focused on teaching acute lifesaving interventions. The Respi-Heart device was applied to the animal and used to monitor vital parameters throughout the training session. A total of 22 animals were included in the study. The data gathered from Respiheart were compared to results from a pulse oximeter and ventilator connected to the animal. Statistical comparison were performed using linear regression and Bland-Altman plots to analyze agreement of methods.
Results: The heart rate as measured by the pulse oximeter was correlated to the rate reported by RespiHeart. The R^2 was 0.9946 with a p-value of less than 0.0001. Bland-Altman analysis of heart rate revealed a bias of -0.06127 (95% CI -2.219-2.097). The respiratory rate as set on the ventilator was correlated to the rate reported by RespiHeart. The R^2 was 0.9978 with a p-value of less than 0.0001. Bland-Altman analysis of respiratory rate revealed a bias of -0.008584 (95% CI -0.42-0.4028).
Conclusion: The results obtained in this study demonstrate a high degree of correlation between the data obtained from RespiHeart and the pulse oximeter and ventilator. This renders RespiHeart as a promising device for prehospital use.
Prehosp Disaster Med 2017;32(Suppl. 1):s165–s166
doi:10.1017/S1049023X17004460

Alert Function of Emergency Medical Information System: Securing Sufficient Time and Medical Resources in Mass Casualty Incidents

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Study/Objective: To evaluate the efficacy of alert function for mass casualty incidents in which prompt information can be provided from fire departments to hospitals.
Background: In mass casualty incidents, securing sufficient time and resources for medical action/response is key. In 2003, Emergency Medical Information System in Hyogo Prefecture (EMISHP) was innovated with a special alert function, through which fire departments can simultaneously alert medical institutions about mass casualty incidents in local man-made disasters.
Methods: Retrospective analysis of mass casualty incidents/disasters in which the alert function was activated from 2003 to 2015. Number of casualties, destination hospitals to which the injured were transported, duration from emergency call to activation of alert function (activation time), time of search and rescue activity at the scene (S/R time), etc., were evaluated.
Results: In 13 years, the alert function was activated in 143 mass casualty incidents. These included motor vehicle accidents, fire/explosion, chemical spill, etc. The casualty count ranged from 0 to 662 (median value = 5). Activation time ranged from 1 to 89 minutes (median value = 12). S/R time ranged from 13 minutes to 23 hours 23 minutes (median value = 70 minutes). The number of destination hospitals ranged from 0 to 54 (median value = 3). In all cases, Emergency Medical Coordinators (EMCs) at Hyogo Emergency Medical Center, a principal hub hospital for disasters, directly or indirectly assisted, by providing prompt first aid at the hospitals, dispatching doctor-attending cars or helicopters and DMATs (Disaster Medical Assistance Teams) to the scene if requested, and coordinating activities across medical teams and fire departments.
Conclusion: By sharing up-to-date information with hospitals and fire departments, the alert function of EMISHP, along with the EMCs' coordination, enables smoother patient transport to hospitals and improved medical activities at the scene. This alert function contributes much in securing sufficient time and resources for medical response in mass casualty incidents.
Prehosp Disaster Med 2017;32(Suppl. 1):s166
doi:10.1017/S1049023X17004472

So You Need to Suddenly Evacuate Hundreds of Hospital Patients - Without Power

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Study/Objective: This case study will discuss events during, after, and lessons learned from one of the largest 'entire' hospital evacuations to date in United States History.
Background: Between 1971 and 1999 there were about 275 reported hospital incidents involving hospital evacuations. Of these, a majority occurred because of an event that originated within the hospital. Whether natural disaster or not, hospitals are an easy target to become victims of sudden catastrophic events. In the summer of 2016, a lightning strike and fire forced the evacuation of a multi-story hospital of hundreds of patients without power.
Methods: After lightning struck a Florida Hospital, a fire then ensued that destroyed both the power and the backup power for the entire hospital, despite the fire itself spreading. This led to more than 70 ambulances from over 175 miles away, three ambulance Mass Casualty Incident (MCI) buses, multiple engine companies, emergency management response, a couple EMS physicians, and multiple sheriff's units evacuating over 200 patients, both ambulatory and Intensive Care Unit (ICU) intubated and ventilated patients, to various hospitals in the region.
Results: No deaths were reported, and no further injuries initially reported among rescuers during the approximately six hour operation.
Conclusion: While a large number of various agencies and hospitals had an impressively successful outcome, many lessons can be learned for other facilities as well as improvements for an even better response in the future, and hopefully disaster mitigation.
Prehosp Disaster Med 2017;32(Suppl. 1):s166
doi:10.1017/S1049023X17004484

EMS Preparedness to Arson Terror

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Study/Objective: Research characteristics of arson terror and the differences between wildfires that occur naturally and those by arson, to learn the necessary preparedness concepts and reduce response times while improving response quality to such events.

Background: Wildfires occur where all elements of the fire triangle exist, these are an ignition source, combustible material and oxygen. During December 2010 Israel's Carmel forest experienced an extensive forest fire with 17,000 people evacuated from their homes and 44 dead, the fire did not extend out of the region where it started. During November 2016, the weather conditions were hot and dry and fires occurred in multiple regions in Israel, some not close to each other. The police investigations are yet to have final conclusions but preliminary reports show that 40/90 fires are due to arson.
Methods: Magen David Adom (MDA), the Israeli national EMS organization compared the difference between arson terror and wildfires from EMS perspective.
Results: Fires occurred in different regions of Israel, more than 1,500 apartments were consumed and 75,000 people evacuated. Two nursing homes were evacuated with more than 80 patients transported, including an ICU ward with 22 mechanically ventilated patients. More than 125 casualties were evacuated with smoke inhalation injuries. MDA resources utilized include 845 ambulances, 61 medicycles, 99 mobile intensive care units (MICUs), 2 mass casualty incident (MCI) vehicles, an advanced command & control vehicle and emergency backup ambulances.
Conclusion: Arson terror is characterized by multiple fires in different regions. The Magen David Adom response to extensive incidents is based on shift, on-call response and recruiting personnel and vehicles from nearby regions. Mobilization of EMS resources is complicated because of fires blocking roads, the need to simultaneously respond in multiple regions while holding preparedness in others because of the uncertainty factor about the locations of next arsons. Also, although they had been called, not all personnel can report to duty because their homes or families are affected.

Prehosp Disaster Med 2017;32(Suppl. 1):s166–s167
doi:10.1017/S1049023X17004496

Simulating Multi Casualty Incidents to Improve Preparedness of Potential Incident Commanders for Real Events

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Study/Objective: To study the influence of Mass Casualty Incident (MCI) simulator on the confidence and decision-making of potential incident commanders.
Background: Israel has been dealing with multi casualty incidents since before it was founded. Magen David Adom (MDA) as the Israeli national EMS organization, has gained extensive MCI experience. MDA personnel are trained in the concepts and algorithms of MCIs and incident commander training is mandatory for EMT's and Paramedics. A simulator was developed with cooperation of "Technicon" institute to simulate the high load on the thought processes while making decisions. The participant is briefed at the beginning of the scenario, then he must follow the initial MCI algorithm and start making decisions to distribute forces, triage and patient treatment. The simulator does not allow delegation of medical, parking and transportation responsibilities to deputy commanders.
Methods: The simulator was played by MDA personnel in a classroom mode. Participants were given 10 minutes per scenario, each participant played 3-5 scenarios after which, the participants had to fill out a survey about the scenario, and a concluding survey after the completion. The logs were retrieved and compared to the surveys to analyze change in confidence level as incident commander, action times and durations, prioritization skills and overall survival of casualties.
Results: With the completion of each scenario the participants reported a rise in their confidence level as incident commander, shorter response times for requests for additional resources, and shorter times for initial triage and patient treatment, and transportation to the hospitals.
Conclusion: The simulator engages participants to make quick and appropriate decisions while in state of stress. The main goal is to save as many lives as possible by conducting good initial triage and lifesaving treatment, transporting as many patients as possible - as quickly as possible and with the most appropriate medical personnel. The simulator was found to increase confidence, decision making and prioritizing among incident commanders.

Prehosp Disaster Med 2017;32(Suppl. 1):s167
doi:10.1017/S1049023X17004502

Developing an Educational Intervention to Train Prehospital Responders in High Consequence Emerging Infectious Diseases

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Study/Objective: The goal of this session is to provide participants with an overview of efforts currently underway, to develop an interactive online curriculum to provide an awareness level, as well as, just-in-time training for issues surrounding response to high consequence emerging infectious diseases.
Background: From the global threat of Ebola Viral Disease, to outbreaks of novel influenza, through localized outbreaks of multidrug resistant tuberculous, the prehospital disaster and emergency medical community must continue to maintain a constant awareness of operational and clinical concerns associated with high consequence emerging infectious diseases. Such vigilance starts with syndromic recognition, and quickly transcends to include operational issues, clinical interventions, public health integration.
Methods: The University of Maryland, Baltimore County (Maryland, USA), Department of Emergency Health Services has partnered with the Maryland State Department of Health and the Centers for Disease Control and Prevention (USA), to develop an online educational curriculum. The curriculum is hybrid in design and includes awareness level training, as well as, just in time "medical minutes" for providers to review in near, real time. Once deployed, the content will be accessible via computer, tablet and smartphones. The curriculum is validated by subject matter experts and field providers for content and usability.