

Exploring the Utilization of Small Unmanned Aerial Vehicles (UAV) Known as Drones in Early Phase Disaster Response

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Introduction: Disaster Medical Response is a challenging field where opportunities for advancement are welcomed. Small Unmanned Aerial Vehicle (sUAV) technology (i.e., drones) has made enormous strides in the past few years and is poised for utilization in the early disaster response phase.

Aim: To discuss current uses of UAVs, proposed utilization and logistical details, technological advancements, current deficits, and training.

Methods: Our Foundation, Luman Medical, is working in the field of UAV integration for small to large scale disaster response. The concept is to equip first responders with small, relatively inexpensive, programmable drones that come equipped with hardware and software that are easy to use for inexperienced as well as skilled sUAV pilots.

Discussion: These UAVs could increase ease and speed of deployment for early assessments of disaster area mapping, thermal imaging, ingress and egress routes, the discovery of survivors, communications, and delivery of supplies. Drone technology offers a new and growing type of tool in the disaster response arena. It is our hope to explore an integration that is easy, safe, and affordable to augment and enhance existing disaster response planning.

Prehosp Disaster Med 2019;34(Suppl. 1):s132

doi:10.1017/S1049023X19002875

First Aid Management of Hypothermia and Cold Injuries

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Introduction: Best practice first aid management of accidental hypothermia and cold injuries in the prehospital setting is relevant for disaster management in cold environments as well as for wilderness and expedition medicine, and space medicine. In the Australasian context, guidance is currently taken from the Australian Resuscitation Council (“ARC”) Guidelines dealing with these issues.

Aim: To review and update the recommendations of the ARC Guideline 9.3.3 Hypothermia: First-Aid Management (February 2009) and ARC Guideline 9.3.6 Cold Injury (March 2000).

Method: The review is being undertaken through a combination of a focused literature review and expert opinion. Through the author’s membership of the International Commission for Alpine Rescue (“ICAR”) Alpine Emergency Medicine Commission, two northern-hemisphere experts on hypothermia

have reviewed the guidelines and provided commentary and recommendations.

Results: Much of the literature around accidental hypothermia and cold injuries (including frostbite, frostnip, and chilblains), relies on expert opinion and case studies. There are relatively few randomized controlled trials, and these are often confined to the laboratory setting. As a result, there is a heavier reliance on expert opinion than in any other areas of medicine.

Discussion: This presentation will summarize the current best practice recommendations for the first aid management of accidental hypothermia and cold injuries through combining the existing ARC Guidelines with key advances identified through the literature review, and the key management recommendations stemming from expert opinion. This will provide attendees with a cohesive set of clinical practice recommendations which can be used in the field.

Prehosp Disaster Med 2019;34(Suppl. 1):s132

doi:10.1017/S1049023X19002887

Focused Ultrasound: Applications and Implications for Education

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Introduction: Focused or point of care ultrasound applications have been integrated into prehospital assessments, triage capacities, military applications, trauma, and emergency health care settings, and medical school curriculums. Often, the inclusion of focused ultrasound is to answer specific clinical questions. However, the value is ultimately determined by the experience, skills, and training of the operator performing and interpreting the examination. Ultrasound was reserved for traditional imaging providers as little as two decades ago. However, as the application of ultrasound expands within clinical medicine, there is an increasing necessity for associated education and training.

Aim: To highlight the applications and uses of focused ultrasound in the current diverse health care landscape while identifying the associated educational considerations, including the undergraduate tertiary education sector.

Methods: A search of peer-reviewed published literature was undertaken to determine the range of current usage of ultrasound imaging across professions, and to identify the education and training available.

Results: The results discussed within this presentation will highlight identified trends, ultrasound applications, educational considerations, and potential future practices based on the content of the literature explored.

Discussion: Technology is rapidly advancing in the field of medical ultrasound with handheld ultrasound scanners now smaller, less expensive, and more accessible than ever before. Paralleled with these advances and the more generous use of ultrasound come the expectation and pressures of competent skill diversity among healthcare staff and specialists. Significantly, sonography is still considered by many as the most technically demanding and operator dependent medical

imaging modality available. Therefore, as the application of ultrasound expands within clinical medicine, educational considerations must also align with this expansion to maintain diagnostic accuracy. This means an increasing demand for associated education and training, including in the undergraduate tertiary education sector.

Prehosp Disaster Med 2019;34(Suppl. 1):s132–s133

doi:10.1017/S1049023X19002899

From Yokohama, Hyogo, and Sendai to the World: The Global Legacy of Kobe

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Introduction: The Hyogo and Sendai Frameworks for Disaster Reduction are well known and have been influential globally. However, less is known of their broader contexts.

Aim: A recent opportunity to visit Kobe, Japan, provided an opportunity to experience the rich, and largely unknown tapestry behind the scenes of the Hyogo and Sendai Frameworks. This paper aims to illuminate the journey of the Kobe Legacy and its global influence.

Methods: An experiential visit to Kobe and exploring its rich resources relating to disaster risk reduction.

Results: The First World Conference on Natural Disasters, was held in Yokohama, Japan, in 1994. Almost immediately, Kobe experienced the Great Hanshin Earthquake, January 17, 1995, resulting in 6,434 dead, 43,792 injured, and 249,180 homes damaged. The United Nations International Strategy for Disaster Reduction (2000 – 2005) culminated in the Second World Conference on Disaster Reduction, Kobe, 2005 and the Hyogo Framework for Action 2005 – 2015. The Great East Japan Earthquake occurred on March 11, 2011, with 18,453 dead or missing, 6157 injured, 1.1M homes damaged, with a tsunami and nuclear accidents. The Third World Conference on Disaster Risk Reduction followed in Sendai in 2015 with the Sendai Framework for Disaster Risk Reduction 2015 – 2030 agreed on. Subsequently, the Sendai Framework has further evolved. However, behind the scenes, Kobe has developed a rich tapestry of insightful and valuable resources which will be outlined in this presentation.

Discussion: In the words of the Mayor of Kobe, Mr. Tatsuo Yada in 2010, “I would like to reaffirm my determination to never allow our experiences of the disaster to fade away. It is our responsibility to make the utmost effort for disaster prevention and mitigation and keep passing on our experiences and the lessons learned to future generations”. This is the real legacy of Kobe.

Prehosp Disaster Med 2019;34(Suppl. 1):s133

doi:10.1017/S1049023X19002905

Gender-Based Violence After A Natural Disaster

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Introduction: Gender-based violence is endemic across the world. The current evidence suggests that gender-based violence increases after natural disasters. Factors leading to this increase following

natural disasters include physical displacement, loss of community supports and protections, economic hardship, and gendered differences in coping. Multiple agencies are mobilized in response to natural disasters, however, personnel are often not adequately trained to recognize or address gender-based violence.

Aim: To identify challenges faced by disaster responders in recognizing and responding to gender-based violence in disaster settings, and to advocate for gender-sensitive training prior to deployment by responding personnel.

Methods: The world’s literature was reviewed to identify challenges for disaster teams in recognizing and responding to gender-based violence, and to identify principles of training which may be applicable for pre-deployment competency building by disaster response personnel

Results:

Disaster response programs should ensure:

- Collection of data to identify vulnerable populations
- Establishment of procedures for monitoring and reporting
- Inclusion of female staff at all levels of planning and response
- Implementation of holistic services including physical and psychosocial care and legal response
- Safety in designing accommodations and distribution centers

Pre-Deployment training should include:

- Gender-sensitive approach, knowledge of prevalence and impact of gender-based violence
- Familiarity with behaviors and conditions associated with gender-based violence
- Non-judgmental, supportive, and validating approach to inquiry and response
- Familiarity with risk assessment tools
- Mobilization of social supports
- Knowledge of resources, including medical and legal services

Discussion: Natural disasters are destabilizing events which expose vulnerable populations, particularly women, to increased violence. Disaster response teams should be adequately trained on the prevalence and impact of gender-based violence to ensure gender-sensitive interventions. Standard training of response personnel can ensure adequate identification of victims of gender-based violence and referral to appropriate services.

Prehosp Disaster Med 2019;34(Suppl. 1):s133

doi:10.1017/S1049023X19002917

Happy New Year! Do New Year’s Eve Festivities Influence the Workload of the Emergency Department of an Urban Hospital?

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Introduction: Bruges is the largest city in the province of West-Flanders in Belgium. Because of its ample canals, it is sometimes referred to as “Venice of the North.” As such, it is