disaster medicine, as well as systems to receive international emergency medical teams (I-EMTs).
Results: The four-week KCCP course contained a trial implementation of a four-day training program for receiving I-EMTs and coordination among stakeholders in ASEAN disaster response, based on the regional standard curriculum developed by the ARCH Project, and invited experts in DHM not only from Japan but also from AMS as instructors. Participants analyzed and identified challenges on DHM in their countries, and developed draft action plans (APs) to improve the situation through the knowledge obtained from the program.
Conclusion: The draft APs, the training deliverables, will be shared with the ARCH Project, and used to build a support mechanism to achieve national level targets of the POA/ALD DHM, and the progress will be reflected in the CR in the subsequent year. The KCCP on DHM is expected to facilitate knowledge sharing in AMS and Japan, and contribute to fostering the culture of mutual learning.

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Assessing the Sympathetic Response of Medical Doctors and Trainees when Exposed to a Virtual Realty Mass Casualty Incident Simulation

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Introduction: The occurrence of disasters and mass casualty incidents (MCIs) is on the rise, thus training and rehearsal for disaster response remain paramount. Virtual reality (VR) platforms have previously been shown to be well-received, engaging, and immersive for disaster training. The primary objective of this study was to ascertain if a human actor-based VR MCI scenario could elicit a sympathetic response, as measured by heart rate variability (HRV), in medical doctors and trainees compared to a baseline state.
Method: A simulation was filmed with students, residents, and surgeons on a GoPro 360 camera. Subjects (n=35) were recruited to sufficiently power (1-b=0.8) a Wilcoxon matched-pairs test and Welch's t-test. Subjects watched the simulation on an Oculus Quest headset while having HRV recorded. Multivariate logistic regression was performed to identify factors associated with increased odds of significant sympathetic activation. Statistical significance was established at $p<0.05$.
Results: Thirty-five subjects were enrolled and included three trauma surgeons, three emergency medicine (EM) attendings, eight EM residents, six surgery residents, and 15 medical students. A significant decrease in HRV was observed across all groups in the MCI (median 20 ms IQR 16.2, 31.4 ms) compared to baseline (33.2 ms IQR 27.2, 44.1 ms; $p<0.0001$). Sympathetic activation was most pronounced in students, then attendings, then residents. There was no significant difference in the fold-difference of sympathetic activation of EM physicians (-48.5% +/- 32.1%) versus surgeons (-49.5% +/- 25.2%; $p=0.57$). In all groups, SNS activation occurred independently of heart rate, age, sex, number of years in practice, first responder experience, or prior MCI response.
Conclusion: Live-actor VR MCI simulation elicited a strong sympathetic response from students, residents, and attending physicians. By recruiting and disinhibiting essential neural pathways via controlled SNS activation, VR MCI training has the potential to enhance the encoding and consolidation of disaster training in a low-cost and reproducible manner.

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A Disaster Medicine Education Program for Undergraduate Medical Students in Tohoku

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Introduction: In Tohoku, the northeastern part of the main island of Japan, students entered medical school following the Great East Japan earthquake that occurred on March 11, 2011. Such students wished to volunteer at the time of disaster, however, the undergraduate medical curriculum was inadequate to enable the practice of disaster medicine. Thus, the Tohoku Disaster Medical Assistance Student (DMAS) holds workshops for undergraduate students to acquire disaster medicine knowledge.
Method: Tohoku DMAS offers Peer Learning Education. In the DMAS course, students learned disaster medicine through lectures and simulations under the supervision of disaster medicine experts. The workshops vary in length between 3–8 hours. Tohoku DMAS's goal is to support disaster management headquarters and shelters. Students are expected to provide logistical support that includes recounting the chronology of events at disaster management headquarters and helping with managing evacuation shelters.
Results: According to the activity reports and roster of the course, there were only three students initially when the course was formed in 2018, however, the group continued to grow, and 165 students currently belong to the Tohoku DMAS. Those students include medical students, nursing students, and paramedics students at various universities and colleges. The DMAS has held 30 training sessions since 2018. The total number of training participants was 1,308. The DMAS has held tabletop simulation exercises and lectures on various topics such as shelter management, disaster triage, and nuclear disasters. Furthermore, some members have participated in emergency drills for each prefecture. The current challenge of the program was obtaining adequate insurance coverage for

students and financial support during the activity at the disaster scene.
Conclusion: The DMAS plays a role in disaster medicine education for undergraduate medical students in the Tohoku region. The program continues to grow and faces opportunities and challenges.

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Utilization of a Delphi Study to Determine Core Concepts for a Pediatric Residency Disaster Medicine Curriculum

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Introduction: As disasters increase globally in both frequency and intensity, the vulnerability of children during disasters has become obvious. Pediatricians are often left to manage the resulting physical and mental repercussions. With minimal to no disaster medicine training offered at most U.S. pediatric residencies, the need for an easily accessible pediatric disaster medicine curriculum has been exacerbated. While this need has been highlighted in the literature, material to include or methods to sustainably incorporate disaster medicine into training programs has not been established.
Method: From a thorough literature review, 19 topics were selected as potentially necessary to include in a disaster medicine curriculum for pediatric residents. Utilizing the Delphi method, subject matter experts were asked to rank these topics with an option to add others. Two independent surveys separated by time were administered with the goal of identifying ten critical core concepts for pediatric resident disaster medicine education. A virtual roundtable discussion then took place to finalize the ten core concepts, discuss objectives, and consider realistic methods of incorporating the curriculum into the residency timeline.
Results: The ten core concepts identified were 1) introduction to disaster medicine, 2) patient triage, 3) surge capability, 4) mental health effects of a disaster, 5) preparedness for children with special healthcare needs, 6) communicating personal/family disaster preparedness, 7) hospital disaster mitigation, 8) reunification, 9) drills and training, and 10) disaster ethics and crisis standards of care.

Experts agreed upon a longitudinal multi-modal approach with inclusion of short didactics, case scenarios, questions/answers, games, and links to further educational activities and opportunities focused on individualized needs.
Conclusion: The Delphi method was a successful approach to gathering expert consensus to establish core concepts for a pediatric resident disaster medicine curriculum.

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Sustainability First: Evaluating a Digital Training of Trainers Approach for Lay First Responders in a Post-COVID-19 World

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Introduction: Road traffic injuries (RTIs) are the largest individual contributor to the global burden of injury and were among the five leading causes of global disability-adjusted life years (DALYs) in 2016. In regions with limited emergency medical services, training lay first responders (LFRs) has been shown to increase availability of prehospital care for RTIs, but sustainable mechanisms to scale these programs remain unstudied.
Method: Using a training of trainers (TOT) model, a six-hour LFR training program was launched in Lagos, Nigeria. The course was taught in a hybrid fashion with primary didactics over Zoom and practical in-person breakout sessions. Thirty TOTs proceeded to train 350 transportation providers as LFRs over one month. A previously validated, 23 question, pre-/post- assessment was administered digitally to assess knowledge acquisition. Participants responded to five-point Likert survey assessing instruction quality and post-course confidence.
Results: TOTs scored a median of 56.5% (IQR: 43.5%, 71.7%) and 91.3% (IQR: 88.0%, 95.7%) on the pre- and post-assessments, respectively, with bleeding control scores increasing most (+69.4%). Course trainees scored a median of 34.8% (IQR: 26.0%, 43.5%) and 73.9% (IQR: 65.2%, 82.6%) on the pre- and post-assessments, respectively, with airway and breathing increasing most (+48.6%). All score increases were statistically significant with $p<0.001$ and did not differ by trainer. Participants rated confidence 5/5 (IQR: 5,5) in first aid skills and 5/5 (IQR: 4,5) in emergency transportation, increasing from pre-course confidences of 3/5 (IQR: 3,4) and 4/5 (IQR: 3,5), respectively ($p<0.001$). Participants rated the quality of education content and TOT instructors to be 5/5 (IQR:5,5).
Conclusion: This is the first time the efficacy of digital instruction for first responder trainers in LMICs has been investigated and demonstrates knowledge acquisition equivalent to that of prior in-person courses. Future work will examine the cost-effectiveness of the training of LFRs and the effect of LFRs on trauma outcomes.

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Impact of a Simulation Game (MASS) on the Undergraduate's Experience and Performance in Triage Training–A Pilot Study

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