offers doctors advanced training in disaster medicine, also disaster medicine education is provided at the bachelor and residency levels all over the Russian Federation. In Ukraine, at the moment, there is no training of specialists in disaster medicine, while in Belarus there are curricula at all levels of education.

**Conclusion:** Despite the fact that our life is impossible without catastrophes, most of the post-soviet countries are not having educational programs in disaster medicine. Using international experience could be beneficial so that every country will be prepared to face any disaster both locally and globally.

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## Emergency Preparedness: Training Outcome in Hospital Staff

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**Introduction:** A widely acknowledged aspect of emergency preparedness is hospital-wide staff education. Maintaining interest in hospital emergency preparedness among hospital staff is challenging. A hospital-wide education process involving a robust lecture and hands on donning and doffing sessions followed by periodic disaster drills has been recently undertaken as a quality improvement process.

**Method:** A prospective pre- and post-test study of 256 hospital staff were given a six-hour training course in comprehensive Hospital Incident Command Systems (HICS), Hazmat (Hazardous Materials), and CBRNE (Chemical, Biological, Radiation, Nuclear, and Explosive) events. The same pre and post-test were given to all participants that contained questions to assess emergency preparedness knowledge.

**Results:** 256 registrars within seven months (two classes per month) completed training with pre and post-tests. The average class size was 18.3 (range= 14 to 26 registrars). 3 of 256 (1.1 % 95% confidence interval) registrars achieved the pass mark of 70% in the pre-test survey and 230 (89.8 %) registrars achieved the pass mark in the post-test ( $\chi$ 2-test P < 0.001) with an absolute increase in the pass rate of 84%.

**Conclusion:** This finding justifies Emergency Preparedness Training at our institution, showing a marked improvement in staff knowledge of HICS and CBRNE management. This study should encourage continuous widespread use of Emergency Preparedness training in hospital Emergency Preparedness.

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## Impact of Virtual Disaster Collaboration Exercises on Disaster Leadership at Hospitals in Saudi Arabia

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**Introduction:** This study measured the impact of virtual threelevel collaboration (3LC) exercises on participants' perceived levels of collaboration, learning, and utility (CLU) at hospitals in the southern region of Saudi Arabia. Our 3LC exercise is a tabletop training tool used to facilitate disaster education and document CLU. This model enables the practitioner to acquire new knowledge and promotes active learning.

**Method:** An English version of the CLU scale, the validated Swedish survey tool, was applied to 100 health-care managers or leaders in various positions at both the operational and tactical levels after conducting the 3LC exercises.

**Results:** The results show that most participants strongly agreed that the exercises focused on collaboration (r2 = 0.767) and that they had acquired new knowledge during the exercises. There was a statistically significant association between participation in the collaboration exercises and perceived learning (r2 = 0.793), as well as between perceived learning and utility (r2 = 0.811).

**Conclusion:** This study confirms the feasibility of three level collaboration exercises conducted virtually. Our work also demonstrates that learning depends on collaboration practices and that collaboration exercises before crises can help to build qualities that people can apply in daily life. Collaboration elements exercised in this study contributed to perceived learning. There was a strong covariation between participation in the participants' collaboration exercises and perceived learning and utility. The virtual three-level collaboration exercises were well received by the participants and achieved an acceptable collaboration, learning, and utility score. Although exercises were conducted virtually, they were well received by the participants and achieved a value M = 4.4 CLU score, which opens up new dimensions in collaboration simulation exercises, at least from an organizational perspective, in a world with an increasing number of disasters and public health emergencies.

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## Reinventing Medical Hazardous Materials Response for Radiological Emergencies: Building Resiliency in Emergency Medical Response Systems Through a Novel Approach to Education and Training

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