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Introduction: Nankai Trough earthquake, with an anticipated death toll of 323,000, is a disaster for which the country of Japan set the highest priority on building capacities. Tokushima prefecture aims to minimize preventable death among survivors and has strived to build a medical and health response system and strengthen outreach systems for vulnerable populations. To actualize these aims, Tokushima prioritized human resource development.

Methods: Tokushima has initiated periodic trainings based on the Sphere Standard, the internationally recognized minimum standards for humanitarian aid, since 2015. The trainings were conducted by certified trainers and trainees received an official certification recognized by the Sphere Project, Geneva. The training materials were localized and the trainings were contextualized to Japan as a developed and super-aged nation. The learning outcome was evaluated by a pre-post test.

Results: Between April 2015 and November 2018 the two-day training was held seven times. There were two hundred twelve participants from various clusters such as health, education, logistics, nutrition and food, security, and protection. The results of the pre-post test were statistically significant (still in process) indicating the effectiveness of the training on knowledge. Training evaluations suggest nurturing ethical attitudes and skills utilizing the Sphere Handbook.

Discussion: Despite under-recognizing the Sphere Standard in Japan, the Standard has been incorporated into the disaster risk reduction plan in Tokushima. For larger scale human resource development, training local representatives to be trainers would be the next step.

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Novel Delivery of Meaningful EMS and Disaster Medicine Content to Residents and Medical Students

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Introduction: Residency education delivery in the United States has migrated from conventional lectures to alternative educational models that include mini-lectures, small group, and learner lead discussions. As training programs struggle with mandated hours of content, prehospital (EMS) and disaster medicine are given limited focus. While the need for prehospital and disaster medicine education in emergency training is understood, no standard curriculum delivery has been proposed and little research has been done to evaluate the effectiveness of any particular model.

Aim: To demonstrate a four-hour multi-modal curriculum that includes lecture based discussions and small group exercises,

culminating in an interactive multidisciplinary competition that integrates the previously taught information.

Methods: EMS and disaster faculty were surveyed on the previous disaster and prehospital educational day experiences to evaluate course content, level of engagement, and participation by faculty. Based on this feedback, the EMS/Disaster divisions developed a schedule for the four hour EMS and Disaster Day that incorporated vital concepts while addressing the pitfalls previously identified. Sessions included traditional lectures, question and answer sessions, small group exercises, and a tabletop competition. Structured similarly to a strategy board game, the tabletop exercise challenged residents to take into account both medical and ethical considerations during a traditional triage exercise.

Results: Compared to past reviews by emergency medical faculty, residents, and medical students, there was a precipitous increase in satisfaction scores on the part of all participants.

Discussion: This curriculum deviates from the conventional education model and has been successfully implemented at our 3-year residency program of 66 residents. This EMS and Disaster Day promotes active learning, resident and faculty participation, and retention of important concepts while also fostering relationships between disaster managers and the Department of Emergency Medicine.

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A Novel Strategy to MCI Management

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Introduction: On February 6, 2018, a 6.0 magnitude earthquake struck Hualien, a county of East Taiwan. Hualien Tzu Chi Hospital, the only tertiary hospital in East Taiwan, activated the mass casualty incident (MCI) call and received 144 patients that night. Our operation did not perform satisfactorily despite regular MCI drills. Thus, a new strategy to cope with the increasing frequency of disaster-related MCIs was developed.

Aim: To facilitate the management of disaster-related MCIs, we developed a novel Disaster Response System which includes a triage system combining Simple Triage and Rapid Treatment (START) and Five-Level Taiwan Triage and Acuity Scale (TTAS), a novel registration system for MCIs, and anonymous patient identification and reporting system.

Methods: We begin the triage with the START method and then shift to the TTAS. The new registration system only needs the patient's gender, age, and triage category. Patients are then assigned to different treatment areas accordingly. Further dispositions are applied after initial stabilization management. To identify the anonymous disaster victims, we take photographs of victims after clean-up and display them on an electronic bulletin with the patient list to the families in our emergency department. Real-time casualty statistics are collected automatically and synchronized to the governmental administrative system.

Results: This novel Disaster Response System reduces the time from patient arrival to definite treatment and disposition in a simulated mass casualty incident exercise. The victim

identification bulletin provides clear information to those who are seeking their family, and thus, avoids the chaos of the scene.

Discussion: From the experience of the earthquake-related MCI, we found that inadequate training causes time mis-triage and treatment delays. Our Disaster Response System facilitates the workflow with an easily practiced algorithm, reveals on-time and easily accessible information to the public, and altogether improves our MCI management.

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Nurse Leadership in a Small Hospital in the Less Developed Country: Is It Needs or Circumstances?

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Introduction: Clinic Communal de Miniera is a small hospital located in the poor Dixinn district in Guinea Conakry. The hospital functions with seven general physicians, three surgeons, one gynecologist, one dentist, and fifteen nurses. The facility provides small admitting wards for medical, gynecologist (mostly maternity), and pediatric patients. The average number of patients per day is about forty, including acute and ambulatory patients. Although there is a medical director, the daily work is run by the Head Nurse (HN) who is specialized (on spot) as an Emergency Nurse. Management of all emergency patients is based on her experience, personality and the reality of the organization.

Results: The circumstances emphasized the gaps between the managerial needs and existent reality, and raised the HN role to a team leader. The work will present the situation in the hospital as a case study related to “non-conventional” management due to a “deferent” situation and will highlight questions related to capabilities and risk factors.

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Nursing Can Improve Shelter Environment: Cluster Approach and the Sphere Standard Based Community Shelter Drill

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Introduction: As Florence Nightingale stated, nursing plays a critical role in environmental management for people in sick, injured, and even good conditions. In current practice, affected people are forced to reside in the evacuation shelters for a prolonged period in Japan. Unfavorable living conditions lead to adverse physical and psychological outcomes including cardiovascular events, depression, and more. However, environment management cannot be achieved without involving the community.

Aim: To initiate community into shelter environment management a multi-cluster drill was coordinated by the Department of Psychiatric and Mental Health Nursing, University of Miyazaki,

which appointed a director of Shelter Management for the annual nation-wide disaster drill hosted by the Cabinet Office of Japan.

Methods: With the Department of Health and Pharmaceuticals, Miyazaki Prefecture, the director invited local communities and held an exhibition type disaster drill on August 4, 2018.

Results: 36 organizations, including prefectural and municipal crisis management departments, health care organizations, a social welfare council, Red Cross, a telecommunication company, WASH cluster organizations, and the Japan Ground Self-Defense Force participated. The director requested to develop a plan filled with tactics and techniques protecting the health of people living in the shelter. Through meetings, the organizations recognized similarities and differences in roles, responsibilities, and capacities leading to an organized inter-cluster network. Participants created and prosecuted the plan independently and the director only orchestrated and negotiated with other supporting entities. The organizations exhibited and demonstrated how residents can protect their own physical and psychological health by setting up a proper shelter environment. Direct feedback from residents to organizations resulted in an expanded local network and the organizations improving their capacities.

Discussion: Shelter environment cannot be managed by nursing solely but coordination by nurses may consolidate multi-cluster aid organizations so that shelter environment management would be done by residents and local organizations.

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One Hospital's Timeline for In-Hospital Vertical Evacuation during a Flood Disaster

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Introduction: Recently, the risk of flood disasters due to concentrated heavy rains has been increasing in Japan. While some cases of hospital evacuation have been reported, standards for hospital evacuation have not been established and regional administrative evacuation plans do not include medical facilities.

Aim: To clarify the timeline for in-hospital vertical evacuation during a flood disaster.

Methods: A timeline was set for vertical evacuation as criteria of the hospital's emergency response based on the Arakawa River Downstream Timeline, which is an estimate of the time until river flooding based on the water level of the Arakawa River located near the facility. The timeline was calculated backward from 0 hours to when the river floods. A drill was held for verification.

Results: The timeline was based on the water level of the Arakawa River and objective evidence of risky transfer of critical patients; therefore, the decision to evacuate was made when the water level reached a dangerous level (-3 hours). However, this