

**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.

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### 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.

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### 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.

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### 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

collectively in systems has been found to focus improvement efforts in the audit cycle. The second Irish report on Major Trauma Audit (MTA) was published in December 2017. The median age of trauma patients in Ireland was 59, indicating an aging trauma population. 28% of patients required secondary transfer to complete their care. The mortality rate for 2016 was only 4%.

**Aim:** To determine the ability of a road-based EMS system to bring patients from areas of Wexford County to proposed receiving centers within 60-90 minutes.

**Methods:** Analysis took population centers in Wexford County, used Google Maps to estimate travel times at 3pm on a weekday, and proposed new trauma units and centers in Dublin, Cork, and Waterford.

**Results:** In Wexford County urban centers, >95% of patients will not reach a trauma unit in less than 60 minutes with current prehospital medical service capabilities. This even excludes response/on-scene time by prehospital practitioners in land-based EMS vehicles.

**Discussion:** The proposed introduction of trauma bypass systems in Ireland should not disenfranchise patients with respect to the standards they are currently receiving. Gap analysis suggests considerable work is required within the ambulance service to increase critical skill levels of paramedics to support critical patients in the golden hour of their transfer. An increase in vehicles/resources will be required to ensure adequate staffing to meet Health Information and Quality Authority (HIQA) targets of 8 and 19 minutes for response acuity, and for longer durations of transport allied to dynamic resource deployment model as used by National Emergency Operations Centre (NEOC). Unintended consequences of system changes will need to be monitored carefully to avoid further adversely impacting recruitment of staff to bypassed Model 3 hospitals.

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### Confusion, Chaos, and Bridging the Gap: A Prospective Study Gauging Disaster Triage Methodologies and Usage Across First Responder Professions

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**Introduction:** Disasters are unique in that they impact all socioeconomic, class, and social divides. They are complex, hard to conceptualize and operationally define, and occur sporadically without warning. However, regardless of each disaster's innate unpredictability, there is one common need that directly impacts patient morbidity and mortality: effective triage.

**Aim:** Currently the United States has no uniform triage mandate. The purpose of this study is to gather descriptive data on the type of mass-casualty triage currently being utilized by first responders (Emergency Medical Services/Fire/Nurses) and improve our understanding regarding the prevalence of mass casualty triage.

**Methods:** A descriptive mixed methods survey is being distributed to first responders/nurses in the Appalachian region. This survey collects respondents' demographics, profession, and MCI

triage data. Data will be analyzed and descriptive statistics will be generated. GIS will be utilized to graph findings and visualize local and national trends.

**Results:** Results of this study are pending.

**Discussion:** Organizations have addressed the need for a standard triage protocol, even going so far as to create uniform criteria which each triage system should meet. However, the literature does not describe how individual professions train their members in disaster triage, or what triage is currently being utilized in each profession. Nurses and first-responders serve as linchpins in many communities. They remain in a community, both before, during, and after a mass casualty event, but they do not perform in a vacuum. During an MCI (mass-casualty incident) their scope of practice may vary, but they have common foci: the affected community. A better understanding of the type of MCI triage that each profession is using is vital in understanding how triage is being applied, and vital in identifying gaps in application that may impact the effectiveness of field triage, and affect local and national policy, practice, and future research.

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### Construction of an Operational Protocol for Multiple Victims and Disasters in Southern Brazil

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**Introduction:** Unpredictable events, such as disasters, can change the organizational configuration of health facilities. In a situation of multiple victims, this scenario modifies the flow of care to adapt to the reality that is there. In addition, emergency and emergency units provide immediate care to maintain and preserve the lives of these victims, making it a challenge for all health professionals.

**Aim:** To construct an Operational Protocol for nursing care with multiple victims and disasters in a Hospital Emergency and Emergency Service.

**Methods:** We used a descriptive study with a qualitative approach using the Focal Group technique (GF). The participants included nursing staff and residents who work in the emergency and emergency unit in a hospital in the south of Brazil. The topics from the GF discussion were analyzed by the scientific content of Minayo (2013).

**Results:** The operational assistance protocol for multiple victims and disasters was planned with a redistribution of materials, equipment, human resources of the service, and physical restructuring of the service and other units with the construction of a flow chart to meet the proposed demand.

**Discussion:** In the study, we observed the importance of discussing and planning proposals for care with multiple victims. In addition, the interest of the participants was fundamental to the success of this protocol. This protocol serves as an incentive for nursing professionals and academics for future research that evaluates the effectiveness of using nursing competencies to assist multiple victims in emergency and disaster situations.

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