

Collaborative Relationships for Mass Gathering Events

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Introduction: Electronic Dance Music events (EDMs) are complex mass gatherings and given published rates of illnesses, injuries, and hospitalizations, these events can place an additional burden on local health care services. Accordingly, during the planning process for EDMs many stakeholders are involved; however, local hospitals, a key part of the medical safety plan, are often excluded. In this case report, it is posited that the involvement of local hospital(s) and the resulting integration of on-site and acute-care service provision during an event, ultimately reduces the burden placed on local hospitals.

Methods: Case report; synthesis of published literature.

Results: A 25,000 person per day, two-day mass gathering EDM event trialed a model of collaborative planning with a local community hospital. Planning included the identification of a hospital liaison, pre-event teleconferences between event staff, contracted and public medical response teams, emergency management teams, harm reduction practitioners, public health, and hospital personnel. Throughout the collaborative planning process, vital information was shared in order to optimize patient continuity of care and streamline the transition of care from site medical response to an acute care setting. Outcomes included the prevention of unnecessary transfers to the hospital; however, those patients who required transfer had their initial treatment started prior to leaving the venue. Further, collaborative planning also contributed to improved bidirectional data sharing to better understand the impact on the local hospital of the event, including transfers from the onsite medical team as well as transports from the community and self-presentations for care.

Discussion: The collaboration of onsite medical and hospital teams improved the delivery of essential medical care to the patrons of the event and added a layer to the safety planning process essential to mass gathering events.

Prehosp Disaster Med 2019;34(Suppl. 1):s109

doi:10.1017/S1049023X19002280

Comparing Training Techniques in Chemical Disaster Preparedness

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Introduction: Currently, there are no universally accepted personal protective equipment (PPE) training guidelines for Emergency Medicine physicians, though many hospitals offer training through a brief didactic presentation. Physicians' response to hazmat events requires PPE utilization to ensure the safety of victims, facilities, and providers; providing effective and accessible training is crucial. In the event of a real disaster, time constraints may not allow a brief in-person presentation and an accessible video training may be the only resource available.

Aim: To assess the effectiveness of video versus in-person training of 20 Emergency Medicine Residents in Level C PPE donning and doffing (chemical-resistant coverall, butyl gloves, boots, and an air-purifying respirator).

Methods: A prospective observational study was performed with 20 Emergency Medicine residents as part of Emergency Preparedness training. Residents were divided into two groups, with Group A viewing a demonstration video developed by the emergency preparedness team, and Group B receiving in-person training by a Hazmat Team Member. Evaluators assessed critical tasks of donning and doffing PPE utilizing a prepared evaluation tool. At the drill's conclusion, all participants completed a self-evaluation to determine their confidence in their respective trainings.

Results: Both video and in-person training modalities showed significant improvement in participants' confidence in doffing and donning a PPE suit ($p > 0.05$). However, no statistically significant difference was seen between training modalities in the performance of donning or doffing ($p > 0.05$).

Discussion: Video and in-person training are equally effective in preparing residents for donning and doffing Level C PPE, with similar error rates in both modalities. Future trainings should focus on decreasing the overall rate of breaches across all training modalities.

Prehosp Disaster Med 2019;34(Suppl. 1):s109

doi:10.1017/S1049023X19002292

Comparison of the Effects of Sacco and START Triage Methods in the Death Risk Assessment of Mass Trauma Patients after Earthquake

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Introduction: Compared with traditional START Triage Method, the Sacco Triage Method is a new way to assess death risk in disaster scenes. However, due to the difficulties in disaster medical research, there is still no evidence to prove which one is more effective.

Aim: To assess and compare the value of START Triage Method and Sacco Triage Method in the death risk assessment of transport and the one-month death risk assessment of the earthquake mass trauma patients.

Methods: A retrospective analysis was conducted on 1,612 patients who were transferred to the West China Hospital by assigning to different triage levels by Sacco Triage Method and START Triage Method respectively. Both of the triage methods were evaluated based on death cases on either during transport or in the emergency department, using the area under the receiver-operator curve.

Results: For death during the transport and in the emergency department, the receiver-operator curve of two groups reflected as 0.721 and 0.649. For death in a consequence, the receiver-operator curve of the two groups was revealed as 0.667 and 0.519.

Discussion: As an accurate triage method, the Sacco Triage Method may be used in a mass casualty incident. It is a more effective way than the START Triage Method for the evaluation of death risk assessment of the mass trauma patients.

Prehosp Disaster Med 2019;34(Suppl. 1):s109–s110

doi:10.1017/S1049023X19002309

Comparison of Traumatic Brain Injury Patients by Age Group in Emergency Department

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Introduction: Traumatic brain injury (TBI) is an important public health concern because of the high mortality rate of young people and a high proportion among the trauma. According to studies, patients visiting the emergency department (ED) with TBI comprise 1.4% of all ED patients.

Aim: The authors think that the characteristics of patients with TBI will vary according to the age group. Therefore, the purpose of this study is to investigate the clinical and social characteristics of patients with TBI visiting the ED by age group.

Methods: Trauma patients who conducted brain CT at the ED of Korean University Hospital (three hospitals) for 3 years from March 2013 to February 2016 were enrolled. Medical records were investigated retrospectively. The GCS scores were estimated at initial ED arrival. The primary outcome was to determine the characteristics of each age groups with gender, severity (by GCS score), trauma mechanism, and admission rate.

Results: A total of 15,567 TBI patients received brain CT evaluation during the investigation period. Based on age, patients in their 50s were the most common (16.5%). Regarding the severity, the ratio of mild was higher in under patients under 9 (99.3%); the ratio of severe was higher for patients in their 20s (4.6%). In almost every age group, the male ratio of TBI was higher, except for females aged 70 or older. Under 19 years of age, the ambulance utilization rate was lower than any other age group. The most common injury mechanism was a collision, the next was a traffic accident, and in under 9, a fall was the most common. 70.1% of patients returned home after treatments.

Discussion: Identifying the characteristics of patients with TBI visiting ED is fundamental. Therefore, it is necessary to continuously collect basic data on TBI among patients visiting the ED.

Prehosp Disaster Med 2019;34(Suppl. 1):s110

doi:10.1017/S1049023X19002310

A Comparison of Two Types of Personal Protective Equipment (PPE) Doffing Process: Frequency and Sites of Contamination

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Introduction: Personal protective equipment (PPE) is a necessary item in the period of unknown and high-risk emerging infectious disease. It is not only the necessary requirement of strict isolation, but also the last line of defense to protect medical staff.

Aim: Compare the differences between contaminated frequency and sites under two types of PPE doffing.

Methods: Recruited 56 health care workers (HCWs) who worked in clinical to follow the different PPE removal guidelines issued by the Chinese Center for Disease Control (CDC) and the World Health Organization (WHO) final resolution for preventing Ebola virus. Eight batches of HCWs were divided to conduct simulations of contaminated PPE removal using fluorescent lotion (Glitter Bug Potion, On Solution Pty Lt). Then we recorded the frequency and sites of contamination of personnel after removal of contaminated PPE by the method of visual observation.

Results: According to China's CDC process, the parts that are easily contaminated during PPE removal are: left hand and wrist (7 times), left calf (7 times), front chest center and left and right chest (6 times each) and left abdomen (5 times). Contaminated parts of the PPE process in accordance with the WHO process from high to low were: right hand and wrist (13 times), left hand and wrist (12 times), middle of the abdomen (10 times), left chest (9 times), and left abdomen (6 Times). There was no statistical difference between the two kinds of PPE piercing and removal ($Z=1.177$, $P > 0.05$).

Discussion: Under the guidance of the two processes recommended by China CDC and WHO, there was no significant difference in the frequency of pollution after removing PPE. It is speculated that the PPE recommendation processes issued by WHO and China CDC are effective for personal protection against fulminating infectious diseases.

Prehosp Disaster Med 2019;34(Suppl. 1):s110

doi:10.1017/S1049023X19002322

Concerns for Small Hospitals in Rationalising Trauma Services: How Do We Ensure Enhanced Patient Services in Rural Areas?

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Introduction: Trauma bypass has been introduced successfully worldwide with sustained reductions in mortality/morbidity. Analyzing structure, process, and outcome individually and