

Determinant of Severe Road Traffic Injury Cases Managed by Fatmawati Jakarta Hospital Emergency Department

Gde Yogadbita Apt, MEPid

University Gadjah Mada, Sleman, Indonesia. CHPM UGM, Sleman, Indonesia

Introduction: A traffic accident injury is one type of unintentional injury that contributes to the third leading cause of death in Indonesia, according to the WHO 2013 Global Road Safety Report based on Indonesian Police, estimated 37,000–47,000 fatalities annually and 46,000 experiencing severe injuries. The injury surveillance pilot project by the Ministry of the Health Republic of Indonesia in the Fatmawati Hospital Emergency Department is trying to describe the magnitude of injury along with its components and risk factors.

Method: This study aims to determine the risk factors of severe road traffic injury documented by injury surveillance forms in the Fatmawati Hospital Emergency Department from March to July 2016. The research design used was cross-sectional with a number of samples of 600 road traffic injury cases.

Results: The results show risk factors that contributed as predictors for severe road traffic injury are being male, OR 2.03 (95% CI 1.37–3.02); age greater than 30 years old, OR 1.57 (95% CI 1.11 – 2.22); low education (not attending school until high school graduate) with OR 1.59 (95% CI 1.12–2.25); during working days with OR 1.53 (95% CI 1.08 – 2.17), and cyclists with OR 4.84 (95% CI 0.87–29.0).

Conclusion: Based on this research, the Ministry of Health of the Republic of Indonesia needs to continue advocating the use of injury surveillance forms at hospital emergency departments to provide a complete picture of injury characteristics and risk factors and to educate and develop road traffic injury prevention and risk communication for the community.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s159

doi:10.1017/S1049023X23004132

Creating a Health Emergency and Disaster Risk Management (EDRM) Learning Community

Donald Donabue DHEd, MBA, MSJ¹, Paul Barach MD, MPH^{2,3}, Raymond Swienton MD⁴, Jan-Cedric Hansen MD⁵, Curt Harris PhD⁶

1. University of Maryland Baltimore, Baltimore, USA
2. Thomas Jefferson University School of Medicine, Philadelphia, USA
3. University of Queensland, Brisbane, Australia
4. University of Texas Southwestern Medical Center, Dallas, USA
5. Centre d'Hébergement et d'Accompagnement Gériatologique, Pacy-sur-Eure, France
6. University of Georgia College of Public Health, Athens, USA

Introduction: Disaster research is primarily posthoc analysis, locally focused or within response organizations, overlooking the wellness and safety of first and second responders or the broad multi- and interdisciplinary activities necessary to foster and sustain recovery. A broad framework to span locality, institutional, and professional boundaries supports the development of a true learning community—a health EDRM sector that

supports society in recognizing lessons, refining findings, and free and fluid global sharing.

Method: Several organizations joined to create a robust disaster health learning community: CREDO, GloHSA, ICDM, and ECDM, a multi-national, multi-disciplinary collaborative network of patients, universities, societies, regulators, publishing, healthcare, and technology partners designed to foster expert level education and training with shared educational design concepts, milestones, and core curricula that embrace the strength of a standardized base upon which to link unique pillars of excellence of separate functions, institutions, nations, and regions.

Results: The Emergency Disaster Global Health Sciences (EDGHS) model developed by University of Texas Southwestern Medical Center is interactive, open, and responsive. EDGHS addresses critical gaps in applied research by convening leaders across the healthcare and public health continuum to map the way forward, designing and implementing high-quality, evidence-based practical and policy research.

This defines essential public health functions for national contexts, including a focus on emergency preparedness and response, strengthening competency-based education on essential public health functions, and mapping and measurement of occupations delivering EDRM functions, offering an exportable model of global relevance.

Conclusion: Putting disaster prevention into recovery processes is a strategic opportunity to improve the well-being of future generations. The survivability and well-being needs of present and future generations are contingent on knowledge-based, lived experiences of recoverable disaster loss and damage, and the capacity to thrive sustainably. This presentation serves as an invitation to join the growing momentum of creating a learning health EDRM community.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s159

doi:10.1017/S1049023X23004144

Disaster Medicine Compendium and the Necessity of Preparation of Medical Techniques for Handling NBC/ CBRNE Hazards, for General Surgeons

Yoshikura Haraguchi PhD, Masami Hoshino, Yozo Tomoyasu, Tohru Tsubata

Tsubatakei Keiyo Hospital, Tokyo, Japan

Introduction: The risks of NBC (Nuclear, Biological and Chemical) or CBRNE (R: radiological, E: explosive) hazards are rapidly increasing even in civilian areas, as well as those of natural disasters (earthquakes, hurricanes, etc.). Therefore, one of the most important and emergent issues for medical staff, especially for general surgeons is the necessity of skills to deal with various mega- or major disasters to help people as well as, protecting themselves. This has been a point of emphasis since 2005, when the Disaster Medicine Compendium was published and continues to be updated today.

Method: The research focuses on NBC/CBRNE hazards: Pandemics such as COVID-19, Monkeypox, influenza, the Tokyo Subway Sarin Incident, and the 2011 Tōhoku Earthquake, followed by Fukushima Plant Incident,



Chernobyl, earthquakes with tsunami, such as the 2004 Indian Ocean earthquake, and the September 11 terrorist attacks in the US.

Results: The skills that should be accustomed to are protection, prevention, diminution of toxicity, decontamination, as well as routine medical/surgical treatments. The relevant education is varied and not easily performed. For example, it was found that Japan DMAT or disaster medical assistant teams struggled with a lack of techniques to deal with the nuclear plant hazard during the above-mentioned Fukushima plant accident.

Conclusion: In the event of hazards including NBC/CBRNE, surgical skills are necessary. However, medical teams require training in advance. Surgical methods and other skills, intensive care, and examinations performed wearing PPE or personal protection equipment is important, as well as the safety and security of the medical teams, in addition, to supporting the vulnerable/weak victims, ensured using an Incident Command System.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s159–s160

doi:10.1017/S1049023X23004156

Challenge for the Green Response: Reduction of Impact on the Environment by Emergency Medical Team

Masabaru Nakade MD

Japanese Red Cross Osaka Hospital, Osaka, Japan. Disaster Management Research Institute, JRCs College of Nursing, Shibuya, Japan

Introduction: Environmental degradation and climate change can lead to humanitarian crises and undermine humanitarian operations. Therefore, Emergency Medical Teams should try to reduce environmental impacts.

Method: Collaborative development with companies was started by trimming the weight of tents, improving lights, and introducing renewable energy to our emergency medical unit to reduce greenhouse gas emissions.

Results: The mechanism of the medical tent, and materials was changed. The weight of tents was cut by 30%. The final goal is to develop an 8 x 6 meter tent which is set up by four women.

Light-weight and low-power tent light was created. It is 50% weight and 60% power consumption of our conventional light.

All the power of the emergency clinic was run by renewable energy. introducing a 1 x 2 m, 5,5kg solar panel that produces 350 Wh/day. If 18 panels were put on the tent roof, they produce 6,300 Wh. This is equivalent to the power consumption of a standard household in Japan, and it is estimated this can cover the power consumption of the patient department of the emergency clinic. Experimental tests will now be conducted.

Conclusion: Nowadays, even emergency medical teams are required to reduce their impact on the environment on the field. Therefore, trying to reduce the greenhouse gas emissions from the emergency medical team. The challenge is still on the way, but marching steadily.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s160

doi:10.1017/S1049023X23004168

Focused Needs Assessment and Tailored Training Pilot for Emergency Care Providers in Rwanda

Naz Karim MD, MPH, MHA¹, Catalina Gonzalez Marques MD², Angela Zhang MD³, Janette Baird PhD¹, Mikaela Belsky⁴, Jean Marie Uwitonze⁵, Jeanne D'arc Nyinarwankusi⁵, Pascal Mugemangango⁶, Zeta Mutabazi⁶, Adam Aluisio MD, MSC, DTM&H¹

1. Brown University, Providence, USA
2. Brigham, Boston, USA
3. UCSF, San Francisco, USA
4. NYU Grossman School of Medicine, New York, USA
5. Service d'Aide Médicale Urgente, Kigali, Rwanda
6. University of Rwanda, Kigali, Rwanda

Introduction: In lower- and middle-income countries (LMIC), 45% of deaths could be prevented by implementation of emergency care systems. Prehospital care is critical for emergency medical services (EMS) worldwide, and basic affordable training improves EMS systems. This study conducted a needs assessment in addition to a tailored prehospital training intervention. Subsequent changes in prehospital care as well as patient outcomes were measured.

Method: Thirty providers identified through the prehospital medical command office participated. A prospective, non-randomized interrupted time-series approach was utilized for a needs assessment and training intervention. Data collected included age, gender, training level, and a knowledge assessment, and was used to create an 18-hour training, with immediate and 11-month posttests. Prehospital process indicators evaluated on-the-ground application of skills, including airway intervention, intravenous fluid administration, and glucose administration. Linked prehospital and hospital care datasets allowed for evaluation of patient outcomes.

Results: Of 30 providers, 60% (n=18) female and 40% (n=12) male, 19 were nurses and 11 were nurse anesthetists. Median age was 36 and median years providing care was 10 (IQR: 7,11). 24 (80%) participants completed immediate and post-test assessments, showing a 56% (95%CI: 36.2, 75.8) relative increase in mean knowledge score across 12 core skills that was maintained across post-tests. 324 of 572 total patients transported to the ED during the study were transported during the pre-training period (56.4%). Prehospital oxygen administration for patients with a saturation level of <95% increased pre- to post-intervention (66.7% to 71.7%; $\Delta = 5.0\%$; $\Delta 95\%$ CI: 1.9, 8.1%).

Conclusion: This study is the first LMIC-based prehospital provider training efficacy study that includes analysis of patient outcomes and clinical process indicators. Results offer important insights on Rwanda's prehospital care system and demonstrate that affordable, tailored educational interventions targeting process indicators have positive impacts on provider knowledge and practice.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s160

doi:10.1017/S1049023X2300417X