MONITORING AND EVALUATION

SIMEDIS: A Computerized Medical Management Simulator for Testing Medical Responses to Disasters

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Background/Introduction: The use of computer modelling and simulation is allowing researchers to test operational assumptions in a virtual but controlled experimental environment.
Objectives: Developing a valid computer simulation model allowing (1) to model complex medical response systems with several types of victims, (2) to test different aspects of the medical response.
Method/Description: The SIMEDIS (**Si**mulation for the Assessment and Optimization of **Me**dical **Dis**aster Management) computer simulator consists of 3 interactive components: the victim creation model, the victim monitoring model, and the medical response model.

The objectives of the study were to create a disaster medical response simulation model in the case of an aircraft crash and in a CBRN incident simulation, to test and to optimize existing and future medical disaster response plans, to develop a victim model, to develop a victim creation model and a victim monitoring model, and to produce a pre-hospital medical response model.
Results/Outcomes: The case studies showed that the SIMEDIS simulator is offering a valuable tool for testing the impact of several interventional factors on the disaster medical response in specific scenarios including more complex situations such CBRN-incidents.
Conclusion: This study reflects the potential of SIMEDIS to model complex systems, to test different aspects of the disaster medical response and to potentially inform changes in practices. This might be of potential interest for disaster response planners allowing them to make the best choices in composing their medical teams and adapting the medical response system.

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Rapid Response in High-Risk Environments: A CBRN Assessment Tool for WHO Emergency Medical Teams (EMTs)

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Background/Introduction: The World Health Organization (WHO) Emergency Medical Teams (EMTs) frequently deploy in high-risk environments, including conflict zones, where Chemical, Biological, Radiological, Nuclear (CBRN) threats are a concern. This study aimed to develop a CBRN assessment tool to evaluate the preparedness of WHO EMTs to respond effectively to such incidents.
Objectives: Develop a comprehensive CBRN assessment tool for evaluating the preparedness of WHO Emergency Medical Teams (EMTs) to respond effectively to CBRN incidents.
Method/Description: Utilizing the WHO Classification and Minimum Standards for EMTs and adapting the Harvard Public Health School's hospital decontamination self-assessment tool, this tool focuses on key areas aligned with WHO recommendations, including decontamination, staffing, training, response procedures, alert systems, security, personal protective equipment (PPE), staff safety, medical monitoring, decontamination zone setup, and triage.
Results/Outcomes: The developed CBRN assessment tool provides a structured framework to evaluate EMT preparedness across multiple domains critical for CBRN incident response. The tool highlights potential gaps in preparedness and facilitates targeted improvements. This assessment tool can be a valuable resource for WHO EMTs to proactively assess CBRN capabilities. Regular use of this tool can enhance preparedness, response efforts, and improve patient outcomes in the face of CBRN events. Further research is needed to validate the tool's effectiveness in team preparedness and refine its components.
Conclusion: This CBRN assessment tool is an important step towards strengthening the capacity of WHO EMTs to manage CBRN incidents. By facilitating self-assessment and targeted improvements, the tool contributes to a more effective and coordinated preparedness and response to these complex and challenging events.

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PEMAT Information Systems (PIS): Digitalizing Health Emergency and Disaster Response

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Background/Introduction: The Philippines, being prone to natural disasters, often faces challenges in securing real-time data, hindering effective decision-making. In response, the Philippine Emergency Medical Assistance Team (PEMAT) of Dr. Jose N. Rodriguez Memorial Hospital and Sanitarium (DJNRMHS) developed the PEMAT Information System (PIS) to enhance real-time reporting and support the functions of EMT-Type 1 Fixed facilities during disaster responses. The PIS was successfully launched and fully implemented during the 7.8 Magnitude Earthquake in Türkiye in February 2023.

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