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Editorial: Recent advances in emergency medicine

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Editorial on the Research Topic Recent advances in emergency medicine

Emergency medicine stands as a cornerstone of healthcare, crucial for managing acute conditions and reducing mortality. The dynamic and multifaceted nature of this field demands continuous adaptation and innovation. This editorial underscores the contributions of recent studies that have expanded our understanding of emergency medicine through innovative educational methods, technological advances, and novel clinical practices. These insights are not only pivotal for immediate patient care but also for shaping the future of emergency medicine.

Babkair et al.'s study explores the transition from traditional to active learning methodologies within emergency medicine education, focusing on a modified teaching approach that has shown significant improvements in engagement and knowledge retention among residents. This research aligns with broader educational trends that advocate for active learning to enhance cognitive processing and clinical decision-making skills in medical training (1, 2). The shift toward interactive and participatory learning environments is crucial for preparing residents to manage real-life emergencies effectively. This approach emphasizes critical thinking and practical skills, which are essential for real-world challenges, suggesting a broader shift toward valuing practical application over theoretical knowledge in professional education. This method enhances the quality of emergency care, similar to improvements noted in other healthcare sectors that have adopted active learning.

The review by **Akman et al.** evaluates the potential of drones in transforming emergency medical services by facilitating rapid delivery of critical medical supplies. This technology could revolutionize response times, particularly in remote or hard-to-reach areas, enhancing outcomes in critical care scenarios such as cardiac arrests or severe traumas (3, 4). While the findings of individual studies are promising, it is important to note that most evidence in this field are simulation-based, with sparse real-life implementation studies providing concrete evidence of drone effectiveness. This can be explained in part by the fact that the integration of drone technology into emergency healthcare systems faces several challenges, including regulatory approvals, privacy concerns, and the development of robust logistical frameworks (5).

Reverse triage, as reviewed by **Pollaris et al.**, represents a strategic response to mass casualty incidents by optimizing resource allocation through the early discharge of less critically injured patients. This method has been shown to significantly enhance surge

capacity, aligning with disaster management principles that prioritize efficiency and adaptability during crises (6). The application of reverse triage could be crucial in large-scale emergencies, such as natural disasters or terrorist attacks, where medical resources are overwhelmed. This approach parallels military medicine and public health emergency preparedness, focusing on maximizing resource efficiency by prioritizing care based on urgency and availability.

Shibata et al.'s research highlights the psychological impacts of nuclear disasters on medical responders, identifying significant anxiety factors among Japanese Disaster Medical Assistance Teams. This study emphasizes the need for comprehensive training programs that include psychological resilience and stress management, addressing the high-stress nature of handling contaminated patients during nuclear incidents (7). The findings suggest that enhanced training could mitigate anxiety and improve the effectiveness of disaster response teams.

The comprehensive review by Papanikolaou et al. discusses advances in mechanical circulatory support devices for managing cardiogenic shock in acute myocardial infarction patients. With high mortality rates associated with cardiogenic shock, the timely and appropriate use of devices like Impella and ECMO is critical (8). The review calls for more rigorous clinical trials to establish clear guidelines for the use of these technologies, ensuring that they can be deployed effectively to save lives in critical situations.

Overall, it is imperative that the emergency medicine community continues to pursue research and development in these areas. By fostering an environment of continuous learning and adaptation, we can ensure that emergency medicine remains well-equipped to meet both current and future challenges. The

articles in this Research Topic collectively broaden the scope of emergency medicine, highlighting its interdisciplinary nature and the integration of new technologies and methodologies. From the lecture hall to the field, the advancements discussed herein not only enhance the educational and operational aspects of emergency medicine but also propose solutions to long-standing challenges in patient care during emergencies.

Author contributions

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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