

Promoting Useful and Usable Scientific Evidence in Health Emergencies and Disaster Risk Management: The WHO Health EDRM Knowledge Hub

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Introduction: In order to promote useful and usable scientific evidence for health emergency and disaster risk management (Health EDRM), the World Health Organization (WHO) Health EDRM Knowledge Hub has been established as part of the WHO Thematic Platform for Health EDRM research network (Health EDRM RN). The Knowledge Hub aims to extend scientific knowledge; strengthen evidence-based practice in the management of health risks in emergencies and disasters; create and develop a competent network in the Health EDRM community; and integrate research, policy and practice.

Method: To begin with, the Knowledge Hub has five interconnected research themes: (1) health data management; (2) psychosocial support; (3) health needs of sub-populations; (4) health workforce development; and (5) research methods. Systematic literature reviews and expert consultations have assessed current research under each theme and identified potential knowledge gaps. The work of the Knowledge Hub is advised by members of the Health EDRM RN and staff in WHO regional offices.

Results: The WHO Health EDRM Knowledge Hub will be a platform for providing and exchanging up-to-date evidence. This will include information on validated methods for managing health data and identifying health needs in specific subpopulations. The Knowledge Hub will raise awareness of psychosocial support, health workforce development and research before, during and after disasters. It is targeted to policy-makers, researchers, practitioners and the broader community with the aim of accelerating evidence-informed policy and programs. This will support implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030, the WHO Health EDRM Framework, and other related global, regional and national agendas.

Conclusion: This paper introduces this new initiative and describes its objectives, design, and implementation. Additionally, it provides an overview of the Knowledge Hub and invites session participants to provide insights into their current needs and to make recommendations for improvement.

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Disaster Management Simulation—A Novel Virtual Exercise

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Introduction: Disaster management and emergency preparedness relies on the collaboration, communication, and expertise of a multidisciplinary team. Skills in preparation, communication, and management of disasters are core competencies of an emergency physician. To learn the principles of disaster management, simulations are critical as mass casualty/rapid surge events seldom occur. The COVID-19 pandemic resulted in the cancellation of in-person events. In response to these restrictions, the University of Toronto, EM Program developed a successful virtual interprofessional mass casualty simulation.

Method: The novel online simulation event was piloted in 2021 and ran for three-hours. The exercise focused on developing soft skills (e.g., communication, team-work, and debriefing) and hard skills (e.g., triage, casualty distribution, and activation of plans). Groups were composed of members of each post-graduate year to facilitate near-peer learning. A total of six groups were formed: Adult, Children, Community Hospitals, EMS, Government, and Media. Each Team used multiple communication tools (i.e., Whatsapp groups, Zoom breakout rooms, Shared Google Documents) to swiftly pivot and manage a mass casualty event. Post-exercise debriefing and anonymous evaluations were gathered.

Results: A total of 28-residents (nine PGY1, ten PGY2, and eight PGY3 learners) and 11-staff observers participated (25-respondents). Nineteen participants rated the simulation exercise as excellent and six as “very good”. Twenty participants rated the workshop as “very useful” and five as “useful”. Positive feedback centered around content applicability, exercise creativity, level of engagement, and learning value. Constructive feedback included the need for more pre-exercise orientation time, increasing disaster management time, and inviting allied-health staff.

Conclusion: There is a clear need for EM residents to learn and develop skills related to disaster management and emergency preparedness. This exercise showed that disaster management and emergency preparedness competencies can be learned in a virtual format. This virtual format has encouraged its continuation and further inspired the curation of a four-year program.

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Integration of Simulation-Based Exercises and Practical Skills into a Public Health Emergency Management Curriculum

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Introduction: As public health emergency management (PHEM) is a growing field, so is the development of its workforce. Ensuring workforce readiness from graduate-level education and courses can be challenging given the limitations of the traditional classroom environment. This presentation highlights a novel curriculum created and taught by first responders consisting of simulation and application of practical skills developed within a public health graduate certificate program.

Method: The semester-long course reviews foundations of PHEM and students progress through a sequence of

increasingly complex discussions and operation-based exercises for both domestic and international disaster preparedness and response. Students progress through case studies, tabletops, functional exercises, and full-scale exercises with practical skills interspersed. This includes creation of SMART objectives and incident action planning, crisis communication and public messaging drills, use of radios, personal protective donning and doffing, and Geiger counter use.

During the COVID-19 pandemic, the curriculum was adapted for asynchronous and live virtual sessions with further offerings including various online trainings that are required for most employments in the field and guest speakers with national recognition for their experiences in public health and healthcare emergency management and subject matter expertise in various fields related to preparedness and response.

Results: Since commencing in 2016, approximately 100 students have completed the course and feedback has been overwhelmingly positive even with limitations of in-person activities during the COVID-19 Pandemic. Student feedback has noted that the majority of students feel that the knowledge and skills from the coursework is applicable to future employment and that their ability to think critically about the subject matter increased as a result of taking the course.

Conclusion: Implementation of this innovative graduate level course can serve as a model to enrich students' education through practical activities and hands-on simulations.

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Participants' Experience of Completing Trauma and Critical Skills Training in a Resource-Limited Environment

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Introduction: Global Emergency Care Skills, an Irish-based NGO, provided a five-day intensive training course to 24 local healthcare professionals in Nyabondo, Kenya in November 2022, in advance of the opening of a new major trauma center which will serve the greater Kisumu region. The pre-participation knowledge, experience and skills base was surveyed. Following the completion of didactic, workshop and simulation-based training, the perceived acquired competence and applicability of skills were surveyed. The ability to provide ongoing teaching of skills acquired within local healthcare settings was evident.

Method: Nine emergency medicine and two anesthesia doctors currently working in the Irish healthcare system traveled to Nyabondo in the Kisumu region in Kenya for one week in November 2022. A five-day course based on providing practical training addressing comprehensive trauma and acute deteriorating patient knowledge and skills was provided. This included extensive focus on the primary survey approach. A quantitative survey of 22 questions with binary answering options was used. 19 participants completed the survey, and qualitative data on the

applicability of the training provided to the local healthcare resource environment was gathered.

Results: Following surveying participants we found that the majority of participants had no previous experience or knowledge of simulation based learning. Further, a vast majority had no formal skills or educational training post completing their medical qualification.

Conclusion: The overwhelming majority of participants felt that this training improved their confidence and competence in managing trauma and assessment of the critically unwell adult and child. 100% of participants stated they gained new skills and were confident in their ability following this training to deliver local training on an ongoing basis in their own healthcare settings.

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Exploring Irish Faculty Members' Experiences of Delivering a Multi-modal Medical Education Course in a Resource-limited Environment

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Introduction: In November 2022, a group of eleven Irish doctors traveled to St. Joseph's Hospital, Nyabondo, Kenya with Global Emergency Care Skills (GECS), an Irish NGO. The group delivered a training course to healthcare staff in the hospital, in advance of the scheduled opening of a regional Major Trauma Center on site. This course incorporated didactic lectures, skills stations and simulated clinical scenarios and covered commonly encountered emergency presentations in low and middle income countries (LMICs).

Method: A qualitative study was conducted using a free text questionnaire with faculty, exploring their experiences of education in a resource-limited environment. Responses were interpreted by performing thematic analysis to identify recurring themes.

Results: All eleven faculty members completed the survey in full. An interrogation of the responses identified commonalities across the majority of faculty members. The main themes encountered were increased recognition of the lack of post-graduate training in LMICs, the challenge of devising material appropriate to a resource-limited setting, a growth in confidence and individual teaching ability, and a reaffirmation of the effectiveness of simulation teaching in medical education.

Conclusion: This survey demonstrates the significant impact of teaching such a course on faculty members. Despite the challenges encountered, faculty members strongly felt that simulation training offered significant benefits. Survey respondents noted that moulage could be adapted to suit the needs of course