Methods: Cases of the J-SPEED activation at the Kumamoto earthquake in 2016, West Japan Heavy Rain in 2018, and Hokkaido Earthquake in 2018 were reviewed.
Results: The first large-scale activation of the J-SPEED at the Kumamoto earthquake revealed a significant burden in aggregations of submitted paper forms at the EMT Coordination Cell (EMTCC). To strengthen this function of the EMTCC, electronic system and human capacity development have been identified as key issues. To fulfill this gap, a smartphone app so-called J-SPEED+ has been developed. Also, the J-SPEED offsite analysis support team, which is a team to support analysis of data from outside of an affected area has been established. These two functions contributed to significant improvement of J-SPEED data flow at the West Japan Heavy Rain and Hokkaido Earthquake. These two responses reinforced the necessity of strengthening the capacity of J-SPEED onsite coordinator working at the ETMCC, and national education and training for all EMTs.
Discussion: In order to strengthen the mechanism to run the J-SPEED, nationwide training for all EMTs, onsite coordinators, and the off-site analysis support team have been established. The authors regard this structural approach as a requirement for other countries to run the MDS.

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The Experience of a Mass Casualty Incident Call in a Tertiary Hospital after the 2018 Hualien Earthquake

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Introduction: After a 6.0 magnitude earthquake struck Hualien on February 6, 2018, over one hundred and fifty patients crammed into the emergency department of a nearby tertiary hospital within two hours. The mass casualty incident (MCI) call was activated, and over 300 related personnel responded to the call and engaged with the MCI management.
Aim: This research aimed to analyze the practice of an MCI call and to form the strategies to improve its efficiency and effectiveness.
Methods: The research was conducted in a tertiary hospital in Hualien, Taiwan. Questionnaires regarding the practice of the MCI call were sent out to the healthcare providers in the emergency department who responded to that MCI operation.
Results: Thirty-seven responders in the emergency department were involved in this study. 78% had participated in training courses for hospital incident command system (HICS) or MCI management before this event. On arrival at the emergency department, 69.4% of the responders were aware of the check-in station and received a clear task assignment and briefing. During the operation, 25.7% reported the lack of confidence carrying out the assigned tasks and 54.1% of the participants experienced great stress (stress score over 7 out of 10).
Discussion: MCI is an uncommon event for hospital management. It is universally challenging owing to its unpredictable and time-sensitive nature. Furthermore, the administration could be further complicated by the associated disasters. Despite regular exercises and drills, there are still a significant number of participants experiencing stress and confusion during the operation. The chaotic situation may further compromise the performance of the participants. This study showed that optimizing task briefing and on-site directions may improve the performance of the MCI participants.

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The Experience of Using Informational Systems to Improve the ACLS Process Optimization in the Emergency Department

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Introduction: The best first-aid treatment for cardiac arrest patients is Advanced Cardiac Life Support (ACLS) to not only hope to save lives but to also leave minimal sequelae. The American Heart Association (AHA) published updated ACLS guidelines for care in 2015 emphasizing the concept of teamwork in resuscitation. However, the actual use of ACLS is not easy due to stress and unfamiliarity with the process.
Aim: Therefore, we want to use the information technology to assist the medical team to implement the ACLS process. This information system can help us to save time and labor, as well as increase precision. In addition to this, data analysis is more convenient, which facilitates the management and supervision of resuscitation quality.
Methods: An information system was developed using responsive web design (RWD) website. It can be used on a variety of devices, such as desktops, tablets, or mobile phones, and can be updated simultaneously. The system requires non-synchronous operation to be used in a wireless network environment. When the information system is in operation, the medical personnel can perform the resuscitation actions according to voice prompts, which can periodically remind staff to check rhythm, give correct medication dose, and identify whether defibrillation shock is needed. At the same time, the entire process can be recorded instantly. After the file is uploaded, the medical records are complete at the same time.
Results: After 3 months, the satisfaction of medical staff reached 80.3%, the rate of return of spontaneous circulation (ROSC) of OHCA cases elevated to 45% from 15%, and discharge without neurological sequelae elevated to 33% from 27.4%.
Discussion: All hospital staff can use this system to assist in the correct implementation of advanced CPR. It improves the quality of resuscitation and reduces the burden on clinical and writing medical records of medical staff.

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