

Four SCAs among 18,144 half-marathoners and the EMS were enrolled.

A medical command center was set up 100 meters from the finish line. Ten medical tents, one first-aid station, and nine event ambulances were distributed along the course, and one medical tent was placed near the baggage storage area. Each medical tent comprised: 1 doctor, 1–3 nurses, and 1–3 paramedics. The in-event EMS also comprised a mobile first-aid team. Thirty paramedics rode motorcycles and carried automated external defibrillators and emergency medical kits throughout the racecourse.

Results: Among the 7,811 full- and 18,144 half-marathoners, the total number of SCAs was four male half-marathoners. Three runners (75%) stated that they decreased their weekly running volume during the pandemic restrictions' period. Two runners (50%) experienced cardiac arrest in the final quarter of the race. The median interval of time between SCA occurrence and EMS arrival was 2.5 minutes (interquartile range, 0.5–4 minutes). Electric shocks were delivered to all the four runners (100%) experiencing ventricular fibrillation, and all of them were successfully resuscitated in the field. The median interval of cardiopulmonary resuscitation duration before return of spontaneous circulation was 8.5 minutes (interquartile range, 6–9.5 minutes).

Conclusion: 4/18144 is a significantly high number of SCA compared to data from the annual Taipei Half-Marathon between 2016 and 2020 and past half-marathons worldwide. The high prevalence rate of SCA (22 per 100,000) may be due to inadequate acclimation and training volumes.

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Factors Associated with International Humanitarian Aid Appeal: Analysis of Disasters from 1995 to 2015

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Introduction: International humanitarian aid is crucial in disasters but must be needs-driven and coordinated with requests from local authorities. We identify disaster and population factors associated with international aid appeal during disasters and hence guide preparation by international humanitarian aid providers.

Method: In this retrospective database analysis, we searched the Emergency Events Database for all disasters from 1995 to 2015. Disasters with and without international aid appeals were compared by location, duration, type of disaster, deaths, number of people affected, and total estimated damage. Logistic regression was used to examine the association of each factor with international aid appeal.

Results: Of 13,961 disasters recorded from 1995 to 2015, 168 (1.2%) involved international aid appeals. Aid appeals were more likely to be triggered by disasters which killed more people (OR 1.29 [95% confidence interval (CI) 1.02–1.64] log₁₀ persons), affected more people (OR 1.85 [95%CI 1.57–2.18] / log₁₀ persons), and occurred in Africa (OR 1.67 [95%CI 1.06–2.62]). Earthquakes (OR 4.07 [95%CI 2.16–7.67]), volcanic activity (OR 6.23 [95%CI 2.50–15.53]), and insect infestations (OR 12.14 [95%CI 3.05–48.35]) were more likely to trigger international aid appeals. International aid appeals were less likely to be triggered by disasters which occurred in Asia (OR 0.46 [95%CI 0.29–0.73]) and which were transport accidents (OR 0.12 [95%CI 0.02–0.89]).

Conclusion: International aid appeal during disasters was associated with greater magnitude of damage, disasters in Africa, and specific types of disasters such as earthquakes, volcanic activity, and insect infestations. Humanitarian aid providers can focus preparation on these identified factors.

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The Hard-to-Reach Data (HaRD) Framework: a Case Study in Humanitarian Mine Action

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Introduction: Following humanitarian crises (e.g. armed conflict), reliable population health metrics are vital to establish health needs and priorities. However, the challenges associated with accurate health information and research in conflict zones are well documented. Often working within conflict settings are authorities and non-government organizations (NGOs) who frequently collect data under the context of operations. This operational data is a potentially untapped source of hard-to-reach data that could be utilized to provide a better insight into conflict affected populations. The Hard to Reach Data (HaRD) framework highlights the process of identifying and engaging with these stakeholders collaboratively to develop research capacity.

Method: The HaRD framework was developed from literature searches of health and social sciences databases. The framework which provides a structure to gain access to data in hard-to-reach settings was applied to humanitarian mine action to identify and collect existing but underutilized data.

Results: Guided by the HaRD framework we compiled the world's first global casualty dataset for casualties of landmines and explosive remnants of war. The framework provided a structured approach to identify and engage with key stakeholders. An adaptive approach was needed for stakeholder engagement with trust building and transparency important factors in developing a collaborative partnership. Appropriate communication of research findings is important to ensure reciprocity.

Conclusion: The HaRD framework can identify potential data sources and guide access in hard-to-reach data settings. Operational data is often available but hidden; a systematic approach to identifying and engaging with stakeholders can

assist in developing successful research partnerships between academia and humanitarian organizations.

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The Role of Diagnostic Medical Imaging Community in Responding to Nuclear and Radiological Events in Urban Environments

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Introduction: To understand the role of medical providers in general and the radiology community in the prevention, management, and aftermath of a radiological or nuclear event.

Method: Using a power point presentation, the author will describe in detail the role diagnostic medical imagers can play in responding to the radiological or nuclear MASCAL events.

Results: The purpose is to educate the civilian radiology audience about their role amidst the changing nature of current nuclear threats and asymmetric and hybrid warfare in urban settings. It is very likely that in the future the civilian radiology community may be involved and respond to a nuclear crisis or a radiation accident or its aftermath before the military gets involved because it will most likely be initially a MASCAL event in a civilian setting, not immediately under the purview of the military.

Conclusion: Radiologists and nuclear medicine physicians will play a very critical and central role in the event of a nuclear detonation or a radiation dispersal device detonation due to their inherent knowledge of the principles of radiation, contamination, exposure and radiation protection.

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Considerations for Pediatric Mass Shooting Triage Training: A Qualitative Analysis

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Introduction: Accurate triage is crucial for pediatric patients because their physiological differences make them more vulnerable to traumatic injury and mortality. However, pediatric trauma patients are challenging for EMS personnel for several reasons including infrequent clinical encounters and inadequate training. Despite the need for increased training, little is known about EMS readiness to perform triage and lifesaving interventions during pediatric mass casualty incidents (MCIs). Simulation skills assessment correlates with EMS performance in the field and can be used to determine MCI readiness. Pediatric patients are often omitted from MCI training and protocols. Feedback from EMS clinicians who participate in pediatric MCI simulations may be useful for educators seeking to optimize pediatric mass shooting triage training.

Method: This was an observational study assessing EMS clinician accuracy in triaging eight children and two adults in a mass shooting simulation involving intimate partner violence (IPV) set at a private residence. Participating EMS clinicians were attendees of continuing education classes at Yale New Haven Health Centers for EMS. Participants worked in pairs, and triage decisions were documented during the simulation with an evaluation tool and video recording. After the simulation, pairs completed the demographic survey and completed a semi-structured debriefing. Facilitator prompts included correct triage level for each patient, the role IPV plays in mass shootings, and the participants feedback. Recordings of the debriefings were transcribed and analyzed using grounded theory. During the evaluation process, the major themes will be identified and coded. The transcriptions will be re-evaluated and any additional sub-themes will be identified and coded.

Results: As of November 2022, eight paramedics have participated with more sessions scheduled for spring 2023. A preliminary review indicates potential themes will fall under the categories of simulation implementation and clinical approach to triage.

Conclusion: These findings may assist EMS agencies with their pediatric MCI training and response.

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Handover Between Prehospital and Intra-hospital Physicians—Utility of Simulation in Enhancing Quality of Transmission

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Introduction: Handover is of big value in preserving continuity of the medical services chain when managing patients. Simulation is well accepted as a good learning method to acquire non-technical skills. Actual studies dealing with this issue are performed on paramedics. Studies involving physicians are rare and usually focus on interviews or questionnaires describing practical situations.

The aim of our study was to evaluate the utility of simulation in enhancing the quality of handover between both pre-hospital and intra-hospital physicians.

Method: We conducted a prospective pre-test/post-test study in a regional Emergency Medical System (EMS) on the handover topic.

We included voluntary physicians who signed participation consent. The study was designed as a three-step project: theoretical training with pre-test and post-test, 1st simulation session, 2nd simulation session with post-test. The two simulation sessions were evaluated according to a specific score. We evaluated the progression of knowledge (tests means) and skills (percentages of good answers): before and after theoretical training and before and after simulation sessions.

Results: Sixteen EMS physicians were enrolled. Thirteen were under 40 years old and ten were emergency medicine physician