

the treatment of radiation-contaminated patients. The results of this study will contribute to fostering the workforce response to radiation through efficient education using a VR training simulator, as well as promoting the use of radiation safety regulations.

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### Combined Trauma and CBRN Exposure

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**Introduction:** Whether it is COVID in New York, chemicals in Syria, or a radiological exposure from a dirty bomb or nuclear detonation, trauma is increasingly mixed with CBRN. Decontamination, isolation, and newer treatments all impact the patient as well as the physician. Military physicians regularly plan for these patients, but the civilian world has not. Civilian CBRN training has been spotty, at best. Our recent experience with COVID and the current threats of nuclear attack, emphasize the need to integrate CBRN exposure into our trauma treatment plans, both to help our patients and to protect the caregivers.

**Method:** Literature review and US Department of Health and Human Services Guidelines.

**Results:** A template for patient flow and treatment priorities is presented along with just-in-time references. Triage guidelines for trauma patients with Acute Radiation Syndrome (ARS) are also provided.

**Conclusion:** Civilian preparation for managing the CBRN contaminated trauma patient starts with a mental model of treatment priorities and self-protection strategies. Just-in-time treatment references can provide additional support and confidence.

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### The Training Effects of Mass Casualty Triage in Radiological Events for 119 Emergency Medical Team

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**Introduction:** Korea Institute Radiological Medical Sciences operates an emergency medical response system in case of a radiological accident or disaster. A radiation accident or disaster can affect large-scale patients and destroy medical infrastructure. However, there is currently a lack of specialized education for treating large-scale patients or high-dose exposure patients. This study aimed to evaluate the efficiency of radiological mass casualty triage education programs and present a new training method to improve the ability of 119 emergency medical teams in the event of a radiological accident or disaster.

**Method:** The results of mass casualty triage for radiological events were analyzed using the audience response system and questionnaire for paramedics who participated in the radiation

accident response training program. For 25 paramedics, a pre-post evaluation was conducted on two items: understanding the mass triage and understanding the radiological mass triage. The data were analyzed using the SPSS WIN 23.0 program.

**Results:** Thirty simulated patient scenarios were developed with the addition of clinical symptoms of radiation exposure based on the four trauma classifications: immediate, urgent, delayed, and death. The triage results of 30 cases conducted by 119 emergency medical teams were evaluated, and the trainees were asked to respond to the level of improvement in their knowledge of triage through pre- and post-training questionnaires. As a result of the pre- and post-education questionnaire, the degree of understanding of the mass triage was 3.8 before education and 4.4 after education, showing a significant difference ( $p=.003/\text{MAX}=5$ ). The pre- and post-education questionnaire results of radiological mass triage showed a difference between 2.3 before education and 4.1 after education ( $p=.000/\text{MAX}=5$ ).

**Conclusion:** For effective radiation medical response, 119 emergency medical teams are required to have a repetitive mass triage education program for radiological events. It is especially important to provide a radiological triage system for field application.

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### Children's Welfare Concern in a Full-scale Disaster Pediatric Drill

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**Introduction:** Children are almost systematically involved in mass casualty events, especially in the context of terrorist attacks. Unfortunately, the emergency medical responder preparedness is quite often low when it comes to pediatrics, on both technical and emotional sides. Preliminary training is indispensable, and full-scale simulations are arguably the best solution to tackle the needs of the first responders. The purpose of the study was to describe a simulation-based pediatric training with pediatric psychological support set up for the drill.

**Method:** A full-scale exercise involving children between five and fifteen years old was conducted in the Toulouse municipal stadium during the preparation of the 2016 UEFA (European Football Championship) in France. As children welfare was the primary concern, a psychological support team was present at each stage of the drill and assessed any mental harm that could have happened. Children were asked about their feelings at the end of the exercise with a 5-point Likert rating scale and their parents had to report any perceived changes in the following week.

**Results:** Out of 16 children participating in the drill, four were in an immediate situation (P1), four were in an emergent situation (P2), and eight were in an urgent situation (P3). One hundred percent of them rated their experience as very good and expressed no stress to their parents in the week that followed,

