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Systematic Review of Components and Standards Framework of Health Information Management for Emergency Medical Teams (EMT) during Disaster Response in the ASEAN Region

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 May 2025 and was last updated on 22 May 2025.

INTRODUCTION

Review question / Objective What are the components and standards that define the EMT Minimum Data Set (MDS) implementation capacity of countries receiving international assistance in ASEAN? This part of the study aims at identifying components and standards through a systematic literature review that will inform a draft assessment tool. This tool will later be validated through experts' consultation in subsequent phase.

Rationale Disasters cause major disruptions that exceed a community's capacity to respond, requiring coordinated efforts to minimize harm. To support effective health responses, the World Health Organization has identified "Records and Reporting" as a core standard for Emergency Medical Teams (EMTs), emphasizing the need for structured medical information management to improve both patient care and overall coordination. The EMT Minimum Data Set (EMT MDS) was developed as a global standard to facilitate data-driven decision-making within the EMT Coordination Cell (EMTCC). However, successful implementation of the EMT MDS depends on specific components and standards that enable its operationalization. This is particularly relevant in the ASEAN region, where diverse health systems and frequent natural disasters underscore the need for a harmonized approach to EMT MDS adoption and use.

Condition being studied The Emergency Medical Team Minimum Data Set (EMT MDS) is a standardized tool developed by the World Health Organization to guide the collection and reporting of essential clinical and operational data by Emergency Medical Teams (EMTs) during disaster and emergency responses.

METHODS

Search strategy The search was conducted through PubMed, EMBASE, and Scopus, using tailored queries for each database to account for differences in controlled vocabularies and indexing. In PubMed, the search combined MeSH terms and free-text keywords related to EMTs, data systems, disaster response, and the ASEAN region. The EMBASE search adapted this using Emtree terms and free-text for comparable concepts. The Scopus search focused on title, abstract, and keywords fields, and was broadened by including country affiliations to increase sensitivity. We will apply filter on English language restriction during the search. To ensure comprehensive coverage, a manual search of reference lists from relevant articles and grey literature sources (e.g., WHO and ASEAN emergency health publications) was also performed. The additional document from this manual search included guidelines, policies, strategies, regulatory documents, standard operating procedures (SOPs).

Participant or population This review targets Emergency Medical Teams (EMTs) and related health emergency response systems operating within ASEAN member states. The focus is on the organizational, institutional, and national-level actors involved in disaster response and EMT coordination, including ministries of health, emergency preparedness agencies, and EMT coordination cells (EMTCCs). Rather than individual patients, the unit of analysis is the system-level implementation of standardized information tools used by EMTs in the ASEAN context.

Intervention The intervention of interest is the implementation of the Emergency Medical Team Minimum Data Set (EMT MDS), a globally standardized information management tool endorsed by the World Health Organization. The review aims to identify the essential components, standards, and enablers required for successful EMT MDS adoption and use. These may include elements related to governance, leadership, financing, workforce readiness, information systems, and service delivery. The focus is on how these components contribute to effective and sustained use of EMT MDS during disaster response.

Comparator This review does not include a direct comparator group. However, studies or reports that describe EMTs or emergency response settings without apparent implementation of EMT MDS —or with partial or inconsistent adoption— may be used as context to contrast facilitators and barriers. The goal is not to compare interventions head-to-head but to extract what components or standards are associated with successful versus limited implementation across settings.

Study designs to be included We have no restriction on study designs for this review.

Eligibility criteria We will include sources that focus on the implementation of disaster response activities involving data collection, medical recordkeeping and reporting, or the management of health and medical data. These activities may be explicitly described using terms such as Emergency Medical Team (EMT), EMT Minimum Data Set (EMT MDS), or Emergency Medical Team Coordination Cell (EMTCC), or more broadly under frameworks for health, medical, or emergency response operations. Eligibility criteria will be stratified by source type. For empirical studies (e.g., observational studies, qualitative research, case studies), we will include only those that describe implementation, operationalization, or enabling components of EMT MDS or comparable health information systems within specific country contexts in the ASEAN region. We will exclude studies that primarily focus on clinical outcomes, patient-level data, or medical procedures without discussion of system-level or data-related operational aspects, as well as those that do not provide sufficient information on ASEAN countries. In contrast, global or regional guidelines, technical documents, and policy reports (e.g., from WHO or other intergovernmental bodies) that describe frameworks, components, standards, or strategic recommendations related to EMT MDS or relevant data systems will be included regardless of country specificity. We will exclude documents that do not address operational aspects of health data and reporting systems in emergency medical settings. Only documents in English will be considered. Other types of publications such as editorial, commentaries, and conference abstracts lacking sufficient detail for assessment will be excluded.

Information sources The three main databases were PubMed, EMBASE, and SCOPUS. During the screening process, we will contact authors of articles that we cannot obtain the full-text article from these databases. Additional documents were manually searched from websites of the World Health Organization (WHO), the Association of Southeast Asian Nations (ASEAN), and the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre).

Main outcome(s) The primary outcome is the identification of key system-level components and standards that support or hinder the implementation of the EMT MDS in ASEAN countries. Outcomes will be categorized thematically using implementation and health system frameworks.

Additional outcome(s) None.

Data management All records identified through database and grey literature searches will be imported into reference management software and systematic review platform to facilitate the removal of duplicates. Screening of titles, abstracts, and full texts will be managed using a systematic review platform. Included studies will be logged in a data extraction sheet, where relevant characteristics will be recorded. Grey literature and policy documents will be organized by type and source for parallel extraction or contextual description as appropriate. Three reviewers will be involved. The lead and second reviewers will independently analyze selected studies initially, any discrepancy between them will be discussed. If no solution can be reached, the third reviewer will make the final decision.

Quality assessment / Risk of bias analysis Given the diverse nature of sources anticipated in this review, multiple tools will be used to assess the quality and credibility of the included evidence. The Critical Appraisal Skills Programme (CASP) checklists will be used selectively, depending on study design. Grey literature such as organizational guidelines, preliminary reports, and technical documents may also be assessed using assessment tools such as the AACODS checklist. Quality appraisal will not be used to exclude studies but to inform the interpretation and confidence in the findings.

Strategy of data synthesis Components and standards relevant to national implementation capacity of the EMT MDS will be extracted and categorized into six thematic domains, based on the WHO's Assessment Tool for National Health Information Systems.

Subgroup analysis None.

Sensitivity analysis None.

Language restriction We will only considered articles in English language.

Country(ies) involved The authors are from Indonesia, Japan, Myanmar, and Thailand.

Other relevant information None.

Keywords EMT MDS, Disaster management.

Dissemination plans We plan to present preliminary findings at an academic conference and later publish the full article in an academic journal.

Contributions of each author

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