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DEVELOPING A HYBRID TRAINING CURRICULUM FOR THE INAUGURAL WORLD HEALTH ORGANIZATION (WHO) SINGAPORE EMERGENCY MEDICAL TEAM (SGEMT) USING ANDRAGOGICAL PRINCIPLES FOR ADULT TRAINING

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List of Abbreviations

ASEAN	: South East Asian Nations
AMS	: ASEAN Member States
ARCH	: ASEAN Regional Capacity on Disaster Health Management
BDHM	: Basic Disaster Health Management
EMT	: Emergency Medical Team
MOH	: Ministry of Health
SGEMT	: Singapore Emergency Medical Team
TTX	: Tabletop Exercise
GDX	: Ground Deployment Exercise
WHO	: World Health Organization

ABSTRACT

Introduction: The WHO-EMT initiative seeks to "enhance surge capacity of countries through promotion of rapid mobilization and efficient coordination of both national and international medical teams and the health-care workforce to reduce loss of life and prevent long-term disability caused by disasters, outbreaks and other emergencies. It values "inclusiveness, transparency, global cohesion and regional adaptation, needs driven and adherence to quality standards and methodology. In partnership with the Ministry of Health

(MOH) of Singapore, Singapore Health Services (SingHealth) was tasked to help set up Singapore's inaugural World Health Organisation (WHO) Emergency Medical Team (EMT) – Singapore Emergency Medical Team (SGEMT). Singapore will be the third ASEAN country, after Thailand & Malaysia, to set up such a WHO EMT programme. SGEMT plans to be verified by WHO by 2024. **Methods:** Our SGEMT is a Type 1 Fixed EMT and will attend to outpatient and emergency patients in the community over a 14-day overseas deployment, and comprises an 18-member medical team with 5 doctors, 10 nurses, 1 rehabilitative physiotherapist, 1 clinical psychologist and 1 clinical support staff. The medical team are volunteers from all across our SingHealth cluster. In addition to this 18-member medical component, there is an additional 15 member administrative and logistic team from MOH and our designated logistics partner. Our SGEMT therefore comprises 33 members – 18 medical team members and 15 admin / logistics members. In order to adequately prepare all our SGEMT volunteers for deployment, our SingHealth team together with MOH developed a comprehensive and uniquely tailored training programme. The design of this training programme is based on well-established andragogical principles and applications to ensure effective adult learning. **Results:** All SGEMT volunteers will undergo a three-component hybrid training programme comprising of 1) E-Learning Modules, 2) Face-to-Face Workshop & Table-Top Exercise (TTX) and 3) Ground Deployment Exercise (GDX). Component 2 and 3 aim to help participants consolidate the knowledge acquired in the e-learning component, provide hands-on opportunity to demonstrate both the clinical and non-clinical skills required of SGEMT volunteers. The final integration will first be done via TTX, followed by GDX. **Conclusion:** The training curriculum and andragogy adopted for SGEMT was to ensure effective adult learning, such that our SGEMT can function seamlessly on the ground once deployed by MOH & WHO.

Keywords: WHO Emergency Medical Team; Singapore Emergency Medical Team; SGEMT Training Course

INTRODUCTION

As part of the Association of South East Asian Nations (ASEAN), Singapore is a member of the ASEAN Regional Capacity on Disaster Health Management Project - the ARCH Project. ARCH is the collaboration mechanism for comprehensive capacity strengthening on disaster health management at national and regional levels within ASEAN. The World Health Organisation (WHO) Emergency Medical Team (EMT) initiative seeks to "enhance surge capacity of countries through promotion of rapid mobilization and efficient coordination of both

national and international medical teams and the health-care workforce to reduce loss of life and prevent long-term disability caused by disasters, outbreaks and other emergencies." It values "inclusiveness, transparency, global cohesion and regional adaptation, needs driven and adherence to quality standards and methodology."(1)).

ASEAN Member States (AMS) have been committed to provide effective mechanisms to achieve substantial reduction of disaster losses and to jointly respond to disaster emergencies through concerted efforts and strengthened collaboration. AMS accepted WHO's call for accredited EMTs and adoption of WHO standards. WHO has verified more than 35 EMTs internationally to date. Within ASEAN, Thailand was the first ASEAN country to set up a WHO-EMT in 2019. This was followed by Malaysia, led by a non-governmental agency, Mercy Malaysia, in 2023. Singapore aims to be the third ASEAN country to have a WHO-verified EMT by 2024.

Singapore's WHO-EMT is established through a whole-of-government (WOG) approach involving the Health, Foreign Affairs, Home Affairs, and Defence Ministries. In partnership with the Ministry of Health (MOH) of Singapore, the largest healthcare cluster in Singapore - Singapore Health Services (Sing Health) - was tasked to help set up Singapore's inaugural WHO verified EMT, that is the Singapore Emergency Medical Team (SGEMT).

METHODS

In order to adequately prepare all our SGEMT volunteers for deployment, our SingHealth team together with MOH developed a comprehensive and uniquely tailored training programme. We describe the development of this training programme for SGEMT with emphasis on well-established andragogical principles and applications to ensure effective adult learning, such that the SGEMT can function seamlessly on the ground once deployed.

Participants

Our SGEMT is a Type 1 Fixed EMT and will attend to outpatient and emergency patients in the community over a 14-day overseas deployment, and comprises an 18-member medical team with 5 doctors, 10 nurses, 1 rehabilitative physiotherapist, 1 clinical psychologist and 1 clinical support staff. The medical team are volunteers from all across our SingHealth cluster. In addition to this 18-member medical component, there is an additional 15 member

administrative and logistic team from MOH and our designated logistics partner. Our SGEMT therefore comprises 33 members – 18 medical team members and 15 admin / logistics members.

Initial Learning from ARCH Basic Disaster Health Management Course

Prior to the conceptualisation of the SGEMT Training Course, we sent our training & development team to participate in the mock run of ARCH Basic Disaster Health Management Course (B-Course) in Bangkok Thailand from 03 to 08 July 2023. This B-Course was graciously supported by Japan International Corporation Agency. The B-Course comprised of two parts: 1) Online e-Learning Modules and 2) In-Person Course.

The e-learning part comprised of a total of 15 modules under 3 broad categories – namely (i) General Disaster, (ii) Medical & (iii) Logistics (Appendix A). The in-person course ran over three days with focus on i) Disaster and Disaster Health Management Principles, ii) Roles, Responsibilities and Capacity of the EMT and iii) Tabletop Exercise to put it all together. As the B-Course's e-learning curriculum and content was professionally developed by various ASEAN Disaster Experts under the ARCH Project, we decided to adopt the e-learning material in totality. In consideration of the unique learning needs and styles of our adult SGEMT volunteers in Singapore, we decided to prioritise and incorporate relevant elements of the B-Course in-person curriculum into our SGEMT Training Course.

Underlying Andragogical Principles

While pedagogy is a traditionally dependent and closely-guided way of learning and means of instruction, andragogy refers to a facilitated learning by less-dependent or independent and self-directed adults. At the end of the continuum, for heutagogy, the learning is by self-managed learners with inter-dependency. As such, andragogy and heutagogy are practical frameworks for continuing medical education and continuing professional development (2).

Adult learners differ from non-adult learners in six key ways (3,4), highlighting the need for careful selection of curriculum that is relevant to the adult learner and the task at hand:

1. The need to know – "*Why do I need to know this?*"
2. The learners' self-concept – "*I am responsible for my own decisions."*
3. The role of the learners' experiences – "*I have experiences which I value and you should respect that."*
4. The readiness to learn – "*I need to learn because my circumstances are changing."*

5. The orientation to learning – "*Learning will help me deal with the situation in which I find myself."*
6. The motivation – "*I learn because I want to."*

In adult education, a challenge for many learners and educators is how to reconcile experience with theoretical knowledge. Mezirow's theory of transformative learning encourages critical reflection on an established frame of reference (currently accepted as "fact' or "truth") to challenge the assumptions and search for evidence (5). Habermas describes three types or levels of knowledge that are of "constitutive interests". They are "technical"; "practical" & "emancipatory" types or levels of knowledge (6). In the "technical-rational" approach to learning, the type of knowledge (usually largely informational) can largely be taught and accrued through didactic forms of learning.

In the current age of the internet, one can arguably learn this online – with online modular quizzes to reinforce key points. Secondly, the "practical or humanistic" framework is one that considers learner needs and acknowledges the self-directed capacity that many adults demonstrate in determining their individual learning trajectories. Thirdly, in the "emancipatory approach" to education allows opportunities of learning to occur via discussion (e.g. group discussions in face-to-face workshop), dialogues, communicative learning (e.g. tabletop exercise) and immersive learning (e.g. ground deployment exercise).

A Habermasian framework helps situate the multiple theoretical perspectives that shape our teaching and learning contexts, which are often overlapping and intertwine (7). It is important that in the adult learning and continuing medical education pantheon, information and knowledge is not just unilaterally downloaded and accrued but is further digested and processed. Similarly, according to Constructivism theory, individuals construct new knowledge through the interaction between their previous skills and knowledge, the skills and knowledge gained from social interaction with peers and teachers, and social activities. Knowledge is actively constructed based on a learner's environment, the physical and social world, which makes it relative (8).

In our context of preparing SGEMT volunteers for deployment, the focus should not be on didactic teaching of our volunteers the theories of disaster health management. Instead, we should create an interactive environment where volunteers can leverage on their existing skills and knowledge, applying them to situations they are likely to encounter during deployment and

hence allowing them to construct new knowledge. Scott et al used an evaluative research framework to explore the relationship among key elements of certain theoretic models as applied to physician continuing medical education programmes (9). He concluded that physicians as adult learners:

1. Are self-directed and experientially oriented (10).
2. Are impacted by their physical age and stage in life (Bennett)
3. Are influenced by year or decade of graduation (Savatsky)
4. Are impacted by four dimensions of practice (Nowlen)
5. Require a force and image for change (Fox)
6. Must be motivated to participate (Knox)

Similarly, Schon et al stated that adult learning is associated with two fundamental elements of motivation and reflection. There are two types of reflection: reflection-on-action and reflection-in-action (11). In the "chain of response" model, there are three internal motivating factors: self-evaluation, the attitude of the learner toward education, and the importance of goals and expectations (12). In essence, we need to acknowledge the self-directed, self-motivated, and self-reflective nature of our SGEMT adult learners when designing a training program that taps into their higher calling for humanitarian service.

RESULTS

Learning Outcomes & Course Design

We tapped on our experience in B-Course and the understanding of the above adult learning principles to design and construct our SGEMT Training Course. All deployed SGEMT volunteers (clinical, admin & logistics members) will undergo a three-component hybrid training programme (Figure 1) comprising of:

1. E-Learning Modules
2. Face-to-Face (F2F) Workshop & Tabletop Exercise (TTX)
3. Ground Deployment Exercise (GDX)

Figure 1. The Three Components of our SGEMT Training Course

Source: Ho et al., 2025

The SGEMT Training Course Objectives (TCO) are set as such – By the end of the training course, participants should be able to

1. Explain the underlying principles of disaster health management [TCO 1]
2. Explain the key entities and components of disaster health management [TCO2]
3. Demonstrate crisis resource management skills during a critical incident [TCO 3]
4. Demonstrate competency in the functions and workflows of SGEMT [TCO 4]
5. Demonstrate competency in health information management [TCO 5]
6. Demonstrate competency in radio communications [TCO 6]
7. Demonstrate self-sufficiency skills required for overseas deployment [TCO 7]

Part 1: E-Learning Modules

There are two parts in this e-learning module. Part 1A comprises of the fifteen ARCH modules (Appendix A). Part 1B comprises of four SGEMT modules (Appendix B). The ARCH modules aim to provide participants with the relevant knowledge, clinical and non-clinical skills in managing, responding, and providing healthcare to the casualties of any disasters during deployment. Upon completion of these modules, SGEMT volunteers will have the knowledge to adapt to the general disaster management system and co-ordinate effectively with other ASEAN emergency medical teams onsite.

The SGEMT modules aim to provide participants with a big picture background of SGEMT, as well as its goals, composition, capability and capacity. Issues unique to overseas deployment and important self-care tips of both physical and psychological aspects will also be discussed. In the final module, important clinical and operational processes will be highlighted

from the Clinical Care Technical Standards (CCTS) and the Logistics Technical Standards & WASH Technical Standards respectively.

This e-learning component is delivered in an asynchronous online learning format. By making these modules available on an online platform, it will allow our learners to access the teachings at a convenient time for them and at a pace they can digest. We try as much as possible to keep the didactic elements as simple and easy to understand as possible. We also make attempts in our design to ensure retention of the information we are disseminating and sharing. For example, we include video interviews of experienced humanitarian volunteers in SingHealth who shared priceless insights from their previous deployments.

Part 2: Face-to-Face Workshop & Tabletop Exercise (TTX)

This is a one-day face-to-face (F2F) indoor workshop for deployed personnel of SGEMT. The workshop aims to help participants consolidate the knowledge acquired in the e-learning training component, provide hands-on skill stations to acquire both the clinical and non-clinical skills required of SGEMT and final integration with a table-top exercise at the end of the day. A sample of the workshop schedule is available in Appendix C. The training & learnings are from the continuum of individual to small-group and large-group sharing, discussion and tabletop exercises.

In Activity 1 – Basic Disaster Health Management (BDHM) Theory, we adopted a flipped classroom approach in the teaching of BDHM theoretical concepts by requiring participants to complete the e-learning modules prior to attendance of this F2F workshop. In this activity, participants will be assessed to identify knowledge gaps. The overall objective of this activity is to reinforce the key BDHM concepts through facilitated team-based learning [TCO 1-2].

In Activity 2 – Self-Sufficiency Skills, the term "self" refers to both a team-level and an individual-level aspect. The objective of this activity is to equip participants with essential self-sufficiency skills required for a safe and fruitful overseas deployment [TCO 3-7] – i.e. Mass Casualty Incident Triage, Health Information Management, Field Survival Skills and Radio Communications Skills.

In the final Activity 3 – TTX, through the case injects, we wanted the learner to understand and appreciate the SGEMT operational flow and actual modes of practices on the ground. Our intent was not so much to test our team's medical or technical knowledge or knowhow but to exercise their understanding of the SGEMT operational flow and way of operations.

For the clinical aspect of operation flow, we start with day-to-day non-infectious care cases before escalating to infectious cases, vulnerable cases (e.g. orphan child, gender-based-

violence) and cases from a nearby mass casualty incident. We also design our injects to surface to our learners the operational aspects of SGEMT deployment. In addition, our injects had multidisciplinary participation, with one inject giving different learnings and perspectives to different ground stakeholders. E.g. in a security breach inject, the response of the medical side of SGEMT will be different from the response of the admin and logistics team but equally important. We also framed the injects and sessions for constructive feedback and critique to our standard operating procedures, so as to enable us to refine and improve our policies and protocols.

Part 3: Ground Deployment Exercise (GDX)

Our full-scale ground deployment exercise is a continuation of our F2F Workshop and TTX. The GDX, in a similar vein, will have injects that will exercise and ensure constructive discussions about our modus operandi and work processes on the ground. This GDX aims to help participants acquire the skills required to set up, operate safely in and demolish the base of operations (BOO).

The injects in our GDX were scenario-based injects, which, being real on-the-ground simulations, we were able to translate paper processes to practice-in-reality. For example, it was only through our GDX, where we exercise night deployment of our base-of-operations and SGEMT tentage setup, that we were able to determine if we had sufficient lighting and equipment when the sun sets. Again, the learnings are from the continuum of individual to small-group and large-group sharing, discussion and almost real-life exercises.

Assessments & Learning Outcomes

We have chosen to use Biggs Constructive Alignment Theory (13) to guide the design of our training activities and assessments to align with the intended course objectives. To recap, there are three components of our hybrid training course – 1) E-Learning Modules, 2) Face-to-Face (F2F) Indoor Workshop and 3) GDX Outfield Training (GDX). We adopt a flipped classroom approach for the delivery of Basic Disaster Health Management (BDHM) theoretical concepts by requiring participants to complete their ARCH e-learning modules prior to attendance of the F2F workshop. In the F2F workshop, participants will be assessed individually as well as in their pre-assigned teams to identify knowledge gaps. The objective of

the assessment is to reinforce the key BDHM concepts through facilitated team-based learning [TCO 1-2].

The F2F indoor workshop is designed to build upon the SGEMT e-learning modules and provide participants with hands-on training in medical, technical and self-sufficiency skills required of SGEMT. Participants will be assessed together as a team in the table-top exercise (TTX) at the end of the workshop [TCO 3-7]. The GDX outfield training is designed to further build upon the knowledge and skills acquired in the F2F indoor workshop. It provides an opportunity for participants to demonstrate their medical, technical and self-sufficiency skills in an outdoor environment. Participants will be assessed together as a team in various SGEMT clinical workflows within an actual setup of the SGEMT base of operations [TCO 4-7]. Appendix D summarizes the linkage of the training activities and assessment tasks to the intended training course objectives.

DISCUSSION

Amat Camacho et al (14) has described a global operational learning framework for EMTs, linked to current WHO EMT standards. This recommendation sets out the minimum standard for education and training of EMTs. It is the responsibility of EMT organisations to ensure that all its staff has gone through all three steps before deployment. This three-step learning process are designed to:

1. Ensure professional competence and license to practice
2. Support adaptation of technical and non-technical professional capacities into low-resource and emergency context
3. Prepare for an effective team performance in the field

SGEMT Training Course has adequately fulfilled the three-step learning process described. Firstly, SGEMT has a Secretariat to ensure all potential SGEMT staff selected for SGEMT Training Couse have a current accreditation by a competent authority for their field of practice, regardless whether they are clinicians or logisticians. In particular, SGEMT clinical team will only be chosen from practising healthcare workers in the public sector.

Secondly, the focus of the first two components of our SGEMT Training Course is designed to individually help prepare our SGEMT staff adapt to the context of a low-resource emergency setting. While the 1st component of our training course described the relevant technical knowledge, the 2nd component focused on the practical application - e.g. basic disaster health management theory, mass casualty incident triage, health information

management, health needs assessment, radio communications skills and self-sufficiency skills such as psychological first aid and outfield survival skills were taught.

Lastly, in order to prepare our SGEMT clinical, logistics and admin staff for deployment as an integrated team, the 2nd and 3rd training components of our training course. i.e. TTX and GDX respectively, were designed with realistic clinical and non-clinical scenarios to inculcate the values and mandates of SGEMT, key clinical protocols and communication pathways, security guidelines, teamwork dynamics and also a hands-on experience in the mobilisation, maintenance and demobilisation of the SGEMT base of operations.

CONCLUSION

Leveraging on current adult learning precepts and concepts, we designed an end-to-end adult training program for our SGEMT members with the end in mind – to effectively train and enable our SGEMT to work well on the ground. The training curriculum and andragogy adopted for SGEMT was to ensure effective adult learning. Our SGEMT Training Course has also met the three-step process recommendation under the global operational learning framework set out by Amat Camacho et al (14). Further evaluation is needed to determine whether our training course has brought about effective changes. We are hopeful that SGEMT can ultimately function seamlessly as a cohesive unit on the ground once deployed by MOH & WHO.

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AUTHORS CONTRIBUTION

Kee Chong Ng conceptualised and wrote the initial manuscript. Shu Fang Ho took the lead in completing the manuscript. All the remaining authors contributed to the critical edits of the final manuscript. All the authors were involved in the conceptualisation and development of the SGEMT Training Course.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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APPENDIX A

ARCH Modules Objectives:

Module 1: General Knowledge in Disaster

1. To describe the definition, types, and extent of the disaster.
2. To understand the mechanism of each disaster's hazard.
3. To describe the impact of the disaster on the affected area.
4. To understand disaster cycle and risk assessment.

Module 2: Disaster and Disaster Health Management

1. To describe the general concept of disaster management in each process of disaster.
2. To describe the definition of health, health system, and disaster health management.
3. To understand disaster health management.
4. To compare general disaster management to disaster health management.

Module 3: Laws and Regulations and Disaster Health Management

1. To appreciate the importance of international policies and frameworks of disaster health management.
2. To comprehend local and national laws and regulations relevant to disaster health management.
3. To identify domestic organizations relevant to disaster health management locally, nationally, and regionally (ASEAN).

4. To understand the processes of the document management system, finance system, and administrative system in disaster health management.

Module 4: Communication and Coordination Mechanism in Disaster Management

1. To describe the principle of communication during a disaster.
2. To identify basic communication devices and protocols in disaster.
3. To explain the importance of a minimal data set and reporting system in disaster management.
4. To describe local, national, and ASEAN coordination mechanisms during a disaster.

Module 5: Role and Capability of Basic Disaster Management

1. To describe the roles and responsibilities of basic disaster management teams.
2. To describe the strengths and weaknesses of basic disaster management teams.

Module 6: Survival Theories

1. To understand the factors to survive in critical situations.
2. To describe how to survive in critical situations.
3. To describe self-preparedness and team preparedness to survive in critical situations.
4. To describe how to conduct safety, gather adequate food and water, and set up accommodation.

Module 7: The Obligation to the Affected Area

1. To identify what and how disaster and Basic disaster management teams causing environmental damage to the affected area.
2. To describe environmental control during settlement and after demobilization.
3. To describe waste management and dead body management.

Module 8: Principle of Crisis Resource Management

1. To understand the principles of perception and situation awareness.
2. To understand the creative decision-making process.
3. To understand the process of communication and team management.

Module 9: Ethics and Humanitarian Issues

1. To understand ethical issues in disaster management
2. To understand humanitarian issues (quality, equity, and patient-centered care) include SPHERE project requirements such as WASH, shelter, and health system approach

Module 10: [Medical] Basic Disaster Emergency Response

1. To describe the principle of medical management in a mass casualty incident
2. To demonstrate the appropriate medical treatment for mass casualty victim
3. To describe the use of psychological triage in emotionally distressed victims
4. To demonstrate the techniques of psychological first aid

Module 11: [Medical] Specific Hazard 1 – Abrupt-onset Disaster

1. To describe the concept of abrupt onset disaster.
2. To describe specific concerns in clinical practice: appropriate injury preventions and medical response accordingly.

Module 12: [Medical] Specific Hazard 2 – Long Standing Disaster

1. To describe the concept of long-standing disasters.
2. To describe specific concerns in clinical practice: exacerbation of chronic diseases, weather-related diseases, pollution-related diseases, and disease control and health surveillance.

Module 13: [Logistic] Communication Device Installation and Operation

1. To understand the components and mechanisms of communication devices such as radio transmitters (single-sided bands), satellite communication, or other innovations.
2. To describe the strengths and weaknesses of each type of communication device
3. To describe how to set up devices and operate and control them.

Module 14: [Logistic] Transport and Control

1. To describe the concept of transport in disaster.
2. To describe an appropriate type of transport in each specific condition.
3. To describe how to perform safe transport and control.

Module 15: [Logistic] Facility Installation

1. To describe the concept of basic facilities such as accommodation, electricity, light, water and waste.
2. To describe how to install the facilities effectively.

APPENDIX B

SGEMT Modules Objectives:

Module S1: Introduction to SGEMT

1. To understand the big picture and goals of SGEMT
2. To understand the composition, capability and capacity of SGEMT
3. To understand the base of operation that SGEMT will work in

Module S2: Overseas Deployment – Tips & Pearls

1. To understand the potential ethical and cultural sensitivity issues that may arise
2. To understand the communications and media management issues that may arise
3. To understand the security and safety issues that may arise
4. To be prepared for the unexpected events that may arise
5. To understand the strategies for physical self-care during deployment

Module S3: Psychological First Aid and Self-Care

1. To understand the techniques of psychological first aid
2. To understand the strategies for psychological self-care during deployment

Module S4: Important Clinical and Operational Processes of SGEMT

1. To understand the important clinical processes and patient journey stipulated in the SGEMT Clinical Care Technical Standards (CCTS)
2. To understand the important operational processes stipulated in the SGEMT Logistics Technical Standards & WASH Technical Standards

APPENDIX C

S/N		Training Activity Description		Time
0	**Team Introduction & Workshop Overview**			**0800h-0810h**
AM Session – Knowledge Consolidation and Self-Sufficiency Skills				
1	**Basic Disaster Health Management (BDHM) Theory**		**1h 20m**	**0810h-0930h**
	1.1	Individual Readiness Assessment Test (IRAT)	20min	
	1.2	Team Readiness Assessment Test (TRAT)	15min	
	1.3	Quiz Review and Summary of Key BDHM Concepts	45min	
				10min break
2	**Self-Sufficiency Skills**		**2h 30m**	**0940h-1210h**
	2.1	Mass Casualty Incident (MCI) Triage	45min	
	2.2	Health Information Management	45min	
	2.3	Field Survival Skills	30min	
	2.4	Radio Communications	30min	
				50min lunch
PM Session – Table Top Exercise				
3	**Table Top Exercise (TTX) Assessment**		**4h 30m**	**1300h-1730h**
	3.1	Part 1: Clinical Processes TTX by PHI	2h	
	3.2	Part 2: Operational Processes TTX by MOH	2h30min	
4	**GDX Briefing and Q&A by MOH**			**1730h-1745h**

Figure 2. SGEMT Training Course – F2F Indoor Workshop Schedule

Source: Ho et al., 2025

APPENDIX D

Training Component #1: E-Learning Modules

S/N		Training Activity Description	TCO
1A	**ARCH Modules**		**TCO 1-7**
	1	Module 1: General Knowledge in Disaster	TCO 1
	2	Module 2: Disaster and Disaster Health Management	TCO 1
	3	Module 3: Laws and Regulations and Disaster Health Management	TCO 1,2
	4	Module 4: Communication and Coordination Mechanism in Disaster Management	TCO 2,4,5
	5	Module 5: Role and Capability of Basic Disaster Management	TCO 2,4
	6	Module 6: Survival Theories	TCO 3,7
	7	Module 7: The Obligation to the Affected Area	TCO 2,4,7
	8	Module 8: Principle of Crisis Resource Management	TCO 3
	9	Module 9: Ethics and Humanitarian Issues	TCO 4,7
	10	Module 10: [Medical] Basic Disaster Emergency Response	TCO 3,7
	11	Module 11: [Medical] Specific Hazard 1 – Abrupt-onset Disaster	TCO 3,7
	12	Module 12: [Medical] Specific Hazard 2 – Long Standing Disaster	TCO 4,7
	13	Module 13: [Logistic] Communication Device Installation and Operation	TCO 6
	14	Module 14: [Logistic] Transport and Control	TCO 4
	15	Module 15: [Logistic] Facility Installation	TCO 4
1B	**SGEMT Modules**		**TCO 2,4,7**
	S1	Module S1: Introduction to SGEMT	TCO 2,4
	S2	Module S2: Overseas Deployment - Tips & Pearls	TCO 7
	S3	Module S3: Psychological First Aid and Self-Care	TCO 7
	S4	Module S4: Important Clinical and Operational Processes of SGEMT	TCO 4

Figure 3. Course Design and Constructive Alignment - E-learning Modules

Source: Ho et al., 2025

Training Component #2: Face-to-Face Indoor Workshop

S/N		Training Activity Description	TCO
1	**Basic Disaster Health Management (BDHM) Theory**		**TCO 1-2**
	1.1	Individual Readiness Assessment Test (IRAT)	TCO 1-2
	1.2	Team Readiness Assessment Test (TRAT)	TCO 1-2
	1.3	Quiz Review and Summary of Key BDHM Concepts	TCO 1-2
2	**Self-Sufficiency Skills**		**TCO 3-7**
	2.1	Mass Casualty Incident (MCI) Triage	TCO 3
	2.2	Health Information Management	TCO 4,5
	2.3	Field Survival Skills	TCO 7
	2.4	Radio Communications	TCO 6
3	**Table Top Exercise (TTX) Assessment**		**TCO 3-7**
	3.1	Part 1: Clinical Processes TTX by PHI	TCO 3-6
	3.2	Part 2: Operational Processes TTX by MOH	TCO 4

Training Component #3: GDX Outfield Training

S/N		Training Activity Description	TCO
	1	GDX Outfield Training	TCO 4-7

Figure 4. Course Design and Constructive Alignment - Face-to-face Indoor Workshop

Source: Ho et al., 2025

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