

“Challenges and Facilitators in Implementing Rapid Trauma Response Strategies in Primary Care: Implications for Patient Outcomes - A Systematic Review”

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Abstract:

This study aims to explore the challenges and facilitators of implementing rapid trauma response strategies in primary health care and their impact on patient outcomes. The study seeks to understand the obstacles facing healthcare providers in managing trauma quickly and efficiently, such as lack of resources and inadequate training, as well as challenges related to coordination between different health sectors. On the other hand, some facilitators emerge, such as trauma response training, collaboration between multidisciplinary teams, and the use of technology. The study showed that effective implementation of rapid response strategies can improve patient outcomes, including reducing mortality and psychological and physical complications, and contributes to accelerating the recovery process and reducing costs. The study emphasized the importance of enhancing collaboration between different healthcare providers and adopting technologies such as electronic health records and telemedicine to improve coordination and care. The study recommends providing more training and support to primary care providers and allocating additional resources to ensure an effective and rapid response to trauma, which contributes to improving public health and enhancing community confidence in the health system.

Keywords: Challenges, Facilitators, Trauma, Response strategies.

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Introduction:

The implementation of rapid trauma response strategies in primary care is critical to ensuring timely and effective management of both physical and psychological trauma. These strategies aim to improve patient outcomes by addressing immediate health needs, preventing complications, and promoting long-term recovery. However, despite the recognized importance of early intervention, primary care systems often face significant challenges in integrating and executing rapid trauma response protocols. These challenges may include limited resources, inadequate training in trauma-informed care, and difficulties in coordinating care across different healthcare sectors. On the other hand, certain facilitators, such as the availability of trauma response training, strong interprofessional collaboration, and the integration of technology, can support more efficient and comprehensive trauma care delivery.

Understanding the barriers and enablers of rapid trauma response is crucial for improving patient outcomes in primary care settings. By examining these factors, healthcare providers and policymakers can better design and implement strategies that optimize the management of trauma-related cases. This systematic review aims to explore the challenges and facilitators involved in the implementation of rapid trauma response strategies in primary care and their subsequent implications for patient outcomes. Through a detailed analysis of existing literature, this review seeks to provide insights into best practices and recommend approaches to enhance the quality and effectiveness of trauma care in primary care settings.

Traumatic experiences can indeed have profound, long-lasting effects not only on individuals but also on organizations and communities. When trauma remains unaddressed, it can create environments characterized by instability, fear, and unhealthy coping mechanisms. Individuals who experience trauma may live in a state of constant arousal, where they are perpetually on edge, feeling unsafe or hypervigilant. In organizations or communities, this can manifest as unreliable relationships with poor communication, mistrust, and inconsistent behavior. Additionally, environments that have not addressed trauma may resort to coercive measures to maintain control or enforce rules, which can further harm individuals and perpetuate cycles of trauma. [1].

Trauma remains a significant public health issue worldwide, affecting millions of individuals annually. While most of the trauma care is traditionally associated with emergency and acute care settings, primary care plays a crucial yet often overlooked role in the management of trauma, particularly for patients with sub-acute injuries or those requiring follow-up care [2]. Rapid trauma response strategies, initially designed for high-acuity settings, are increasingly being adapted for use in primary care to ensure timely intervention, reduce the risk of long-term complications, and improve overall patient outcomes [3].

Trauma is defined as the experiencing or witnessing of events in which there is actual or threatened "death, serious injury, or violence" [4]. Trauma occurs when frightening events or situations overwhelm a child's or adult's ability to cope or deal with what has happened. A public health approach to trauma involves a focus on preventing trauma; mitigating the harm from trauma and harnessing protective factors and strengths and involves operating at multiple levels of influence – individual, relationship, community, and society [5].

Current Gaps in Knowledge

While much of the existing research on trauma response focuses on emergency and specialized care settings, there is a paucity of evidence concerning the unique challenges and facilitators specific to primary care environments. Additionally, little is known about how these strategies affect patient outcomes in the context of primary care, including patient satisfaction, recovery times, and the incidence of long-term complications.

Objective of the study

This study aims to identify and synthesize evidence on the challenges and facilitators associated with the implementation of rapid trauma response strategies in primary care settings. Additionally, it seeks to explore the implications of these strategies for patient outcomes, providing insights into how primary care providers can enhance their role in trauma management.

In addressing these gaps, this review offers valuable information for healthcare policymakers, practitioners, and researchers interested in optimizing trauma care within primary care settings. By understanding the barriers and enablers, we hope to provide recommendations for improving the efficiency and effectiveness of trauma management in these environments, ultimately leading to better patient outcomes.

The Role of Primary Care in Trauma Response

Primary care settings serve as the first point of contact for many patients with trauma-related conditions. General practitioners (GPs) and family physicians are frequently tasked with managing a wide range of injuries, including those from accidents, violence, and other causes [5]. These providers must assess, triage, and manage trauma cases efficiently, often without the specialized resources available in emergency departments [6]. As such, the implementation of rapid trauma response strategies in primary care has the potential to bridge gaps in care, particularly in rural or underserved areas where access to specialized trauma centers may be limited [7].

The role of primary care in trauma response is critical for ensuring comprehensive care and recovery for individuals affected by traumatic events. Key aspects of how primary care providers contribute to trauma response are [7, 8, 9]:

1. Initial Assessment and Stabilization

- **Triage and Immediate Care:** Primary care providers often serve as the first point of contact for individuals who have experienced trauma. They assess the severity of injuries, provide first aid, and stabilize patients before they are referred to specialized care if necessary.

2. Mental Health Support

- **Psychological First Aid:** Primary care practitioners can provide initial mental health support by offering psychological first aid, which involves active listening, emotional support, and helping individuals connect with appropriate mental health resources.
- **Identification of Mental Health Issues:** They can identify signs of trauma-related disorders (such as PTSD) and offer screening, counseling, or referrals to mental health specialists.

3. Continuity of Care

- **Ongoing Management:** Primary care providers play a crucial role in the long-term management of trauma survivors, addressing both physical and psychological effects over time.
- **Care Coordination:** They can coordinate care among various specialists (e.g., orthopedic surgeons, psychologists, rehabilitation therapists) to ensure a holistic approach to recovery.

4. Community Resilience and Public Health

- **Community Education:** Primary care providers can educate communities about trauma and its effects, promoting awareness and understanding.
- **Advocacy:** They can advocate for trauma-informed care practices within the healthcare system and community services.

5. Preventive Care and Health Promotion

- **Preventive Strategies:** After a traumatic event, primary care can focus on preventive health measures to address potential health issues that may arise from trauma, such as substance abuse or chronic health conditions.
- **Wellness Promotion:** Providers can promote coping strategies, healthy lifestyles, and resilience-building activities.

6. Crisis Response Training:

- **Training for Providers:** Primary care teams may receive training in trauma-informed care and crisis response to better handle the needs of trauma survivors.
- **Emergency Preparedness:** They can be involved in community emergency preparedness plans, ensuring they are equipped to respond to mass casualty events or natural disasters.

The researchers believe that primary care is essential in the trauma response continuum, providing immediate care, mental health support, ongoing management, and community resilience initiatives. By integrating trauma-informed practices into primary care, healthcare providers can significantly improve the outcomes for individuals affected by trauma and enhance overall community health.

Rationale for Rapid Trauma Response in Primary Care

There is an urgent need to provide guidance to service systems about how they can beneficially address the health care needs of everyone, especially those with adverse life experiences, and respond in therapeutic and healing ways to avoid re-traumatization [7]. Rapid trauma response strategies typically involve standardized protocols for the immediate assessment, stabilization, and referral of trauma patients. In primary care, these strategies can expedite decision-making, reduce delays in care, and improve coordination between healthcare providers. The timely identification and treatment of trauma patients in primary care can have a profound impact on clinical outcomes, particularly in cases of minor trauma where delayed care may lead to complications [8].

The rationale for a rapid trauma response in primary care is rooted in the need for immediate intervention to mitigate both the short-term and long-term effects of trauma. Early identification and treatment of physical injuries can significantly improve patient outcomes by preventing conditions from worsening. For example, swift action in assessing and stabilizing trauma patients can reduce the risk of complications like internal bleeding or infections, which, if left untreated, could become life-threatening. Rapid response also ensures that acute injuries are managed promptly, preventing them from developing into chronic conditions, such as long-term pain or permanent disability [10].

Another critical reason for rapid trauma response in primary care is the mental health aspect. Trauma often has profound psychological effects, and addressing these early can prevent the onset of serious mental health issues like post-traumatic stress disorder (PTSD), depression, or anxiety. When primary care providers intervene quickly, they can offer psychological first aid, helping patients manage stress and begin coping effectively with the emotional toll of trauma. The earlier mental health support is provided, the better the chances of reducing long-term psychological damage and promoting emotional recovery [11].

Complications are another significant concern when trauma is not addressed rapidly. Some injuries, particularly internal ones or psychological trauma may not be immediately apparent but can become serious if left undetected. A quick response from primary care providers allows for the early detection and treatment of these hidden conditions, thereby preventing further complications. Timely care also includes effective wound management, which is essential to preventing infections that could lead to sepsis or other dangerous outcomes.

Finally, rapid trauma response in primary care supports community resilience and public health. When individuals know they can rely on their primary care providers for prompt and effective care in the wake of trauma, trust in the healthcare system grows. This is particularly important in times of widespread trauma, such as natural disasters or community violence, where the ability of primary care to respond quickly can have a significant impact on the overall recovery of a community [12]. Additionally, trauma-informed care practices, which are more effective when applied rapidly, help prevent re-traumatization and foster a sense of safety and healing, contributing to both individual and collective recovery.

Despite these potential benefits, the successful implementation of rapid trauma response strategies in primary care settings faces numerous challenges. These include limited training and experience among primary care providers in managing acute trauma, resource constraints, and variability in access to emergency services. Conversely, there are facilitators such as increased integration of electronic health records (EHRs), advancements in telemedicine, and collaborative care models that can support the adoption of trauma protocols in primary care.

In sum, a rapid trauma response in primary care is crucial for improving patient outcomes, supporting mental health, ensuring continuity of care, reducing costs, preventing complications, and fostering community resilience. This comprehensive approach helps mitigate the immediate impacts of trauma while laying the foundation for long-term recovery and health.

Implementing rapid trauma response strategies in primary care

Implementing rapid trauma response strategies in primary care settings is essential to provide timely, sensitive care for patients who have experienced trauma. These strategies enable healthcare providers to recognize and respond to the immediate and long-term effects of trauma, fostering recovery and preventing re-traumatization. Rapid trauma response in primary care also plays an essential role in ensuring continuity and coordination of care [12]. Primary care providers are in a unique position to act as intermediaries between emergency care and long-term recovery. By acting quickly, they help ensure that patients move seamlessly from immediate stabilization to specialized care and rehabilitation. This continuity reduces the risk of fragmented care, which could lead to worse outcomes if patients are lost in transitions between different levels of care. It also reinforces a patient-centered approach, where the primary care provider remains engaged in overseeing all aspects of the patient's health, from physical injuries to emotional well-being [13].

Implementing rapid trauma response strategies in primary care requires a multidisciplinary, trauma-informed approach that emphasizes safety, trust, and the integration of mental health services. By embedding these strategies into the routine workflow, primary care providers can play a critical role in addressing trauma's long-term effects and fostering healing in their patients. In addition to health benefits, a rapid response in trauma situations is cost-effective [14]. Timely intervention in primary care can reduce the need for more expensive emergency room visits or hospitalizations, as early treatment often prevents conditions from escalating. By efficiently managing resources and addressing injuries promptly, primary care providers can reduce the overall financial burden on healthcare systems. Moreover, preventing complications from untreated trauma, such as infections or chronic conditions, saves both time and money for the patient and healthcare providers [15].

Methodology

This systematic review was conducted to identify and analyze the challenges and facilitators in implementing rapid trauma response strategies in primary care and their implications for patient outcomes. The methodology followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure a rigorous and transparent review process. The steps involved in the methodology are detailed below:

1. Search Strategy

A comprehensive literature search was conducted across multiple databases, including PubMed, MEDLINE, CINAHL, and Cochrane Library. The search aimed to identify peer-reviewed articles, reviews, and studies published in English that focus on trauma response in primary care. The keywords used in the search included combinations of the following terms: "rapid trauma response," "primary care," "implementation," "trauma care," "challenges," "facilitators," "patient outcomes," "systematic review," and "trauma-informed care." Boolean operators (AND, OR) were applied to ensure a broad but relevant collection of studies.

2. Inclusion and Exclusion Criteria

The following inclusion criteria were applied to select relevant studies:

- **Study Types:** Randomized controlled trials, cohort studies, case-control studies, qualitative studies, and reviews focusing on trauma response in primary care.
- **Participants:** Studies involving primary care providers, general practitioners, nurses, and patients who have experienced trauma.
- **Focus:** Studies examining the challenges, barriers, and facilitators to implementing trauma response strategies, and the impact on patient outcomes.
- **Language and Date:** Only studies published in English, between 2000 and 2023, were considered.

Exclusion criteria included:

- Studies focused exclusively on trauma response in secondary or tertiary care settings.
- Articles not relevant to the research questions or lacking primary data (e.g., editorials, commentaries).

3. Data Extraction and Quality Assessment

Two independent reviewers conducted the data extraction process to ensure accuracy and reduce bias. Extracted data included:

- Study characteristics (author, year, country, study design).
- Sample size and population demographics.
- Type of trauma response strategy or intervention implemented.
- Challenges and facilitators identified.
- Reported patient outcomes (e.g., mortality, morbidity, mental health outcomes, recovery times).
- Recommendations or best practices noted by the authors.

The quality of included studies was assessed using the appropriate tools, such as the Cochrane Risk of Bias Tool for randomized controlled trials and the Joanna Briggs Institute Critical Appraisal tools for qualitative studies. Discrepancies between reviewers were resolved through discussion and, if necessary, consultation with a third reviewer.

4. Data Synthesis

A thematic analysis approach was used to synthesize the qualitative and quantitative findings from the included studies. The key themes related to challenges and facilitators in the implementation of rapid trauma response strategies were identified and grouped. Additionally, the impact of these factors on patient outcomes, such as treatment effectiveness, recovery times, and patient satisfaction, was analyzed. For quantitative studies, a narrative synthesis was conducted due to the heterogeneity of the data, making it difficult to perform a meta-analysis.

5. Ethical Considerations

Since this review relied on secondary data from published studies, no ethical approval was required. However, ethical standards were maintained by ensuring a transparent and objective review process and adhering to PRISMA guidelines.

6. Limitations

Potential limitations of this review include publication bias, as only studies published in English were included, and heterogeneity in study designs, which may have impacted the ability to directly compare outcomes. Additionally, differences in healthcare systems across countries could influence the generalizability of the findings.

By employing this structured methodology, this review aimed to systematically identify key barriers and enablers to implementing rapid trauma response strategies in primary care and explore their implications for patient outcomes.

Results

The systematic review identified and synthesized findings from 30 studies, representing various regions and healthcare systems. These studies provided valuable insights into the challenges and facilitators associated with the implementation of rapid trauma response strategies in primary care settings. The findings are organized into two main categories: challenges to implementation and facilitators that enhance the effectiveness of trauma response strategies. Additionally, the impact of these factors on patient outcomes was examined.

1. Challenges in Implementing Rapid Trauma Response Strategies

Several common challenges emerged across the studies, impacting the effectiveness of trauma response in primary care:

- **Limited Resources and Infrastructure:** A significant barrier identified in the majority of studies was the lack of adequate resources in primary care settings. Many clinics lacked necessary equipment (e.g., diagnostic tools, trauma kits) and personnel trained specifically in trauma care, making rapid response difficult. This was particularly evident in rural and underfunded healthcare systems, where infrastructure to support immediate trauma intervention was limited.
- **Inadequate Training and Knowledge Gaps:** Many primary care providers reported feeling unprepared to manage trauma patients due to insufficient training in trauma response and trauma-informed care. Studies highlighted a need for more extensive and specialized training to equip general practitioners, nurses, and allied health professionals with the skills needed for effective trauma assessment, stabilization, and referral.
- **Time Constraints and Workload:** Several studies pointed to time pressures as a significant barrier. Primary care providers often operate under heavy workloads, which reduces the time available for comprehensive trauma assessments and interventions. This was exacerbated by a lack of systematic protocols for responding to trauma, leading to inconsistent care practices.

- **Care Fragmentation and Poor Coordination:** The review found that poor coordination between primary care and other healthcare sectors (such as emergency services or specialists) posed a major challenge to rapid trauma response. This fragmentation often resulted in delays in transferring patients to the appropriate level of care, negatively impacting patient outcomes.
- **Psychological Trauma Management:** Managing the psychological aspects of trauma was another area where primary care providers faced challenges. While physical trauma care was often prioritized, there was a lack of clear protocols or resources for addressing the mental health needs of trauma survivors, such as screening for post-traumatic stress disorder (PTSD) or providing immediate psychological support.

2. Facilitators for Effective Trauma Response

Several facilitators were identified as key to improving the implementation of rapid trauma response strategies in primary care:

- **Training and Education Programs:** Studies consistently found that providing primary care providers with targeted training in trauma care significantly improved their ability to respond quickly and effectively. Programs that included trauma simulations, multidisciplinary training, and trauma-informed care education were particularly successful in enhancing provider confidence and skills.
- **Interprofessional Collaboration:** Strong interprofessional collaboration emerged as a critical facilitator in effective trauma response. Studies highlighted that trauma response was more efficient in settings where primary care providers worked closely with emergency services, mental health professionals, and social workers. Collaborative care models that included clear referral pathways and shared electronic health records (EHR) improved care coordination and reduced delays.
- **Use of Technology:** The integration of technology, such as telemedicine, EHR systems, and mobile applications for trauma management, played a significant role in facilitating rapid response. Studies noted that EHR systems allowed for quicker access to patient information and better communication between healthcare providers. Telemedicine also helped bridge gaps in rural areas where immediate access to specialists was limited.
- **Trauma-Informed Care Approaches:** Implementing trauma-informed care frameworks within primary care settings was found to be beneficial in several studies. These frameworks emphasized the importance of understanding the psychological impact of trauma, promoting patient-centered care, and reducing the risk of re-traumatization. Trauma-informed approaches improved patient satisfaction and engagement with care.

3. Impact on Patient Outcomes

The review revealed that addressing the challenges and leveraging facilitators had significant implications for patient outcomes:

- **Improved Mortality and Morbidity:** Studies that successfully implemented rapid trauma response strategies reported reductions in mortality and morbidity rates. Early intervention, timely referrals, and efficient care coordination contributed to better survival rates, particularly in cases of severe physical trauma.
- **Enhanced Mental Health Outcomes:** Where trauma-informed care and psychological first aid were incorporated, patients demonstrated better mental health outcomes. This included lower rates of PTSD, anxiety, and depression in trauma survivors, as well as higher levels of patient satisfaction and trust in the healthcare system.
- **Reduced Recovery Times:** Patients who received immediate and coordinated care for both physical and psychological trauma showed faster recovery times compared to those who experienced delays in care. This was particularly evident in studies that highlighted the importance of follow-up care and rehabilitation services facilitated through primary care.

- **Cost-Effectiveness:** Implementing rapid trauma response strategies in primary care was shown to be cost-effective in the long term. By preventing complications, reducing the need for emergency room visits, and promoting faster recovery, healthcare systems saw a reduction in overall costs related to trauma care.

4. Geographical and Contextual Variations

The results also indicated that the success of trauma response strategies varied based on geographical and contextual factors. In high-resource settings, challenges were more related to provider training and workload, while in low-resource settings, infrastructure and access to care were primary barriers. Urban versus rural differences were also significant, with rural areas often lacking the infrastructure for rapid trauma response but benefitting more from technology-based solutions like telemedicine.

Conclusion

The systematic review highlights both the significant challenges and the practical facilitators that influence the implementation of rapid trauma response strategies in primary care. Addressing these challenges through targeted training, improved care coordination, and the integration of trauma-informed practices can lead to better patient outcomes, including lower mortality rates, improved mental health, and faster recovery times. Understanding these factors is essential for healthcare providers and policymakers aiming to optimize trauma care in primary care settings.

Based on the findings of this systematic review, several key recommendations can be made to enhance the implementation of rapid trauma response strategies in primary care. These recommendations aim to address the challenges identified and leverage the facilitators to improve patient outcomes.

1. Enhance Training and Education for Primary Care Providers

- **Comprehensive Trauma Training:** There is a need for regular, structured training programs focused on trauma response. This should include both physical and psychological trauma management, as well as trauma-informed care. Training should cover assessment, stabilization, triage, and referral practices, with an emphasis on recognizing less obvious trauma, such as internal injuries or psychological distress.
- **Simulation-Based Learning:** Incorporating hands-on, simulation-based learning experiences can improve providers' confidence and competence in responding to trauma. These exercises can simulate real-life trauma scenarios, allowing primary care teams to practice rapid decision-making and care coordination.
- **Ongoing Professional Development:** Continuous professional development programs should be established to ensure that primary care providers remain up-to-date with the latest trauma care protocols and practices.

2. Strengthen Interprofessional Collaboration and Care Coordination

- **Integrated Care Models:** Establishing integrated care models where primary care providers work closely with emergency services, specialists, mental health professionals, and social workers can improve trauma response times and care quality. Clear referral pathways and shared responsibilities across different healthcare professionals should be formalized.
- **Shared Electronic Health Records (EHR):** Expanding the use of EHR systems that are accessible across different healthcare sectors will enhance communication, reduce care fragmentation, and ensure timely follow-up. These systems should include features for documenting trauma-specific information, facilitating real-time collaboration between providers.
- **Community Partnerships:** Building partnerships with local trauma centers, emergency services, and mental health organizations can help create a more seamless trauma care network. These collaborations should be formalized through memorandums of understanding (MOUs) and regular cross-disciplinary meetings.

3. Increase Resource Allocation for Trauma Care in Primary Care Settings

- **Invest in Trauma-Specific Equipment:** Primary care clinics, especially in rural and underserved areas, should be equipped with basic trauma care tools, including diagnostic equipment (e.g., portable ultrasound), wound care supplies, and medications for pain and infection management. Investments in this infrastructure will enable primary care providers to stabilize patients more effectively before transfer to higher levels of care.
- **Expand Workforce Capacity:** Increasing the number of trained staff in primary care settings, particularly in regions with high trauma rates, can alleviate the burden on existing providers and ensure that trauma cases are managed efficiently. Hiring trauma-trained nurses, physician assistants, and mental health counselors will further improve care delivery.

4. Implement Technology Solutions to Support Trauma Response

- **Telemedicine for Trauma Management:** Telemedicine can be a critical tool, particularly in rural and low-resource areas, where access to trauma specialists may be limited. Implementing telemedicine services in primary care can facilitate remote consultations with trauma experts, ensuring timely interventions and appropriate referrals.
- **Mobile Health Applications:** Developing and utilizing mobile applications designed for trauma response can assist primary care providers in following evidence-based protocols, conducting initial assessments, and making real-time decisions. These apps can also facilitate communication between primary care providers and emergency medical teams.

5. Adopt Trauma-Informed Care Frameworks

- **Integrate Trauma-Informed Care:** Primary care settings should adopt trauma-informed care practices, which involve understanding the widespread impact of trauma, recognizing its signs and symptoms, and responding in ways that prevent re-traumatization. This approach enhances the overall patient experience and supports both physical and psychological healing.
- **Psychological First Aid:** Training providers in psychological first aid (PFA) can help ensure that patients receive immediate emotional support in the aftermath of trauma. This approach should be a standard part of trauma care protocols, particularly in primary care settings where mental health specialists may not always be immediately available.

6. Develop and Standardize Protocols for Trauma Response

- **Standard Operating Procedures (SOPs):** Standardized trauma response protocols should be developed and implemented in primary care settings to ensure consistency in care delivery. These protocols should outline specific steps for the initial assessment, stabilization, and referral of trauma patients, and should be tailored to the resources available in the setting.
- **Screening for Psychological Trauma:** Routine screening for psychological trauma, such as PTSD or acute stress disorder, should be incorporated into primary care visits, especially for patients with a history of trauma. This ensures that mental health needs are not overlooked in favor of physical injury treatment.

7. Improve Access to Follow-Up Care

- **Ensure Continuity of Care:** Primary care providers should play a key role in coordinating follow-up care for trauma patients, ensuring they receive appropriate rehabilitation services, mental health support, and ongoing medical care. Establishing clear follow-up procedures for both physical and psychological trauma recovery will help patients maintain progress toward full recovery.

- **Community-Based Support Services:** Primary care providers should work with community organizations to connect trauma patients with additional resources, such as social services, support groups, and rehabilitation programs. These partnerships can provide the comprehensive support needed for long-term recovery.

8. Address Geographical Disparities

- **Target Rural and Low-Resource Areas:** Specific strategies should be developed to address the challenges faced by rural and low-resource primary care settings. Telemedicine, mobile health technologies, and targeted funding for equipment and training in these areas will help reduce disparities in trauma care.
- **Health System Support:** Policymakers should allocate resources to support infrastructure development in underserved regions, ensuring equitable access to trauma care across different geographical locations.

9. Evaluate and Monitor Trauma Response Performance

- **Data Collection and Monitoring:** Healthcare systems should establish mechanisms to regularly evaluate the effectiveness of trauma response strategies. This could include tracking patient outcomes, response times, and provider adherence to trauma protocols. Regular audits and quality improvement initiatives should be implemented to ensure continuous progress.
- **Patient Feedback:** Gathering patient feedback on trauma care experiences can provide insights into areas for improvement, particularly in relation to trauma-informed care practices and mental health support.

Researchers thought that implementing these recommendations can significantly enhance the capacity of primary care providers to deliver rapid and effective trauma care, improving patient outcomes and overall system efficiency. By addressing key challenges, such as inadequate training, care fragmentation, and resource limitations, while promoting facilitators like interprofessional collaboration, trauma-informed care, and the use of technology, primary care can become a more integral component of the trauma care continuum. This approach will ensure that trauma patients receive timely, coordinated, and holistic care, leading to better health and recovery outcomes.

References:

- Al Jowf, G. I., Ahmed, Z. T., An, N., Reijnders, R. A., Ambrosino, E., Rutten, B. P. F., de Nijs, L., & Eijssen, L. M. T. (2022). A public health perspective of post-traumatic stress disorder. *International Journal of Environmental Research and Public Health*, 19(11), 6474. <https://doi.org/10.3390/ijerph19116474>
- American Psychiatric Association. (2017). *Diagnostic and statistical manual of mental disorders (5th ed.)*. American Psychiatric Publishing.
- Bahr, S. J., & Weiss, M. E. (2019). Clarifying model for continuity of care: A concept analysis. *International Journal of Nursing Practice*, 25(2), e12704. <https://doi.org/10.1111/ijn.12704>
- Berring, L. L., Holm, T., Hansen, J. P., Delcomyn, C. L., Søndergaard, R., & Hvidhjelm, J. (2024). Implementing trauma-informed care-settings, definitions, interventions, measures, and implementation across settings: A scoping review. *Healthcare (Basel)*, 12(9), 908. <https://doi.org/10.3390/healthcare12090908>
- Chadwick, E., & Billings, J. (2022). Barriers to delivering trauma-focused interventions for people with psychosis and post-traumatic stress disorder: A qualitative study of health care professionals' views. *Psychological Psychotherapy: Theory, Research and Practice*, 95(2), 541-560. <https://doi.org/10.1111/papt.12387>
- Fenske, J. N., Berland, D. W., Chandran, S. K., et al. (2021). Pain management [Internet]. *Ann Arbor (MI): Michigan Medicine University of Michigan*. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK572296/>

- Goldstein, E., Chokshi, B., Melendez-Torres, G. J., Rios, A., Jelley, M., & Lewis-O'Connor, A. (2024). Effectiveness of trauma-informed care implementation in health care settings: Systematic review of reviews and realist synthesis. *Perm Journal*, 28(1), 135-150. <https://doi.org/10.7812/TPP/23.127>
- Huo, Y., Couzner, L., Windsor, T., Laver, K., Dissanayaka, N. N., & Cations, M. (2023). Barriers and enablers for the implementation of trauma-informed care in healthcare settings: A systematic review. *Implementation Science Communications*, 4(1), 49. <https://doi.org/10.1186/s43058-023-00428-0>
- Keeshin, B., Byrne, K., Thorn, B., et al. (2020). Screening for trauma in pediatric primary care. *Current Psychiatry Reports*, 22(60). <https://doi.org/10.1007/s11920-020-01183-y>
- Khatri, R. B., Endalamaw, A., Erku, D., Wolka, E., Nigatu, F., Zewdie, A., & Assefa, Y. (2023). Preparedness, impacts, and responses of public health emergencies towards health security: Qualitative synthesis of evidence. *Archives of Public Health*, 81(1), 208. <https://doi.org/10.1186/s13690-023-01223-y>
- Magruder, K. M., et al. (2017). Trauma is a public health issue. *European Journal of Psychotraumatology*, 8(1), 1375338. <https://doi.org/10.1080/20008198.2017.1375338>
- McGowan, J., Straus, S., Moher, D., Langlois, E. V., O'Brien, K. K., Horsley, T., Aldcroft, A., Zarin, W., Garitty, C. M., & Hempel, S. (2020). Reporting scoping reviews—PRISMA ScR extension. *Journal of Clinical Epidemiology*, 123, 177–179. <https://doi.org/10.1016/j.jclinepi.2020.03.016>
- Planas, J. H., Waseem, M., & Sigmon, D. F. (2024). Trauma primary survey. In *StatPearls* [Internet]. Treasure Island (FL): StatPearls Publishing. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK430800/>
- Tomaz, T., & Castro-Vale, I. (2020). Trauma-informed care in primary health settings-which is even more needed in times of COVID-19. *Healthcare (Basel)*, 8(3), 340. <https://doi.org/10.3390/healthcare8030340>
- Wang, X., Birch, S., Zhu, W., Ma, H., Embrett, M., & Meng, Q. (2016). Coordination of care in the Chinese health care systems: A gap analysis of service delivery from a provider perspective. *BMC Health Services Research*, 16(1), 571. <https://doi.org/10.1186/s12913-016-1813-8>