

Integrated Crisis Response: Collaborative Approaches Of Psychologists, Nurses, And Paramedics In Trauma Management

Safar Abdulrahman Al-Mutairi¹, Meaad Abdulkarim Ali Alsahli², May Dhefallah Abdulrahman Almutairi³, Majda Abdulrazaq Alanazi⁴, Amal Obelak Alanazi⁵, Youssef Bakheet Marzouq Almayhubi⁶, Marwah Sanad Ali Albishi⁷, Abdulmajeed Abdullah Atiyan Al-Thaqafi⁸, Talal Shirar Muhamad Aleasaymi⁹, Gharbi Mana Jarwan Alshammari¹⁰, Abdullah Alharthi¹¹, Abdullah Omran Omar Alluhaybi¹²

¹ Psychology, Mental Health Department

² Nursing, King Abdullah Specialized Children's Hospital Riyadh

³ Nursing, King Abdullah Specialized Children's Hospital Riyadh

⁴ Staff nurse at king Abdulaziz medical city in Riyadh, ministry of national Guard, Enizima@ngha.med.sa

⁵ Assistance nurse manager at king Abdulaziz medical city in Riyadh, ministry of national Guard, Onezi073@hotmail.com

⁶ Nursing Technician, King Abdulaziz Medical City Ministry of National Guard

⁷ Dental Assistant, Primary healthcare iskan Taif

⁸ King Salman Specialist Hospital in Taif, National Guard, Health Information Technician

⁹ Emergency medical services, Ministry of National Guard

¹⁰ Emergency medical services, Ministry of National Guard

¹¹ Patient care technician, PHC Taif

¹² Heath Administration, Prince Mohammad Bin Abdulaziz Hospital, Al Madinah Al Munawwarah

Accepted: 15-08-2025

Published: 15-09-2025

Abstract

This comprehensive review explores integrated crisis response models that combine the expertise of psychologists, nurses, and paramedics in trauma management. Drawing on international research and practice frameworks, the article examines how these three disciplines can effectively collaborate to address the complex physical, psychological, and social dimensions of traumatic events. The integration of psychological services with traditional emergency medical response represents a significant evolution in trauma care, particularly relevant given global demographic shifts toward aging populations with increasing multimorbidity. Various collaborative models are analyzed, including integrated emergency response systems, collaborative care pathways, and community-based services. Evidence suggests that these approaches can improve patient outcomes, enhance system efficiency, and reduce healthcare costs through appropriate triage, early psychological intervention, and coordinated transitions between care settings. Implementation challenges related to professional boundaries, communication barriers, and organizational constraints are discussed, alongside practical strategies for overcoming these obstacles. The article identifies key competencies for effective collaboration, outlines ethical considerations specific to interprofessional trauma response, and presents recommendations for education, policy development, and future research. By breaking down traditional silos between disciplines, integrated crisis response models offer promising approaches for

delivering comprehensive, patient-centered care that addresses both immediate needs and long-term recovery following traumatic events.

INTRODUCTION

Modern trauma management requires a sophisticated, multidisciplinary approach that addresses not only physical injuries but also psychological and social dimensions of care. In crisis situations, the integration of psychologists, nurses, and paramedics represents a powerful collaborative model that can significantly improve patient outcomes across the continuum of care. This collaboration becomes increasingly important in the context of global demographic shifts, with aging populations and rising prevalence of multimorbidity creating more complex emergency situations (United Nations, Department of Economic and Social Affairs, Population Division, 2019; Yarnall et al., 2017).

The World Health Organization has emphasized that continuity and coordination of care are essential components of high-quality healthcare delivery, particularly for vulnerable populations (World Health Organization, 2018). Despite this recognition, traditional models of emergency response and trauma management often operate in siloes, with limited integration between psychological, nursing, and paramedic services. This fragmentation can result in gaps in care, missed opportunities for early intervention, and suboptimal patient outcomes.

This article examines the emerging collaborative approaches between psychologists, nurses, and paramedics in trauma management, exploring the theoretical foundations, practical implementations, challenges, and opportunities for advancement. By analyzing the intersection of these three professional disciplines, we can identify best practices for integrated crisis response that addresses the complex needs of patients experiencing traumatic events.

THEORETICAL FRAMEWORKS FOR INTERPROFESSIONAL COLLABORATION

The Evolution of Interprofessional Practice

Interprofessional collaboration in healthcare has evolved significantly over the past several decades, moving from a hierarchical, physician-centered approach to a more integrated, team-based model that recognizes the unique contributions of diverse healthcare professionals (Bouton et al., 2023). This evolution reflects a growing understanding that complex health challenges require multifaceted solutions drawing on diverse expertise (Saint-Pierre et al., 2018).

In the context of trauma management, the integration of psychological, nursing, and paramedic expertise represents a particularly valuable approach. Each discipline brings unique perspectives and skills: psychologists offer expertise in mental health assessment, crisis intervention, and psychological first aid; nurses provide holistic patient care, medication management, and ongoing assessment; and paramedics contribute specialized emergency medical skills, rapid decision-making capabilities, and pre-hospital stabilization techniques (Vaseghi et al., 2022).

Conceptual Models of Care Coordination

Several conceptual models provide frameworks for understanding interprofessional collaboration in crisis response. The Chronic Care Model, for instance, emphasizes the importance of coordinated care delivery across disciplines and settings (Garland-Baird & Fraser, 2018). When applied to trauma management, this model highlights the need for

seamless transitions between emergency response, acute care, and long-term psychological support.

Similarly, the concept of continuity of care offers valuable insights for trauma management. Bahr and Weiss (2019) define continuity of care as "a process that supports the patient journey through the healthcare system and involves coordination among providers, integration of services, and sustained provider-patient relationships" (p. e12704). This definition underscores the importance of maintaining connections between different professionals involved in trauma response, ensuring that patients receive consistent, coordinated care throughout their recovery journey.

The concept of care coordination also provides a useful framework for understanding interprofessional collaboration in trauma management. Williams (2020) distinguishes between care coordination (arranging patient care activities among multiple providers), care management (a more comprehensive approach addressing medical, behavioral, and social needs), and case management (intensive support for patients with complex needs). In trauma situations, elements of all three approaches may be necessary, with the specific combination determined by patient needs and available resources.

Situated Learning Theory and Professional Identity

The development of effective interprofessional teams in trauma management is not merely a matter of bringing together professionals from different disciplines; it requires the cultivation of shared understanding, mutual respect, and collaborative identity. Shinkaruk et al. (2023) applied Situated Learning Theory to understand how healthcare professionals develop interprofessional competence and professional identity through participation in communities of practice.

Their research suggests that effective interprofessional collaboration emerges through a process of legitimate peripheral participation, where professionals gradually move from the periphery to full participation in integrated practice. In trauma management, this might involve joint training exercises, shared decision-making protocols, and collaborative reflection on crisis response experiences. Through these shared activities, psychologists, nurses, and paramedics can develop a collective identity as members of an integrated trauma response team, while still maintaining their distinct professional expertise (Grimell & Holmberg, 2022).

Roles and Competencies of Team Members

Psychologists in Trauma Response

Psychologists bring specialized expertise in psychological assessment, crisis intervention, and trauma-informed care to the collaborative team. In the immediate aftermath of traumatic events, psychologists can provide psychological first aid, helping patients manage acute stress reactions and preventing the development of more severe psychological consequences (Torabi et al., 2018). They are trained to recognize signs of psychological distress, assess suicide risk, and implement evidence-based interventions for trauma-related conditions.

Beyond direct patient care, psychologists also play a valuable role in supporting other team members. The emotional demands of trauma response can lead to compassion fatigue, secondary traumatic stress, and burnout among healthcare providers (Svensson et al., 2019). Psychologists can offer education about self-care strategies, facilitate debriefing sessions after difficult cases, and provide consultation about managing challenging patient interactions.

Additionally, psychologists contribute to the development and implementation of trauma-informed care practices across the healthcare system. By educating other team members about the neurobiological impacts of trauma, the importance of patient choice and control,

and strategies for avoiding re-traumatization, psychologists help create environments that promote psychological safety and healing (Holmberg et al., 2010).

Nurses in Trauma Management

Nurses serve as critical members of the interprofessional trauma response team, providing comprehensive patient assessment, implementing medical interventions, coordinating care transitions, and offering emotional support to patients and families. In emergency settings, nurses with specialized training in trauma care can rapidly assess patients using structured approaches such as the primary and secondary survey, initiate life-saving interventions, and continuously monitor patient status (Forsell et al., 2020).

The role of ambulance nurses is particularly significant in trauma response. As Andersson et al. (2022) note, ambulance nurses engage in complex clinical reasoning processes, integrating information from multiple sources to make rapid decisions about patient care. They must balance the need for swift action with careful consideration of patient needs and preferences, often in challenging environments with limited resources.

Beyond their clinical expertise, nurses also serve as important coordinators of care. Karam et al. (2021) highlight the essential role of nursing care coordination for patients with complex needs, noting that nurses often facilitate communication between different providers, ensure continuity across care transitions, and advocate for patient needs. This coordination function is particularly important in trauma management, where patients may move through multiple healthcare settings and interact with numerous providers during their recovery journey.

Paramedics in Crisis Response

Paramedics represent the frontline of emergency medical response, often being the first healthcare professionals to encounter patients following traumatic events. Their role involves rapid assessment, stabilization, and transport of patients to appropriate care facilities (Carter & Thompson, 2015). In many systems, paramedics also make critical decisions about the level of care needed, determining whether patients require transportation to emergency departments or might be better served by alternative pathways (Ebben et al., 2017).

The paramedic role has evolved significantly in recent years, with expanded scope of practice and increasing responsibility for complex decision-making. Wihlborg (2018) notes that paramedics must now manage a wide range of patient presentations, from life-threatening emergencies to non-urgent conditions that might be better addressed in primary care settings. This expansion of responsibility creates both challenges and opportunities for interprofessional collaboration in trauma management.

Importantly, paramedics also play a key role in identifying patients who might benefit from psychological support following traumatic events. Their position as first responders allows them to observe immediate psychological reactions and identify individuals at risk for adverse psychological outcomes. With appropriate training and collaborative protocols, paramedics can initiate referrals to psychological services for patients experiencing acute stress reactions, ensuring early intervention for trauma-related psychological conditions (Herlitz et al., 2021).

Models of Collaborative Practice

Integrated Emergency Response Systems

Several models have emerged for integrating psychological, nursing, and paramedic services in emergency response. One approach involves embedding mental health professionals within emergency medical services (EMS) systems, allowing for immediate psychological assessment and intervention at the scene of traumatic events. This model recognizes that psychological first aid is most effective when delivered promptly, ideally within hours of the traumatic experience (Farcas et al., 2024).

Another approach focuses on creating specialized trauma teams that include representatives from each discipline. These teams may be activated for mass casualty incidents, complex trauma cases, or situations involving particularly vulnerable populations. By bringing together professionals with complementary expertise, these teams can address the multidimensional aspects of trauma simultaneously, rather than sequentially (Taberna et al., 2020).

Technology-enabled collaboration represents a third model, using telemedicine and digital communication tools to connect geographically dispersed team members. For example, paramedics at the scene of a traumatic event might consult with hospital-based psychologists via secure video connection, receiving guidance about psychological assessment and intervention without delaying transport (O'Hara et al., 2014).

Collaborative Care Pathways

Care pathways provide structured approaches for coordinating the activities of different professionals involved in trauma response. These pathways typically define roles and responsibilities, establish communication protocols, and identify key decision points where interdisciplinary consultation is particularly valuable (Ljungholm et al., 2021).

For example, a collaborative care pathway for motor vehicle accident victims might include initial assessment by paramedics, with standardized screening for psychological distress and mechanisms for rapid referral to psychological services when needed. The pathway would specify when and how information is shared between team members, ensuring that all providers have access to relevant data while protecting patient privacy (Ljungholm et al., 2022).

Care pathways are particularly valuable for managing the transitions between different phases of trauma response—from pre-hospital care to emergency department treatment to rehabilitation and long-term follow-up. By clearly defining handoff procedures and communication expectations, these pathways can reduce fragmentation and ensure continuity of care across settings (Baxter et al., 2020).

Community-Based Integrated Services

While much of the focus on trauma management centers on acute care settings, effective collaboration must extend into community contexts as well. Community-based integrated services bring together psychologists, nurses, and paramedics in primary care, home health, and other non-hospital settings to support long-term recovery from traumatic events (Doornebosch et al., 2022).

This model is particularly relevant for addressing the needs of vulnerable populations, such as older adults with frailty or individuals with multimorbidity, who may experience trauma differently and require specialized approaches to care (Sadler et al., 2023). By extending collaborative practice into community settings, these services can address the full trajectory of trauma recovery, from acute response through rehabilitation and reintegration.

Community paramedicine represents one promising approach within this model. In these programs, paramedics receive additional training in psychological first aid, mental health assessment, and care coordination, allowing them to provide more comprehensive support to patients in community settings (Eastwood et al., 2020). When integrated with psychological and nursing services, community paramedicine can create a robust network of support for trauma survivors, particularly in rural or underserved areas where access to specialized trauma services may be limited.

Evidence for Effectiveness

Outcomes for Patients

Research on the effectiveness of collaborative approaches to trauma management shows promising results across multiple domains. A systematic review by Bouton et al. (2023) found that interprofessional collaboration in primary care was associated with improved

clinical outcomes, enhanced patient satisfaction, and better quality of life for patients with complex needs. While this review was not specific to trauma management, its findings suggest that collaborative approaches have broad benefits that likely extend to trauma care as well.

In the context of emergency services, Conroy et al. (2023) identified several models of care that improved outcomes for older people with urgent care needs. Their research emphasized the value of integrated assessment approaches that address both medical and psychological dimensions of care, particularly for vulnerable populations. Similarly, Kirst et al. (2017) found that integrated care programs for older adults with complex needs were more effective when they included comprehensive assessment, case management, and interprofessional collaboration—elements that align well with collaborative trauma response approaches.

For patients with psychological trauma, early intervention by interprofessional teams has been shown to reduce the risk of developing post-traumatic stress disorder (PTSD) and other trauma-related conditions. The presence of mental health professionals in emergency settings allows for prompt identification of individuals at risk for adverse psychological outcomes and immediate implementation of evidence-based interventions (Torabi et al., 2018).

System-Level Benefits

Beyond individual patient outcomes, collaborative approaches to trauma management also offer system-level benefits. Integrated care models have been associated with reduced emergency department utilization, fewer hospital readmissions, and more appropriate use of healthcare resources (Kasteridis et al., 2021). By ensuring that patients receive the right care from the right providers at the right time, these approaches can improve efficiency and sustainability within healthcare systems.

Collaborative models also create opportunities for more appropriate triage and referral of patients following traumatic events. Research by Pekanoja et al. (2018) and Höglund (2022) has highlighted the potential benefits of non-transport decisions by emergency medical services when alternative care pathways are available. When paramedics can consult with mental health professionals and make referrals to psychological services without transporting patients to emergency departments, system resources can be preserved for those with the most urgent needs.

Additionally, interprofessional collaboration creates valuable opportunities for shared learning and professional development. Hayes et al. (2022) found that simulation-based interprofessional education improved team communication, role clarity, and collaborative decision-making among healthcare professionals. These improvements in team functioning can enhance system resilience, particularly during mass casualty events or other high-stress situations where effective collaboration is essential.

Cost-Effectiveness Considerations

From an economic perspective, collaborative approaches to trauma management show promise for enhancing cost-effectiveness. By reducing duplication of services, preventing unnecessary hospitalizations, and addressing psychological needs early to prevent longer-term complications, integrated care models can potentially generate substantial cost savings (Ehrlich et al., 2009).

However, implementing collaborative approaches also requires initial investment in training, coordination mechanisms, and supportive infrastructure. The long-term economic impact depends on the specific model implemented, the characteristics of the population served, and the existing healthcare system context. Further research is needed to establish the cost-effectiveness of different collaborative approaches across diverse settings and populations.

Implementation Challenges and Solutions

Professional Boundaries and Role Clarity

One of the most significant challenges in implementing collaborative approaches to trauma management involves negotiating professional boundaries and establishing role clarity among team members. Each profession brings its own culture, terminology, priorities, and scope of practice, which can sometimes lead to confusion or conflict within interprofessional teams (Hedqvist et al., 2024).

Samuriwo (2022) argues that effective interprofessional collaboration requires a new "theory of action" that acknowledges the complex interplay between professional identity, organizational context, and patient needs. Rather than rigid role definitions that create artificial boundaries between professions, this approach emphasizes flexible, patient-centered collaboration where different team members contribute based on their expertise and the specific situation at hand.

Practical strategies for addressing boundary issues include joint training programs, shared decision-making protocols, and regular opportunities for interprofessional dialogue. By creating spaces where psychologists, nurses, and paramedics can discuss their respective roles, clarify expectations, and develop mutual understanding, organizations can foster more effective collaboration in trauma response (Shinkaruk et al., 2023).

Communication and Information Sharing

Effective communication represents another critical challenge in collaborative trauma management. Team members must share relevant information promptly and accurately, often under time pressure and in challenging environments. Different documentation systems, inconsistent terminology, and varying communication preferences can create barriers to seamless information exchange (Lindblad et al., 2018).

Technology solutions such as shared electronic health records, secure messaging platforms, and mobile applications can facilitate communication between team members across settings. However, these tools must be designed with input from all disciplines to ensure they meet diverse needs and integrate smoothly into existing workflows (O'Hara et al., 2014).

Beyond technological infrastructure, communication challenges also involve interpersonal dynamics and team culture. Creating psychological safety within teams—where members feel comfortable asking questions, expressing concerns, and admitting knowledge gaps—is essential for effective collaboration in high-stress trauma situations. Regular team debriefing sessions, reflective practice, and leadership that models collaborative communication can help create this supportive environment (Torabi et al., 2018).

Organizational and System Barriers

At the organizational and system levels, numerous barriers can impede collaborative approaches to trauma management. These include fragmented funding streams, misaligned incentive structures, insufficient resources for coordination activities, and organizational policies that reinforce professional siloes rather than promoting integration (Kirst et al., 2017).

Addressing these barriers requires commitment at multiple levels—from frontline providers to organizational leaders to policymakers. Successful implementation of collaborative models often involves:

1. Clear leadership support and vision for interprofessional practice
2. Dedicated resources for coordination activities and team development
3. Aligned incentives that reward collaborative care rather than volume-based metrics
4. Flexible policies that accommodate the needs of different professional groups
5. Continuous quality improvement processes that identify and address system barriers

Case studies of successful implementation highlight the importance of starting with small-scale pilots, gathering data on outcomes and implementation challenges, and gradually scaling up based on lessons learned. This incremental approach allows organizations to adapt collaborative models to their specific contexts and build supportive infrastructure over time (Östman et al., 2019).

Training and Education for Collaborative Practice

Interprofessional Education Approaches

Preparing professionals for collaborative trauma management begins with education and training programs that emphasize interprofessional competencies alongside discipline-specific skills. Interprofessional education (IPE) approaches bring together students or practitioners from different disciplines to learn with, from, and about each other, creating foundations for effective collaboration in clinical practice (Hayes et al., 2022).

Simulation-based training offers particularly valuable opportunities for developing collaborative skills in trauma management. By creating realistic scenarios that require coordinated response from psychologists, nurses, and paramedics, educators can help learners practice communication, role negotiation, and joint decision-making in a safe environment. Debriefing sessions following simulations allow participants to reflect on team dynamics, identify areas for improvement, and develop shared mental models for future collaborations (Hayes et al., 2022).

Community-based learning experiences also contribute to interprofessional education for trauma response. When students from different disciplines participate in community health projects, disaster preparedness exercises, or service learning activities focused on vulnerable populations, they develop appreciation for diverse perspectives and practical skills for collaboration. These experiences can be particularly valuable for understanding the social determinants that influence trauma risk and recovery (Shinkaruk et al., 2023).

Continuing Professional Development

Beyond pre-professional education, continuing professional development plays a crucial role in supporting collaborative practice among psychologists, nurses, and paramedics. As understanding of trauma and approaches to management evolve, professionals need ongoing opportunities to update their knowledge and refine their collaborative skills (Vaseghi et al., 2022).

Joint training programs that bring together practitioners from different disciplines can reinforce collaborative relationships and create shared language and frameworks for trauma management. Topics might include psychological first aid, trauma-informed care principles, recognition of complicated grief reactions, management of trauma in special populations, and strategies for supporting team resilience in high-stress environments.

Mentorship and coaching also support the development of collaborative practice skills. Experienced practitioners who model effective interprofessional collaboration can guide less experienced colleagues, helping them navigate complex team dynamics and develop confidence in collaborative decision-making. This mentorship can occur formally through structured programs or informally through workplace relationships and communities of practice (Shinkaruk et al., 2023).

Competency Frameworks for Collaboration

Several frameworks have been developed to articulate the competencies needed for effective interprofessional collaboration in healthcare. These frameworks typically address domains such as roles and responsibilities, interprofessional communication, team functioning, collaborative leadership, and patient/family-centered care (Vaseghi et al., 2022).

When applied to trauma management, these competency frameworks help guide education, assessment, and professional development for psychologists, nurses, and paramedics. For

example, competency in interprofessional communication for trauma response might include the ability to:

1. Use standardized approaches for communicating critical information during handoffs
2. Adapt communication style based on team needs and situational demands
3. Advocate effectively for patient psychological needs within medical settings
4. Provide clear, concise updates to team members during evolving situations
5. Document assessment findings and interventions in ways accessible to other disciplines

By defining these competencies explicitly, educators and organizations can develop targeted training activities, assessment approaches, and quality improvement initiatives to strengthen collaborative practice in trauma management (Swedish Society of Nursing, 2022).

Ethical Considerations in Collaborative Trauma Response

Patient Autonomy and Shared Decision-Making

Collaborative approaches to trauma management must navigate complex ethical terrain, particularly regarding patient autonomy and shared decision-making. In crisis situations, patients' capacity for autonomous decision-making may be compromised by factors such as pain, medication effects, emotional distress, or traumatic brain injury. Team members must balance respect for autonomy with the obligation to provide timely, appropriate care that prevents further harm (Torabi et al., 2018).

Interprofessional teams can address this challenge by establishing clear protocols for assessing decision-making capacity, involving family members or surrogates when appropriate, and documenting the rationale for decisions made without full patient participation. Including mental health professionals in these processes can be particularly valuable, as they bring specialized expertise in assessing cognitive and emotional factors that may influence decision-making capacity (Svensson et al., 2019).

When patients retain decision-making capacity, collaborative teams face the challenge of presenting information and options in accessible ways during high-stress situations. Each discipline may prioritize different aspects of care, potentially creating confusion for patients trying to make informed choices. Developing shared approaches to communication and decision support can help teams present consistent information while still acknowledging the different perspectives each profession brings to trauma management (Holmberg et al., 2010).

Confidentiality and Information Sharing

Information sharing among team members is essential for collaborative trauma response but must be balanced with respect for patient confidentiality and privacy. Different professions operate under varied legal and ethical frameworks regarding confidentiality, creating potential tensions within interprofessional teams (Lindblad et al., 2018).

Clear policies for information sharing, based on the principle of minimum necessary disclosure, can help navigate these tensions. Teams should establish agreements about what information is essential for collaborative care, how this information will be communicated, and how patient consent for information sharing will be obtained and documented. Regular ethics discussions within teams can help address complex cases and refine approaches to balancing collaboration with confidentiality (O'Hara et al., 2014).

Digital health technologies create both opportunities and challenges for information sharing in collaborative trauma response. Electronic health records, secure messaging platforms, and telehealth systems can facilitate communication among team members across settings, but also introduce risks related to data security and unauthorized access. Teams must ensure that technological solutions for collaboration incorporate robust privacy protections and comply with relevant regulations in their jurisdiction (Lindblad et al., 2018).

Justice and Resource Allocation

Resource allocation represents another significant ethical challenge in collaborative trauma management. In systems with limited resources, decisions about which patients receive which services from which professionals involve complex ethical judgments about fairness, need, and potential benefit. These decisions become particularly acute in mass casualty situations, where demand for services may significantly exceed available resources (Herlitz et al., 2021).

Collaborative approaches can potentially enhance justice in resource allocation by ensuring that patients receive care matched to their specific needs rather than based on arbitrary system divisions. For example, integrating psychological services into emergency response allows for early identification and intervention for patients with significant psychological trauma, potentially preventing long-term complications and reducing overall system burden (Farcas et al., 2024).

However, implementation of collaborative models must be mindful of potential unintended consequences for resource distribution. If integrated services are concentrated in certain geographic areas or accessible only to certain populations, they may exacerbate rather than reduce healthcare disparities. Ongoing monitoring of access patterns and outcomes across different demographic groups is essential to ensure that collaborative approaches promote rather than undermine justice in trauma care (Farcas et al., 2024).

Future Directions and Recommendations

Research Priorities

While evidence supports the potential benefits of collaborative approaches to trauma management, significant research gaps remain. Future research should address several priority areas:

1. **Comparative effectiveness studies** examining different models of collaboration across diverse settings and populations. These studies should include both process measures (e.g., communication quality, role clarity) and outcome measures (e.g., patient recovery, psychological wellbeing, healthcare utilization).
2. **Implementation science research** identifying factors that facilitate or impede the adoption of collaborative models in different contexts. This research should consider variables at multiple levels—individual, team, organizational, and system—and develop strategies for addressing implementation barriers.
3. **Economic analyses** assessing the cost-effectiveness of collaborative approaches compared to traditional, siloed models of trauma care. These analyses should consider both short-term costs and long-term impacts across healthcare and social service sectors.
4. **Patient-centered outcome research** exploring how collaborative care influences the outcomes that matter most to trauma survivors, including functional recovery, quality of life, return to roles and relationships, and sense of control over recovery.
5. **Research on special populations**, such as older adults, individuals with pre-existing mental health conditions, or culturally diverse communities, to understand how collaborative approaches can be adapted to meet diverse needs (Harthi et al., 2022).

Policy Implications

Policy changes at multiple levels could support the development and implementation of collaborative approaches to trauma management:

1. **Funding models** that support coordination activities and team-based care, moving away from fee-for-service approaches that reimburse individual services without recognizing the value of collaboration.
2. **Regulatory frameworks** that facilitate appropriate information sharing among team members while protecting patient privacy and confidentiality.

3. **Scope of practice regulations** that enable each profession to work at the top of their license and recognize the overlapping competencies among psychologists, nurses, and paramedics in trauma response.
4. **Quality measurement systems** that include indicators of effective collaboration and patient-centered care alongside traditional clinical outcomes.
5. **Educational policies** that support interprofessional education and continuing professional development focused on collaborative competencies for trauma management.

Practice Recommendations

For organizations seeking to implement collaborative approaches to trauma management, several practical recommendations emerge from the literature:

1. **Start with leadership commitment** and a clear vision for how collaboration will improve trauma care in your specific context. Involve leaders from each professional discipline in developing this vision.
2. **Invest in relationship building** among team members through joint training activities, shared workspace when possible, and regular opportunities for interprofessional dialogue.
3. **Develop clear protocols** for communication, decision-making, and role allocation in different types of trauma situations, while maintaining flexibility to adapt to unique patient needs.
4. **Implement technology solutions** that facilitate information sharing and communication among team members, ensuring these tools are accessible and useful for all disciplines involved.
5. **Create feedback mechanisms** that allow teams to reflect on their collaborative practice, identify areas for improvement, and celebrate successes. Include both process measures (how well the team works together) and outcome measures (how patients fare) in these feedback systems.
6. **Build capacity for collaboration** through ongoing education and mentorship, recognizing that effective interprofessional practice requires continuous learning and adaptation.

CONCLUSION

The integration of psychological, nursing, and paramedic expertise represents a powerful approach to trauma management that addresses the complex, multidimensional nature of traumatic experiences. By combining the unique perspectives and skills of these three disciplines, collaborative teams can provide more comprehensive, coordinated care that supports both physical recovery and psychological wellbeing following traumatic events. While significant challenges exist in implementing collaborative models—including professional boundary issues, communication barriers, and system constraints—evidence suggests that these challenges can be overcome through thoughtful leadership, supportive organizational cultures, and commitment to patient-centered care. The potential benefits for patients, providers, and healthcare systems justify the investment required to develop and sustain effective collaboration in trauma response.

As global healthcare systems face increasing pressures from demographic shifts, rising prevalence of complex conditions, and resource constraints, collaborative approaches to trauma management offer a promising path forward. By breaking down traditional siloes between psychologists, nurses, and paramedics, we can create more resilient, responsive systems of care that better serve the needs of trauma survivors in diverse contexts and communities.

References

1. Andersson, U., Andersson Hagiwara, M., Wireklint Sundström, B., Andersson, H., & Maurin, S. H. (2022). Clinical Reasoning among Registered Nurses in Emergency Medical Services: A Case Study. *Journal of Cognitive Engineering and Decision Making*, 16(3), 123–156.
2. Bahr, S. J., & Weiss, M. E. (2019). Clarifying model for continuity of care: A concept analysis. *International Journal of Nursing Practice*, 25(2), e12704.
3. Baxter, R., Shannon, R., Murray, J., O'Hara, J. K., Sheard, L., Cracknell, A., et al. (2020). Delivering exceptionally safe transitions of care to older people: a qualitative study of multidisciplinary staff perspectives. *BMC Health Services Research*, 20(1), 780.
4. Bouton, C., Journeaux, M., Jourdain, M., Angibaud, M., Huon, J-F., & Rat, C. (2023). Interprofessional collaboration in primary care: what effect on patient health? A systematic literature review. *BMC Primary Care*, 24(1), 1–20.
5. Carter, H., & Thompson, J. (2015). Defining the paramedic process. *Australian Journal of Primary Health*, 21(1), 22–6.
6. Conroy, S., Brailsford, S., Burton, C., England, T., Lalseta, J., Martin, G., et al. (2023). Identifying models of care to improve outcomes for older people with urgent care needs: a mixed methods approach to develop a system dynamics model. *Health and Social Care Delivery Research*, 11(14), 1–183.
7. Doornebosch, A. J., Smaling, H. J. A., & Achterberg, W. P. (2022). Interprofessional Collaboration in Long-Term Care and Rehabilitation: A Systematic Review. *Journal of the American Medical Directors Association*, 23(5), 764-77.e2.
8. Eastwood, K., Nambiar, D., Dwyer, R., Lowthian, J. A., Cameron, P., & Smith, K. (2020). Ambulance dispatch of older patients following primary and secondary telephone triage in metropolitan Melbourne, Australia: a retrospective cohort study. *BMJ Open*, 10(11), e042351.
9. Ebben, R. H. A., Vloet, L. C. M., Speijers, R. F., Tönjes, N. W., Loef, J., Pelgrim, T., et al. (2017). A patient-safety and professional perspective on non-conveyance in ambulance care: a systematic review. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 25(1), 71.
10. Ehrlich, C., Kendall, E., Muenchberger, H., & Armstrong, K. (2009). Coordinated care: what does that really mean? *Health & Social Care in the Community*, 17(6), 619–27.
11. Farcas, A. M., Crowe, R. P., Kennel, J., Little, N., Haamid, A., Camacho, M. A., et al. (2024). Achieving Equity in EMS Care and Patient Outcomes Through Quality Management Systems: A Position Statement. *Prehospital Emergency Care*, 28(6), 871–81.
12. Forsell, L., Forsberg, A., Kisch, A., & Rantala, A. (2020). Specialist Ambulance Nurses' Perceptions of Nursing: A Phenomenographic Study. *International Journal of Environmental Research and Public Health*, 17(14), 5018.
13. Garland-Baird, L., & Fraser, K. (2018). Conceptualization of the Chronic Care Model: Implications for Home Care Case Manager Practice. *Home Healthcare Now*, 36(6), 379–85.
14. Grimell, J., & Holmberg, M. (2022). Identifying and mapping professional identities among Swedish ambulance nurses: A multiple qualitative case study. *Theory & Psychology*, 32(5), 714–32.
15. Harthi, N., Goodacre, S., Sampson, F., & Alharbi, R. (2022). Research priorities for prehospital care of older patients with injuries: scoping review. *Age and Ageing*, 51(5), afac108.
16. Hayes, C., Power, T., Forrest, G., Ferguson, C., Kennedy, D., Freeman-Sanderson, A., et al. (2022). Bouncing off Each Other: Experiencing Interprofessional Collaboration Through Simulation. *Clinical Simulation in Nursing*, 65, 26–34.

17. Hedqvist, A-T., Lindberg, C., Hagerman, H., Svensson, A., & Ekstedt, M. (2024). Negotiating care in organizational borderlands: a grounded theory of inter-organizational collaboration in coordination of care. *BMC Health Services Research*, 24(1), 1–17.
18. Herlitz, J., Magnusson, C., Andersson Hagiwara, M., Lundgren, P., Larsson, G., Rawshani, A., et al. (2021). The role of prehospital emergency care in Sweden has changed - patient safety has become a key issue. *Lakartidningen*, 118, 1–6.
19. Höglund, E. (2022). Non-conveyance within the Swedish ambulance service: A prehospital patient safety study [Doctoral thesis, comprehensive summary]. Örebro: Örebro University.
20. Holmberg, M., Fagerberg, I. (2010). The encounter with the unknown: Nurses lived experiences of their responsibility for the care of the patient in the Swedish ambulance service. *International Journal of Qualitative Studies on Health and Well-being*, 5(2), <https://doi.org/10.3402/qhw.v5i2.5098>.
21. Karam, M., Chouinard, M-C., Poitras, M-E., Couturier, Y., Vedel, I., Grgurevic, N., et al. (2021). Nursing Care Coordination for Patients with Complex Needs in Primary Healthcare: A Scoping Review. *International Journal of Integrated Care*, 21(1), 16.
22. Kasteridis, P., Mason, A., & Street, A. (2021). Evaluating integrated care for people with complex needs. *Journal of Health Services Research & Policy*, 26(1), 46–53.
23. Kirst, M., Im, J., Burns, T., Baker, G. R., Goldhar, J., O'Campo, P., et al. (2017). What works in implementation of integrated care programs for older adults with complex needs? A realist review. *International Journal for Quality in Health Care*, 29(5), 612–24.
24. Lindblad, M., Flink, M., & Ekstedt, M. (2018). Exploring patient safety in Swedish specialised home healthcare: an interview study with multidisciplinary teams and clinical managers. *BMJ Open*, 8(12), e024068.
25. Ljungholm, L., Edin-Liljegren, A., Ekstedt, M., & Klinga, C. (2022). What is needed for continuity of care and how can we achieve it? – Perceptions among multiprofessionals on the chronic care trajectory. *BMC Health Services Research*, 22(1), 1–15.
26. Ljungholm, L., Klinga, C., Edin-Liljegren, A., & Ekstedt, M. (2021). What matters in care continuity on the chronic care trajectory for patients and family carers?—A conceptual model. *Journal of Clinical Nursing*, 31(9–10), 1327–38.
27. O'Hara, R., Johnson, M., Hirst, E., Weyman, A., Shaw, D., Mortimer, P., et al. (2014). A qualitative study of decision-making and safety in ambulance service transitions. *Health Services and Delivery Research*, 2(56), 1–138.
28. Östman, M., Bäck-Pettersson, S., Sandvik, A-H., & Sundler, A. J. (2019). "Being in good hands": next of kin's perceptions of continuity of care in patients with heart failure. *BMC Geriatrics*, 19(1), 375.
29. Pekanoja, S., Hoikka, M., Kyngäs, H., & Elo, S. (2018). Non-transport emergency medical service missions - a retrospective study based on medical charts. *Acta Anaesthesiologica Scandinavica*, 62(5), 701–8.
30. Sadler, E., Khadjesari, Z., Ziemann, A., Sheehan, K. J., Whitney, J., Wilson, D., et al. (2023). Case management for integrated care of older people with frailty in community settings. *Cochrane Database of Systematic Reviews*, 5(5), Cd013088.
31. Saint-Pierre, C., Herskovic, V., & Sepúlveda, M. (2018). Multidisciplinary collaboration in primary care: a systematic review. *Family Practice*, 35(2), 132–41.
32. Samuriwo, R. (2022). Interprofessional Collaboration-Time for a New Theory of Action? *Frontiers in Medicine (Lausanne)*, 9, 876715.
33. Shinkaruk, K., Carr, E., Lockyer, J. M., & Hecker, K. G. (2023). Exploring the development of interprofessional competence and professional identity: A Situated Learning Theory study. *Journal of Interprofessional Care*, 37(4), 613–22.

34. Svensson, C., Bremer, A., & Holmberg, M. (2019). Ambulance nurses' experiences of patient relationships in urgent and emergency situations: A qualitative exploration. *Clinical Ethics*, 14(2), 70–9.
35. Swedish Society of Nursing. (2022). Competency Description Advanced Level. Specialist nurse with a focus on ambulance care. Stockholm: The Swedish Society of Nursing.
36. Taberna, M., Gil Moncayo, F., Jané-Salas, E., Antonio, M., Arribas, L., Vilajosana, E., et al. (2020). The Multidisciplinary Team (MDT) Approach and Quality of Care. *Frontiers in Oncology*, 10, 85.
37. Torabi, M., Borhani, F., Abbaszadeh, A., & Atashzadeh-Shoorideh, F. (2018). Experiences of pre-hospital emergency medical personnel in ethical decision-making: a qualitative study. *BMC Medical Ethics*, 19(1), 1–9.
38. United Nations, Department of Economic and Social Affairs, Population Division. (2019). *World Population Prospects 2019: Highlights*. New York: United Nations.
39. Vaseghi, F., Yarmohammadian, M. H., & Raeisi, A. (2022). Interprofessional Collaboration Competencies in the Health System: A Systematic Review. *Iranian Journal of Nursing and Midwifery Research*, 27(6), 496–504.
40. Wihlborg, J. (2018). *The ambulance nurse - Aspects on competence and education* [Doctoral thesis (Department of Health Sciences)]. Faculty of Medicine: Lund University.
41. Williams, M. D. (2020). Practical and measurable definitions of care coordination, care management, and case management. *Translational Behavioral Medicine*, 10(3), 664–6.
42. World Health Organization. (2018). *Continuity and coordination of care*. Geneva: World Health Organization.
43. Yarnall, A. J., Sayer, A. A., Clegg, A., Rockwood, K., Parker, S., & Hindle, J. V. (2017). New horizons in multimorbidity in older adults. *Age and Ageing*, 46(6), 882–8.