training, communication, and support systems are crucial. Future research and interventions should focus on strengthening teamwork, enhancing professional development, and addressing the systemic barriers that healthcare providers face in emergency care. By doing so, we can ensure better preparedness and more effective management of patients during emergencies, ultimately leading to improved healthcare outcomes.

References

1. Abu-Alhaija DM, Gillespie GL. Critical Clinical Events and Resilience Among Emergency Nurses in 3 Trauma Hospital-Based Emergency Departments: A Cross-Sectional Study. *J Emerg Nurs*. 2022 Sep;48(5):525-537. doi: 10.1016/j.jen.2022.05.001. Epub 2022 May 31. PMID: 35660061; PMCID: PMC10729101.
2. Mostafa R, El-Atawi K. Strategies to Measure and Improve Emergency Department Performance: A Review. *Cureus*. 2024 Jan 24;16(1):e52879. doi: 10.7759/cureus.52879. PMID: 38406097; PMCID: PMC10890971.
3. Agency for Healthcare Research and Quality: Section 3. Measuring Emergency Department Performance. In: *Improving Patient Flow and Reducing Emergency Department Crowding: A Guide for Hospitals*. [Sep; 2023]. 2020
4. Evaluation of emergency department performance - a systematic review on recommended performance and quality-in-care measures. Sørup CM, Jacobsen P, Forberg JL. *Scand J Trauma Resusc Emerg Med*. 2013;21:62. doi: 10.1186/1757-7241-21-62
5. Delays in arrival and treatment in emergency departments: women, children and non-trauma consultations the most at risk in humanitarian settings. Beltrán Guzmán I, Gil Cuesta J, Trelles M, Jaweed O, Cherestal S, van Loenhout JA, Guha-Sapir D. *PLoS One*. 2019;14:0. doi: 10.1371/journal.pone.0213362.
6. Burgess L, Kynoch K, Theobald K, Keogh S. The effectiveness of nurse-initiated interventions in the Emergency Department: A systematic review. *Australas Emerg Care*. 2021 Dec;24(4):248-254. doi: 10.1016/j.auec.2021.01.003. Epub 2021 Mar 13. PMID: 33727062.
7. Trisyani Y, Emaliyawati E, Prawesti A, Mirwanti R, Mediani HS. Emergency Nurses' Competency in the Emergency Department Context: A Qualitative Study. *Open Access Emerg Med*. 2023 May 10;15:165-175. doi: 10.2147/OAEM.S405923. PMID: 37197564; PMCID: PMC10183472.
8. Boyle A, Coleman J, Sultan Y, et al. Initial validation of the International Crowding Measure in Emergency Departments (ICMED) to measure emergency department crowding. *Emerg Med J*. 2015;32(2):105–108. doi: 10.1136/emmermed-2013-202849
9. Avital Glasser (2023) The Role of Emergency Nursing in Critical Care. *J Perioper Med*. 6:186.

10. <https://www.webmd.com/a-to-z-guides/what-is-an-emergency-medical-technician>
11. “EMT Emergency Medical Technician Job Description [Updated for 2022].” Wwww.indeed.com, 10 Dec. 2022, www.indeed.com/hire/job-description/emt-emergency-medical-technician.
12. What Does an Emergency Medical Technician (EMT) Do? Duties, Salary, and More.” Coursera, 21 Dec. 2022, www.coursera.org/articles/emergency-medical-technician.
13. Boivin N, Ruane J, Quigley SP, Harper J, Weiss MJ. Interdisciplinary Collaboration Training: An Example of a Preservice Training Series. *Behav Anal Pract*. 2021 Mar 31;14(4):1223-1236. doi: 10.1007/s40617-021-00561-z. Erratum in: *Behav Anal Pract*. 2021 May 3;14(4):1237. doi: 10.1007/s40617-021-00601-8. PMID: 34868824; PMCID: PMC8586302.
14. Brodhead, M. T. (2015). Maintaining professional relationships in an interdisciplinary setting: Strategies for navigating nonbehavioral treatment recommendations for individuals with autism. *Behavior Analysis in Practice*, 8(1), 70–78. 10.1007/s40617-015-0042-7.
15. Al-Ghabeesh SH, Thabet A, Rayan A, Abu-Snieneh HM. Qualitative study of challenges facing emergency departments nurses in Jordan. *Heliyon*. 2023 Mar 2;9(3):e14141. doi: 10.1016/j.heliyon.2023.e14141. PMID: 36938388; PMCID: PMC10015203.
16. Hong Y. Opportunities and challenges in the emergency and critical care medicine. *J Emerg Crit Care Med* 2018;2:23.