

Cooperative System between NGOs and the Private Sector for Disaster Relief in Japan

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Introduction: Disasters disturb the balance of medical supply and demand. Because normal supply chains break down in the wake of disasters, it is difficult to deliver daily necessities to affected areas. In addition, without a reliable supply of medical equipment and medicines, the number of sick and injured patients increases.

Aim: We propose that emergency medical teams should bring medical equipment and daily necessities when responding to disasters.

Methods: The Social Emergency Management Alliance (SEMA) was established in 2017. SEMA is a cooperative system between NGOs and the private sector for disaster relief in Japan. Humanitarian Medical Assistance (HuMA) utilized this system to provide emergency medical assistance during the Western Japan Floods in 2018.

Results: After the flooding, increased amounts of dust caused many cases of conjunctivitis. There were also numerous cases of heat stroke and dehydration, especially in the elderly. We requested SEMA to bring eye drops to wash out dust and isotonic drinks to prevent dehydration and heat stroke to Mabi Town, Okayama. SEMA coordinated with the private sector to provide eye drops and isotonic drinks via a forwarding agent, and we were able to distribute them to affected people and prevent worsening disease.

Discussion: NGOs working within affected areas can assess the exact needs of affected people in order to avoid waste. Such collaboration through SEMA will allow for more effective disaster relief in the future. It is our hope that more private companies join SEMA to reduce the suffering of disaster victims.

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The Core Concepts of an Integrated Information System for Disaster Medical Assistance Teams: Ten-Year Experience in Taiwan

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Introduction: Information systems (IS) have facilitated workflow in the health care system for years. However, the utilization of IS in disaster medical assistance teams (DMATs) has been less studied.

Aim: In Taiwan, we started a program in 2008 to build up an information system, MEDical Assistance and Information Dashboard (MED-AID), to improve the capability and increase the efficiency of our national DMAT.

Method: The mission of our national DMAT was to provide acute trauma care and subacute outpatient care in the field after an emergency event (e.g., earthquakes). We built the IS through

a user-oriented process to fit the need of the DMAT. We first analyzed the response work in the DMAT missions and reviewed the current paperwork. We evaluated the eligibility and effectiveness of the core functions of DMATs by experts in Taiwan and then developed the IS. The IS was then tested and revised each year in two table-top exercises and one regional full-scale exercise by the DMAT staffs who came from different hospitals in Taiwan.

Results: During the past 10 years, we identified several core concepts of IS of DMAT: patient tracking, medical record, continuity of care, integration of referral resources, disease surveillance, patient information reporting, and medical resources management. The application of the IS facilitate the DMAT in providing safe patient care with continuous recording and integrate patient referral resources based on geographic information. The IS also help the planning in real-time disease surveillance and logistic function in the medical resources monitoring.

Discussion: Information systems could facilitate patient care and relieve the workload on information analysis and resources management for DMATs.

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Core Curriculum for Event Medical Leaders

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Introduction: The literature on mass gatherings has expanded over the last decade. However, no readily accessible curriculum exists to prepare and support event medical leaders. Such a curriculum has the potential to align event medical professionals on improving event safety, standardizing emergency response, and reducing community impacts.

Methods: We organized collaborative expert focus groups on the proposed “core curriculum” and “electives.”

Results: Key features of a mass gathering medical curriculum include operations-focused, evidence-informed, best-known practices offered via low barrier, modular, flexible formats with interactive options, and a multi-national focus.

Core content proposed:

- Background (Definitions, Context, Risk, Legalities)
- Event Medical Planning - “The Seven Steps” - (1.) Assessment and Environmental Scan - Event Emergency Action Plan, (2.) Human Resources, (3.) Equipment/Supplies, (4.) Infrastructure/Logistics, (5.) Transportation (To, On, From), (6.) Communication (Pre, During, Post), and (7.) Administration/Medical Direction
- Event After-Action Reporting
- Case-based Activities

Electives mirror Core outline and serve as expanded case-studies of specific event categories. Initially proposed electives include:

- Concerts/Music Festivals
- Running Events

- Cycling Events
- Multi-Sport Events
- Obstacle Adventure Courses
- Staged Wilderness Courses
- Amateur Games
- Political Gatherings & Orations
- Religious Gatherings & Pilgrimages
- Community Gatherings (e.g., Parades, Fireworks, etc.)

Discussion: Complex team learning to standardize real-world approaches has been accomplished in other medical domains (e.g., ACLS, AHLS, ATLS, PALS, etc.). A course for event medicine should not re-teach medical content (i.e. first aid, paramedicine, nursing, medicine); it should make available a commonly understood, systematic approach to planning, execution, and post-event evaluation via a vis health services at events. A ‘train the trainer’ model will be required, with business operations support for sustainable course delivery. The author team seeks community feedback at WCDEM 2019 in creating ‘the ACLS’ of Event Medicine.

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Critical Care Specific Medical Materials Preparedness in the Emergency Department for Mass Shooting Disasters

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Introduction: There has been a dramatic increase in the number of mass shootings (loosely defined as an incident with four or more indiscriminate victims) in the United States (1). Additionally, the use of high-caliber, military-style weapons, has become more common in civilian shootings. These trends should influence how emergency departments prepare for disasters, including an inventory of what critical care medical materials (supplies) are readily available in the event of a disaster.

Aim: To demonstrate the need for the adoption of medical materials planning for disasters to account for new injury patterns from mass shootings.

Methods: A review of injury patterns from recent mass shootings was conducted using available literature (2). The average number of victims presenting to the emergency department in these events was reviewed. Estimation of critical care specific medical materials in the emergency department required for the management of an “average” number of victims with the typical injury pattern of these events was conducted.

Results: Some critical care specific medical materials: intubation equipment, chest tubes, and central venous catheters may be in short supply during a mass shooting event.

Discussion: Emergency physicians must anticipate and prepare for new disaster trends such as mass shootings and high caliber weapons injuries. This includes having specialty medical supplies readily available in sufficient amount. Normal stocking of critical care specific medical materials may be inadequate in a mass shooting event based on the available literature.

References:

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2. Smith ER, Shapiro G, Sarani B. The profile of wounding in civilian public mass shooting fatalities. *J Trauma Acute Care Surg.* 2016; Jul;81(1):86–92.

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Critical Concepts in Disaster Medicine for Saudi Arabian Emergency Residency Programs: A Delphi Study

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Introduction: Saudi Arabia, the largest country in the Middle East, has suffered numerous terrorist attacks and is the location of Hajj, one of the world’s largest annual mass gatherings. Healthcare providers’ pre-incident knowledge and understanding of basic disaster medicine (DM) concepts are crucial for a unified and effective health-system response. Introducing healthcare providers to best practices is a stated vision of the Saudi Commission for Health Specialties. Standardizing DM curriculum taught to physicians during their residency training will assist this goal.

Aim: To produce expert consensus on the most critical DM topics for the residency curriculum in emergency medicine (EM) in the Kingdom of Saudi Arabia.

Methods: Utilizing a Delphi approach, a panel of Saudi Arabian experts in DM and EM residency directors were surveyed regarding potential DM topics for EM residency curricula. The first round comprised of open-ended questions seeking lists of suggested DM curriculum topics. In subsequent rounds, each participant received a questionnaire asking them to review the items contributed in the first round, summarized by the investigation team. The participants rated each item on a five-point Likert Scale to establish preliminary priorities and added their comments. In further rounds, participants reviewed and prioritized subjects until they reached a consensus of $\geq 80\%$.

Results: The study is ongoing and full data will be available in the new year.

Discussion: This expert consensus from major stakeholders can be used to improve the foundation of the DM curriculum. The Delphi Method gives an evidence-based approach to identification and prioritization of subjects, which should be integrated within the Saudi Arabian Emergency Medicine Residency Curriculum. It also can be used as a cornerstone for implementation in other medical education programs across the Kingdom in the future.

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