

**Introduction:** If there is consensus about how to handle a patient with a specific condition, from the ambulance service point of view, it matters less for the patient which ambulance arrives to take care of the patient. Guidelines are a way of standardizing treatment or management of the patient for a given patient condition. Clear and implemented guidelines that promote the handling of the patients is done from best practice and are evidence-based according to the best ability of the organization.

**Aim:** The aim of the current study was to implement guidelines into an organization that was not currently using guidelines. The study was conducted as a collaborative effort between a Swedish pre-hospital training organization and the local ambulance service organization in Kosovo.

**Methods:** An iterative process of implementing the guidelines was applied:

1. Identify guidelines appropriate for the local organization. For each iteration, five guidelines are chosen.
2. Have the five guidelines translated into Albanian.
3. The guidelines are adapted to local conditions and context.
4. The five guidelines are approved by an expert group.
5. The five guidelines are implemented in the organization.

**Results:** The initial iteration included was carried out in the form of a workshop where 22 persons (doctors and nurses) from the local ambulance service in Kosovo participated. During the workshop, the first three implementation steps were taken, while remaining steps were carried out by the local organization.

**Discussion:** With the local management and ambulance personnel involved throughout the process, the implementation of guidelines were delivered in a more feasible way as well as more easily accepted and adhered to. Supporting a standardized treatment or management of the patient will benefit future patients. These standards should be based in evidence-based practice adopted to local conditions.

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### Improving Emergency Preparedness among Children with Special Health Care Needs in a Pediatric Infant Disease Clinic

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**Introduction:** Children with Special Health Care Needs (SHCNs) are at an increased risk for physical, developmental, or emotional conditions, and require special services beyond what is typically required by children. Improving emergency preparedness amongst families with SHCNs has been advocated by the Centers for Disease Control (CDC), Federal Emergency Management Agency (FEMA), and The American Academy of Pediatrics (AAP).

**Aim:** We evaluated the preparedness of children and family members, who are infected, or affected, by HIV illness and require daily medications.

**Methods:** A convenience sample was used to enroll patients and their parents at a pediatric infectious disease clinic. Surveys were used to assess baseline emergency preparedness. Patients were then given an educational intervention on improving personal preparedness. Participants were provided with emergency go-kit and educational materials. Follow up was completed in 30 days to re-assess preparedness by re-administering the initial survey with additional questions.

**Results:** Thirty-eight patients were enrolled and 10 were lost to follow up. Data from a total of 28 patients were used for study results analyses. Chi-squared testing was used for non-parametric variable analyses for an  $N < 30$ . Participants who designated an emergency meeting place outside of their home, post-intervention, were statistically significant-X<sup>2</sup> (1) = 29.20, p-value <0.0001. Participants who completed an emergency information form, post-intervention, were statistically significant-X<sup>2</sup> (1) = 13.69, p-value <0.0002. Participants who obtained an emergency kit of supplies for 3 days, post-intervention, were statistically significant-X<sup>2</sup>(1) = 8.92, p-value <0.0028. Participants who obtained a home first aid kit, post-intervention, were statistically significant-X<sup>2</sup>(1) = 12.16, p-value <0.0005. Five families obtained an emergency supply of medications, post-intervention-X<sup>2</sup> (1) = 1.99, p-value = 0.1582. This result was not statistically significant.

**Discussion:** This study demonstrates that brief educational intervention has potential to improve the preparedness of CSHCNs, including those living with HIV illness.

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### The Incidence of Post-Traumatic Stress Disorder Among Healthcare Providers After the 2018 Taiwan Hualien Earthquake

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**Introduction:** On February 6, 2018, a magnitude 6.2 earthquake struck Hualien, Taiwan. Over 150 patients crammed into the emergency department of nearby hospitals within two hours. Mass casualty incident (MCI) management was activated. During the recovery phase, little attention was paid to the mental health of hospital staff.

**Aim:** To analyze the prevalence of post-traumatic stress disorder (PTSD) among healthcare providers (HCPs) and explore the possible risk factors.

**Methods:** 63 HCPs in the emergency department of the single tertiary hospital near the epicenter were included. The Chinese version of the Davidson Trauma Scale (DTS-C) was used to evaluate the prevalence of PTSD. Questionnaires were sent to explore the possible contributing factors.

**Results:** The average age of the HCPs was 32.7 years (30.3 years for nurses; 40.4 years for physicians). The prevalence of PTSD was 3.2% eight months after the incident. The mean DTS-C score was 8.9/136. Nurses had a higher score than physicians (10.8 and 4.7). HCPs with 6-10 years working experience had the highest score (14.2), while those with less than 3 years experience had the lowest (4.8).

**Discussion:** We found HCPs had a lower prevalence of PTSD compared with earthquake survivors (Chou 2007), and physicians had longer working years and lower DTS-C scores. The professional training may help HCPs going through psychological impacts during the disaster. HCPs with 6–10 years of experience in the emergency department were found to have a higher risk of developing PTSD. Most of them were taking the responsibility of a team leader during the MCI, which may cause significant stress to these staff. Adequate training regarding MCI management could help to relieve tension and frustration, hoping to prevent the development of PTSD. Based on our study, PTSD among HCPs is an ignored issue, and we should follow-up HCPs' psychological condition in the future.

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### Incident Command Adaptations during Sustained Mega-Shelter Medical Clinic Operations during 2017 Hurricane Harvey Response in Dallas, Texas

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**Introduction:** The Dallas Convention Center received over 3800 evacuees because of the unprecedented flooding caused by Hurricane Harvey. A multidisciplinary medical clinic was established onsite to address evacuee needs for medical evaluations, emergency care, chronic disease management, pharmaceuticals, durable medical equipment, and local health services integration. To operate efficiently, the Dallas Mega-Shelter Emergency Operations Center (EOC) worked with the Mega-Shelter Medical Clinic (MMC) under a fluid incident command (IC) structure that was National Incident Management System (NIMS) compliant. Iterations of MMC IC demonstrated maturations in organizational structure while supporting MMC operations that varied from rigid NIMS doctrine.

**Aim:** To explore the use of a fluid IC structure at a large evacuation medical shelter after Hurricane Harvey.

**Methods:** We observed evolutions of IC organizational charts and operational impacts.

**Results:** Modifications through just-in-time iterations of the IC organizational chart were posted and reviewed with MMC IC and EOC sector chiefs. Changes in the organizational chart were noted to improve identification of logistical needs, supply delivery, coordinate with other agencies, and to make decisions for resource typing and personnel utilization. Adaptations also improved communication, which led to timely situational awareness and reporting accuracy.

**Discussion:** MMC medical services were improved by allowing modifications and adaptations to NIMS compliant MMC IC organizational roles and duty assignments. The fluidity of IC structure with ability for just-in-time modifications directly impacted the provision of disaster medical services. Unique situational awareness, coordination of care pathways within the local innate health infrastructure, compliance with health service regulations, and personnel resource typing all

contributed to and benefitted from these IC modifications. MMC and EOC IC collaboration facilitated effective communication and maintained an appropriate span of control and efficient activity reporting.

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### Influenza Vaccine Uptake and Associated Factors in Aged Care Facilities

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**Introduction:** Influenza vaccine is recommended for high-risk populations in Australia (including those aged over 65 years) but is less effective in the elderly due to a progressive and predictable age-related decline in immune function, referred to as immunosenescence. Aged care facilities (ACF) are known to be at high risk of explosive outbreaks of influenza (even in highly vaccinated populations) and may reflect a higher intensity of transmission within the closed setting of ACF, as well as lower immunity and immunosenescence in the frail elderly.

**Methods:** To measure the impact of influenza in aged-care staff (ACS) and residents as well as vaccine effectiveness, a prospective observational epidemiological study was conducted in collaboration with an aged-care provider with multiple sites from March to October 2018. Weekly active surveillance on influenza-like symptoms and questionnaires were used to collect data on two groups: ACS and residents. A range of variables was examined against their 2018 influenza vaccination status in statistical analysis.

**Results:** Vaccination rates were high in residents and consistent with other studies. Vaccine rates in aged-care staff were lower and consistent with other studies.

**Discussion:** Residents and relatives are unlikely to change their minds about vaccination from year to year unless there is targeted effort to persuade them to so, and negative perception of the vaccine is likely to persist. Workplace influenza vaccination programs targeted at staff could be an effective method of raising vaccine uptake.

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### Innovating Disaster Health and Medical Emergency Responses for an Emerging Global Threat

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**Introduction:** The global health threat posed by the ongoing deterioration in natural ecosystems and damage to our physical environment is growing at a rapid pace. Less recognized is the threat from natural hazard disasters, which concentrate contaminants from the damaged environment and expose large vulnerable populations to life-threatening medical conditions and disease. Currently neither international nor any national