

emergency responses such as triage, first aid skills, and patient transport gradually improve after several drills. The ICS operation and communication also became more effective and efficient. The regional emergency response units could understand these theme parks capability and how to cooperate with them.

**Discussion:** The experience of emergency response training and exercise in these two theme parks has shown that such a model is feasible and should be valued.

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### Enhancing the Effectiveness of Disaster Simulations through Contemporary Simulation Design and Technology

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**Introduction:** Simulation is often employed to test mass casualty and disaster response planning within hospitals, but it is resource intensive and needs to achieve high-quality recreation of scenarios to be effective. The delivery of large-scale interdisciplinary team and system simulation requires consideration of physical safety, system integrity for real patients, simulation team communication, and effective dissemination of outcomes.

**Aim:** To describe challenges and potential solutions for effective delivery of disaster simulations, drawn from simulation service experience at Gold Coast Hospital and Health Service (GCHHS).

**Methods:** This case study reviews strategies used to deliver a large-scale multi-team in-hospital disaster and trauma simulation, involving more than 75 participants drawn from paramedic/ambulance, emergency, trauma service, anesthetics, perioperative, surgical, and hospital administrative teams.

**Results:** Issues reviewed include simulation delivery team composition and briefing, safety strategies, matching simulation methodology to exercise objectives, the use of real-time communications technologies and apps for real-time communication and performance tracking, and leveraging the simulation experience for observers by narrated Facetime stream. Following the simulation, a debriefing was conducted with participants to address performance, communication and interfaces, strengths and weaknesses, and overall opportunity for improvement. Facility-wide dissemination of messages through standardized reporting, infographics, and video vignettes were also reviewed.

**Discussion:** Simulation is an engaging way to assess protocols and practices for disaster response within a tertiary hospital, and effectiveness can be enhanced through the strategic use of contemporary techniques and technologies.

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### Environmental Factors at Mass-Gathering Events: Considerations for Health Research and Evaluation

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**Introduction:** This poster will document the environmental domain variables of a mass gathering. They include factors such as the nature of the event, availability of drugs or alcohol, venue characteristics and meteorological factors.

**Method:** A systematic literature was used to develop a set of variables and evaluation regarding environmental factors that contribute to patient presentation rates.

**Results:** Findings were grouped pragmatically into factors of crowd attendance, crowd density, venue, type of event, mobility, and meteorological factors.

**Discussion:** This poster will outline a set of environmental variables for collecting data at mass gathering events. The authors have suggested that in addition to commonly used variables, air quality, wind speed, dew point, and precipitation could be considered as a data points to be added to the minimum standards for data collection.

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### Establishment of Palliative and End-of-Life Care Services in Sri Lanka

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**Introduction:** Sri Lanka has a rapidly aging population with an exponential rise in chronic morbidity. There had been no parallel development of palliative and end-of-life care-specific approach in health care.

**Aim:** To implement sustainable palliative and end-of-life care services in Sri Lanka through the existing systems and resources by advocacy, collaboration, and professional commitment.

**Methods:** Sri Lanka Medical Association established a volunteer task force for palliative and end-of-life care (PCTF) in October 2016, which comprised of multi-disciplinary health care professionals, legal fraternity, and civil society. PCTF identified the need for sensitizing the general public on the importance of palliative care, for standard guidelines and formal training for practicing health care professionals engaged in hospital and community-based palliative care. These needs are addressed through activities of PCTF in collaboration with the Ministry of Health.

**Results:** Representing the National Steering Committee of Palliative Care, the members of the PCTF were instrumental in developing the National Strategic Framework to fill the major gap of affordable quality palliative care in the country. PCTF also published the “Palliative Care Manual for

Management of Non-Cancer Patients” as a preliminary guide for health care professionals. The draft document on the End-of-Life Care Guidelines has been formulated and is currently being reviewed by the relevant medical and legal stakeholders. PCTF has organized CME lectures on palliative care all over the country for health care professionals, and also conducted lectures, exhibitions, and mass media programs to sensitize the public on palliative care.

**Discussion:** Within a brief period, PCTF has played a key role to recognize palliative care by contributing to policy making, training, and public sensitization in palliative and end-of-life care in Sri Lanka.

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### Establishment of Research Model on the Correlation Between Psychological Stress Intensity and Personality in Nursing Students Under Different Pressure Sources

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**Introduction:** In recent years, sudden disasters are occurring frequently, resulting in inestimable casualties and losses. Hence, knowing what personality traits are suitable for stressful works is of vital importance for selecting applicable nurses for disaster relief operation, and helping the nursing students to have a clearer career orientation when choosing the specialty direction. Stress response is divided into psychological response and physiological response. This study focused on the process of physiological response and evaluated the psychological stress intensity through monitoring physiological indexes related to the autonomic nervous system during the stress process.

**Method:** The experimental subjects were 16 nursing students. In the monitoring experiment, three kinds of pressures were set, including time limitation, threat assessment, and task-interference. The physiological indexes under the resting state of the experimental subjects were recorded as the resting period group (RT). Then, the nursing students performed the operation without setting the pressure condition, called the baseline period group (BL). The experimenter would record all important time nodes. The physiological indexes recorded under the three pressures were the time stress group (TS), the assessment stress group (AS), and the task-interference stress group (INS).

**Results:** There was no statistically significant difference in heart rate and skin temperature between RT and BL, but there was a statistically significant difference in skin resistance. The heart rate and skin temperature in the stress phase were significantly higher than those in RT and BL. According to the analysis of HRV, the difference between RT and BL has no statistical significance.

**Discussion:** Models can eliminate the interference of the operation itself to the recording of physiological signals. The time-stress condition caused a more psychological-stress response in nursing students than assessment and task interference. The pressure source was set up effectively and the stress model was established successfully.

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### Evaluating Full-Scale Exercises to Optimize Patient Outcome in an Underground Mine

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**Introduction:** Major incident exercises are expensive to plan and execute, and often difficult to evaluate objectively. There is a need for a generic methodology for reporting results and experiences from major incidents so that data can be used for analysis, to compare results, exchange experiences, and for international collaboration in methodological development. Most protocols use data describing the incident hazards, pre-hospital and hospital resources available and alerted transport resources, and communication systems. However, the successful management of a rescue response during a major incident also demands a high level of command skills.

**Aim:** The aim of this study was to analyze the command and collaboration skills among the emergency service on-scene commanders and the mine director for safety and security during a full-scale major incident exercise in an underground mine.

**Methods:** The commander functions were observed during a full-scale major incident exercise. Audio and video observations and notes were analyzed using a study-specific scheme developed through a Delphi study, including inter-agency collaborative support and efforts of early life-saving interventions; relevant resources and equipment; and shared and communicated decisions about safety, situation awareness and medical guidelines for response. After the exercise additional interviews were made with those responsible for the command functions.

**Results:** Preliminary results indicate that most decisions were not taken in collaboration. Elaborated results will be presented at the conference.

**Discussion:** Command and collaboration skills can benefit from objective evaluations of full-scale major incident exercises to identify areas that must be improved to optimize patient outcome.

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### Evaluation of Published Expedition Medical Resources Compared with Treatment Protocol Recommended Medical Resources for Injuries and Illnesses Encountered on Expeditions

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**Introduction:** People are increasingly embarking on expeditions into remote wilderness environments and subjecting themselves to increased medical risk. Medical provisions for the management of anticipated injuries and illnesses must be selected carefully due to financial and size and weight constraints on expeditions. Literature suggests decisions surrounding medical resource provisioning are rarely made using evidence-based methods.

**Aim:** The aim of this study was to evaluate the medical provisions taken on expeditions against the medical provisions