

Utilization of the Multi-Pathogen Approach in an Online Program for Prehospital Responders in High Consequence Infectious Diseases

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Introduction: The prehospital disaster and emergency medical services community stands on the front-line in the response to events such as novel influenza, multi-drug resistant tuberculosis, and other high consequence diseases such as the Ebola Virus Disease.

Aim: To address provider and community safety, we developed an online educational program utilizing a Multi-Pathogen Approach to infectious disease personal protective equipment (PPE) deployment by prehospital providers. Such vigilance starts with syndromic recognition and quickly transcends to include operational issues, clinical interventions, and public health integration.

Methods: The University of Maryland, Baltimore County (Maryland, USA), Department of Emergency Health Services partnered with the Maryland State Department of Health (USA), to develop an online educational curriculum. The curriculum was developed through an expert panel consensus group including prehospital providers and is hybrid in design and includes awareness level training and procedural guidance.

Results: Currently deployed online, this educational content demonstrating the use of the Multi-Pathogen Approach is accessible open-access via YouTube worldwide on computers, tablets, and smartphones. This curriculum is also accessible for continuing medical education to over 50,000 prehospital, hospital, and clinic personnel throughout Maryland and the National Capital Region of the United States. The curriculum consists of twelve modules of didactic and live videotaped demonstrations.

Discussion: The development of the Multi-Pathogen Approach for the deployment of PPE and the use of online education modules has given prehospital providers an easily accessible open-access tool for high consequence disease management. The development of educational efforts such as these can help ensure better patient care and prehospital EMS system readiness.

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Weaknesses and Capacities Affecting the Prehospital Emergency Care for Victims of Road Traffic Incidents in the Greater Kampala Metropolitan Area: A Cross-Sectional Study

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Introduction: Prehospital emergency care is a vital and integral component of health systems, particularly in resource-constrained countries like Uganda. It can help to minimize deaths, injuries, morbidities, disabilities, and trauma caused by road traffic incidents (RTIs). This study identifies the weaknesses and capacities affecting the prehospital emergency care for the victims of RTIs in the Greater Kampala Metropolitan Area (GKMA).

Methods: A cross-sectional study was conducted in the GKMA using a three-part structured questionnaire. Data related to the demographics, nature of RTIs and victims' pre-hospital experience and existing Emergency Medical Services (EMS) were collected from victims and EMS specialists in 3 hospitals and 5 EMS institutions, respectively. Data were descriptively analyzed, and a principal component analysis was employed to identify the most influential weaknesses and capacities affecting the prehospital emergency care for the victims of RTI in the GKMA.

Results: From 459 RTI victims (74.7% males and 25.3% females) and 23 EMS specialists (91.3% males and 8.7% females) who participated in the study between May and June 2016. key weaknesses and 5 key capacities were identified to affect the prehospital emergency care for RTI victims in the GKMA. Although some strengths exist, (e.g., ambulance facilitation, EMS structuring, and coordination), the key weaknesses affecting the pre-hospital care for victims were noted to relate to the absence of predefined EMS systems, particularly in the GKMA and Uganda as a whole. They were identified to involve poor quality first aid treatment, insufficient skills/training of the first responders, inadequate EMS resources, and avoidable delays to respond and transport RTI victims to medical facilities.

Discussion: Though some strengths exist, the weaknesses affecting prehospital care for RTI victims primarily emanate from the absence of predefined and well-organized EMS systems in the GKMA and Uganda as a whole.

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Who Can Evaluate the Safety of a Hospital Building Just After a Great Earthquake?

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Introduction: The earthquake-resistant standard of the buildings of Japan is maintained by several levels. After the Great Hanshin-Awaji Earthquake(1995) the Ministry of Land, Infrastructure, Transport, and Tourism in Japan classified the earthquake-resistant performance for the base facilities into 3 levels. The hospital manager often selects the middle level of earthquake-resistance. However, 10 hospitals were closed down for the destruction of facilities by the Kumamoto earthquake. Who may evaluate the safety of a hospital after a great earthquake? The purpose of this study is to consider the methods to evaluate the safety of hospital buildings just after a great earthquake.

Methods: The damage to hospitals and the measures based on Japanese Law are arranged. Then it is considered who can declare the safety of hospital buildings after a great earthquake.

Results: Hospital buildings collapsed in the Hanshin-Awaji Great Earthquake and many hospitals lost a function by a tsunami in the Great East Japan Earthquake. In addition, the glass and the ceilings of the hospital were damaged in the Kumamoto Earthquake. The damage occurred although these many hospitals had an earthquake-resistant standard established in the Building Standard Act of Japan. It is necessary for the experts to judge the safety of the hospital building just after a great earthquake.

Discussion: The safety of hospital buildings is the responsibility of the hospital manager. However, there isn't an expert of building structure employed as staff at a hospital. Thus, the hospital personnel must allow the expert of the building structure to advise a manager. In the future, it is important that the evaluation methods that can judge the damage of a hospital are developed, and the practical training for the hospital personnel are repeated.

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A Verification Test for an Assessment System: Rapid Assessment System of Evacuation Center Condition-Gonryo and Miyagi (RASECC-GM) that Utilizes Mobile Devices

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Introduction: On March 11, 2011, the Great East Japan Earthquake struck the northeastern coast of Japan with the magnitude nine. Ishinomaki medical zone was affected most severely with 328 evacuation shelters and approximately 50,000 evacuees. The Ishinomaki Zone Joint Relief Team gathered information directly from all evacuation shelters using assessment sheets. Based on this assessment data, various measures were carried out for environmental improvement of the shelters. To prepare for the next major disaster, a software program called Rapid Assessment System of Evacuation Center Condition - Gonryo and Miyagi (RASECC-GM) was

developed, which computerizes the whole process, including entering, tabulating, and managing of shelter assessment data. **Aim:** To verify the feasibility, usability, and accuracy of RASECC-GM, a verification test was performed using mock shelter data on October 23-26, 2018, to coincide with Logistics Training Course of Medical Logistics for Disasters held by Iwate Medical University.

Methods: On October 22, 2018 at four simulated disaster relief and health care branches, participants at each branch were asked to enter two mock shelter data items, submit a closed shelter request, and register a new shelter using RASECC-GM, respectively. The next day participants were asked to enter two mock shelter data items per branch while offline and upload the data to the server when next online. The uploaded data was checked for accuracy and whether it could be viewed on the management screen. After the test, a questionnaire survey was given to participants to verify the feasibility and usability of RASECC-GM.

Results: It was confirmed that RASECC-GM functioned almost correctly. All participants answered that input operation was easy to understand, and 90.9% of participants could input without a mistake and did not feel stress when inputting data.

Discussion: RASECC-GM appeared to be useful to shelter assessment, but further improvements are needed for practical use.

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Who Revisits Medical Services at a Music Festival?

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Introduction: Attendees at music festivals rely upon on-site medical services for their emergency and medical care needs. Patients previously cared for can re-present for services at different times over the course of an event.

Aim: To identify the proportion of visits that are repeat presentations at music festivals and discuss themes in the medical care needs of these potentially resource-intensive patients.

Methods: This study included a review of prospectively enrolled patients presenting for health services over five years at a number of music festivals in Belgium and Canada. Patient data were extracted from existing databases of visits as well as visit documentation, and linked by name and date of birth to identify repeat visits. Data were de-identified and visit times, triage acuity, chief complaints, treatments, and discharge instructions were extracted.

Results: Re-presentations constituted approximately 5% of all on-site medical visits. The majority were for minor care (e.g., wounds, dressings, foot care). Repeat visits for major issues included chronic disease (e.g., asthma, seizures, diabetes) and serial intoxications; these were high risk for transport to hospital. Festival duration was positively correlated with the number of patients with multiple visits. Three or more visits or visits in different years were rare occurrences.

Discussion: At music festivals, a small but significant proportion of attendees utilize medical services repeatedly. Most are