

**Objectives:** This study aims to develop a comprehensive psychological resilience training program for EMTs to improve their coping mechanisms, emotional regulation, and overall resilience.

**Method/Description:** A comprehensive literature review was conducted to identify evidence-based techniques for building psychological resilience, including cognitive-behavioral therapy (CBT), mindfulness, and stress inoculation training. Based on these findings, a structured resilience training program was developed, incorporating workshops, scenario-based training, peer support networks, and access to professional mental health resources.

**Results/Outcomes:** The proposed framework outlines a structured approach to incorporating psychological resilience training into existing EMT training programs. While the program has not yet been implemented, the literature indicates that such a framework could significantly improve EMTs' ability to manage stress, reduce burnout, and enhance job satisfaction.

**Conclusion:** Integrating psychological resilience training into EMT professional development is crucial for fostering a mentally healthy and resilient workforce. The proposed framework, based on a comprehensive literature review, demonstrates the potential for significantly improving EMTs' psychological well-being and effectiveness in emergency responses. Future implementation and evaluation of this framework are necessary to validate its impact and facilitate broader adoption across EMS organizations.

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### Strengthening Medical Surge Capacities through Collaborative Efforts: Emergency Medical Team – Antigua and Barbuda Deployment at SIDS4 Conference

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**Background/Introduction:** The EMT-ATG achieved a significant milestone with its inaugural deployment during the SIDS4 Conference in Antigua. The EMT2030 strategy and Global Health Emergency Corps (GHEC) approach underscore the importance of collaborative leadership and joint efforts among all the networks to provide a comprehensive response.

**Objectives:** The primary objective of the deployment was to ensure the health and safety of SIDS4 conference attendees through a coordinated and effective emergency medical response. It also aimed to demonstrate the capability of small island countries to establish and deploy fully operational and

self-sufficient EMTs in coordination with other rapid response capacities, fostering a model of collaborative leadership.

**Method/Description:** Training programs, conducted in collaboration with PAHO, focused on disaster response, triage, and mass casualty management. PAHO capacity building included the procurement of medical equipment, establishment of mobile medical units, and enhancement of communication systems for seamless coordination.

In preparation for deployment, ATG-EMT conducted simulation exercises and drills which involved various stakeholders, including local health authorities, security agencies, prehospital EMS, public health rapid response teams, and community volunteers.


**Results/Outcomes:** The successful deployment of ATG-EMT during the SIDS4 Conference demonstrated the team's capability to provide high-quality medical care and support at a high-profile international event. This contributed to the health and safety of over 4,500 delegates.

**Conclusion:** The deployment highlights the importance of continuous training, robust capacity building, meticulous preparation in developing an effective emergency medical response system and serves as a model for small island countries aiming to enhance their disaster response capabilities.

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### Comparing the Effectiveness of Simulation versus Tabletop Exercises in Skill Development of Mass-Casualty Incidents for Emergency Medicine Physicians

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**Background/Introduction:** There is a need for high-quality disaster training in lower income communities that bear an increasing burden of MCIs. Tabletop exercises (TTX) are low-fidelity, low-cost training methods consisting of facilitator-moderated, discussion-based activities. Simulation education (SIM) is a high-fidelity modality mimicking psychological stress, muscle memory and cognitive load of an MCI. These represent economical training strategies which are standardizable across different regions, developing disaster management skills for first responders.

**Objectives:** This study compares the effectiveness of TTX and SIM in building knowledge for Emergency Physicians (EPs) involved in MCIs and increasing comfort in managing disaster scenarios.

**Method/Description:** 64 EPs were randomly assigned to a 1-hour session of TTX or SIM on MCIs and completed assessments testing knowledge and self-perceived comfort levels. Simulation and Disaster Medicine faculty members subsequently moderated debriefing sessions.




**Results/Outcomes:** TTX participants (N=38) had median knowledge scores of 71% compared to 57% in SIM participants (N=25). TTX participants' comfort level in dealing with MCIs

after the education sessions showed a median comfort level of 5/5 compared to 3/5 in SIM participants. TTX showed an average change in comfort level of 2.13 (SD 1.53) pre- and post-education sessions compared to 1.68 (SD 1.38) in the SIM group, with no statistically significant difference between the groups. **Conclusion:** Both modalities increased comfort level in managing MCIs, although participants in TTX performed better on the post-exercise assessment. This data suggests TTX may be an efficacious cost-effective strategy to increase knowledge and comfort in preparing staff for MCIs.

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### Applied Artificial Intelligence in Development of Virtual Simulated Emergency and Disaster Scenarios - Based on Real Patient Data

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**Background/Introduction:** Virtual simulation models enable preparation of healthcare teams working in emergency and disaster responses, by providing practice of leadership and communication in decision making. The statistical functions are also suitable for assessment of team performance. However, developing virtual simulated scenarios focused on team training is time-consuming, expensive, and consists of complex developmental processes. This feasibility study aimed to explore if application of AI on trauma registry would support automated creation of virtual simulated scenarios based on real patient data.

**Objectives:** To determinate design and effects of an automated system converting real patient data into virtual simulated scenarios.

**Method/Description:** Mixed methods with two data sets. The first data set was extracted from trauma patients records for the development of a system converting real patient data into virtual simulated scenarios. The second data set consisted of focus group interviews.

**Results/Outcomes:** The end product consisted of a Python-based program for automating virtual simulation scenario creation and a graphical user interface (GUI) displaying the scenarios. Further improvements were needed in efficiency and correlated to the quality of data derived from patients' records. Incorporating functions such as time as stress factor, integration of decision-making components based on a decision-making tree would also contribute to usefulness and acceptance of the system.





**Conclusion:** The potential of the system is cost efficient and beneficial for healthcare teams and educational bodies by its

ability to provide great numbers of emergency and disaster scenarios, and the access and presentation of real patient data in situations with limitations, such as during the pandemic.

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### HOSPEX Tabletop Simulation for Emergency Medical Teams: Ethiopia Case Study

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**Background/Introduction:** Emergency Medical Teams (EMTs) face several challenges in conducting cost-effective and time-efficient training exercises, particularly in resource-limited settings. HOSPEX TABLETOP is a low-tech classroom-based interactive field hospital simulation exercise designed to train and test casualty management protocols, field hospital layouts, standard operating procedures (SOPs), and team decision-making before expensive full-scale exercises or deployment. The Belgium and Denmark EMTs have already adopted the simulation. The Royal College of Surgeons of England collaborated with the founder of HOSPEX Tabletop to pilot this training with the Ethiopian EMT and assess its impact.

**Objectives:** To train Ethiopian EMT staff in field hospital operations and develop a cadre of instructors to deliver HOSPEX tabletop training in other LMICs.

**Method/Description:** A HOSPEX Tabletop, customized to reflect the layout and staffing of the Ethiopian EMT, was used to train 34 participants from diverse specialties and experience levels over four days, including an instructor training day. Questionnaires were used to assess the impact.

**Results/Outcomes:** Participants were actively engaged throughout the training, rapidly adapting to the simulated environment. They gained experience in using SOPs, managing trauma, diseases, and conflict cases, and applying major incident medical management principles. The training highlighted areas for improving the SOPs and prompted significant changes to Ethiopia's EMT layout, tested within the exercise.

**Conclusion:** HOSPEX Tabletop proved to be an effective and engaging training tool, yielding very positive feedback. It enhanced participants' knowledge and skills, whilst also identifying and developing potential instructors. Insights gained from the training have already contributed to improvements in the EMT's awareness and preparedness.

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