Introduction: The use of simulation games in education has been rising in recent years. Triage is not only a major content among the EMS (emergency medical services) but also a necessary skill for students to improve their first-aid ability. This study aims to investigate a game for education called MASS (movement, assessment, sort, and sending), which attempts to enhance students' capability of disaster response.
Method: A randomized controlled trial was conducted among students who took the course: "Understanding Disaster and Surviving Risk" during the term and volunteered to participate in teaching research from different faculties in Sichuan University. Participants were trained by using the simulation game or the online course before class. The simulation game is MASS, which uses virtual reality techniques to create a realistic 3D tanker explosion scene, and the online course is a Massive Open Online Course created by the teaching team. In the class, questionnaires with subjective and objective multiple choices were carried out after a discussion. With SPSS version 27.0, statistical significance among groups was determined by Mann-Whitney U-test for rank variables, Fisher's exact test for binary variables.
Results: 73 students were included in this study, including 45 in the online course group and 28 in the simulation game group. The qualitative experience survey showed the two groups were significantly different in experience of disaster scene challenges, application scenes, and method of triage (P=0.031, 0.007, 0.031, respectively). Students in the simulation game group showed significantly better performance in knowledge acquisition including application scene of triage, key of the expectant's assessment, and rescue condition for thoracentesis than in the Online game group (P=0.048, 0.020, 0.010, respectively).
Conclusion: Simulation games can improve students' experience and performance in triage training. Due to the unrepeatability of disaster, the study suggests that games can be used to conduct simulation education for disaster medicine.

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Outcomes of Learning and Forgetting for the Undergraduate in Disaster Medicine Education by Blended Learning During the Covid-19 Pandemic: A Prospective Cohort Study

Zhi-yuan Wang PhD
Department of Emergency Medicine, West China Hospital, Sichuan University, Chengdu, China.
Disaster Medical Center, Sichuan University, Chengdu, China

Introduction: Blended learning has been proven to support the teaching of various concepts across disciplines. This study aims to investigate the impact of the traditional blended teaching mode (self-study online and face-to-face consultation) on the undergraduate's learning of disaster skills, and compared with face-to-face consultation, explore the influence of new mode (tutoring manipulation online) on the acquisition and forgetting of knowledge in disaster medicine based on the blended learning.
Method: A prospective cohort study method was used. The two semesters in a school year adopted different blended teaching models for 8 weeks. In the first term, students conducted disaster theoretical knowledge before class through an Online Course created by our team. In class, teachers guided training about response and preparedness (face-to-face consultation). Due to the outbreak of Covid-19, a new training model was adopted (tutoring manipulation online) in the second term. Three knowledge tests were conducted before class, after class, and six months after the end of the term. An accuracy rate difference was defined between the second and first as correct improvement rate (CIR), and the difference between the second and third as forgetting rate (FR).
Results: Seventy-five students were included in the traditional group, and 64 students were included in the new group. The three results in traditional group were (0.38±0.11) %, (0.65 ±0.11) %, (0.56±0.13) %,and (0.49±0.15) %, (0.71±0.13) %, (0.60±0.12) % in new group. The mean scores after 6 months on both groups were lower than at the end of the term ($P_{traditional}$ <0.001, P_{new} =0.010). The new group had a higher accuracy rate on all tests than the traditional group (P <0.01).
Conclusion: Traditional blended learning models can improve students' performance in disaster training and deepen knowledge memory. The new blended model may replace the traditional model for disaster training during the Covid-19 pandemic.

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Scenario-Based Collaboration: Identifying the Role of the NSW Biocontainment Centre in the Response to High Consequence Infectious Diseases

Kavita Varshney MBBS, FACEM, MScDM[1,2], Caren Friend EMG[3], Patricia Ferguson BMed, FRACP, PhD[4,5], Mary Wyer PhD, RN[4,6], Shopna Bag MBBS, MIPH, FAFPHM[7,2]
1. Westmead Hospital, Sydney, Australia
2. University of Sydney, Sydney, Australia
3. Charles Sturt University, Bathhurst, Australia
4. Sydney Institute for Infectious Diseases, University of Sydney, Sydney, Australia
5. NSW Biocontainment Unit, Sydney, Australia
6. NSW Biocontainment Unit,Westmead Hospital, Sydney, Australia
7. Centre for Population Health, Sydney, Australia

Introduction: The New South Wales (NSW) Biocontainment Centre (NBC) is the first high-level isolation unit in Australia. This state-wide referral facility, located at Westmead Hospital, Sydney, will provide care for patients with high-consequence infectious diseases (HCIDs), including viral hemorrhagic fevers (VHF). In preparation, a tabletop exercise with key stakeholders was held to introduce and socialize the NBC's capacity to support NSW's preparedness for the management of a patient with HCID.
Method: Invitations were provided to key stakeholders within Westmead Hospital (facility executive, emergency and ICU services, security, switchboard); NSW Preparedness and Response

Branch; retrieval services; peripheral hospitals; pediatric hospital network; and NSW Public health units (state and district).

The scenario presented was an unwell patient with suspected VHF arriving at a peripheral hospital emergency department.

Discussion during the four-hour long exercise was facilitated with directed questions and injects, and was recorded. Recommendations and key learnings from the exercise and debrief provided opportunities to enhance current response assumptions.

Results: Forty-five people participated both face-to-face and virtually. Participant discussion showed increasing appreciation of patient presentations to any part of the NSW health system and available assistance. Recommendations included: enhanced access to NBC support with a direct "1-800 number", coordination for communication, treatment, and transport, and if required, deployment of an NBC team to peripheral sites. Areas for future collaborative work were identified.

Conclusion: This exercise successfully achieved collaboration of key stakeholders to develop an updated, comprehensive and robust plan for management of HCID patients within NSW, regardless of their presentation site. It has created an opportunity to brainstorm and optimize how the NBC can interact with other agencies to maximize the NSW HCID response.

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Timely Teaching for the Time Poor

Caren Friend
Charles Sturt University, Bathurst, Australia. Royal Prince Alfred Hospital, Sydney, Australia

Introduction: Australian Standard 4080-2010 Planning for Emergencies in Health Care Facilities outlines the requirements for all health care facilities to have procedures in place to respond to internal and external emergencies. These procedures must include mechanisms to activate emergency response systems, and staff should be trained and familiar with these procedures.

Method: To guide staff, Emergency Procedures Flip Charts have been developed and strategically placed throughout facilities. These Flip Charts address immediate actions for staff to follow, including notification and escalation via an internal emergency number.

Specific training has been developed for identified key staff, such as Fire Wardens, but for the general staff the training in Emergency Codes is generic and does not provide scope for staff to contextualize response actions in relation to their department and its nuances.

A survey of staff across all disciplines was conducted which identified knowledge gaps in the immediate response requirements for the different Emergency Codes. To address this knowledge gap, and to ensure staff have an increased understanding of the response expectations relevant to their department, the Six Minute Intensive Training (SMIT) Tools have been developed. These tools can be delivered by any staff member in any forum, such as safety huddles, handover, in-services and toolbox talks.

Results: A survey was conducted three months after their implementation which identified an increased understanding of response requirements. This result, combined with After Action Reviews from actual responses, highlighted an increased knowledge of the Emergency Codes and response actions. It also identified areas to improve delivery using localized examples.

Conclusion: The introduction of the SMITs is a successful first step for increasing staff knowledge and responses to Emergency Codes. The opportunity for staff to deliver these SMITs within their own departments provided an avenue to contextualize responses to local practices and nuances.

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Implementation and Evaluation of the WHO Basic Emergency Care Course in Rwanda

Nidhi Kadakia MD[1], Iju Shakya MPH[1], John Lee MD, MPH[1], Ramu Kharel MD, MPH[1], Maria Diaz MS[2], Pascal Mugemangago MD[3], Vincent Ndebwanimana MD[4], Naz Karim MD, MHA, MPH[1]
1. Brown University, Providence, USA
2. George Washington University, Washington, USA
3. University of Rwanda, Kigali, Rwanda
4. University Teaching Hospital of Kigali, Kigali, Rwanda

Introduction: Improving access to emergency health services can reduce morbidity and mortality for patients with acute emergent conditions. The WHO and ICRC developed the Basic Emergency Care course to train frontline providers in a systematic approach to common and treatable life-threatening conditions. This study aims to evaluate the knowledge retention of Rwandan emergency care providers after implementation of this course.

Method: A prospective, quasi-experimental, nonrandomized study was conducted at the University Teaching Hospital of Kigali (CHUK) in Rwanda. A formal survey was conducted to understand the current composition and training of Rwandan emergency care providers. Baseline and post-course assessments of knowledge were collected via an existing 25 multiple choice question survey tool which is an already established part of the BEC curriculum. Forty providers who care for patients with acute emergent illness were included. Data collected included age, gender, preferred language, as well as information about professional background, knowledge and skills. Providers with both baseline and post-test results were included in the analysis (n=40).

Results: Of the 40 Rwandan providers, 47.5% (n=19) male and 52.5% (n=21) female, 26 were nurses, six were doctors, six were prehospital providers, one was both a prehospital provider and nurse, and one was a midwife. The mean age was 36.3. Out of 25, the mean baseline score was 17.8 (SD=3.2) and this significantly increased to a mean posttest score of 21.9 (SD=2.4). 85% (n=34) of providers' knowledge improved, 2.5% (n=1) of provider's knowledge stayed the same, and 12.5% (n=5) of providers' knowledge decreased. The difference between the pre and post-test scores was found to be statistically significant, 4.1 (SD=3.4), ($P<0.0001$).