

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

participants without compromising on educational goals. In the absence of formal postgraduate education in LMICs, external agencies continue to play an important role in the delivery of structured training programs.

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“Baby Steps” for Baby Breaths—How Incremental Changes Changed Our Performance

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Introduction: Neonatal resuscitations are challenging to any mixed ED with rotating medical staff. Covid-19 decimated nursing numbers and reduced training to a standstill. New doctors and nurses find pediatric resuscitations (simulations and in real cases) challenging as there are complex algorithms/calculations as well as preparing and operating systems such as a Drager Resuscitaire^R.

Training rotating or new staff for rare complex resuscitations can be time and resource consuming with little yield.

We describe our experience of applying incremental measures after almost every simulation to improve team performance and knowledge.

Method: This is an ongoing audit of simulations and cases for neonatal / infant resuscitations using our pediatric bay and Drager Resuscitaire^R system. Our main aim was to improve:

1. Nursing preparation time / competence for:
 - Pediatric / neonatal drug doses
 - Drager Resuscitaire^R system setup
2. Medical staff competence for:
 - Neonatal resuscitation algorithms
 - Drager Resuscitaire^R usage (PPV/Ventilator setup)

Two ED consultants ran “in-situ” simulations and recorded gaps/errors (including feedback in debrief). Any measures deemed fixable were implemented ASAP. Improvement was made if error was not repeated in subsequent two independent simulations.

Results: Audits of five real cases and fifteen simulations revealed gaps (e.g. dose miscalculations, equipment unfamiliarity) which were corrected by simple measures after each discovery. These include:

1. Neonatal resuscitation checklist with steps to setup the Resuscitaire
2. Weight-based resuscitation cards / pre-made packs of equipment instead of manual calculations
3. Position markers for “ideal” Resuscitaire^R ventilator settings
4. Step by step Resuscitaire^R numbered markers on machine

We found improvements in knowledge gaps, task accomplishment rates, staff satisfaction, appreciation of deficits and in-situ simulation uptake. More gaps are found and resolved at every simulation.

Conclusion: A Human Factors approach with incremental adjustments and simple improvements with each simulation led to better team task accomplishment in complex preparation and resuscitation.

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Past, Present, and Future of Korea National Radiation Emergency Medicine Education

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Introduction: In Korea, there are various medical and industrial researchers who use radiation as part of their research. But radiation can cause extensive long-term damage in case of an accident. Therefore, national-level policy and training for the response workforce have been established for a professional response. Since 2002, the KIRAMS has been providing emergency medical response education based on the five mandatory contents (including legislation, protection measures, and emergency medicine).

Method: The training content can be divided into theoretical and practical courses. Early education included theoretical courses on cases of accidents and their effects on the human body, as well as practical courses on treatment for contaminated patients. The current education program offers group practice using a HPS and mobile learning. As for the future of national radiation emergency education, the paradigm of education will change with the fourth industrial revolution, the advancement of the IT industry, and the advent of the ‘tact’ era. Therefore, research and development on XR technology-based educational content that can overcome reality’s constraints, is being conducted. Simulation-based education courses to increase effectiveness and immersion will be implemented.

Results: Currently, there are approximately 900 radiation emergency medical personnel, and more than 30 new and supplementary education contents are provided each year to improve their proficiency and response abilities. Approximately eight types of content using XR technology will be developed and tested (2021-2023) before being implemented in actual education programs (2024). Advancements in education reflecting special conditions, such as COVID-19, and technological advancements will continue indefinitely.

Conclusion: Efforts are ongoing to improve the educational content and to train excellent radiation emergency medical personnel. With the implementation of XR technologies and new education trends, the future of national Korean radiation emergency medical education is expected to advance and diversify, and further improvements in the educational content can be expected.

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