

real-time monitoring in an often chaotic environment, including MCEs.

Prehosp Disaster Med 2017;32(Suppl. 1):s37–s38

doi:10.1017/S1049023X17001157

Emerging Mobile Health (mHealth) in KATH ED: Assessing its Strengths, Weaknesses, Opportunities and Threats (SWOT Analysis) among Healthcare Workers

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Study/Objective: To assess the behavioral attitudes of ward nurses at Komfo Anokye Teaching Hospital (KATH) towards the use of mobile phone app for monitoring bed occupancy to reduce ED overcrowding.

Background: Emerging Mobile Health (mHealth) is a component of electronic health which refers to the use of mobile communication technology to promote health by supporting health care practices. Round-the-clock patient transfers to admitting wards using mHealth tools have been found to address the challenge of overcrowding and improve quality care given by physicians to patients in some EDs. KATH ED has these challenges of overcrowding due to long boarding hours of patients. mHealth tools could be useful in addressing them.

Methods: We adopted an observational study to critically observe nurses' attitudes towards the use of a mobile phone app to send bed states. Twenty-three mobile phones were dispatched to the various wards that receive patient transfers from KATH ED. Nurses on these wards were trained on how to use the mobile app to send bed state; two hourly, nine times a day.

Results: Using Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis model, we found that mHealth enabled a strong teamwork among staff. This tool enabled better communication between the ED and admitting wards, encouraging patient flow in the ED. However, its use was limited by network challenges; there was apathy among ward nurses because they perceived the technology as extra responsibility.

Conclusion: The mHealth re-echoes the importance of an institutionalized and functioning Electronic Medical Records (EMR) in KATH, but it will be important to consider a behavioral model that will encourage acceptance and compliance among staff of KATH.

Prehosp Disaster Med 2017;32(Suppl. 1):s38

doi:10.1017/S1049023X17001169

Creating a National Capacity for Mass Mechanical Ventilation in Disasters: A Methodology of Capability- building Under Stress

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Study/Objective: To describe a structured, reproducible method of a national mass mechanical ventilation capacity building.

Background: The threat from disasters due to terrorism, war, and nature producing massive numbers of patients requiring mechanical ventilation requires that governments prepare a surge capacity location for multiple ventilated casualties. A structured methodology for creating such a capability has not been published. We present the approach used in Israel for creating a national mechanical ventilation capacity in a very short period of time.

Methods: Sequence of activities:

- Development of relevant scenarios;
- Creation of a multi-disciplinary task force;
- Government guiding document detailing requirements and budget;
- Guiding principles (medical, technical, ethical);
- Concept of operations (system components, manpower, monitoring, command & control);
- Infrastructure (patient units, their distribution, ventilators, monitors, supplies, oxygen);
- Manpower requirements and training;
- Storage and technical support;
- Standard Operating Procedures (SOP) and an ethical framework;
- Request For Proposals (RFP);
- Structured assessment tools for the hardware;
- Structured decision process for choosing the hardware;
- Hardware purchase, storage, and distribution;
- Training of relevant hospital personnel; and
- Ongoing maintenance of hardware and training.

Results: Within three months, a comprehensive capability for mass mechanical ventilation was created, including ventilators, monitors, spares, disposables, personnel, SOP, and ethical framework. The system comprises of a mix of low-end and high-end ventilators, monitors, staff, and care locations. It is capable of simultaneously ventilating and monitoring 2,000 patients. It has been maintained and periodically refreshed.

Conclusion: It is possible to rapidly create mass mechanical ventilation capacity for disasters via a structured, reproducible methodology. We submit that the methodology we created may help other nations desiring to create such a capacity, and offer this description, as well as access to the relevant documents and gained expertise to anyone interested in so doing.

Prehosp Disaster Med 2017;32(Suppl. 1):s38

doi:10.1017/S1049023X17001170

Effect of Multivariate Factors on the Complication of Infection in Lushan Earthquake Victims: A Retrospective Analysis

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Study/Objective: In order to reduce the infection rate of victims after an earthquake, resulting in helping doctors make accurate medical decisions, we conducted this study via clarifying the factors associated with the complication of infection in Lushan Earthquake victims.

Background: Our previous study indicated that infection played a critical role in predicting the length-of-stay in hospital,

which was crucial for the first-line doctors in evaluating the adequacy of medical resource.

Methods: We retrospectively analyzed the information of traumatic patients admitted to West China Hospital during the Lushan earthquake from April 20-27, 2013. Thirteen variables were extracted for the analysis, including gender, age, crush injury, multiple injury, injured time, injured places (in rooms or out), rescued ways (by oneself or others), transferred vehicles (ambulance or others), debridement, white blood cells counts, neutrophilic percentage, hemoglobin, and infection. Univariate analysis was conducted to compare the differences of those indicators mentioned above between the infected and uninfected patients. Moreover, multiple logistic regression analysis was performed to identify the factors associated with the complication of infection.

Results: There were 260 victims included in the present study, 90 of whom got infection, with the infection rate at 34.62%. The univariate analysis showed that age and admission to ICU between the infected and uninfected victims are significantly different. The multiple logistic regression analysis indicated that crush injury, hemoglobin, and transferred vehicle had significant correlation with complication of infection, with their odds ratio being 1.482, 0.987, and 0.660, respectively.

Conclusion: This study demonstrated that victims with crush injury or (and) low hemoglobin are more prone to complicate with infection during the inpatient period. This provides the evidence for doctors to decide which patients need debridement carefully, and more attendance as early as triage, in order to reduce the complication of infection and improve the efficiency of medical resource allocation after the earthquake.

Prehosp Disaster Med 2017;32(Suppl. 1):s38-s39

doi:10.1017/S1049023X17001182

Emergency Health Care Demand

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Study/Objective: The five year Emergency Health Services Queensland (EHSQ) study aimed to describe the trends in EHS demand, to identify the factors driving increased demand, and to evaluate strategies which may safely reduce the future demand growth.

Background: Emergency health is a critical component of Australia's health system which has been fundamentally reformed over the last four decades. While these changes have improved the standards and quality of care, emergency health services are increasingly congested from the combined impact of growing demand and blocked access to inpatient care. This congestion has proven adverse to clinical, organizational, and staff impacts. However, the public, bureaucratic, and political perspective is that this problem somehow reflects at worst, gaming of the system, and so public policy solutions have been underpinned by blaming someone else for the problem. The feasible alternative proposition is that there are more sick people seeking care and exercising thoughtful and wise choices of the most appropriate source of that care.

Methods: This research used a mixed-methods approach comprising of analysis from the Queensland wide operational data, and interviews with 911 patients attending public hospital EDs.

Results: Our findings suggest that demand is growing across all developed nations; amongst the more urgent categories of patients, across all age groups, and a broad range of clinical conditions. The ultimate question underpinning this research is "can anything be done to moderate the growing demand while still offering safe, appropriate, and efficient care?"

Conclusion: Our analysis of remedial strategies has identified three broad categories:

Enhanced primary and secondary prevention.
Management on location.

Diversion to alternative services including appropriate primary care services. The analysis of policy options has confirmed there is no single, or even small group of, interventions likely to make a difference. One distinct policy alternative is that the current arrangements offer the most efficient and effective means of providing the required care, and so ongoing expansion of those services may be most appropriate. However, the alternative is a comprehensive suite of strategies properly coordinated at both policy and operational levels, to ensure patients have access to a range of services from which they may choose the most appropriate to their needs, after weighing up the social, clinical, and financial implications. Additional research is required to develop and evaluate such an approach including the economic, clinical, professional, and social costs and benefits.

Prehosp Disaster Med 2017;32(Suppl. 1):s39

doi:10.1017/S1049023X17001194

Improvement in Success Rate of Intubation, Done by Non-Anesthetist Emergency Physician with the Implementation of Rapid Sequence Intubation (RSI) Protocol in the Emergency Department

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Study/Objective: The aim of this retrospective study was to determine whether the current practice of protocolised Rapid Sequence Intubation (RSI) has improved the success rate of intubation done by EP in ED of All India Institute of Medical Sciences (AIIMS) Trauma Center.

Background: Rapid Sequence Intubation (RSI) is key for securing airways in Emergency Departments (EDs). Literature on safety and feasibility of RSI by Emergency Physicians (EP) from India is limited.

Methods: It is a retrospective cohort study conducted in AIIMS, Level I Trauma Center. Data was collected on various parameters using primary information from the Red Area Patients Registry and Computerized Patient Record System (CPRS) of the period from November, 2007 to July, 2013. "Red area" is the specific area of the emergency department where emergency intubations are performed in cases of severely injured patients.

Results: Out of 2,117 intubations EP performed, 89.4% in pre-RSI group vs 97.9 % in post RSI group. Anaesthetists