guaranteeing continuity of care during and after a disaster for avoiding negative health outcomes.
Method: A systematic review was conducted to evaluate the extent and nature of research activity on the use of ACSCs during disasters, with an eye toward finding innovative ways to assess the level of PHC function at times of crisis. Online databases were searched to identify papers.
Results: A final list of nine publications was retrieved. The analysis of the reviewed articles confirmed that ACSCs can serve as a useful indicator of PHC performance during disasters, with several caveats that must be considered.
Conclusion: The reviewed articles cover several disaster scenarios and a wide variety of methodologies showing the connection between ACSCs and health system performance. The strengths and weaknesses of using different methodologies are explored and recommendations are given for using ACSCs to assess PHC performance during disasters.

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Emergency and Disaster Preparedness Amongst Emergency Medicine Residents in Singapore

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Introduction: Emergency Medicine (EM) physicians are crucial members of the disaster medical response. In Singapore, the EM residency program spans five years, with junior residents (JRs) progressing to senior residents (SRs) in three years after passing the MRCEM exam or its local equivalent. This study aims to assess the knowledge, attitudes and perceptions toward disaster medicine among EM residents in Singapore.
Method: A cross-sectional study was performed for 90 EM residents for the academic year 2020/2021. A self-administered, 44-item online questionnaire based on the Emergency Preparedness Information Questionnaire (EPIQ) was delivered via GoogleForms™. This assessed familiarity through 10 dimensions, with a minimal score of one and a maximal score of five. The survey also included questions on attitudes towards emergency preparedness and preferred learning methods. Data was collected from May 2020 to November 2020, and analyzed with SPSS.
Results: The response rate was 41%. Of these, 75% were JRs and 25% SRs. The overall mean familiarity with disaster preparedness was 2.43 ± 0.90. There was no statistically significant difference of overall mean familiarity between JRs and SRs. Overall, they fared best in the dimension on isolation & quarantine with a mean score of 2.91 ±1.05 and worst in the dimension on psychological issues with a mean score of 2.34 ±0.95.

Residents felt that disaster medicine was relevant to their practice with a mean score of 4.22 ± 0.98. They also felt that it was necessary to learn more about it, with a mean score of 4.16 ±0.90. The highest ranked preferred learning method was workshop/simulation training (45.5%), followed by lectures (23.4%).
Conclusion: EM Residents have a poor overall familiarity with emergency preparedness, however, they recognized its importance and relevance. The preferred formats of learning were simulation/workshop training. More must be done to improve the overall competency of EM residents in disaster medical response.

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Physical Trauma Following Rocket Warning Sirens in Israel

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Introduction: Civilians constitute a significant wartime target, and trauma accounts for most of their injuries. Air raid sirens have long been used to alert civilians of incoming attacks and have since expanded to warn of natural disasters. Sirens are known to cause significant emotional distress and physiological changes. Injuries inflicted from trauma during a run for shelter have yet to be described in the medical literature.
Method: During the recent Israel-Gaza conflict of May 2021, most of Israel's population experienced rocket warning sirens. We collected all adult patients arriving at a major tertiary medical center emergency department (ED), attesting to having suffered their injury while running for shelter. Clinical and demographic data were retrieved and analyzed.
Results: A total of 48 patients were identified, with a mean age of 59.6±20.0. Ten (21%) patients were admitted, and their mean length of stay was 4.4±3.7 days. Women had a higher probability of being hospitalized (42.9% vs. 5.9%, p=0.04), and those hospitalized tended to be older (68.8±16.4 vs. 54.8 ±20.8, p=0.06). Extremity injuries were most common (50%), before head trauma (29%), and torso injuries (25%). Most patients (38/48, 79.2%) were discharged from the ED, and the rest were hospitalized for observation or surgery. One patient died from a head injury.
Conclusion: This study implies that injuries while running for shelter were the most significant cause of physical injury to Israeli civilians during the Israel-Gaza 2021 conflict. Warning siren injuries should be given appropriate attention from prevention by directed media campaigns to post-conflict reimbursement.

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The Impact of Hurricane Ida on Emergency Medical Services Operations in New Orleans

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Introduction: On August 29, 2021 Hurricane Ida struck New Orleans with Category 4 winds. While the most severe weather occurred during a 24-hr period on August 29, the city suffered significant damage to telecommunication systems, medical facilities, and infrastructure for several weeks afterward. At the height of the storm, multiple events affected routine deployment of EMS, including damage to transmission lines causing interruption of the 911 system, and suspension of ambulance travel for safety when the winds exceeded 50 mph. These factors, as well as pre-storm preparations, affected utilization of EMS by residents and thus a "peri-hurricane" period was examined to determine the overall effect of Hurricane Ida on New Orleans EMS operations.
Method: Run sheets for calls to NOEMS between August 26-September 9, 2021 were analyzed to assess the most frequently reported medical complaint just prior to and after the hurricane. Run sheets were also evaluated to determine average time from call to arrival on scene, time to arrival at patient ("response time"), and time from leaving scene to arrival at destination ("transport time"). To account for the atypical period during which EMS response was suspended due to wind, both mean and median times were calculated. Data was compared to a control period of Aug 26-Sept 9, 2022.
Results: During the study period, 1,971 calls were received, with trauma and respiratory the most common complaints. The mean call-to-arrival time was one hour, although the median time was 15 minutes. Response time was 34 minutes compared to 21 minutes in 2022, and median response time was comparable to the control period. Transport time mean and median were 12.3 and 11.3 minutes, also similar to 2022.
Conclusion: Despite citywide infrastructure failures and suspension of operations for over 12 hours during landfall, multiple mitigation strategies enabled NOEMS to quickly resume operations and minimize impact on patient care times.

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Effectiveness of and Adherence to Triage Algorithms during Prehospital Response to Mass Casualty Incidents

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Introduction: At mass casualty incidents (MCIs) medical needs exceed available resources, requiring prioritization of response efforts and materials. Principles of triage have evolved since the 18th century into several modern-day algorithms that sort casualties into priority groups based on clinical parameters. It is unclear, however, if such algorithms are effective and practical during real-world MCIs. This analysis reviews the literature on use and efficacy of prehospital MCI triage algorithms.
Method: The MEDLINE, Scopus, and Google Scholar databases were searched for peer-reviewed and grey literature on prehospital MCI medical response. Articles discussing MCI triage concepts, triage at MCIs, or algorithm efficacy were included. Articles were excluded if they described law enforcement, ethical, psychological or epidemiological perspectives without detailing the medical response.
Results: Frequently-cited MCI triage algorithms include START (Simple Triage & Rapid Treatment); Triage Sieve; CareFlight; SALT (Sort, Assess, Lifesaving Interventions, Treatment/Transport); and RAMP (Rapid Assessment of Mentation & Pulse). They differ in the physiologic parameters assessed, inclusion of numerical measurements, and number of triage categories. Surveyed providers were less likely to have performed full triage at MCIs (16%) than in training (69%), and more likely to have performed no triage (29% vs. 1%). In retrospective trauma registry analyses, algorithms were generally poorly predictive of the need for life-saving interventions (13-58% sensitive, 72-97% specific) in one study, and variably predictive of critical injury (45-85% sensitive, 86-96% specific) in another. The Glasgow Coma Scale motor component was associated with critical injury (73% sensitive, 96% specific if <6); other physiologic variables had sensitivities under 40%. In prospective studies, algorithms were accurate for 36-52% of adults and 56-59% of children. Some suggest clinician judgment may be similarly effective.
Conclusion: Multiple algorithms exist for MCI triage, but they are infrequently utilized and may be inaccurate. Simpler, more realistic, scalable, and widely accepted response systems need to be instituted.

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Learning from Each Other, Improving Medical Command and Control after the COVID-19 Pandemic: Experiences from a Bosnian-Swedish Collaboration.

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