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The Evolving Role of Physician Assistants in Multidisciplinary Healthcare Teams: A Focus on Interprofessional Collaboration in ICUs

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ABSTRACT

Critical care environments are increasingly challenged by rising patient acuity, workforce shortages, and the growing need for coordinated, team-based care. This review synthesizes evidence from various complementary studies examining: (1) interprofessional collaboration (IPC) challenges in South African intensive care units (ICUs), (2) the integration and impact of physician assistants (PAs) across diverse Canadian clinical settings, and (3) national workforce trends of PAs in United States critical care medicine. The findings reveal persistent organizational and system-level constraints—including staffing deficits, communication gaps, hierarchical barriers, and role ambiguity—that hinder effective collaboration. Evidence from Canada demonstrates that well-integrated PAs enhance workflow efficiency, continuity of care, and patient access, while U.S. data highlight a rapidly expanding PA critical care workforce with increasing postgraduate training, high job satisfaction, and substantial contributions to ICU operations. Collectively, the studies underscore the importance of structured IPC, comprehensive specialty preparation, and supportive organizational environments in strengthening ICU performance. Addressing burnout, improving role clarity, and expanding training opportunities remain essential for building a resilient and sustainable critical care workforce capable of meeting growing global demands.

Keywords: Interprofessional collaboration; Physician assistants; Critical care workforce; Intensive care units; Postgraduate training

INTRODUCTION

Critical care environments are among the most complex areas of modern healthcare, requiring timely decision-making, coordinated teamwork, and well-trained professionals to manage rapidly deteriorating conditions. With rising ICU demands, workforce shortages, and increasing clinical complexity, interprofessional collaboration (IPC) and the integration of advanced practice providers—including physician assistants/associates (PAs)—have become essential components of critical care delivery. The studies synthesized in this review provide complementary insights into:

(1) Interprofessional collaboration dynamics in South African ICUs,

(2) evaluation of PA integration across diverse Canadian clinical settings, and

(3) national workforce characteristics of PAs in U.S. critical care medicine.

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Together, they offer a cohesive understanding of teamwork, role clarity, staffing pressures, and professional contributions across different health systems.

II. Interprofessional Collaboration in ICU Settings

ICUs demand coordinated actions from multiple health professionals to ensure timely interventions, optimise decisions, and improve patient outcomes. However, evidence from South African decentralised clinical training platforms shows that IPC is often hindered by scope-of-practice misunderstandings, professional hierarchies, and fragmented communication patterns [1,2,3]. In these settings, delayed referrals, unclear professional boundaries, and inconsistent participation in ward rounds reduce the quality of teamwork. Similar challenges are reflected internationally, where rigid hierarchies can restrict nurse and allied health contributions, limit shared decision-making, and compromise holistic patient management [4,5,6].

The COVID-19 pandemic intensified pre-existing barriers. Staff shortages, increased workloads, and physical distancing policies disrupted routine interdisciplinary meetings, reducing real-time communication and heightening stress among team members [7,8]. Despite these constraints, clinicians expressed motivation to improve collaboration by strengthening communication systems, conducting structured interdisciplinary rounds, and promoting mutual professional respect. These recommendations align with the WHO Framework for Action on IPE, highlighting the necessity of building collaborative competencies early in training [9].

III. Organisational and System-Level Barriers to Teamwork

Across settings, systemic challenges limit collaborative practice. South African ICUs experience chronic staffing shortages, high patient turnover, and inconsistencies in allied health coverage [10,11]. These constraints reduce opportunities for coordinated rounds and can delay rehabilitation, nutritional assessments, communication interventions, and discharge planning. Similarly, inefficiencies in clinical workflow and administrative processes can impede patient flow and contribute to staff fatigue.

These structural barriers are paralleled across global critical care systems. Limited human resources, uneven rural–urban workforce distribution, and high burnout rates continue to undermine optimal care delivery in multiple countries. The literature suggests that while individual clinicians may value collaboration, organisational readiness and adequate staffing remain vital for sustaining IPC.

IV. Integration of Physician Assistants into Clinical Services

The Canadian study contributes important evidence about the feasibility, acceptance, and impact of physician assistants in improving service capacity. Initial concerns among physicians and community stakeholders—regarding patient acceptance, role ambiguity, and possible overlap with nursing or medical responsibilities—did not materialise during the evaluation [11,12,13]. Instead, PAs were found to: Improve workflow efficiency, Reduce physician workload, Enhance patient continuity, Support timely follow-up care and Strengthen communication within teams.

Patients demonstrated high acceptance, frequently emphasising the accessibility and attentiveness provided by PAs. The versatility of the PA role also enabled smoother interprofessional interactions, reduced waiting times, and allowed physicians to allocate more time to complex clinical tasks.

Challenges were not absent: scheduling constraints, diagnostic follow-up responsibilities, and administrative role clarification required adjustments. However, these issues diminished as clinics refined internal processes and established clearer supervision strategies. Overall, the Canadian evaluation concluded that PAs enriched service delivery and contributed meaningfully within diverse practice environments, especially in underserved settings.

V. Workforce Trends and Characteristics of PAs in Critical Care Medicine

The U.S. analysis by Hunton *et al.* (2025) [14] offers the first national picture of PAs in critical care medicine (CCM). Using the 2023 NCCPA dataset, the study identified 2,561 PAs practicing primarily in CCM—a 141%

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increase since 2015 (NCCPA, 2023). This rapid expansion reflects national shifts in ICU staffing structures, where advanced practice providers have become indispensable due to growing patient loads and limited intensivist availability [15,16,17].

Several key trends emerged:

Demographics and Practice Settings

CCM PAs were generally younger and earlier in their careers:

They predominantly practiced in urban hospitals (97.7%), reflective of national ICU resource imbalances [18,19]. Gender representation was nearly balanced, marking a shift from earlier decades.

Postgraduate Training and Professional Development

A significant proportion (16.1%) completed postgraduate fellowships—three times higher than other specialties—indicating an expanding appetite for specialty training [20,21]. These structured programs provide essential skills for managing complex ICU patients, including mechanical ventilation, invasive procedures, hemodynamic monitoring, and rapid response leadership. As PA education remains generalist, the authors argue that postgraduate programs will continue to play an important role in specialty preparation.

Work Patterns and Role Responsibilities

CCM PAs worked more hours per week, frequently held multiple clinical positions, and often rotated through night and weekend shifts. They were extensively involved in:

- procedural tasks
- ventilator and sedation management
- sepsis stabilisation
- multidisciplinary rounds
- discharge coordination

These responsibilities align with evidence demonstrating the positive effects of APP-supported ICU models on patient flow, team communication, and physician workload [22,23].

Burnout, Job Satisfaction, and Retention

Burnout among CCM PAs was higher than in other specialties (38.5%), consistent with patterns in ICU physicians and nurses [24,25]. Contributors included emotional intensity, complex clinical decisions, prolonged shifts, and unpredictable emergencies. Yet, satisfaction remained high, and most reported strong commitment to remaining in CCM—suggesting deep professional fulfilment despite stress [26].

Compensation

CCM PAs earned higher salaries than PAs in other fields, reflecting both specialty demands and hospital-based pay structures [27].

VI. Comparative insights

Workforce Shortages and Rising Demand

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Whether in South Africa, Canada, or the United States, ICU workloads are rising while specialist shortages persist. This creates urgent demand for flexible, well-trained clinicians—including PAs and other allied professionals.

Importance of Interprofessional Collaboration

IPC remains central to patient safety, efficiency, and continuity. Both the South African and Canadian studies emphasise how teamwork strengthens service delivery, while the U.S. analysis highlights how PAs integrate into multidisciplinary ICU teams.

Need for Structured Training

Structured interprofessional education (IPE) and postgraduate fellowships emerge as critical to ensure readiness, build mutual respect, and prepare clinicians for coordinated intensive care environments.

Burnout and Workforce Sustainability

All studies underscore the heavy emotional and physical demands of critical care. Sustaining the ICU workforce will require addressing burnout, optimising staffing ratios, and reinforcing team-based models.

Organisational Support as a Prerequisite

Successful collaboration and PA integration depend on organisational support—adequate staffing, attention to scheduling, clear referral systems, and administrative pathways.

CONCLUSION

Across different countries and health system structures, various studies collectively highlight the indispensable role of interprofessional teams and the expanding contributions of PAs in meeting critical care demands. Strengthening IPC, improving clarity of professional roles, expanding postgraduate training, and enhancing workforce distribution will be essential to build resilient ICU services. These findings provide strong evidence that effective collaboration and strategic workforce planning can significantly improve quality of care, patient outcomes, and team functioning across critical care settings.

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