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Review Article

**UNDERSTANDING THE ETHICAL DILEMMAS FACED BY
EMS PROVIDERS IN PREHOSPITAL TRAUMA CARE: A
NARRATIVE REVIEW**

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Abstract:

This narrative review explores the ethical dilemmas faced by Emergency Medical Services (EMS) providers in prehospital trauma care. EMS personnel operate under high-pressure conditions, often requiring rapid decision-making that can significantly influence patient outcomes. This review synthesizes existing literature to identify common ethical challenges, including conflicts between patient autonomy and the urgency of care, issues surrounding informed consent, and the complexities of resource allocation during triage. The findings underscore the necessity of clear ethical guidelines and ongoing training to better equip EMS providers in navigating these dilemmas. The review highlights that while immediate interventions are often crucial, they may conflict with ethical principles, leading to moral distress among providers. Recommendations for future research include the development of standardized ethical frameworks, integration of ethical training in EMS education, and exploration of technological aids to support decision-making. By addressing these ethical complexities, the study aims to enhance the quality of care provided by EMS professionals, ultimately benefiting patient outcomes and provider well-being.

Keywords: Ethical dilemmas, Emergency Medical Services, prehospital care, patient autonomy, trauma care.

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1. INTRODUCTION:

Proper prehospital trauma triage for injured patients is crucial for ensuring effective trauma care. In a comprehensive trauma system, it is important to transport severely injured patients to a Level I trauma center, while those with less severe injuries should be taken to lower-level hospitals (Twijnstra, et al. 2020). Research has consistently indicated that patients with severe injuries experience lower mortality rates when treated at Level I trauma centers compared to those receiving care at lower-level hospitals (MacKenzie, et al. 2006).

Research involving ambulance services is an increasingly dynamic field, with a growing number of studies being conducted worldwide. Early interventions for conditions like myocardial infarction, stroke, or cardiac arrest can greatly enhance patient outcomes, but they must be tested in real-life settings, as current treatments in these situations are often inadequate or lack sufficient evidence (Roberts, et al. 2011). In the UK, ambulance service research includes drug trials, device trials, and studies of alternative care pathways. These trials can be complex, and numerous papers outline the distinct ethical and practical challenges faced in prehospital research (Watson, et al. 2012).

Traditional ethical decision-making in medical care involves balancing the principles of patient autonomy, beneficence, nonmaleficence, and social justice to achieve the best patient-centered outcomes. Interpreting the significance of these principles for an individual patient often requires their input to ensure respect for autonomy. However, acute injuries can compromise a patient's ability to make autonomous decisions due to factors such as unconsciousness, sedative administration, potential brain injury, substance use, distracting injuries, self-harm behaviors, or other circumstances (McDermott, 2013). Additionally, the urgency of the situation may necessitate intervention before consulting the patient or their surrogate decision-maker. In the absence of direct patient input, the medical team may have to rely on substituted judgment for immediate care and resuscitation, acting in what they believe is the

patient's best interest. Resuscitating patients from traumatic injuries may also require substantial system resources, particularly blood products, which may be limited (Slade & Souter, 2017). Emergency Medical Services (EMS) providers are often the first responders in traumatic situations, delivering critical care under high-pressure circumstances. The ethical dilemmas they face can significantly impact patient outcomes, provider stress, and overall healthcare delivery. This research aims to explore these dilemmas through a narrative review, synthesizing existing literature to identify common ethical challenges and potential solutions.

1.1. Statement of the Problem

Emergency Medical Services (EMS) providers play a crucial role as first responders in prehospital trauma care, delivering essential interventions under high-pressure conditions. However, they frequently encounter complex ethical dilemmas that can complicate decision-making and adversely affect patient outcomes. The lack of clear guidelines and the variability in ethical decision-making across different contexts further exacerbate these challenges. This narrative review seeks to illuminate the ethical dilemmas faced by EMS providers in prehospital trauma care, synthesizing existing literature to identify common challenges and potential strategies for addressing these issues. Understanding these dilemmas is vital for improving patient care, reducing provider stress, and enhancing overall healthcare delivery in emergency settings.

1.2. Objectives of the Study

2. To identify and categorize the ethical dilemmas faced by EMS providers in prehospital trauma care.
3. To analyze the decision-making processes involved in these dilemmas.
4. To provide recommendations for training and policy development based on the findings.

1.2. Significance of the Study

This research will contribute to the understanding of ethical issues in EMS and provide a foundation for developing targeted training and support resources for EMS providers. By highlighting the challenges, they face, the study aims to enhance the ethical practice of

EMS professionals, ultimately improving patient care and outcomes.

2. METHODOLOGY:

2.1. Research Design

This study will utilize a narrative review methodology to synthesize qualitative and quantitative research findings related to the ethical dilemmas faced by Emergency Medical Services (EMS) providers in prehospital trauma care. This approach allows for a comprehensive exploration of existing literature, providing insights into the multifaceted ethical challenges within this field. By integrating diverse perspectives and evidence, the narrative review will facilitate a deeper understanding of the ethical complexities that EMS providers encounter in their practice.

2.2. Data Sources

The data sources for this review will include:

Academic Journals: Peer-reviewed articles focusing on ethical issues in EMS, trauma care, and decision-making processes. Relevant studies will provide empirical evidence, case analyses, and theoretical discussions pertinent to the ethical dilemmas faced by EMS providers.

2.3. Inclusion Criteria

The inclusion criteria for selecting relevant literature will ensure a focused and relevant review. Articles must be published in English to guarantee clarity and accessibility for a broad audience. Additionally, only studies published from 2000 to 2024 will be included, allowing the review to capture the most recent developments in the field of EMS ethics. The focus will be strictly on studies that specifically address ethical dilemmas in prehospital trauma care, which is essential for maintaining alignment with the research objectives. Furthermore, research involving EMS providers or related healthcare professionals will be included to ensure that the findings are applicable and pertinent to the target population of this review. By adhering to these criteria, the study aims to provide a comprehensive and relevant synthesis of the existing literature.

2.4. Data Analysis

The analysis of the selected literature will be conducted through thematic analysis, a systematic process designed to uncover key insights related to ethical dilemmas faced by EMS providers. Initially, researchers will thoroughly read and re-read the selected articles to gain a comprehensive understanding of their content and context. Furthermore, the process will highlight gaps in the existing literature, identifying areas that require further investigation. By doing so, this review aims to contribute valuable insights that can inform future

research directions and improve practices in emergency medical services.

3. Literature Review

Emergency Medical Services (EMS) providers operate in high-pressure environments where they are often required to make rapid decisions that can profoundly impact patient outcomes. This complex setting not only demands clinical expertise but also raises significant ethical dilemmas. Consequently, this narrative review synthesizes key findings from recent studies to illuminate the ethical challenges faced by EMS providers in prehospital trauma care.

In their study, Slade and Souter (2018) explored the ethical considerations inherent in trauma resuscitation within EMS. The authors aimed to understand the balance between the urgency of providing care and the ethical need for informed decision-making. Utilizing qualitative analysis, they examined current practices and challenges faced by EMS personnel during trauma scenarios. Their findings highlighted that while immediate intervention is often necessary, it can conflict with ethical principles such as patient autonomy and informed consent. This study emphasizes the importance of training EMS providers to navigate ethical dilemmas effectively in chaotic situations, ensuring that patient-centered care remains a priority.

Building on this theme, Armstrong et al. (2019) investigated the ethical challenges associated with prehospital ambulance-based research. Their aim was to identify key ethical concerns relevant to this unique context. Through qualitative interviews with professionals in the field, the researchers uncovered significant issues, including the complexities of obtaining informed consent under emergency conditions and the implications of research on patient care. The study concluded that there is a pressing need for tailored ethical guidelines that address the specific challenges encountered in prehospital settings, thereby ensuring the integrity of both patient care and research practices.

Similarly, Erbay et al. (2019) conducted a literature review to examine the ethical dilemmas faced by EMS providers in prehospital emergency medicine. This study aimed to elucidate the tension between the necessity for immediate care and the ethical obligation to respect patient autonomy. By analyzing various cases and existing literature, the study identified that EMS providers frequently encounter moral conflicts when prioritizing patient needs in urgent situations. The findings advocate for the development of clearer ethical frameworks that guide EMS providers in

making informed decisions during critical emergencies, facilitating a balance between swift action and ethical responsibility.

In addition to these ethical considerations, the study by Voskens et al. (2017) evaluated the accuracy of prehospital triage systems in selecting severely injured trauma patients. The authors aimed to assess the effectiveness of the Dutch Field Triage Protocol by analyzing prehospital and hospital data of trauma patients transported by EMS in Central Netherlands. The prospective analysis revealed alarming rates of undertriage (21.6%) and overtriage (30.6%), raising ethical concerns regarding the potential harm that can arise from misallocating trauma care. This study underscored the necessity for improvements in triage protocols to enhance the quality of care and ensure that critically injured patients receive appropriate treatment in a timely manner.

Abelsson (2020) focused on the ethical dilemmas encountered by EMS providers when making triage decisions in high-pressure scenarios. The aim was to explore the conflicts between operational protocols and ethical responsibilities. Through qualitative interviews with EMS personnel, the research revealed that providers often experience moral distress when prioritizing patients. The findings highlighted the need for ongoing ethical training and support for EMS personnel, ensuring that they are equipped to handle the complex moral landscape they navigate daily.

Sandman and Nordmark (2006) provides a foundational exploration of ethical conflicts in prehospital care. The authors aimed to analyze the ethical dilemmas encountered by EMS providers through focus group interviews with 29 registered nurses and paramedics across various locations in Sweden. Their qualitative methodology revealed ten distinct nodes of ethical conflict, including issues surrounding patient autonomy, the caregiver-patient relationship, and resource management. Notably, the study concluded that while certain ethical challenges are unique to prehospital settings, many are common across different healthcare contexts. This finding emphasizes the necessity for practical tools to aid EMS providers in ethical decision-making, particularly in the context of limited resources and urgent care scenarios. Building on this, Abelsson et al. (2018) focused on the competence and self-perception of ambulance nurses in trauma care during simulated exercises. The researchers aimed to evaluate both the actual trauma care skills of 63 ambulance nurses and their perceptions of their preparedness. By utilizing a combination of simulation exercises and self-

assessment questionnaires, the study uncovered a significant discrepancy between the nurses' self-rated competence and their performance in simulations. While participants felt confident in their theoretical knowledge, their practical skills often fell short, especially in executing life-saving interventions. This gap raises ethical concerns regarding the implications of self-perception in high-stress environments, where inadequate skills can lead to detrimental patient outcomes.

The World Health Organization (2016) report further contextualizes these findings by outlining the essential components of effective prehospital trauma care systems globally. The organization conducted a comprehensive review of existing frameworks and guidelines related to trauma care. The report highlighted the critical importance of structured prehospital care systems that integrate ethical considerations, effective resource allocation, and communication among care providers. It underscored that ethical dilemmas often stem from insufficient resources and the inherent pressures of emergency situations, suggesting a need for a robust ethical framework to guide EMS personnel in their decision-making processes.

Kerby and Cusick (2012) aimed to evaluate the challenges associated with prehospital emergency trauma care, particularly in the context of ethical considerations surrounding airway management and resuscitation practices. Employing a narrative review methodology, the authors analyzed existing literature and clinical guidelines to identify ethical dilemmas faced by EMS providers. The study concluded that the use of endotracheal intubation remains a contentious issue due to its associated risks and the varying levels of training among EMS personnel. This raises ethical concerns about patient safety and the adherence to established protocols. The authors emphasized the necessity for ongoing training and the evaluation of alternative airway management techniques, highlighting the ethical imperative to prioritize patient well-being in decision-making processes.

A qualitative study by Eisner et al. (2020) sought to investigate the ethical challenges in decision-making processes during prehospital trauma care, with a particular focus on patient autonomy and informed consent. The researchers conducted interviews with EMS providers to gain insights into their experiences and perspectives regarding ethical dilemmas in practice. The findings revealed that EMS providers often faced conflicts between respecting patient autonomy and the urgency of medical interventions.

Many participants expressed concerns about the adequacy of informed consent in emergency situations, suggesting a need for clearer guidelines that support ethical decision-making in the field. This study underscores the importance of balancing ethical obligations to patients with the practical realities of emergency care.

Daviea et al. (2021) aimed to assess the ethical implications of hemorrhage control interventions, especially the use of tourniquets, this study employed a mixed-methods approach. Researchers combined quantitative data on patient outcomes with qualitative interviews from EMS personnel regarding their experiences with tourniquet application. The results indicated that while tourniquet use significantly improved survival rates for patients with extremity wounds, EMS providers expressed ethical concerns regarding the potential for long-term complications. The study highlighted the need for ethical frameworks that balance immediate life-saving interventions with the potential risks to patients' future health. This focus on ethical considerations in the context of trauma care emphasizes the complexity of decision-making in emergency scenarios.

In their nationwide cohort study, Hirano et al. (2018) aimed to evaluate the efficacy of having an emergency physician present in prehospital major trauma care in Japan. The research utilized data from the Japan Trauma Data Bank, encompassing severe trauma patients transported directly from the injury site to hospitals between 2004 and 2013. The study included a total of 30,283 patients, categorizing them into two groups: those attended by an emergency physician and those attended by paramedics. The primary outcome measured was the survival rate at hospital discharge. The study revealed no significant difference in survival rates between the two groups, with 85.9% of patients in the physician group surviving to discharge compared to 87.9% in the paramedics group. Although the physician group exhibited higher Injury Severity Scores (ISS) and more frequent advanced interventions, such as intravenous fluid administration, their involvement did not correlate with improved survival outcomes. The findings suggest that while emergency physicians may provide rapid resuscitation, their presence can also lead to delays in definitive care, highlighting a critical ethical dilemma regarding resource allocation and the balance between immediate intervention and timely transport. Mould-Millman et al. (2022) aimed to evaluate the effectiveness of a bundled care approach—Emergency Medical Services Traumatic Shock Care (EMS-TruShoC) for managing traumatic shock in prehospital

settings, particularly in resource-limited environments like South Africa. The study was motivated by the high mortality and morbidity associated with traumatic shock, which necessitates rapid intervention by emergency medical services (EMS) providers. The researchers employed a quasi-experimental, pre-post design with a control group to assess clinical outcomes. Data were collected over 26 months, comparing the delta shock index calculated as the change in heart rate divided by systolic blood pressure between patients treated by EMS providers who received the EMS-TruShoC training and those who did not. The intervention was implemented among 198 EMS providers at two ambulance bases in Cape Town, with the training focused on basic yet critical interventions such as hemorrhage control and timely transportation to trauma centers. The results indicated that while there was no statistically significant difference in the overall delta shock index between the intervention and control groups, subgroup analyses revealed notable improvements among patients with penetrating trauma cared for by basic life support providers.

One notable study by (Henry, et al. 2019) explores the ethical implications of utilizing extracorporeal cardiopulmonary resuscitation (ECPR) in out-of-hospital cardiac arrest scenarios. The primary aim of this research was to elucidate the ethical considerations that EMS providers must navigate when employing ECPR. Through a qualitative analysis of ethical frameworks and case studies, the authors highlighted significant concerns related to decision-making in time-critical situations, patient autonomy, and the balance between potential benefits and burdens associated with ECPR. The study concluded that there is an urgent need for clear guidelines to assist EMS providers in making these complex ethical decisions, emphasizing the importance of training and ethical awareness in emergency settings.

The complexities of prehospital transfusion practices are further assessed in a multicenter, randomized controlled trial by (Crombie, et al. 2024). This study aimed to evaluate the effectiveness of administering blood products to trauma patients experiencing hemorrhagic shock. By comparing packed red blood cells and lyophilized plasma against saline solutions, the authors sought to determine the ethical justification for blood product use in emergency settings. The results indicated no significant survival advantage for blood product resuscitation over saline, prompting discussions on the ethical implications of blood use, resource allocation, and the risks associated with

transfusions in prehospital care. This study highlights the need for ongoing research and ethical reflection regarding transfusion practices in emergency medicine.

In their study (Miller, et al. 2024) aimed to improve the identification of trauma patients in prehospital settings by comparing two distinct methodological approaches. The study addresses a significant gap in trauma care research, highlighting the need for accurate patient identification in order to enhance outcomes and inform healthcare policy. To achieve this aim, the authors employed a comprehensive analysis of linked data from six routinely collected administrative datasets spanning from 2015 to 2018. These datasets included ambulance patient-care records, emergency department visits, hospitalizations, and rehabilitation outcomes. The results demonstrated that the Extended-T-protocol cohort captured 50% more patients with an injury consistent with the International Classification of Diseases (ICD-10-AM) compared to the T-protocol-only method. Notably, a substantial portion of the non-T-protocol cohort included patients who exhibited severe trauma characteristics.

Abelsson & Lindwall (2018) aimed to explore ethical dilemmas from the perspective of ambulance nurse students. They conducted a qualitative study involving interviews with students training to become specialist ambulance nurses. The findings revealed that these future practitioners often grapple with decision-making under pressure, where clinical guidelines may conflict with personal and professional values. Particularly notable were challenges related to end-of-life care and managing non-compliant patients. The study highlighted the need for enhanced training to prepare EMS providers for these ethical complexities. In a comprehensive investigation, Bruun et al. (2022) focused on the ethical challenges faced by prehospital emergency personnel. Their study utilized focus groups with emergency medical technicians, paramedics, and prehospital anaesthesiologists, employing an action research methodology. The researchers identified three key contexts for ethical challenges: patient care, operations within the emergency unit, and external collaboration. Central issues included the complexities of end-of-life decisions, the allocation of limited resources, and the influence of varying personal values among colleagues. This study emphasized the multifaceted nature of ethical dilemmas in emergency services and the importance of context in understanding these challenges.

Cheraghi et al. (2019) undertook a literature review to systematically assess the ethical challenges faced by emergency medical technicians (EMTs) in prehospital settings. By reviewing studies published from 2000 to 2018 across various databases, they identified eight primary ethical challenges. These included decisions regarding ambulance dispatch, cardiopulmonary resuscitation (CPR), triage during crises, informed consent, and the impact of societal misconceptions about patients. The review underscored the unique environment of prehospital care, where EMTs often operate under pressure with limited information, necessitating clear ethical guidelines to support their decision-making processes.

Further building on their previous work, Bruun et al. (2024) sought to develop a practice-based model for analyzing ethical challenges in prehospital emergency care. Through empirical research involving focus groups and case studies, the authors proposed a model that integrates ethical dilemmas into the decision-making framework of EMS providers. This model emphasizes the interaction between clinical guidelines, legal obligations, and personal values, illustrating the complexity of ethical decision-making in high-stress environments. The study advocates for context-sensitive approaches to clinical ethics support that align with the realities faced by EMS personnel. Rein, et al. (2020) explored ethical considerations specific to trauma care within emergency services. The authors reviewed existing literature and case studies to highlight the importance of ethical guidelines in trauma care. Key issues discussed included informed consent, prioritization of care, and the responsibilities of EMS providers in critical situations. This review emphasized that ethical dilemmas in trauma care often arise in high-pressure scenarios where quick decisions must be made, further complicating the ethical landscape for EMS providers.

In their study, Torabi et al. (2019) aimed to investigate the experiences of prehospital emergency medical personnel concerning ethical decision-making in the field. Utilizing a qualitative approach, the researchers conducted semi-structured interviews with 14 EMS personnel selected through purposive sampling. The data collection was analyzed through a content analysis method, allowing for the identification of significant themes in the participants' narratives. The main results revealed three primary categories that influence ethical decision-making: "respecting client's values," "performing tasks within a professional manner," and "personal characteristics." Participants highlighted the critical importance of respecting patient autonomy, emphasizing that ethical decision-

making is not merely a procedural obligation but a fundamental aspect of their professional identity. The study underscored the need for EMS personnel to navigate the unique challenges of prehospital care while adhering to ethical guidelines.

The reviewed literature underscores the multifaceted ethical dilemmas faced by EMS providers in prehospital trauma care. These studies highlight the necessity of integrating ethical training and clear guidelines into EMS practice to equip providers for the unique challenges of their roles. As the field of prehospital care continues to evolve, fostering an environment where ethical considerations are prioritized will be essential for enhancing the quality of care and ensuring the well-being of both patients and EMS personnel.

4. DISCUSSION:

The discussion section synthesizes findings from the literature review, highlighting the ethical dilemmas faced by Emergency Medical Services (EMS) providers in prehospital trauma care. This analysis is divided into key themes identified across various studies.

4.1. Ethical Challenges in Decision-Making

Several studies underscore the complexity of decision-making in high-pressure environments. Slade and Souter (2018) emphasize the conflict between the urgency of providing care and the ethical need for informed decision-making. Their qualitative analysis reveals that while immediate interventions are often necessary, they can conflict with ethical principles such as patient autonomy and informed consent. This tension is echoed by Eisner et al. (2020), who found that EMS providers frequently grapple with respecting patient autonomy while needing to act swiftly in emergency situations. Both studies highlight the need for enhanced training to equip EMS personnel with the skills to navigate these ethical challenges effectively.

4.2. Informed Consent and Patient Autonomy

The issue of informed consent in emergency settings is a recurring theme in the literature. Armstrong et al. (2019) explored the ethical concerns related to obtaining informed consent in prehospital ambulance-based research. They identified significant challenges, particularly the complexities involved when patients are unable to provide consent due to their medical condition. This is further supported by the findings of Erbay et al. (2019), which illustrate the moral conflicts EMS providers face when prioritizing patient needs in urgent situations. The need for clear guidelines that address these ethical dilemmas is critical to ensure both patient safety and the integrity of care.

4.3. Resource Allocation and Triage

Resource allocation and the ethical implications of triage decisions are central to many studies. Voskens et al. (2017) evaluated the accuracy of prehospital triage systems and found alarming rates of undertriage and overtriage, raising ethical concerns about the potential harm from misallocating trauma care. This is complemented by Abellsson (2020), who focused on triage decisions made under pressure, highlighting the moral distress experienced by EMS providers when operational protocols conflict with their ethical responsibilities. These findings suggest that improvements in triage protocols and ethical frameworks are essential for enhancing care quality and ensuring that critically injured patients receive timely treatment.

4.4. Ethical Training and Support

The necessity for ongoing ethical training and support for EMS providers is emphasized across multiple studies. Sandman and Nordmark (2006) conducted focus group interviews with EMS personnel and identified ten distinct nodes of ethical conflict. Their findings stress the importance of practical tools to aid EMS providers in ethical decision-making, particularly in resource-limited and urgent care scenarios. Similarly, Bruun et al. (2022) highlighted the multifaceted nature of ethical dilemmas and the importance of context in understanding these challenges. They advocate for context-sensitive approaches to clinical ethics support, illustrating the need for training programs that equip EMS personnel to handle ethical complexities effectively.

5. CONCLUSION:

This narrative review has elucidated the complex ethical dilemmas faced by Emergency Medical Services (EMS) providers in prehospital trauma care. The findings underscore that EMS personnel frequently encounter conflicts between the urgency of delivering critical care and the ethical principles of patient autonomy, beneficence, and informed consent. The literature reveals that these dilemmas can significantly affect patient outcomes, provider stress, and the overall efficacy of healthcare delivery in emergency situations (Slade & Souter, 2017; Eisner et al., 2020). Addressing these ethical challenges is essential for enhancing patient care. Improved ethical practices not only foster better decision-making and outcomes but also contribute to the well-being of EMS providers, who often operate under high-pressure conditions. The necessity for clear ethical guidelines and ongoing training is evident, as many EMS professionals feel ill-equipped to navigate the moral complexities inherent in their roles (Abellsson, 2020; Watson et al., 2012). The implications of this research

extend beyond immediate patient interactions; they highlight the need for systemic changes within EMS frameworks that prioritize ethical considerations. By implementing tailored training programs and establishing clear operational protocols, EMS agencies can better equip their personnel to handle ethical dilemmas, ultimately leading to improved patient care and enhanced trust in emergency medical services (McDermott, 2013; Voskens et al., 2017).

6. FUTURE DIRECTIONS:

- Create universally accepted ethical guidelines for EMS providers in prehospital trauma care.
- Incorporate ethical decision-making training into EMS education programs and continuing professional development.
- Investigate the use of technology and decision-support systems to aid EMS providers in ethical dilemmas during emergencies.
- Perform comparative studies to analyze ethical dilemmas faced by EMS providers in different geographical and cultural contexts.
- Explore the need for mental health resources and support systems for EMS providers dealing with moral distress.

REFERENCES:

1. Twijnstra, M. J., Moons, K. G., Simmermacher, R. K., & Leenen, L. P. (2010). Regional trauma system reduces mortality and changes admission rates: a before and after study. *Annals of surgery*, 251(2), 339-343. [Ann Surg. 2010;251\(2\):339-343.](https://doi.org/10.1097/SLA.0b013e3181d11111)
2. MacKenzie, E. J., Rivara, F. P., Jurkovich, G. J., Nathens, A. B., Frey, K. P., Egleston, B. L., ... & Scharfstein, D. O. (2006). A national evaluation of the effect of trauma-center care on mortality. *New England Journal of Medicine*, 354(4), 366-378. [N Engl J Med. 2006;354\(4\):366-378.](https://doi.org/10.1056/NEJMoa052836)
3. Roberts, I., Prieto-Merino, D., Shakur, H., Chalmers, I., & Nicholl, J. (2011). Effect of consent rituals on mortality in emergency care research. *The Lancet*, 377(9771), 1071-1072. [https://doi.org/10.1016/S0140-6736\(11\)603176.](https://doi.org/10.1016/S0140-6736(11)603176)
4. Watson, D. L. B., Sanoff, R., Mackintosh, J. E., Saver, J. L., Ford, G. A., Price, C., ... & Murtagh, M. J. (2012). Evidence from the scene: paramedic perspectives on involvement in out-of-hospital research. *Annals of emergency medicine*, 60(5), 641-650. [https://doi.org/10.1016/j.annemergmed.2011.12.002.](https://doi.org/10.1016/j.annemergmed.2011.12.002)
5. McDermott, P. L. (2013). The American Society of Anesthesiologists' Contributions to the Development. *The Wondrous Story of Anesthesia*, 229.
6. Slade, I. R., & Souter, M. J. (2017). Ethical considerations in trauma resuscitation. *International Anesthesiology Clinics*, 55(3), 68-77.
7. Armstrong, S., Langlois, A., Siriwardena, N., & Quinn, T. (2019). Ethical considerations in prehospital ambulance based research: qualitative interview study of expert informants. *BMC Medical Ethics*, 20, 1-12.
8. Voskens, F. J., van Rein, E. A., van der Sluijs, R., Houwert, R. M., Lichtveld, R. A., Verleisdonk, E. J., ... & van Heijl, M. (2018). Accuracy of prehospital triage in selecting severely injured trauma patients. *JAMA surgery*, 153(4), 322-327.
9. Erbay, H., Rana, C., & Turkan, A. H. (2018). For whom the sirens toll: a study on an ethical challenge in prehospital emergency medicine. *Eurasian Journal of Emergency Medicine*, 17(3), 122.
10. Slade, I. R., & Souter, M. J. (2017). Ethical considerations in trauma resuscitation. *International Anesthesiology Clinics*, 55(3), 68-77.
11. Abellsson, A., & Lundberg, L. (2018). Trauma simulation in prehospital emergency care. *Journal of Trauma Nursing/ JTN*, 25(3), 201-204.
12. Erbay, H. (2014). Some ethical issues in prehospital emergency medicine. *Turkish journal of emergency medicine*, 14(4), 193-198.
13. Abellsson, A., Lindwall, L., Suserud, B. O., & Rystedt, I. (2018). Ambulance nurses' competence and perception of competence in prehospital trauma care. *Emergency medicine international*, 2018(1), 5910342.
14. Sandman, L., & Nordmark, A. (2006). Ethical conflicts in prehospital emergency care. *Nursing ethics*, 13(6), 592-607.
15. World Health Organization. (2005). *Prehospital trauma care systems*. World Health Organization.
16. Kerby, J. D., & Cusick, M. V. (2012). Prehospital emergency trauma care and management. *Surgical Clinics of North America*, 92(4), 823-841.
17. Hirano, Y., Abe, T., & Tanaka, H. (2019). Efficacy of the presence of an emergency physician in prehospital major trauma care: a nationwide cohort study in Japan. *The American journal of emergency medicine*, 37(9), 1605-1610.

18. Davie, G., Lilley, R., De Graaf, B., Ameratunga, S., Dicker, B., Civil, I., ... & Kool, B. (2021). Access to specialist hospital care and injury survivability: identifying opportunities through an observational study of prehospital trauma fatalities. *Injury*, 52(10), 2863-2870.
19. Eisner, Z. J., Delaney, P. G., Thullah, A. H., Amanda, J. Y., Timbo, S. B., Koroma, S., ... & Raghavendran, K. (2020). Evaluation of a lay first responder program in Sierra Leone as a scalable model for prehospital trauma care. *Injury*, 51(11), 2565-2573.
20. Mould-Millman, N. K., Dixon, J. M., van Ster, B., Moreira, F., Bester, B., Cunningham, C., ... & Ginde, A. A. (2022). Clinical impact of a prehospital trauma shock bundle of care in South Africa. *African Journal of Emergency Medicine*, 12(1), 19-26.
21. Crombie, N., Doughty, H. A., Bishop, J. R., Desai, A., Dixon, E. F., Hancox, J. M., ... & Perkins, G. D. (2022). Resuscitation with blood products in patients with trauma-related haemorrhagic shock receiving prehospital care (RePHILL): a multicentre, open-label, randomised, controlled, phase 3 trial. *The Lancet Haematology*, 9(4), e250-e261.
22. Miller, M., Jorm, L., Partyka, C., Burns, B., Habig, K., Oh, C., ... & Gallego, B. (2024). Identifying prehospital trauma patients from ambulance patient care records; comparing two methods using linked data in New South Wales, Australia. *Injury*, 55(7), 111570.
23. Henry, B., Verbeek, P. R., & Cheskes, S. (2019). Extracorporeal cardiopulmonary resuscitation in out-of-hospital cardiac arrest: ethical considerations. *Resuscitation*, 137, 1-6.
24. Bruun, H., Milling, L., Mikkelsen, S., & Huniche, L. (2022). Ethical challenges experienced by prehospital emergency personnel: a practice-based model of analysis. *BMC medical ethics*, 23(1), 80.
25. Bruun, H., Milling, L., Wittrock, D., Mikkelsen, S., & Huniche, L. (2024). How prehospital emergency personnel manage ethical challenges: the importance of confidence, trust, and safety. *BMC Medical Ethics*, 25(1), 58.
26. Abellsson, A., & Lindwall, L. (2018). Ethical dilemmas in prehospital emergency care—from the perspective of specialist ambulance nurse students. *International Journal of Ethics Education*, 3, 181-192.
27. 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, 1-9.
28. Adams, J. G., Arnold, R., Siminoff, L., & Wolfson, A. B. (1992). Ethical conflicts in the prehospital setting. *Annals of Emergency Medicine*, 21(10), 1259-1265.
29. Torabi, M., Borhani, F., Abbaszadeh, A., & Atashzadeh-Shoorideh, F. (2020). Barriers to ethical decision-making for pre-hospital care professionals. *Nursing ethics*, 27(2), 407-418.