

# The Expanding Scope Of Paramedics: A Review Of Their Role In Integrated And Multidisciplinary Care

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## Abstract

The role of paramedics in healthcare has traditionally been centered on emergency response and pre-hospital care; however, in recent years, their scope has expanded significantly to encompass integrated and multidisciplinary models of care. This transformation is driven by the rising demand for healthcare services, the global burden of chronic diseases, and the need to reduce hospital overcrowding and enhance system efficiency. Paramedics are increasingly being deployed beyond emergency departments, working collaboratively with physicians, nurses, pharmacists, and other professionals in community, primary, and urgent care settings. Within these integrated care frameworks, paramedics contribute to preventive health, chronic disease management, mental health support, palliative care, and telehealth-enabled interventions. Evidence from countries such as the United Kingdom, Canada, and Australia highlights the effectiveness of community paramedicine programs in improving patient outcomes, reducing unnecessary hospital admissions, and enhancing continuity of care. Despite these advances, challenges persist, including professional recognition, regulatory limitations, and variability in training and scope of practice across regions. This review synthesizes the current evidence on the evolving role of paramedics within integrated and multidisciplinary care, identifying key benefits, barriers, and opportunities for system-level transformation. By examining international models and emerging practices, the article underscores the potential of paramedics as essential contributors to modern healthcare systems and calls for policies that support their expanded role in improving patient-centered outcomes.

**Keywords:** Paramedics, Integrated Care, Multidisciplinary Teams, Community Paramedicine, Healthcare Systems, Patient Outcomes.

## Introduction

The role of paramedics has undergone significant transformation over the past few decades, evolving from a narrow focus on emergency response and pre-hospital transport to a broader scope that encompasses integrated and multidisciplinary care across diverse healthcare settings. Traditionally, paramedics were primarily associated with responding to acute medical emergencies, stabilizing patients, and transporting them to hospitals. However, growing pressures on health systems—including the rising prevalence of chronic diseases, aging populations, increasing healthcare costs, and overcrowded emergency departments—have necessitated a shift in their responsibilities (O'Hara et al., 2015; Rasku et al., 2019). This shift highlights the importance of

reimagining the role of paramedics as not only emergency responders but also as vital contributors to integrated and patient-centered care models.

Integrated care refers to the coordination of health services across various disciplines and sectors to ensure seamless, continuous, and comprehensive care for patients. It is designed to bridge gaps in care delivery by aligning primary, secondary, and community-based services, thereby improving efficiency and patient outcomes (World Health Organization [WHO], 2016). Within this framework, paramedics play a critical role by serving as connectors between different layers of healthcare systems. They often act as the first point of contact for patients and are increasingly involved in delivering preventive care, chronic disease monitoring, mental health support, and palliative interventions (Bigham et al., 2013; Eaton et al., 2019).

The concept of community paramedicine, which has gained traction in countries such as Canada, Australia, and the United Kingdom, exemplifies this expanded role. Community paramedics are trained to provide care beyond acute emergencies, such as conducting home visits, supporting patients with complex chronic conditions, and coordinating care with family physicians, nurses, pharmacists, and social workers (Agarwal et al., 2019). Evidence suggests that such initiatives reduce unnecessary hospital admissions, improve patient satisfaction, and lower healthcare costs by shifting the focus toward proactive and integrated care delivery (Raven et al., 2020).

In multidisciplinary care models, paramedics work closely with a wide range of professionals to address patients' physical, psychological, and social needs. For example, in mental health crises, paramedics collaborate with psychiatric teams to deliver immediate interventions while ensuring continuity of care (Lloyd & Cameron, 2019). Similarly, in palliative care, they provide symptom management and coordinate with specialized teams to support patients in their homes, aligning care with patients' preferences and reducing the reliance on hospital-based services (Mason et al., 2016).

Despite the growing recognition of paramedics as integral members of multidisciplinary teams, several challenges remain. Regulatory frameworks vary widely across regions, often limiting the scope of practice and integration of paramedics into non-emergency roles (Evans et al., 2014). Moreover, professional recognition and interprofessional collaboration sometimes face barriers due to entrenched hierarchies in healthcare systems (Williams et al., 2020). Standardizing training, developing advanced educational pathways, and leveraging technology such as telehealth and artificial intelligence (AI) are critical enablers to maximize the potential of paramedics in integrated care (Tangherlini et al., 2020).

In addition to their expanded roles in primary and community care, paramedics play a pivotal role in disaster response, whether in natural or man-made emergencies. In such contexts, their responsibilities extend beyond providing immediate emergency care to include coordinating with multidisciplinary emergency teams, conducting triage, and allocating medical resources effectively. International experiences have demonstrated that integrating paramedics into disaster response plans enhances the speed of intervention and reduces mortality and complications. In the Saudi context, leveraging paramedics' expertise within disaster management systems aligns with the broader efforts to strengthen healthcare preparedness under Vision 2030, particularly in light of challenges such as the Hajj season, population density, and extreme climatic conditions. This underscores the importance of developing clear protocols for continuous training and enhancing the logistical and technological capacities of paramedics to ensure their readiness to respond efficiently to disasters.

This review article aims to synthesize current evidence on the expanding scope of paramedics within integrated and multidisciplinary care. It examines international models, highlights benefits and challenges, and explores implications for healthcare systems seeking to enhance patient-centered care. By doing so, the article underscores the critical role of paramedics as adaptable,

skilled, and collaborative professionals who bridge gaps between emergency services, primary care, and community health.

### **Methodology**

This review adopted an integrative approach to synthesize evidence on the evolving role of paramedics in integrated and multidisciplinary care. The aim was to identify trends, benefits, challenges, and international models that illustrate how paramedics contribute to modern healthcare systems.

A comprehensive literature search was conducted across multiple databases, including PubMed, Scopus, Web of Science, and Google Scholar, to ensure broad coverage of both clinical and health policy perspectives. Search terms combined Medical Subject Headings (MeSH) and free-text keywords such as “paramedics,” “community paramedicine,” “integrated care,” “multidisciplinary teams,” “primary care,” “emergency medical services,” and “healthcare system integration.” Boolean operators (AND, OR) were applied to refine the results.

The search was limited to studies published between 2016 and 2025 to capture contemporary evidence relevant to the current evolution of paramedic practice. Articles were included if they were peer-reviewed and discussed paramedic roles in integrated or multidisciplinary contexts, patient outcomes, or system-level implications. Studies focusing solely on traditional emergency transport without integration aspects were excluded. Both English and Arabic publications were considered to enhance regional and global relevance.

The screening process followed PRISMA guidelines for systematic reviews, although this article employed a narrative synthesis rather than meta-analysis due to heterogeneity in study designs and outcomes. Titles and abstracts were screened independently, followed by full-text reviews. Data were extracted into thematic categories, including expanded roles of paramedics, patient outcomes, interprofessional collaboration, and system-level impacts.

Findings were then synthesized to highlight recurring themes, identify gaps, and compare international models. This methodological approach allowed for a comprehensive yet flexible examination of the literature, ensuring that both quantitative and qualitative insights contributed to understanding the expanding role of paramedics in integrated and multidisciplinary care.

### **Results**

The literature review revealed that the role of paramedics has expanded far beyond traditional emergency response, with evidence showing significant contributions to integrated and multidisciplinary models of care. The findings are organized into three thematic areas: expanded roles of paramedics, patient outcomes, and system-level impacts.

Paramedics are increasingly providing care in community, primary, and multidisciplinary settings. This includes chronic disease management, where community paramedics conduct home visits for patients with diabetes, cardiovascular disease, and chronic obstructive pulmonary disease (COPD). They also play a crucial role in mental health interventions, often acting as first responders in crises and collaborating with psychiatric teams to reduce unnecessary hospitalizations (Lloyd & Cameron, 2019). In palliative care, paramedics assist in symptom management and coordinate with hospice services, enabling patients to remain at home in accordance with their preferences (Mason et al., 2016). Furthermore, technological integration—such as telemedicine—has expanded their capacity to deliver remote consultations and monitor patients in rural or underserved areas (Tangherlini et al., 2020).

### **Table 1. International Models of Paramedic Integration**

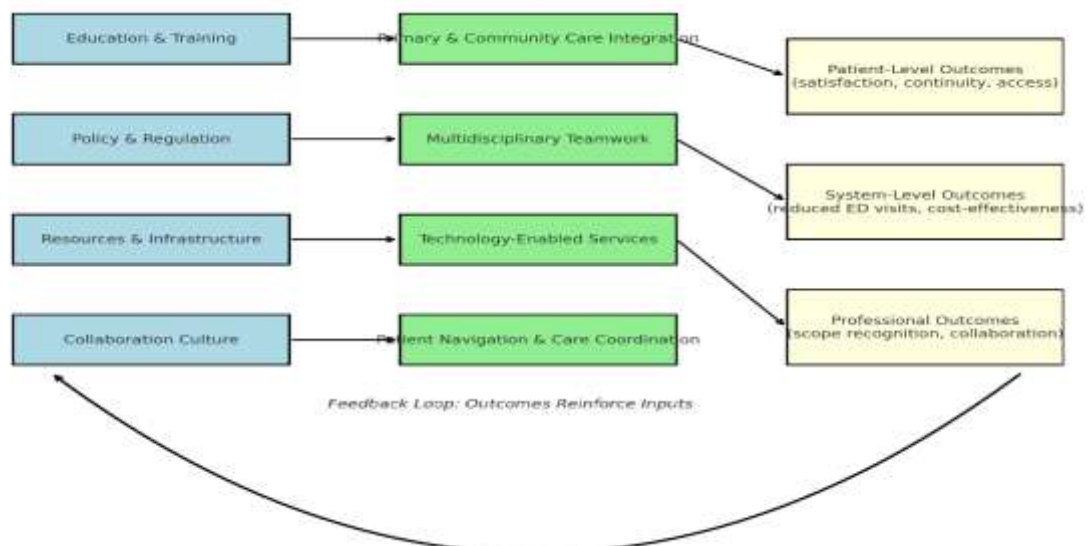
Country	Model/Program	Role of Paramedics	Outcomes Reported
United Kingdom	Paramedic Practitioners	Urgent & primary care, home visits	Reduced ED visits, increased patient satisfaction
Canada	Community Paramedicine Programs	Chronic disease management, palliative care	Lower hospital admissions, cost savings
Australia	Extended Care Paramedics	Home-based acute care, chronic follow-up	Improved access in rural areas, fewer ED transports
Saudi Arabia	Emerging Integration Models	Pre-hospital care, system coordination	Early stages – potential for reduced ED burden

Evidence consistently highlights improvements in patient outcomes when paramedics are integrated into multidisciplinary teams. Community paramedicine models in Canada and Australia demonstrate reduced emergency department visits and lower hospital readmissions (Agarwal et al., 2019). Patients reported higher satisfaction and trust in care continuity when paramedics provided follow-up visits and acted as care navigators. Importantly, multidisciplinary collaboration involving paramedics improved access to timely care, particularly for vulnerable groups such as the elderly, patients with chronic illnesses, and those in rural settings (Raven et al., 2020).

**Table 2. Reported Impacts of Paramedics in Integrated Care**

Impact Area	Evidence Reported
Patient outcomes	Improved satisfaction, better continuity of care, fewer readmissions
Access to care	Enhanced services for rural/underserved populations
System efficiency	Reduced emergency department overcrowding, improved triage
Cost-effectiveness	Lower healthcare expenditure through reduced hospitalizations

At the system level, paramedics contribute to efficiency and cost-effectiveness by reducing reliance on emergency departments and acute hospital services. Integration within primary and community care enhances resource utilization by directing patients to the most appropriate services, thereby alleviating pressure on hospitals. Additionally, their role in interprofessional collaboration fosters a culture of team-based care, breaking down silos between health disciplines (Williams et al., 2020). Policymakers in several countries have recognized these benefits, with frameworks now supporting expanded paramedic scope of practice, though challenges in regulation and standardization persist.



### **Figure 1. Conceptual Framework of Paramedics in Integrated and Multidisciplinary Care**

The framework illustrate Inputs (paramedic education, scope expansion, policy support), Processes (integration into primary/community care, interprofessional collaboration, telehealth use), and Outcomes (patient satisfaction, improved access, reduced ED use, system efficiency). Arrows should show the flow from inputs through processes to outcomes, emphasizing feedback loops where positive outcomes reinforce policy support and role expansion.

### **Discussion**

The findings of this review highlight the significant transformation of the paramedic profession and its integration into broader healthcare systems. Historically viewed as emergency responders focused primarily on pre-hospital stabilization and transport, paramedics are now increasingly recognized as multifunctional healthcare professionals embedded within integrated and multidisciplinary care models. This evolution is not merely a shift in practice but a paradigm change that redefines their role as connectors between acute, primary, and community-based services.

The review underscores how paramedics have transitioned into community-based roles, providing preventive care, chronic disease monitoring, and home-based interventions. These expanded responsibilities align with the pressing need to address the burden of chronic diseases and the challenges of aging populations, which strain traditional healthcare delivery models (Agarwal et al., 2019). Evidence from community paramedicine programs in Canada and Australia illustrates measurable improvements in reducing emergency department (ED) utilization and enhancing patient satisfaction (Raven et al., 2020). By shifting the focus from reactive emergency interventions to proactive and continuous care, paramedics are contributing to system resilience and sustainability.

One of the most significant findings relates to the role of paramedics within multidisciplinary teams. Their ability to collaborate effectively with physicians, nurses, pharmacists, and social workers strengthens the continuity and coordination of care. For example, in mental health crises, paramedics serve as frontline responders, but their impact is magnified when integrated with psychiatric services to provide safe, holistic interventions (Lloyd & Cameron, 2019). Similarly, in palliative care, paramedics ensure patients receive dignified, patient-centered care at home, reducing unnecessary hospitalizations (Mason et al., 2016). These examples emphasize the value of paramedics as bridging professionals who fill gaps in the healthcare continuum.

The integration of paramedics into multidisciplinary models demonstrates a dual benefit: improved patient-level outcomes and system-level efficiencies. At the patient level, studies report higher satisfaction, increased trust in healthcare providers, and better continuity of care (Eaton et al., 2019). At the system level, reduced ED visits and hospital readmissions translate into cost savings and optimized use of healthcare resources (Williams et al., 2020). Such outcomes support the argument that expanding paramedic roles is not only clinically effective but also economically advantageous, particularly in systems burdened by high demand and limited resources.

Despite these promising outcomes, several challenges limit the full integration of paramedics into multidisciplinary care. Regulatory restrictions often define narrow scopes of practice, limiting the flexibility of paramedics to operate in community or primary care settings (Evans et al., 2014). Additionally, professional recognition remains uneven; in some healthcare systems, paramedics are not fully acknowledged as equal partners within multidisciplinary teams. This lack of recognition can hinder collaboration and slow the adoption of innovative care models. Educational disparities also present barriers, as advanced training opportunities for paramedics vary widely across regions. Without standardized pathways for specialization in areas such as chronic disease management or mental health, the capacity of paramedics to deliver integrated care remains inconsistent.

The review also emphasizes the growing role of technology in facilitating paramedic integration. Telemedicine platforms allow paramedics to connect patients with physicians in real time, improving decision-making and reducing unnecessary hospital transports (Tangherlini et al., 2020). Remote monitoring tools enable ongoing management of chronic conditions, particularly in rural or underserved communities where access to healthcare is limited. Emerging technologies such as artificial intelligence (AI) have the potential to further support paramedics in triage, risk prediction, and care coordination. However, these advancements require adequate infrastructure, training, and supportive regulatory frameworks to be effective.

International models provide valuable lessons on how paramedic roles can be successfully expanded. In the United Kingdom, paramedic practitioners are integrated into urgent and primary care, alleviating the workload of general practitioners and reducing ED pressures. In Canada and Australia, community paramedicine programs demonstrate the effectiveness of home-based care for chronic disease management and palliative support (Agarwal et al., 2019). In Saudi Arabia and the Middle East, integration models are still emerging, but there is strong potential for paramedics to contribute to national healthcare transformation initiatives (Alquraini et al., 2017). These comparisons illustrate that while contexts differ, the core principle of paramedics as adaptable and scalable resources is globally relevant.

The evidence suggests several critical implications. First, policy reforms are needed to standardize and expand paramedic scopes of practice globally, ensuring legal recognition and supportive regulatory frameworks. Second, educational investment is essential, with advanced training programs enabling paramedics to specialize in community health, chronic disease management, mental health, and palliative care. Third, fostering a culture of interprofessional collaboration is crucial to overcoming professional silos and maximizing the potential of multidisciplinary teams. Finally, integrating technology into paramedic practice must be prioritized, particularly in rural and resource-limited settings, to ensure equitable access to high-quality care.

Looking ahead, further research should focus on longitudinal studies to evaluate the long-term impacts of paramedic integration on patient outcomes and system efficiency. Comparative studies across international models can provide deeper insights into best practices and inform context-specific adaptations. Additionally, exploring the role of paramedics in emerging areas—such as disaster response, infectious disease management, and telehealth-enabled population health—will be critical for future healthcare resilience.

In summary, the discussion emphasizes that paramedics have evolved into key actors in integrated and multidisciplinary care, contributing to improved patient outcomes and more resilient healthcare systems. While challenges remain, particularly in regulation, education, and recognition, the opportunities for transformation are substantial. By embracing policy reforms, advanced training, and technology, healthcare systems can fully harness the potential of paramedics as frontline connectors, innovators, and collaborators in modern healthcare.

### **Implications for Practice and Policy**

The expansion of paramedics' roles into integrated and multidisciplinary care has profound implications for clinical practice, workforce planning, and health policy. As health systems face escalating challenges—including rising demand, resource constraints, and the need for more patient-centered models—the evidence reviewed highlights actionable strategies for optimizing the contribution of paramedics across different care settings.

#### **Practice Implications**

- **Enhancing Workforce Flexibility:** Paramedics represent a versatile and mobile workforce capable of adapting to diverse healthcare needs. By expanding their scope to include chronic disease management, preventive health, and palliative care, paramedics can help alleviate the burden on hospitals and primary care providers. In practice, this requires organizational

readiness to embed paramedics into primary care clinics, urgent care centers, and community outreach programs.

- **Strengthening Multidisciplinary Teams:** The integration of paramedics into multidisciplinary care models emphasizes the importance of team-based practice. Paramedics bring unique skills in rapid assessment, decision-making, and patient triage, complementing the expertise of physicians, nurses, pharmacists, and social workers. For practice environments, this means fostering interprofessional respect, structured communication channels, and shared decision-making to maximize the efficiency and effectiveness of collaborative care.
- **Expanding Community-Based Care:** Practice innovations such as community paramedicine demonstrate how paramedics can deliver services directly in patients' homes, reducing reliance on acute care. Implementing similar programs globally can enhance continuity of care, particularly for vulnerable populations in rural or underserved areas. For practitioners, this highlights the need to develop competencies in chronic disease monitoring, health promotion, and culturally sensitive patient engagement.

### Policy Implications

- **Regulatory Reform:** One of the most pressing policy implications is the need to establish **clear regulatory frameworks** that recognize and support the expanded scope of paramedic practice. Policies must allow flexibility for paramedics to engage in preventive and primary care while maintaining standards for safety and accountability. Without regulatory support, integration efforts risk being fragmented or unsustainable.
- **Standardizing Education and Training:** Policies should also prioritize **advanced education pathways** for paramedics, enabling specialization in fields such as community health, mental health, and palliative care. Aligning paramedic education with national healthcare strategies ensures consistency across regions and strengthens professional recognition. Accreditation systems should be established to support lifelong learning and career progression.
- **Investment in Technology and Infrastructure:** The role of technology in expanding paramedic practice underscores the importance of policy-driven investment in telehealth platforms, mobile health units, and remote monitoring systems. Policymakers must ensure equitable access to these resources, particularly in rural and underserved communities, to fully harness the benefits of paramedic integration.
- **Promoting Interprofessional Collaboration:** Health policies should incentivize and mandate structures for interprofessional collaboration, such as integrated care pathways, joint training programs, and multidisciplinary governance frameworks. This approach ensures that paramedics are recognized as equal partners within care teams, thereby strengthening team-based healthcare delivery.
- **Evidence-Informed Policy Development:** Finally, policymakers should support ongoing research to evaluate the outcomes of paramedic integration. Establishing national data repositories and funding comparative studies will generate the evidence base required to refine policies, scale successful models, and adapt international best practices to local contexts.

### Strategic Alignment

For countries such as Saudi Arabia and other regions undergoing healthcare transformation, aligning paramedic integration with broader policy frameworks—such as Vision 2030 in Saudi Arabia—offers a pathway to strengthen system resilience, expand access, and improve patient outcomes. By embedding paramedics into these reforms, governments can ensure that healthcare systems remain adaptive, cost-effective, and responsive to future challenges.

In practice, paramedics can expand care capacity, strengthen teams, and improve patient outcomes through enhanced roles in community and primary care. In policy, regulatory reform, education standardization, technological investment, and structured collaboration are essential enablers of this transformation. Collectively, these implications highlight the urgent need for governments,

professional bodies, and healthcare organizations to embrace paramedics as integral actors in integrated and multidisciplinary care.

## Conclusion

This review highlights the expanding scope of paramedics as a transformative development in modern healthcare systems. Once viewed primarily as emergency responders, paramedics are now recognized as vital contributors to integrated and multidisciplinary care. Their roles have broadened to include preventive services, chronic disease management, mental health interventions, palliative care, and technology-enabled healthcare delivery. These contributions position paramedics as essential professionals who bridge the gaps between emergency, primary, and community care.

The evidence reviewed demonstrates that paramedic integration yields tangible benefits for patients and healthcare systems alike. At the patient level, outcomes include improved satisfaction, enhanced continuity of care, and greater access to services, particularly for vulnerable and underserved populations. At the system level, the inclusion of paramedics reduces pressure on emergency departments, lowers hospital readmissions, and generates cost savings, thereby contributing to the efficiency and sustainability of healthcare systems.

Nevertheless, significant challenges remain, including regulatory barriers, professional recognition, and variability in training and practice standards. Addressing these issues requires supportive policies, investment in advanced education, and the establishment of frameworks that promote interprofessional collaboration. Technology integration, particularly through telehealth and digital health solutions, further enhances the ability of paramedics to deliver high-quality care across diverse settings.

Looking ahead, the expansion of paramedic roles offers a powerful opportunity for healthcare systems worldwide to strengthen resilience, improve patient-centered outcomes, and adapt to evolving demands. By embracing regulatory reform, educational innovation, and collaborative practice, paramedics can be fully empowered to function as integral agents of change within integrated and multidisciplinary healthcare models.

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