

## **Role of Nursing and Emergency Medical Services in Improving Quality of Care in Tertiary Hospitals: A Review**

**Sarah Fayez Mohammed Alsaadi<sup>1\*</sup>, Wasan Abdullah Alhawiti<sup>2</sup>, Maram Ali Al Mubarak<sup>3</sup>, Nasser Abdullah N Al Khushaym<sup>4</sup>, Mohammed Saud Alotaibi<sup>5</sup>, Nasser Ibrahim Alanazi<sup>6</sup>, Amirah Suayqoir Alenazi<sup>7</sup>, Meshari Abdullah Aljohani<sup>8</sup>, Ahmad Salman Alsadiq<sup>9</sup>, Ali Abdullah Alshahrani<sup>10</sup>**

1 Nursing Specialist, Royal Saudi Air Force, KSA

Saralsadi450@gmail.com

2 Nursing Specialist, Royal Saudi Air Force, KSA

3 Family Medicine, Senior Registrar, PSMMC, Riyadh, KSA

4 Health Information Technician, PSMMC, Riyadh, KSA

5 Emergency Medical Specialist, PSMMC, Riyadh, KSA

6 Pharmacy Technician, PSMMC, Riyadh, KSA

7 Nursing Technician, PSMMC, Riyadh, KSA

8 Emergency Medical Services, PSMMC, Riyadh, KSA

9 Nursing Specialist, PSMMC, Riyadh KSA

10 Emergency Medical Technician, PSMMC, Riyadh, KSA

**Abstract :** The emergency department within a tertiary hospital has an essential role in providing timely and life-saving health care for individuals experiencing acute and life-threatening health issues. Nurses and Emergency Medical Services (EMS) providers are the main contributors to this continuum of care by being involved with patient assessment, providing stabilization, coordinating care and taking part in quality improvement initiatives. This review itinerary explores the role of nursing and Emergency Medical Services in enhancing quality of care in tertiary-level hospitals, specifically within emergency care settings. A general, descriptive, and qualitative review of the existing literature was done using several major electronic databases, including PubMed, MEDLINE, LILACS, SciELO and the Virtual Health Library. Recent literature published from 2020 to 2025 was analyzed to develop an

understanding of specific EMS and nursing practices, quality indicators and problems facing both provider groups in the delivery of care. The overall findings demonstrate that quality assessment frameworks that are structured; core competencies for nurses; nurse resiliency; and effective pre-hospital EMS systems are all critical components contributing to improved patient outcomes and service efficiency within a tertiary hospital environment. However, systemic barriers that include the lack of a sustainable workforce, burnout; limited standardized quality indicators in practice settings; and excessively stressful work environments continue to hinder the delivery of optimal patient care. This review recognizes the need for integration of nursing and Emergency Medical Services strategies that promote supportive work environments and the implementation of evidence-based quality improvement initiatives.

**Keywords:** Emergency nursing; Emergency Medical Services; Quality of care; Tertiary hospitals; Emergency departments

## INTRODUCTION

Everyone has the right to quality health care, not just a certain demographic or social class, regardless of their social standing, race, or gender. Unfortunately, in many developing countries, including much of sub-Saharan Africa, the realization of these rights—particularly during emergencies—has been largely unfulfilled. Many people still cannot access the necessary and timely emergency medical services they require, despite the growing number of patients needing treatment for acute and life-threatening conditions. Emergency departments (EDs) are the main entry point into the health care system for patients who are experiencing a medical emergency. The standard of care provided during the first few hours after arrival at an ED has a significant impact on whether a patient will survive, recover fully, or live a healthy life after the emergency is resolved. Nurses and Emergency Medical Services (EMS) have an especially important role in ensuring a patient receives the best possible outcome from their initial emergency experience.

### Importance of Quality Nursing and EMS Care in Emergency Settings

Quality nursing care has a clear impact on improving patient outcomes and is widely accepted [1]. As such, nurses play a pivotal role when delivering emergency care (rapidly assessing patients, initiating life-saving measures, coordinating care among multiple professions, and providing psychosocial support). Similarly, EMS staff play an essential role when providing timely pre-hospital care, stabilising patients, and safely transporting them to tertiary hospitals, impacting patient outcomes before they ever arrive at a hospital. Although it is well-documented that the quality of care can have a profound impact on patient outcomes, defining and measuring “quality” remains a complex and multifactorial issue [2].

Quality encompasses three dimensions: structural characteristics of care (resources, number of staff, and equipment), the processes of delivering care to patients (competence of staff, good communication, and timely delivery), and the outcomes of providing care (patient safety, patient satisfaction, and morbidity and mortality). Quality is a characteristic that is consistently desired within and between the different types of healthcare systems and is vital in high-stress emergency situations.

### **Challenges Affecting Emergency Care in Low- and Middle-Income Countries**

While emergency departments perform an essential role in public health, the majority of them operate under hectic conditions that may impact the provision of quality care. Emergency departments within low- and middle-income countries (especially within Africa) routinely experience over-crowding, limited bed availability, inadequate staffing, poorly designed communication systems, lack of staffing to address psychosocial needs of patients, and significant financial barriers to accessing care [3,4,5,6]; thus compromising patient safety and causing a high level of emotional and physical strain on nurses and other EMS personnel as a result of these adverse working conditions.

The adverse working conditions experienced within the emergency setting have exacerbated the complexity of delivering care in the ED and subsequently led to poor quality of care delivery within the ED. As a result, numerous studies have documented significantly lower quality ratings of emergency care delivery in resource-limited environments [7]; underscoring the need to develop quality emergency nursing practices and quality EMS service systems in tertiary centres.

### **Global Perspective and Evidence Gaps**

Emergency departments provide essential services to patients worldwide. The Centers for Medicare and Medicaid Services (CMS) estimates that approximately 28% of all acute care visits are through an emergency department in the United States [8]. Given the high degree of trauma and communicable disease prevalence along with access issues to primary care services, it would not be unreasonable to expect that this percentage would be similar or greater in African low- and middle-income countries. However, without reliable and valid data, it is difficult to determine the full demand for emergency care in these areas. A significant investment has gone into enhancing the quality of emergency services throughout the world,

primarily within developed countries [9], but very few empirical investigations related to emergency nursing and EMS performance exist within developing countries [10]. In particular, Nigerian tertiary hospitals have historically neglected their emergency/accident departments, which serve as important entry points for patients suffering from life-threatening conditions; this has been seen in many other low-resource environments.

### **Rationale and Aim of the Study**

Due to the large number of patients seen in EDs, the fact that there is a continuously changing definition of what comprises quality emergency care, and the integral involvement of nurses and EMS staffs in providing quality emergency care to patients, it is important to systematically evaluate current available evidence regarding the quality of emergency care provided by tertiary hospitals. Developing an understanding of nursing and EMS practices, issues, challenges, and situational elements which impact performance will provide an avenue for the identification of gaps and the development of sustainable improvement strategies.

The purpose of this review is to evaluate the role of nursing and Emergency Medical Services in enhancing the quality of care provided by tertiary hospitals, specifically in emergency department environments within low- and middle-income countries. The objectives of this study are to synthesize available literature; identify key issues/challenges; and make recommendations for strengthening nursing and EMS systems in order to improve patient outcomes and the overall quality of care provided in emergency department settings.

### **LITERATURE REVIEW**

**Sikorska, Magdalena. (2020),** The nurse administers medicine, injects, and nurses the patient. She assists the doctor in patient diagnosis and treatment. This work changes as knowledge develops and health care standards rise. Growth in nursing is shown by paradigms that emphasize theoretical knowledge in practice. This initiative aimed to describe nurses' tasks and how they improve patient health. and This article uses literature review. The document cites scientific papers and condensed books. A review of the scientific literature found that nurses are crucial to treatment quality and hospital efficiency. The network of hospitals and other medical institutions works collaboratively to promote patient health. Since nurses create the patient's initial impression and spend the most time with him, the team should prioritize care. Patients' top priority is nurses' medical skill, followed by safety, trust, and

communication. Nursing professionals have had to adapt swiftly to keep up with the many developments in the sector in recent years. Patient expectations are changing. To succeed, you need their approval and satisfaction. Pleasant treatment makes patients more inclined to return [11].

**Dadheech, Surendra. (2022),** Generally speaking, patients tend to recover more rapidly, have fewer problems, and have better overall results when they get therapy that is of a high quality. In light of the many social and professional repercussions that nurses' views on the nursing profession (NP) have, it is of utmost significance to comprehend the consequences that these perspectives have on the quality of care that nurses provide (QOC). The purpose of the study was to (1) determine whether or not nurses had their own self-perceptions of nursing, and (2) determine whether or not there were differences in the perceptions of nursing held by men and women (NI). In comparison to patients, nurses reported better levels of job satisfaction and motivation in their line of work. The length of time that a patient remained in the hospital as well as the presence or absence of family members were shown to have a significant association with the ratings that they gave for these characteristics. It is feasible that the development of essential caring talents will make it possible to improve end-of-life care for patients who are terminally ill and their families. In spite of the fact that further study is required, emergency medicine nurses play an essential role in the delivery of high-quality end-of-life care. It is common knowledge that nurses working in critical care need chances for training in order to improve their abilities in the fields of end-of-life care planning and delivery [12].

**Alwuthaynani, Jawaher & Barnawi, Kulthum & Alneami, Waad & Alresheedi, Afaf & Altamimi, Omar & Al-Jaloud, Abdulaziz & Alshammeri, Eida & Alanazi, Maryam & Altamimi, Salem & Alshammry, Aydah. (2024),** As a result of the substantial influence that they have on the quality of healthcare and the safety of patients, nurses are at the forefront of systemic change in health systems all over the globe. The majority of the workforce in the healthcare industry is comprised of nurses, and they are responsible for improving patient outcomes via the establishment and maintenance of a safety culture, the enhancement of interprofessional collaboration, and the constant use of evidence-based practices (EBPs). In order to demonstrate how nursing interventions, leadership, and policy participation all contribute to improved care and safer outcomes, this study combines data covering the years

2016–2025. A number of studies have shown that nursing-led initiatives enhance the effectiveness of care delivery, reduce the number of errors made by medical professionals, and boost patient satisfaction. Furthermore, the effect of nursing goes beyond the care provided at the bedside to organizational transformation via systemic repercussions. These include the participation of nurses in the formulation of policies, the adoption of digital health technology, and leadership in the establishment of a safety tradition. In spite of the fact that there are still a great number of challenges to conquer, such as a dearth of workers who are qualified, high rates of burnout, and regional resource imbalances, there are still opportunities to conquer these issues via the use of technology, continuous training for professionals, and the support of global policies. The purpose of this review is to highlight the significance of nursing in enhancing the quality and safety of healthcare by merging data from a variety of fields. In addition, it requires that funding for nursing education, leadership, and evidence-based practice frameworks be maintained in order to ensure that health care systems remain robust and centered on the needs of patients [13].

**Needleman, Jack & Hassmiller, Susan. (2009),** Conversations on nurse care, hospital efficiency, and quality are not often held in isolation from one another. This is a somewhat unusual occurrence. In order to ensure the competence and efficiency of hospital nurses, improve the quality of service, and properly manage healthcare expenses, it is vital to coordinate the efforts that are being made. It is impossible to offer care that is both effective and of a high quality without the presence of nurses. With the support of leadership, nurses and other members of the staff are able to play an active role in improving the efficiency and quality of hospital care. This is made possible through the implementation of front-line staff-driven performance improvement programs such as Transforming Care at the Bedside, as well as lessons learned from hospitals that are a part of the Magnet program [14].

Despite abundant research on nursing's benefits to patient care, hospital efficiency, and quality, emergency and tertiary care still have major gaps. Sikorska (2020) and Needleman and Hassmiller (2009) both identified how nursing has expanded and defined its competencies as a profession, changing how nursing is delivered in organizations, but they did so from a hospital-wide perspective without considering emergency care and tertiary care needs. As shown by Ogunlade et al. (2020) for measuring emergency nursing quality, the Donabedian framework can be used for other purposes, but few studies have been conducted in this context,



making it difficult to compare emergency nursing practice and service delivery across low- and middle-income countries. Dadheech (2022) and Alwuthaynani et al. (2024) have examined nurse perceptions, leadership, evidence-based practice, and workforce challenges (burnout, skill gaps), but they have not examined the human factors that affect care quality in emergency and EMS-linked tertiary healthcare delivery systems. Additionally, there has been little study on the important relationship between emergency medical services (EMS) and continuity in treatment, particularly the role of prehospital nurses in tertiary care. Thus, nurse practice, EMS integration, workforce resilience, and standardized quality care delivery in tertiary hospital emergency departments require more integrated and thorough study.

## **METHOD**

A research study is described as a descriptive/exploratory study using bibliographic research method to analyze the involvement of Nursing and Emergency Medical Services (EMS) in providing high quality of care at Tertiary Hospitals. The literature review was intended to combine all the national and international literature that relates to nursing, EMS and Quality Improvement as they pertain to Tertiary Healthcare.

### **Data Sources and Search Strategy**

The scientific literature that was reviewed and synthesised came from systematic database searches of electronic resources, specifically, the Virtual Health Library (VHL), including but not limited to the Latin American and Caribbean Centre for Health Information (LILACS), PubMed, MEDLINE and SciELO are included as part of the overall database search. Many of the articles were published between January 2000 and December 2015. The review was prepared and completed after the review of the articles during the period from August 2016 to January 2017. The articles reviewed included those published in English, Portuguese and Spanish primarily to ensure a global and regional perspective on nursing and emergency medical services along with general quality of care within the hospital setting.

### **Search Terms**

Initially, the initial draft of the Search Strategy was created using the Health Sciences Descriptors and the Medical Subject Headings for developing the key terms either separately or in combination, including:

- Nursing
- Emergency Medical Services
- Pre-Hospital Care
- Emergency Care
- Quality of Care
- Tertiary Care Hospitals

### **Selection Criteria**

Studies included in this review addressed any of the following topics:

- Nursing's role and/or EMS's role at either the emergency or tertiary hospital level.
- Quality of care, patient safety, clinical outcome or service efficiency.
- Original research articles, reviews, or systematic reviews.
- Published within the specified date range(s) and in the specified languages (only studies with these characteristics would be included).

All studies that did not directly relate to tertiary care; nursing and EMS's role in quality improvement; or emergency nursing and EMS were excluded.

### **Data Collection and Analysis**

Four phases were completed to gather data:

- First, an exploratory reading allowed for general overview of existing studies;
- Second, as titles/abstracts of studies were reviewed, some were selected that matched objectives of the current review ("selective reading");
- Third, selected studies' pertinent information was organized/categorized through an analytical reading;



- Fourth, through critical analysis/evaluation of results in some selected studies, a theoretical framework (interpretative reading) was developed.

There were initially 34 bibliographic references identified as relevant to topic area, of which after doing selective and analytical readings, only 20 were finally selected for inclusion in this literature review.

### **Presentation of Results**

After analyzing the results, researchers presented their findings via themes. The results are structured within one of the following three themes to improve understanding and application of the findings:

1. The role of nursing professionals in improving the quality of emergency and tertiary care;
2. The contribution of Emergency Medical Services (EMS) to providing continuous and effective emergency care at tertiary hospitals;
3. The documentation of the challenges, risks, and systemic barriers faced by EMS and nurses that affect their performance, therefore affecting the quality of care that is provided to patients.

This structural approach has provided a comprehensive overview of how nurses and the EMS continue to improve the quality of health care delivered at the tertiary hospital level.

### **RESULT**

A descriptive and thematic classification of recent empirical & review studies that were published sometime over the next five years (2020-2025) is used in using these findings from the literature to show both how nurses & EMS have many different roles in providing services at the emergency and tertiary level, and also to demonstrate how various occupational hazards and/or contextual variables impact the quality of care provided by these two groups of health care professionals.

Table 1- identifies different areas of practice that will improve the quality of care provided to patients in an emergency department or tertiary hospital setting, for the purpose of simplifying the interpretation of all the findings into two tables;

Table 2- Contains information related to the types of occupational hazards, types of job-related challenges, and/or contextual variables that could prevent a nurse, or EMS from being able to perform optimally and thus negatively affect the quality of care being provided.

**Table 1: Main Areas of Practice of Nurses and EMS in Emergency/Tertiary Care**

<b>Author, Year</b>	<b>Journal</b>	<b>Key Areas of Practice Related to Quality of Care</b>
Ogunlade et al., <b>2020</b>	<i>African Journal of Emergency Medicine</i>	Quality assessment of emergency nursing care; structure, process, and outcome domains influencing patient care quality in tertiary settings.
Mustonen et al., <b>2024</b>	<i>Journal of Nursing Care Quality</i>	Identification of nursing quality indicators in emergency nursing (structure, process, outcome) relevant to improving quality metrics.
Trisyani et al., <b>2023</b>	<i>Open Access Emergency Medicine</i>	Core nursing competencies in ED context: acute care, coordination, leadership, ethical/legal standards — all contributing to care effectiveness.
Subih et al., <b>2024</b>	<i>SAGE Open Nursing</i>	Predictors of clinical performance among emergency nurses linked to quality care and safety outcomes.
Vaisi-Raygani et al., <b>2025</b>	<i>BMC Nursing</i>	Relationship between nurse resilience and quality of nursing care in

		emergency departments — linking staff factors with quality outcomes.
(EMS relevance) Ravindra et al., <b>2022</b>	<i>Journal of Emergencies, Trauma, and Shock</i>	EMS utilization patterns and resource availability for prehospital care affecting tertiary hospital emergency outcomes.

In Table 1, we see how the nursing and emergency medical services (EMS) contribute toward providing quality of care in each of these locations (emergency facilities and tertiary facilities). The research articles reviewed found consistently that assessing quality, clinical competency and collaborative organization of care delivery are the three critical areas necessary for providing effective emergency services.

For example, Ogunlade et al. (2020) and Mustonen et al. (2024) both maintain that there are several types of quality-based frameworks that can be used to assess and improve emergency nursing care as well as to ultimately determine ways to evaluate and improve upon quality measurement systems through using structured methods of assessing quality, one being the structure-process-outcome model [15,16]. As such, well-defined indicators and standardization of processes establish the opportunity to monitor the quality of care and patient outcomes much easier.

In addition, Trisyani et al. (2023) and Subih et al. (2024) focus on similar themes, highlighting the use of nursing competencies related to acute clinical performance, professional leadership, personal communication and ethical conduct as key nursing competencies related to providing safe and effective patient care [17,18]. These studies also found that there is a strong correlation between the clinical performance of a nurse and the safety outcomes for patients, identifying that nurses are integral members of quality improvement efforts.

By connecting nurse resilience with improved quality of care, Vaisi-Raygani et al. (2025) build upon this view of the role of personal and organizational support systems in providing continued high-quality emergency services [19]. In a similar vein, Ravindra et al.'s (2022)

contribution illustrates how efficient prehospital care, resources, and timely patient transport impact emergency department outcomes within tertiary hospitals [20].

Table 1 demonstrates the integral relationship between nursing and EMS practices and adequate resources, competencies, and quality measurement systems, which are needed to improve patient care outcomes in both emergency and tertiary care environments.

**Table 2: Occupational Risks / Work Context Impacting Emergency Nurses and EMS Staff**

Author, Year	Journal	Identified Risks / Challenges / Consequences
Turnbach et al., 2024	<i>Journal of Emergency Nursing</i>	Emergency nurses reported high burnout, job dissatisfaction, staffing shortages, linked with lower care quality and workflow issues.
Mustonen et al., 2024	<i>Journal of Nursing Care Quality</i>	Lack of validated emergency nursing quality indicators reveals gaps in measuring and improving care safety and outcomes.
Subih et al., 2024	<i>SAGE Open Nursing</i>	Variations in clinical performance predictors highlight risks for inconsistent care and potential safety issues.
Vaisi-Raygani et al., 2025	<i>BMC Nursing</i>	Moderate nursing care quality scores linked with resilience; low resilience may lead to poorer outcomes and stress.

Table 2 clearly shows that occupational hazards and difficult working conditions significantly impact the quality of accuity provided by emergency nursing and EMS workers. High demands and durgs of emotional stris, as well as limitations within the system, have been identified as common themes among the studies examined.

Turnbach et al. (2024) found high levels of burnout, low job satisfaction, and staff shortages, which all correlate to lower quality of care and inefcient flow within the emergency

departments [21]. These factors may jeopardize patients' safety and make it difficult to consistently provide high-quality care.

Additionally, the study conducted by Mustonen et al., (2024) stated that not having validated and standardized Quality Indicators (QIs) has hindered the ability of healthcare organizations to measure and increase the level of emergency nursing care provided. This lack of measurement prevents organizations from implementing evidence-based quality improvement initiatives.

The research conducted by Subih et al. (2024) identified variability among clinical performance predictors, leading to the recommendation that lack of standardization of education, work experience, and organizational support may be responsible for the inconsistency in care delivery. In a similar way, Vaisi-Raygani et al. (2025) found that individuals with higher levels of resilience are more likely to have better quality outcomes than those with low resilience, which contributes to increased stress and emotional exhaustion.

Table 2 illustrates that to maintain effective quality improvement initiatives across all emergency and tertiary health care settings, it is essential to address occupational distress/obstacles, workforce shortages, resiliency and systemic gaps.

## **CONCLUSION**

This review highlights that nursing professionals as well as the Emergency Medical Services (EMS) system contribute significantly to enhancing quality in respect to care provided at emergency departments of hospitals that provide tertiary (highly-specialized) healthcare. Recent studies found that a structured approach to assessing EMS quality, as well as the clinical nurse's ability to deliver competent care, leadership within the department, the resilience of nursing staff, and EMS systems utilized before patients arrive at the emergency department, all affect the quality of care provided to patients who visit the emergency department. Occupational hazards such as burnout, shortages of nursing staff, inadequate systems for measuring quality of care, etc., create challenges to the staff delivering quality patient care on a consistent basis. Providing targeted support for the workforce; developing standard indicators for assessing quality of care in the EMS system; providing on-going professional development opportunities for professional nursing staff; and improving the integration of the EMS system with the emergency department of the tertiary hospital will

positively affect patient-care outcomes. Finally, in order to achieve safe, efficient and high-quality emergency health care in both low-income and middle-income countries it is essential that tertiary hospitals invest in the nursing and the EMS system and, as a result, build the capacity of those two systems at tertiary hospitals.

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