

### Characteristics and Outcomes Among Patients with Acute Extremity Wounds Due to Gunshots Versus Bomb Blasts – A Prospective Cohort Analysis from Two Civilian Hospitals in Iraq and Jordan

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**Introduction:** Gunshots and bomb blasts are important causes of injury within conflict zones and extremities are frequently affected. There is a paucity of research on the characteristics and outcomes among civilians with conflict-related extremity injuries.

**Method:** We performed a prospective cohort analysis utilizing data collected during a randomized trial at two civilian hospitals in Jordan and Iraq between 2015 and 2019. Adult patients who presented within 72 hours of sustaining an extremity injury requiring surgical care were included. We used mechanism of injury (gunshot versus bomb blast) as the exposure and wound closure by day five as the primary outcome measure.

**Results:** The population was predominantly young men (n=163, 94% male, median age 29 years), injured by gunshot (61%) or bomb blasts (39%). Compared to the gunshot group, participants in the bomb blast group had more concomitant injuries (32/63 [51%] vs 11/100 [11%]; p<0.001), larger wounds (median area 100 cm<sup>2</sup> [IQR 50–145] vs 53 cm<sup>2</sup> [IQR 25–78]; p<0.001) and more frequent infections (16/63 [25%] vs 13/100 [13%]; p=0.04). Wound closure by day five was achieved in 25% (n=16/63) of the bomb blast group and 74% (n=74/100) of the gunshot group (p<0.001). This difference remained after controlling for confounding factors (OR 4.7; 95% CI 1.6–13.7).

**Conclusion:** In this first prospective cohort analysis of civilians with acute conflict-associated injuries, those with extremity wounds caused by bomb blasts had worse outcomes than those with gunshot wounds. Our findings may prove useful to inform treatment protocols for civilians in armed conflict settings.

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### Crisis Communications for Leaders in Disasters

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**Introduction:** The COVID-19 crisis stressed the medical system and required leaders to rise to the occasion. Some institutions were very successful while others floundered. We saw this at every level of government as well as in healthcare. Applying the principles of crisis leadership and communication (and avoiding pitfalls) will increase our readiness to respond effectively during stressful times.

**Method:** Literature review and US Centers for Disease Control and Prevention guidelines.

**Results:** While there is robust literature on the topics of crisis communications and leadership this training is lacking in healthcare circles. This poster aims to introduce the subject and advocate for increased training in Crisis Communications.

The US CDC has developed a freely downloadable training manual, along with tools for rapidly developing a crisis message. Furthermore, a checklist to help with the presentation and a list of communication pitfalls to avoid are included.

**Conclusion:** Leaders can use these tools to prepare in advance for crisis communications, avoiding common mistakes that reduce communication effectiveness.

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### Measuring Patient Hazard Exposure—The Missing Middle in Disaster Mortality Prevention

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**Introduction:** Interventions that mitigate hazard exposures offer the most efficient means of reducing disaster mortality. However, such interventions require an evidence base that describes the relationship between hazard exposure dynamics and health risk. Medical practitioners have long used patient specific hazard exposure assessments to determine acute and chronic disease risk and align medical treatment and care. This study compared patient-specific hazard exposure data collected from people seeking healthcare during seven different natural hazard disaster events and compared the minimum patient data set standards recommended at the time.

**Method:** Patient data collection forms used by primary and secondary health care providers during emergency health and medical responses to seven natural hazard disasters were reviewed. Data fields relating to potential exposure characteristics were recorded and compared to patient data fields used by health services prior to the disaster event. A literature review of definitions of disaster ‘exposure’ adopted by UN disaster management agencies were compared with the health and medical sector.

**Results:** Only the SARS-CoV-2 disaster consistently assessed and recorded details about patient exposure characteristics. Patient hazard exposure data was typically limited to the time of onset of symptoms and duration relative to hazard impact. Little qualitative or quantitative assessment of the magnitude of exposure to any hazard was included, or patient-environmental data. While variables of hazard and vulnerability were extensively studied, and discussed in scholarly and industry literature, the concept of exposure received comparably little attention.

**Conclusion:** Building an evidence base to correlate hazard and environmental exposure characteristics with patient health effects must be prioritized, especially for cohorts vulnerable from physiological or co-morbid factors. Such advances can be made through simple inclusions in minimum patient dataset