





Revolutionizing Disaster Response Through Real-Time Data and Evaluation

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Background/Introduction: Meaningful medical data are crucial for response teams in the aftermath of disaster. Electronic Medical Record (EMR) systems have revolutionized healthcare by facilitating real-time data collection, storage, and analysis. These capabilities are particularly relevant for post-disaster and austere environments. fEMR, an EMR system designed for such settings, enables rapid documentation of patient information, treatments, and outcomes, ensuring critical data capture.

Objectives: Data collected through fEMR can be leveraged to perform comprehensive monitoring and evaluation (M&E) of emergency medical services, assess operational needs and efficiency, and support public health syndromic surveillance.

Method/Description: Analyzing these data identifies patterns and trends or assesses treatment effectiveness. This insight facilitates data-driven decision-making and the optimization of medical protocols. fEMR's real-time reports enhance situational awareness and operational coordination among response units. The aggregated data can detect trends, classify case-mix, and facilitate after-action reviews, contributing to continuous improvement in emergency preparedness and response strategies. The system also supports fulfilling reporting requirements for health agencies and funding organizations, ensuring accountability and transparency.


Results/Outcomes: EMRs like fEMR are vital for emergency response teams, supporting immediate patient care and ongoing M&E of disaster response efforts. Its robust data management capabilities support evidence-based practices and strategic planning, improving the effectiveness of emergency medical services in disaster scenarios.

Conclusion: The effective use of fEMR in disaster response scenarios highlights its significance in enhancing operational efficiency, ensuring accountability, and improving the overall effectiveness of emergency medical services through comprehensive data management and real-time reporting.

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Assessment of the Quality of MDS Data Collected by Emergency Medical Teams During Idai Cyclone of Mozambique

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Background/Introduction: The WHO endorsed the Emergency Medical Team (EMT) Minimum Data Set (MDS) as a real-time data collection and reporting tool during health emergencies and disasters in 2017. It was for the first time activated in 2019 during Cyclone Idai in Mozambique. Since then, it has been used in 16 countries during various events. However, no assessment on data quality collected via MDS has been conducted.

Objectives: This study aimed to assess data completeness using data from Cyclone Idai.

Method/Description: We analyzed 282 daily reports containing 18,468 patient consultations from 14 international EMTs between 2019/03/27 and 2019/07/12. We considered data incomplete if inputs for demographic information, health events, outcomes, and relation to disaster were lower than the total number of patient consultations. We calculated the percentage of missing values for MDS items. Logistic regression identified associations between data incompleteness and EMT type.








Results/Outcomes: Completeness of information on team and location was 100%. Incompleteness rates were 7.1% for sex and age, 37.2% for health events, 48.9% for outcomes, and 41.8% for the relation of health events to the disaster. Type 1 Fixed EMTs reported less complete data compared to Type 1 Mobile and Type 2 EMTs. Classified EMTs were more likely to report complete data.

Conclusion: Overall, MDS daily report completeness needs improvement. Type 1 Fixed EMTs may have lower completeness due to busier schedules, while Type 1 Mobile EMTs benefit from more effective just-in-time training. Type 2 teams, being less busy, achieve more accurate data entry. Training for data collection is essential for better data completeness.

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Enhancing Clinical Records: A Continuous Improvement Project by PT EMT

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Background/Introduction: Clinical records are crucial for patient safety, continuity of care, and reflect the quality of care. In disasters, their importance increases due to limited patient information and complex scenarios. PT EMT clinical records

should follow WHO recommendations and SOPs to ensure good practices and patient safety, especially during care transitions. Currently, PT EMT records are paper based until the Emergency Medical Team Operating System (EOS) digital system is implemented.

Objectives: The aim was to review PT EMT's clinical records from 2023 to assess adherence to procedures, identify improvement areas, provide feedback to professionals, and promote a culture of patient safety and continuous improvement.

Method/Description: Ten clinical records were randomly selected from each PT EMT deployment in 2023, totaling 60 records analyzed and registered using a specific checklist.



Results/Outcomes: Records were missing information for: mission identification (35%), patient nationality (52%); contact details (100%); event date (12%); event type (57%); event-mission relationship (87%); time of 1st triage (43%); triage result (25%); patient assessment time (33%); patient history (48%); allergies (45%); usual medication (57%); diagnosis (30%); medication prescription and administration (21%); procedures carried out (44%); patient situation decision (43%); physician signature (12%) and ID number (53%); decision date (22%), and decision time (33%).

Conclusion: To standardize patient clinical recording, we planned and implemented: inclusion of this topic during briefings in deployments and in the PT EMT annual training plan; elaboration of a specific SOP, update record templates; conduct a workshop during DIRECT Course. The audits will be repeated with 2024 clinical records to evaluate the measures' effectiveness.

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Predicting the Number of Consultations by Emergency Medical Teams during Disasters Using a New Statistical Model

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Background/Introduction: When a natural or man-made disaster occurs, emergency medical teams (EMTs) are dispatched to provide medical surge capacity for injured and sick individuals. Accurate predictions of EMTs consultations during disasters can improve dispatch and withdrawal decisions. However, no published studies have yet demonstrated a method for predicting the number of consultations or patients based on EMT activity data.

Objectives: This research explores an innovative yet simple and reliable method to predict the number of consultations needed by EMTs during disasters, aiming to enhance the effectiveness and efficiency of medical response.

Method/Description: Data were collected using Japan-Surveillance in Post-Extreme Emergencies and Disasters (J-SPEED) and Minimum Data Set (MDS) for five disasters

in Japan and one in Mozambique. For each disaster, the number of consultations was predicted from the K value and constant attenuation model, originally developed for predicting COVID-19 patient numbers.

Results/Outcomes: The total number of EMT consultations per disaster ranged from 684 to 18,468. The predicted curve and actual K data were similar for each of the disasters (R² from 0.953 to 0.997), but offset adjustments were needed for the Kumamoto earthquake and the Mozambique cyclone because their R² values were below 0.985. For the six disasters, the difference between the number of consultations predicted from K values and the measured cumulative number of consultations ranged from $\pm 1.0\%$ to $\pm 4.1\%$.

Conclusion: The K value and constant attenuation model reliably predicted EMT consultations during six different disasters. This simple model may be useful for the coordination of future responses of EMTs during disasters.

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Perspectives on Evaluating Emergency Medical Team Deployments

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Background/Introduction: Effectiveness of EMT deployments have long been questioned. It is often suspected that EMTs are reluctant to share information that could be used for evaluation because they are concerned by the gap between expected and reality. The multitude of methods used to evaluate, without similar language, limits comparisons, and makes it difficult to make any meaningful generalizations on conclusions and recommendations. Hence, a common set of criteria to evaluate an EMT deployment must be established.

Objectives: To understand perspectives of evaluating EMT deployments for floods, tropical cyclones, earthquakes, and tsunamis

Method/Description: In-depth interviews were conducted with 17 EMT stakeholders. Mentioned evaluation indicators were listed in the Delphi Method questionnaire.

Two rounds of Delphi Method questionnaire were conducted, where fifteen and sixteen participants responded respectively, with all participants in round one responding to round two. Participants were asked to rate evaluation indicators and respective questions according to their perceived suitability using a four-point Likert scale. Suggestions provided in the first round were incorporated into the second round. Consensus was reached when more than 75% of respondents rated slightly suitable or highly suitable.

Results/Outcomes: A total of 23 indicators and 160 questions have been raised, and all indicators and 157 questions reached consensus after two rounds of Delphi Method. A draft evaluation framework was formed, based on the After-Action Review published by the WHO.