Perspective

Strengthening emergency preparedness through the WHO emergency medical team mentorship and verification process: experience from Thailand

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Abstract

The World Health Organization (WHO) emergency medical team (EMT) mentorship and verification process is an important mechanism for providing quality assurance for EMTs that are deployed internationally during medical emergencies. To be recommended for classification, an organization must demonstrate compliance with guiding principles and core standards for international EMTs and all technical standards for their declared type, in accordance with a set of globally agreed minimum standards. A rigorous peer review of a comprehensive documentary evidence package, combined with a 2-day verification site visit by WHO and independent experts, is conducted to assess an EMT’s capacity. Key requirements include having sufficient systems, equipment and procedures in place to ensure an EMT can deploy rapidly, providing clinical care according to internationally accepted standards, being able to be fully self-sufficient for a period of 14 days and being able to fully integrate into the emergency response coordination structure and the health system of the country affected during deployment. Through the WHO mentorship programme, each EMT is provided with a mentor team, which guides and supports it during the preparatory process. The process typically takes around 1 to 2 years to complete. The Thailand EMT is the first team from the WHO South-East Asia Region to successfully complete the WHO mentorship and verification process. The experience of this process in Thailand can serve as an example for other countries in the South-East Asia Region and encourage them to strengthen their emergency preparedness and operational readiness by getting their national EMTs verified.

Keywords: emergency medical team, health system emergency preparedness, South-East Asia, Thailand

Background

Countries in the World Health Organization (WHO) South-East Asia Region face a broad range of disasters, from natural hazards including earthquakes, floods, tsunamis, landslides and volcanic eruptions to outbreaks and other types of emergencies. Sudden onset disasters occur without any advance notice or warning and often cause extensive injuries to people and damage to health-care systems, damaging or destroying health facilities in crisis situations that may exceed a country’s capacity to respond. In addition, instances of conflicts with non-state actors result in large numbers of civilian casualties and large numbers of trauma patients. Furthermore, hospitals are being attacked with disconcerting frequency. This situation brings with it a set of unique challenges, as large numbers of complicated trauma cases require immediate intervention by skilled trauma teams.

Emergency medical teams (EMTs) are defined as “groups of health professionals providing direct clinical care to populations affected by disasters or outbreaks and emergencies as a surge capacity to support the local health system”.1 Experiences from health emergencies in the region have shown that, following a sudden onset disaster, a large number of EMTs often arrive in the country affected to provide emergency care to patients with traumatic injuries and other life-threatening conditions. However, in an emergency, the outcome of the response depends on how quickly the right expertise reaches the right place at the right time to meet the needs of the people affected. In many emergencies, the deployment of EMTs is not based on assessed needs, and there is wide variation in EMTs’ capacities, competencies and adherence to professional ethics. EMTs are often unfamiliar with international emergency response systems and standards
and may not integrate smoothly into the usual coordination mechanisms.

Following the experience of the catastrophic earthquake that occurred in Haiti in 2010, WHO identified an urgent need to develop standards and a coordination mechanism for EMTs (referred to at the time as “foreign medical teams”). A working group was established and met for the first time in December 2011, resulting in the publication in May 2013 of Classification and minimum standards for foreign medical teams in sudden onset disasters, informally known as “the blue book”. In this key policy document, EMTs are categorized into three types, as follows.

- **Type 1 EMTs** provide outpatient emergency care and have the capacity to conduct at least 100 patient consultations per day (for type 1 fixed teams, which have a fixed health facility) or 50 patient consultations per day (for type 1 mobile teams, which are able to move frequently and access remote areas).
- **Type 2 EMTs** provide inpatient surgical emergency care, with capacity for at least 7 major or 15 minor surgeries and 20 inpatients per day.
- **Type 3 EMTs** provide referral-level care, with capacity for at least 40 inpatients per day, including four to six intensive care beds.
- **Additional specialist cells** can provide care in support of existing facilities, in areas such as burns care, rehabilitation and other specialized clinical areas.

The “blue book” also outlines minimum standards for EMTs, divided into 6 guiding principles and 13 core standards that apply to all EMTs equally, as well as a number of technical standards that apply to certain types of EMT.

In recent years, there has been a shift in the focus of the global health emergency response architecture towards regionalization and strengthening national capacities. This was reflected in the decision made at a global meeting of the EMT community in December 2015 to change the term “foreign medical team” to “emergency medical team”, to underline the leading role of the national EMT in every response and the need to have unified coordination systems for national and international teams. The working group on foreign medical teams evolved into the WHO emergency medical teams initiative, which aims to support Member States and nongovernmental and international organizations by setting minimum standards, identifying best practices, and establishing logistics and operational field coordination standard operating procedures (SOPs).

The WHO South-East Asia Region took on a leadership role in the regionalization of the EMT initiative when, following a comprehensive consultation process, the WHO Regional Committee for South-East Asia, in its 71st session in September 2018, adopted resolution SEA/RC71/R5 on strengthening emergency medical teams (EMTs) in the South-East Asia Region. The resolution confirms that EMTs play an important role in the response to emergency situations; it acknowledges the need to adopt WHO minimum standards and the need to implement quality assurance and governance mechanisms at national, regional and international levels; and it urges Member States to establish or strengthen the national mechanisms that support effective and high-performing national EMTs, in line with the WHO classification and minimum standards, and to develop and implement a national plan for strengthening systems for EMTs.

### The mentorship and verification process for the Thailand emergency medical team

WHO has developed a global mentorship and classification process to provide independent quality assurance for EMTs that intend to make themselves available for international support. The process is based on the globally recognized minimum standards for EMTs. Teams that have successfully completed the process are included in a global directory of internationally deployable EMTs.

Once an EMT has expressed its interest in entering the WHO mentorship and verification process, and after a self-assessment of existing capacities has been conducted using a standardized checklist, teams are assigned a mentor team to support the development of the EMT and help it to prepare for verification. This process usually entails several site visits, as well as close collaboration and communication remotely over an extended period of time. Mentors are typically peers from other EMTs that have recently completed the process with their own teams. A lead mentor is usually assisted by two support mentors, ensuring that all three key technical areas of an EMT – clinical capacity, logistics, and management and administration – are covered. The mentorship process usually leads to a verification site visit, conducted over a period of 2 days by a group of independent peer reviewers led by WHO, to evaluate the EMT’s ability to meet all the required minimum standards.

Thailand has been a strong supporter of the EMT initiative in the WHO South-East Asia Region since 2011. The country has a strong national capacity of 77 domestic medical emergency response teams from the Ministry of Public Health, located in each of the 77 provinces to ensure rapid response to domestic emergencies, as well as four military medical emergency response teams. The Thailand EMT has experience of international deployments to support other countries, during the responses to Cyclone Nargis in Myanmar in 2008, the Nepal earthquake in 2015 and the collapse of a major dam affecting the Attapeu province of the Lao People’s Democratic Republic in 2018.

Based on this sound foundation, WHO verification of the Thailand EMT as an international EMT was included as a target in the United Nations Partnership Framework for Thailand 2017–2021. To establish an international EMT based on the national medical emergency response teams, the Ministry of Public Health of Thailand partnered with the Ministry of Defence, the Ministry of Interior and the Ministry of Foreign Affairs; the Royal Thai Armed Forces; the Thai Red Cross Society; and the Thai Association for Emergency Medicine.

A team of mentors (author AT was lead mentor) from Australia, Japan and Spain was assigned to the Thailand EMT to provide guidance and advice, in close collaboration with the WHO EMT Secretariat, the WHO Regional Office for South-East Asia and the WHO Country Office for Thailand. Following multiple consultation visits, a national EMT training session was conducted by WHO in 2018 to introduce key concepts and develop a roadmap to achieve the WHO verification status by mid-2019 (see Fig. 1).
A working group was established with designated functional team leaders for the areas of clinical capacity, logistics, and management and administration. Key milestones in the development process were defined, and a timeline for their implementation was developed.

The key components of the evidence package for WHO verification of an EMT are a comprehensive set of SOPs, developed and compiled by the team to guide the staff in carrying out certain routine activities in a timely, efficient and uniform manner (see Box 1). To aid the Thailand EMT in the development of its SOP package, a dedicated training workshop was conducted, and draft documents submitted by the team members were reviewed by the mentors and WHO staff on an ongoing basis.

A key requirement that an EMT must meet to achieve WHO verification status is being able to be fully self-sufficient for a period of 14 days, so that it does not place any burden on the country affected. Teams must be able to meet the needs of their staff and patients regarding clean water, food, shelter, hygiene and sanitation, and communication and transport. They also

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**Box 1. An overview of the key components of the evidence package**

- A written statement on behalf of the organization declaring compliance and the ability to provide quality, appropriate, equitable, ethical, accountable and integrated care during deployment
- Human resources processes and workflow systems to ensure that all team members are qualified and have credentials for their function in the team
- A comprehensive training programme that enables all team members to fulfil their roles within the team safely and effectively
- Evidence that all team members are screened for physical and mental fitness and have access to all relevant pre-deployment vaccinations, chemoprophylaxis and personal protection from vectors, as appropriate to the relevant context and informed by risk assessments
- Evidence of effective structures and systems to ensure rapid team activation and deployment
- Evidence of medical malpractice insurance coverage arrangements for the team in the event of deployment
- A critical incident management system for events affecting staff during deployment
- A confidential medical records system
- Standard operating procedures (SOPs) on: reporting mechanisms; informed consent; protection for vulnerable populations; public health and disease surveillance; logistics, i.e. water, power and lighting, food, shelter, communications, transport, and sanitation and waste management; pharmacy and pharmaceutical management; vaccine storage and transport; management of controlled drugs; sterilization of equipment; laboratory testing
- Clinical SOPs on: mass casualty management and triage; resuscitation, patient stabilization and referral; communicable diseases and vector control; infection prevention and control; maternal and child health; fracture care; wound care; noncommunicable disease care; mental health; rehabilitation
need to be able to ensure their team members’ and patients’ safety and security. Other important aspects of logistical and operational support that must be delivered by EMJs include power and lighting for the entire camp, appropriate management of all medical and general waste that is produced and control of all vectors around the facility that may transmit pathogens (see Box 2). To achieve this, EMJs have to be capable of the safe storage, rapid mobilization, transport and set-up, and maintenance of a large amount of equipment and supplies when deployed. To provide guidance and support to the Thailand EMJ in the development of its logistical capacity, dedicated training sessions were conducted to familiarize the team members with key aspects of water supply systems, power and energy, sanitation, waste management, vector control, and the storage and transport of equipment.

To train a sufficient number of staff and volunteers who could be deployed to fulfil specific functions in the team structure, the Thailand EMJ developed a comprehensive training system. Team members underwent two training sessions on the specific requirements of their functional role within the EMJ, on matters related to the specific emergency deployment context – characterized by resource limitations and an austere environment – and on safety and security aspects. In addition, designated team leaders underwent additional training sessions to prepare them for their specific leadership roles. Training sessions for EMJ staff members should always be complemented by simulation exercises so that they can practise the skills they have acquired in a realistic but safe environment. All training sessions should be conducted on a regular basis to maintain team capacity and readiness.

As a final step in the mentorship process, WHO and the mentor team conducted a final pre-verification visit, during which all the aspects of the EMJ were reviewed in a similar fashion to during the actual verification visit. This was an additional opportunity to provide comprehensive feedback and advice to the team.

On 30 and 31 July 2019, a verification team led by the WHO Regional Office for South-East Asia and consisting of peer reviewers from the Ministry of Health of Indonesia, Japan’s International Cooperation Agency and the UK EMJ conducted the verification field visit to formally evaluate the Thailand EMJ’s ability to meet WHO’s required minimum standards for classification as a type 1 fixed EMJ.

After a careful review of the documentary evidence package, consisting of all the SOPs and other key documents guiding the work of the Thailand EMJ, extensive site visits and in-depth discussions with the team, the verifiers recommended that the Thailand EMJ be verified as meeting the guiding principles and core standards for an international EMJ and the technical standards for a type 1 fixed EMJ. The verifiers commended the Thailand EMJ for its hard work and highlighted the professionalism, ethics, transparency, leadership and voluntary engagement of the team. The team received a certificate of recognition of classification signed by the WHO Director-General and the WHO Regional Director for South-East Asia, during a ceremony at the 72nd session of the WHO Regional Committee for South-East Asia on 3 September 2019 in New Delhi, India. This certification will be valid for a 5-year period, after which reclassification will be required to maintain the team’s classification status.

### Box 2. An overview of key equipment for the Thailand type 1 fixed emergency medical team

- A water supply system to ensure the availability of water in sufficient quantities (100 litres per team member, plus 5 litres per outpatient per day) at a safe drinking water quality level, including equipment for purification, treatment and quality testing, safe storage (tank or bladder) and distribution, and management of waste water
- Power and lighting equipment, including generators that are able to meet power level requirements, a fuel supply chain and fuel farm, lighting equipment, and an electrical system installation, including all required cables, connectors, junction boxes, etc.
- A portable climate-appropriate shelter system for living and clinical facilities, including internal lighting sources and flooring, that can be easily and rapidly erected and dismantled by a minimal number of team members
- Internal hardware for the clinical facility, including stretchers, waterproof storage boxes in various sizes, shelving units, folding chairs and tables, internal lighting, a maternity bed, wheelchairs, etc.
- Clinical equipment, including for basic patient monitoring, defibrillators, oxygen bottles, an oxygen concentrator, portable ultrasound equipment, point-of-care testing devices, trauma backpacks, etc.
- Clinical consumables supplies sufficient for a minimum of 14 days
- Medication supplies and a pharmacy stock list, with a supply of pharmaceuticals sufficient to make the EMJ self-sufficient for 14 days, mechanisms and equipment for dispensing medicine and stock management, and a secure space for medicine storage, with climate control, including a lockable container for controlled substances and a cold chain
- Sanitation facilities, including one shower per 20 team members; one toilet per 20 team members, separated by gender; one toilet per 50 outpatients, separated by gender; handwashing stations; and blackwater waste management capability
- A medical and general waste disposal system, including a portable incinerator, waste bags, sharps containers, personal protective equipment for waste handling, etc.
- A food supply for all deployed team members for 14 days, e.g. dry or wet ration packs, staff kitchen equipment
- A warehouse/storage (including a main warehouse in the home country and a field warehouse at the deployment site) with a supply chain management system
- A communication system to support the safe and effective delivery of operational activities during deployment, including mobile phones, satellite communications, very high-frequency/high-frequency radio communication, laptops, printers, etc.
- A personal deployment kit for each team member
Conclusion and next steps

The WHO mentorship and verification process is an important mechanism for providing quality assurance for EMTs that are deployed internationally to support countries in need. It is a rigorous exercise that helps EMTs to review every aspect and every component of their team that will be required to deploy rapidly to support a country affected by an emergency, starting with equipment and logistical procedures, clinical capacity, and administration and management. The process ensures that teams are fully self-sufficient and provide patient care in accordance with global standards.

The financial and human resources and the time required to complete this process should not be underestimated. Given the significant resources required for successful verification, a strong project management approach is necessary, with a detailed work plan including a realistic budget with assurances of the necessary funding support for the procurement of equipment and the development of the documentary evidence package and training sessions and exercises. While it focuses on ability to deploy internationally, the mentorship and verification process is also a highly useful exercise for strengthening national EMT capacities and capabilities, through interaction with peers and familiarization with global standards.

The aim of the WHO Regional Office for South-East Asia is to build a sufficient cadre of regionally deployable EMTs to support national EMTs as a key component of emergency preparedness and operational readiness for health emergencies when required. The successful completion of the WHO EMT mentorship and verification process is not an end-point, as significant efforts are required to continuously maintain capacity and readiness to deploy through regular training sessions and exercises.

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