

long durations of antibiotics, resulting in long length of hospital stay, excess morbidity and mortality, and delayed progression to rehabilitation.

Objectives: To support the implementation and evaluation of an infectious disease and antimicrobial stewardship program in a surgical department in a reconstructive hospital along the Ukrainian Trauma Pathway

Method/Description: An INGO supported the Ukrainian tertiary hospital to implement “Antimicrobial stewardship programs in health-care facilities in low-and middle-income countries: a WHO practical toolkit”

Results/Outcomes: The following results were evaluated from March 2023 to September 2023:

- The average duration of antibiotics reduced from 5.18 days to 3.92 days
- The average cost of antibiotics per patient reduced from \$31.2 to \$19.33 USD and cost of surgical prophylaxis antibiotics per patient reduced from \$4.87 to \$3.17 USD

Conclusion: Implementing an Antimicrobial Stewardship and Infectious Disease Program in a surgical department of a tertiary hospital could support the quicker movement of patients to rehabilitation, reduce cost to the health facility and support clinicians to more effectively treat war-wounded patients in a conflict zone.

Prehosp. Disaster Med. 2025;40(Suppl. S1):s46–s47

doi:10.1017/S1049023X25001281

Multi-Dimensional Analysis of Attacks on Medical Facilities and Hospitals: Evidence of Humanitarian Crisis during the Syrian War

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Background/Introduction: The targeting of healthcare facilities during conflicts contravenes international humanitarian laws and exacerbates humanitarian crises. In Syria, the systematic attacks on medical facilities have not only led to direct casualties but have also crippled the healthcare system, further intensifying the civil strife.

Objectives: This study aims to elucidate the patterns and impacts of attacks on medical facilities and hospitals in Syria, employing a robust multi-dimensional statistical analysis to assess the extent and implications of these attacks on healthcare infrastructure and societal well-being.

Method/Description: Utilizing data collected by the White Helmets from 2016 to 2021, the authors analyzed the basic demographic variables as attack frequency, types, and geographical distribution of the attacks, alongside the responsible perpetrators as well as damage outcome variables as injuries

and death. The statistical correlation between damage outcomes and attack frequency was also analyzed.




Results/Outcomes: This comprehensive analysis identifies Idlib (n=78, 47%) and Aleppo (n=51, 31%) as the regions most frequently targeted by attacks, with the primary method being air-strikes (n=96, 58%). Artillery shelling and barrel bombs are also prevalent (n=22, 13% and n=20, 12%, respectively). Statistical assessments show a robust correlation between the frequency of attacks and the total number of injuries, with a Pearson correlation coefficient of 0.956 (p<0.01), underscoring the direct impact on civilian casualties. The primary perpetrators were found to be Syrian (n=88, 53%) and Russian forces (n=70, 42%), indicating a systematic approach to targeting medical facilities.

Conclusion: The data underscores an urgent need for international action to enforce accountability and protect healthcare in conflict zones.

Prehosp. Disaster Med. 2025;40(Suppl. S1):s47

doi:10.1017/S1049023X25001293

Cybersecurity Threats, Challenges, and Current Strategies in Humanitarian Organizations

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Background/Introduction: The digitalization of the humanitarian sector promises to enable swifter and more efficient aid delivery. However, as humanitarian organizations (HOs) increasingly rely on digital technologies, they become more vulnerable to cyber threats. This vulnerability was highlighted by the data breach suffered by the International Committee of the Red Cross in 2022, and the cyberattacks during the conflicts in Ukraine and the Gaza Strip. Unfortunately, despite HOs recognizing the importance of implementing strategies to mitigate the impact of potential cyber incidents, these often face both academic and practical limitations, as they are primarily designed for private companies.

Objectives: This study aims to identify cyber threats, challenges and gaps in current strategies reported by the literature to provide recommendations for strengthening cybersecurity strategies tailored to the unique needs and characteristics of HOs.

Method/Description: This study presents the results of a comprehensive review that maps existing threats and challenges associated with the digitalization of humanitarian aid delivery, as well as the current cyber preparedness, response and communication strategies employed by HOs.

Results/Outcomes: Our results reveal a range of cyber threats and challenges faced by HOs and show a notable lack of preparedness, response, and communication strategies to address these threats.

Conclusion: The absence of comprehensive strategies underscores the need for further research and the development of tailored solutions to strengthen cybersecurity within the humanitarian sector. HOs must draw lessons from other sectors and implement robust preparedness and response strategies to mitigate the impact of potential cyber incidents, ensuring the protection of victims and the organizations' reputations.

Prehosp. Disaster Med. 2025;40(Suppl. S1):s47

doi:10.1017/S1049023X2500130X