Results: Preparations included training radiation monitoring personnel, decontamination station’s staff and training of CH-ED, and ED reinforcement medical and ancillary staff. The main sites that were prepared and later drilled included: The decontamination site in which patients with possible radiologic contamination were decontaminated and received emergency care, The staff radiation clearance stations, The designated ED areas for care of potentially contaminated patients, The uncontaminated ED areas including areas for acute stress reaction victims, The ED imaging facilities and a designated OR for care of contaminated patients requiring surgical decontamination, or other urgent surgeries, in patients of whom routine external decontamination was insufficient. A total of 220 hospital employees participated in formal training sessions, preparatory internal drills and the final full scale drill.

Conclusion: The “dirty-bomb” scenario for a receiving hospital is challenging. It requires identification of radiological contamination in terror related bomb explosion victims, safely decontaminating the victims while minimizing staff exposure, and allowing prompt care of both conventional and radiation related injuries. A successful response also requires designated radiation detection and monitoring equipment, and vigorous training of a large proportion of the hospital’s staff.

Comprehensive Disaster Medical System to Threat of Nuclear Emergency and Disaster

Soon-Joo Wang
Hallym University, Hwaseong/Republic of Korea

Study/Objective: To develop a new comprehensive disaster medical system.

Background: The Government has developed the National Radiation EMS.

Methods: EMS for nuclear disasters were reviewed and re-organized.

Results: The primary emergency medical system around the nuclear plants was considered to be good, but there are problems during nights or holidays, for severe injury, and for many injured victims. The systems for decontamination in receiving facilities were not prepared enough. Personal protection devices for medical teams are less equipped. So, the new system is based on the assumption of nuclear disaster anywhere, any situation. It includes scenario of urban radiological material leakage, nuclear contamination from neighboring region, and mass panic state after perception of nuclear threat. National Radiation EMS developed a survey, an evaluation index of infrastructure, a prediction program for medical demand according to radiation disaster scenarios, and development plans. Evaluation indicators were composed of the seven domains: on-site response, ER, psychiatric support, radiation burn, bone marrow transplantation, internal contamination, and acute radiation syndrome. Each domain was measured by six grade levels. If 1,000 patients occur in the situation of combined disasters, according to the simulation analysis, the medical demand exceeds the capacity of the national radiation emergency medical response system. If 250 patients occur in case of a radioactivity leakage accident, it is expected to have some difficulty within the capacity of the regional response system, but it would be possible to respond within the national level.

Conclusion: The current level can be evaluated by comprehensive indicators and it is possible to plan the further development. For the adequate response to newly emerging threat of radiological dispersal devices.
The New Radiation Emergency Medical System in Japan: Lessons from the Fukushima Nuclear Plant Accident
Hitoshi Yamamura, Shinya Yaguchi, Katsubiro Itoh
Dept Of Disaster And Critical Care Medicine, Hirosaki University, Graduate School of Medicine, Hirosaki Aomori/Japan

Study/Objective: Our aim was to clarify the new radiation emergency medical system in Japan, and the related activities at our hospital after the Fukushima No. 1 Nuclear Power Plant accident.

Background: The radiation accident at Fukushima No. 1 Nuclear Power Plant occurred on March 11, 2011. After this accident, the Japanese radiation medical system was in a state of confusion because health care workers had no knowledge about radiation emergencies and there was no appropriate organization to handle the control of a radiation disaster.

Methods: The Japanese government created two special radiation medical centers after the accident. First was a Radiation Disaster Medical Care and general Support Center comprised of four hospitals, with the role of coordinating the radiation emergency medical assistant teams, treatment of radiation exposure patients, and training of the hospital staff in Radiation Emergency Medicine (REM). Second was an Advanced Radiation Emergency Medical Support Center comprised of five hospitals with an advisory role in dispensing advice about professional REM dissymmetry for internal exposure, special training for professional research, and knowledge about REM. Our hospital was designated as a member of the above two centers, and we investigated our related activities.

Results: Since our designation, we have rebuilt the REM system in our hospital. Our achievements mainly include education, the development of training contents for activities in our hospital, and lectures on REM for the hospital staff including the doctors, nurses, radiologists, laboratory technicians, and office employees. Hands-on training and lectures were given on REM for medical students. We have also participated in REM training on the national and prefatory levels.

Conclusion: It is important for us to educate all of the health care workers in our hospital about radiation emergencies, and to train professional staff who are familiar with both general disaster medical care and radiation emergency medical treatment.

Development and Effect of Personal Protective Equipment, Train-the-Trainer Program for Hospital Nurses
Jiyoung Noh¹, Hyun Soo Chung², Minhong Cho¹, Seungewan Kim³, Inkeun Kim⁴
1. Center For Disaster Relief, Training, And Research, Yonsei University Severance Hospital, Seoul/Republic of Korea
2. Emergency Medicine, Yonsei University College of Medicine, Seoul/Republic of Korea

Study/Objective: To develop a standardized Personal Protective Equipment (PPE), Train-the-Trainer Program for hospital nurses and to investigate the effect of the program.

Background: Despite the importance and perception of nurses in preparation for contaminated and/or infectious crisis, a standardized program to develop competencies is still lacking in Korea. Many hospitals train for protective equipment through large group lectures. Some institutions conduct hands-on training, but the educational contents and assessment tools are not standardized. PPE training is needed for all hospital personnel that has the potential to be in contact with patients. The number of hospital personnel mounts to more than 1,000, and it is very difficult to train everyone in a single place by few trained instructors. Therefore, it is important to train trainers to be competent in training PPE.

Methods: Staff from the Office of Infection Control, Office of Quality Improvement, Department of Emergency Medicine, Department of Nursing, and Center for Disaster Training gathered to develop a standardized training content and assessment tool. The tools were validated through the content validity index. After pilot testing, 44 nurses from five different departments were selected to become trainers. The educational intervention consisted of a 2-hour workshop. A pre- and post-survey was conducted to evaluate the differences in perception and performances in personal protection (paired t tests). The statistical level of significance was set at 0.05.

Results: Pre- and post-survey differences in perception for PPE knowledge and confidence were 5.3 to 8.4 and 5.3 to 8.3, respectively. Average performance points out of 10 was 9.1, and the observed points in the role of trainers was 9.0 out of 10. All 44 participants passed the minimum passing score of 90 percentage.

Conclusion: A standardized train-the-trainer program for PPE was successfully developed, and the newly trained trainers will be performing their roles as trainers for PPE.

Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Outbreak and National and Hospital Response in Korea
Soon-Joo Wang
Hallym University, Hwaseong/Republic of Korea

Study/Objective: The study objective is to understand the MERS-CoV outbreak outside the Middle East.

Background: The outbreak of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) infection in the Republic of Korea started from the index case who developed fever after returning from the Middle East. He infected 26 cases in Hospital P, and consecutive nosocomial transmission proceeded throughout the nation. The author provided an epidemiologic description, the hospital response, and the first case of mortality from the outbreak.

Methods: Epidemiological research was performed by direct interview of the health care professionals, and reviewing medical records in the hospital where the first mortality occurs in Korea.