

needs and challenges. The presentation will focus on their dispatch on medical alerts. A brief comparison of the two groups will also be performed.

**Methods:** A case study approach was applied involving interviews and workshops with security guards, civil volunteers, ambulance services, and rescue services personnel.

**Results:** The civil volunteers are dispatched on medical alerts concerning heart failures and accidents requiring first aid, including stopping major bleedings. The scope of tasks of security guards is broader since they are also dispatched on suicide and assault alerts. Needs in both cases include, e.g., proper training, joint exercises, equipment in terms of defibrillators, torquedos, and first aid kits, and proper ICT/GPS positioning support for dispatching. Challenges are mainly organizational and legal where security guards are somewhat protected by their own employer (e.g., through agreements, trauma support, and safety measures such as receiving a hepatitis vaccine) while civil volunteers do not have sufficient protection in any of these respects.

**Discussion:** Both groups are useful resources in future medical emergency response since they are often close to the incident site and can provide first response while waiting for the professional resources, thereby saving lives and reducing consequences of trauma. However, they need to be better integrated into the professional emergency response system.

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### Using the Past to Prepare for the Future: A 2018 Pilot Study to Improve the Hospital Response for Mass Casualties via a Multi-Dimensional Approach

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**Introduction:** Recent mass shooting events remind us of the importance of hospitals' preparedness to manage a large number of patients in a short period of time. While prehospital systems triage for field interventions and priority of transport, they were not designed to triage for the scarce resources of a hospital. Therefore, upon arrival to hospital, clinicians must then quickly determine how to best assess and provide life-saving interventions based on their limited resources.

**Methods:** In collaboration with the Greater New York Hospital Association (GNYHA), the Center for Disaster Medicine at New York Medical College piloted an interactive and intensive eight-hour course at four New York State hospitals that covered critical areas such as: current literature on Mass Casualty Events and Triage, review of hospital emergency management, hospital-based triage principles, a MCI exercise in the emergency department, a surge capacity tabletop exercise, and use of ultrasound. While targeted towards physicians to foster team-based care and learning, nurses, physician assistants, and hospital administrators also participated in the pilot course.

**Results:** Sixty persons from four hospitals participated in the pilot phase. Preliminary findings post-training reveal the

following: 58% of participants expressed greater confidence in distinguishing between emergency department triage and triage during disasters; 59% of participants expressed greater confidence in performing initial triage of victims; 49% of participants expressed greater confidence in describing the use of ultrasound-guided triage; and 95% of participants reported an enhancement in their ability to perform their clinical role.

**Discussion:** Preliminary findings reiterate the ongoing need for hospitals to provide training to their staff in the unique aspects of hospital triage and surge management using tools specifically designed in order to be prepared for the rapid influx of a large number of patients. A multipronged training model is a positive approach to help hospitals prepare for large-scale disasters.

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### Using the Patient Data in the Hualien Earthquake to Analyze the Reasons of Visit, the Trauma Injury Sites and the Severity

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**Introduction:** On February 6, 2018, a magnitude 6.2 earthquake struck Hualien, the eastern part of Taiwan. The quake resulted in 17 deaths and more than 300 people injured. Four buildings completely collapsed and hundreds of houses were damaged.

**Aim:** The aim of this research was to use the patient data to analyze the reasons for visits, the trauma sites, and the severity.

**Methods:** We obtained the patient information from the Taiwan Eastern Medical Emergency Operation Center. Medical records were reviewed to analyze the primary diagnosis, the trauma mechanisms, and the sites of injury. Injury severity score (ISS) was used to assess trauma severity.

**Results:** Two hundred and eighty patients were included in the study, with 90.3% being traumatic patients. Among them, 18.2% was geriatric trauma, 4.7% was pediatric trauma, and 0.4% was obstetric trauma. The most common injury site was lower extremities (33.2%), followed by head (31.4%) and upper extremities (27.1%). The mean injury severity score (ISS) was 1.9. The geriatric population had an average ISS of 2.4, and the pediatric group had a mean ISS of 1.2.

**Discussion:** In our study, the majority of the patients had minor trauma. Lower extremities may be more vulnerable during the evacuation of an earthquake, and thus, became the most common injury site. The elderly patients had a higher ISS, which may be explained by their immobility and fragility of the body. In the future, it is critical to educate citizens about self-protection during earthquakes, focusing on protecting the head and the extremities. Healthcare providers and emergency medical technicians need to be well-trained to handle geriatric trauma since it poses unique challenges and is associated with increased mortality.

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