



A Guideline for Innovative Tabletop & Simulation Exercise

Lesson Learned from MBDS Experiences

February 2021

Authors:

Moe Ko Oo; Budi Eko Siswoyo; Win Min Thit; Jittra Thajeen

Mekong Basin Disease Surveillance (MBDS) Foundation

Foreword

The coronavirus disease 19 (COVID-19) is a highly transmittable and affecting 219 countries and territories around the world [1,2]. The preparedness and response is varied among countries depend on their capacity of health systems. As the pandemic is dynamics, simulation exercises and information sharing especially COVID-19 experiences are important to strengthen multisectoral cooperation and coordination among countries. The IHR monitoring and evaluation framework (2015) also aims to establish a system of mutual accountability for global public health security among countries. Tabletop and simulation exercises can help identify and assess both capacity and challenges, as well as develop and improve the functional capabilities of emergency systems, procedures and mechanisms to respond to outbreaks and public health emergencies.

The objective of this series of resource materials are to assist the planning and implementation of the innovative tabletop and simulation exercises in order to promote group problem solving and to strengthen collaboration and communication, rapid information exchange, and evidence-based operational plans for better preparedness and joint response. This series has developed with sequential steps categorized into 3 phases: pre-exercise, conducting the exercise, and post-exercise activities. This resource material may not be able to cover all technical aspects in preparing and conducting the innovative tabletop and simulation exercise. This document have been prepared by considering existing and updated related references, including the experiences from Mekong Basin Disease Surveillance (MBDS) network.

This series of resource material covers the gap of knowledge as a supporting reference that can be adopted and modified by the TTX management team, public health surveillance team, health professional, educators/ trainers, and educational institutions according to the needs and each context/ setting. As supporting document and reference, authors strongly advised to update and improve any information adopted in the materials accordingly with user's preferences.

Acknowledgement

Ministry of Health, Cambodia

National Health and Family Planning Commission of the People's Republic of China

Ministry of Health and Sports, Myanmar

Ministry of Public Health, Thailand

Ministry of Health, Vietnam

Mekong Basin Disease Surveillance Foundation

Table of Content

FOREWORD	II
ACKNOWLEDGEMENT	III
TABLE OF CONTENT	IV
LIST OF TABLES	VII
LIST OF FIGURES	VIII
A. INTRODUCTION OF EXERCISES	1
A.1. CORONAVIRUS DISEASE (COVID-19) SITUATION	1
A.2. TABLETOP (TTX) AND SIMULATION EXERCISES	2
A.2.1. <i>Importance of simulation exercises</i>	2
A.2.2. <i>Type of simulation exercises</i>	7
A.2.3. <i>Selection of exercise types</i>	9
Based on preparedness cycle	9
Based on exercise decision tree	10
Based on preparation and capacity.....	12
Based on research articles.....	13
A.2.4. <i>Importance of tabletop exercise</i>	14
B. MBDS EXPERIENCES ON TTX	17
B.1. OVERVIEW OF MBDS NETWORK	17
B.2. MBDS TTX ACTIVITIES	19
B.3. HYBRID MODEL FOR TTX AND SIMULATION EXERCISE	27

C. PREPARATION AND IMPLEMENTATION	29
C.1. PRINCIPLES FOR TABLETOP EXERCISE PROCESS	29
C.2. FACILITATOR AND PARTICIPANT	32
C.2.1. <i>Facilitator criteria</i>	32
C.2.2. <i>Role of facilitators</i>	33
C.2.3. <i>Participant criteria</i>	34
C.2.4. <i>Role of participants</i>	34
C.3. TABLETOP EXERCISE MANAGEMENT	35
C.3.1. <i>Phase 1: Pre-exercise</i>	37
1. Needs assessment	37
2. Understanding existing plans, actors, and system.....	38
3. Meet with key actors and leaders; clarify exercise goals.....	40
4. Develop a draft of TTX process and materials	41
5. Review exercises with stakeholders.....	48
6. Revise the exercise and setting up.....	48
C.3.2. <i>Phase 2: Conducting the exercise</i>	49
Step by step approach.....	49
1. Welcome and opening	49
2. Participant briefing.....	50
3. Starting the TTX.....	50
4. Facilitating the TTX.....	50
5. Capture the discussions.....	51
6. Ending the TTX.....	51
7. TTX debriefing.....	52
8. Closing the TTX	52
9. Field trip for simulation exercise.....	52

Process and discussion	53
1. Cambodia.....	54
2. Myanmar	62
3. Thailand	70
4. Vietnam	76
<i>C.3.3. Phase 3: Post-exercise.....</i>	<i>83</i>
Step by step approach.....	83
1. Debriefing the management team.....	83
2. The TTX report.....	83
3. Closing TTX activity.....	84
4. Create after action report	84
5. Develop action plan.....	84
6. Make improvements	85
Post-exercise documentation	85
1. Executive summary	85
2. After action review	86
3. Lesson learned.....	87
4. Recommendations.....	91
<i>C.3.4. TTX design at COVID-19 situation.....</i>	<i>92</i>
REFERENCES	94

List of Tables

TABLE 1. CATEGORIES AND TYPES OF SIMULATION EXERCISE.....	7
TABLE 2. COMPARISON OF SIMULATION EXERCISE BASED ON THEIR KEY CHARACTERISTICS	8
TABLE 3. EXERCISE TYPE IN DIFFERENT AREAS OF THE EMERGENCY PREPAREDNESS CYCLE (EPC)	10
TABLE 4. APPLICATION OF TABLETOP EXERCISE BASED ON LITERATURES	13
TABLE 5. MBDS EXPERIENCES ON TABLETOP EXERCISES.....	21

List of Figures

FIGURE 1. SIMULATION EXERCISES IN EMERGENCY PREPAREDNESS CYCLE	3
FIGURE 2. EXAMPLE OF SIMULATION EXERCISES IMPLEMENTATION	5
FIGURE 3. PREPAREDNESS CYCLE	9
FIGURE 4. EXERCISE DECISION TREE.....	11
FIGURE 5. LEVEL OF PREPARATION AND CAPACITY PER EXERCISE.....	12
FIGURE 6. TABLETOP EXERCISES ARE ONE OF SEVERAL KEY INPUTS FOR IMPROVING PREPAREDNESS	14
FIGURE 7. IMPORTANCE OF TABLETOP AND SIMULATION EXERCISE	15
FIGURE 8: MBDS CROSS-BORDER SITES.....	18
FIGURE 9. MBDS STRATEGIC ROADMAP FOR TTX AND JOINT OUTBREAK INVESTIGATION.....	19
FIGURE 10. MBDS REGIONAL TTX AND SIMULATION EXERCISE USING HYBRID MODEL.....	28
FIGURE 11: TABLETOP EXERCISE MANAGEMENT MODEL.....	35
FIGURE 12. TABLETOP EXERCISE DEVELOPMENT PROCESS.....	36
FIGURE 13. SCENARIO ON MBDS REGIONAL TABLETOP AND SIMULATION EXERCISE.....	43
FIGURE 14. COUNTRY GROUP DISCUSSION FROM CAMBODIA.....	54
FIGURE 15. COUNTRY GROUP DISCUSSION FROM MYANMAR.....	62
FIGURE 16. CASE FLOW OF MECHANISM.....	63
FIGURE 17. COUNTRY GROUP DISCUSSION FROM THAILAND	70
FIGURE 18. COUNTRY GROUP DISCUSSION FROM VIETNAM	76

A. Introduction of exercises

This chapter presents the overview and importance of simulation exercises in which tabletop exercise (TTX) is one of the types of simulation exercises. Description and comparison among different types of simulation exercise with some consideration for selection of exercise type is described. Tabletop and simulation exercise play an important role in addressing COVID-19 pandemic.

A.1. Coronavirus disease (COVID-19) situation

The coronavirus disease 19 (COVID-19) is a highly transmittable and pathogenic viral infection caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which first reported and emerged in Wuhan, China in December 2019 and spread around the world [3]. The COVID-19 is affecting 219 countries and territories around the world, which total cases as January 2021 reached 95,493,908 cases [1,2]. On January 30th 2020, a panel of experts of the World Health Organization (WHO) declared the outbreak causing the COVID-19, a Public Health Emergency of International Concern (PHEIC) and on March 11th 2020, the ongoing COVID-19 outbreak was upscaled by WHO to its 6th and highest alert scale as a pandemic [4]. Pandemic outbreaks cannot be confined within a consigned geographic boundary. Strong and rapid domestic and global preparedness is required to stop the spread and spark risk [1].

The countries focus on reducing the severity of the disease by identifying, testing and isolating cases, thus minimizing the health and socioeconomic impacts, at least until safe vaccine or effective treatments become available. Extreme measures of closing down national and international borders have led to several challenges and complexities. However, some remarkable innovations in response have occurred in the way countries are assessed, surveillance strategies are reshaped, protocols for infection protection and control redefined and new ways

are found to communicate critical information. Simulation exercises, risk assessments and country profiles are pivotal to monitor and evaluate the transmission dynamics and epidemic trends [5].

As the pandemic evolved, the limitations and differences in the capacity of health systems among countries became evident. The challenge to achieve sharing of best practices for risk mitigation during the current COVID-19 pandemic is high [4]. Integrated approach by public health agencies, professional personnel, relevant government officials and political leaders is necessary to achieve optimum situational awareness and effective outcomes [1]. Cross-country and cross-sectoral information sharing along with experience and skills are important to strengthen cooperation and coordination, regionally and globally; both for public health surveillance, rapid response, case management, risk communication, and community engagement.

A.2. Tabletop (TTX) and simulation exercises

Simulation exercise has different forms to practice, training, monitoring or evaluation of capabilities, involving the description or simulation of an emergency to which a described or simulated response is carried out. A tabletop exercise is a facilitated discussion that uses a progressive simulated scenario based on events, to elicit constructive discussion, to identify problems and practice group problem solving, and to refine existing operational plans

A.2.1. Importance of simulation exercises

The IHR monitoring and evaluation framework (2015) aims to establish a system of mutual accountability for global public health security among Member States. It draws on a mixed approach of qualitative and quantitative data collection and analysis, as well as on desk reviews and functional assessments of capacities for the preparedness, detection and response [6]. To support countries' preparedness effort on COVID-19 outbreak, tabletop and simulation exercises with COVID-19 – based scenario play an important role [7]. In this regard, Figure 1 describes that

simulation exercises have been identified as a critical functional means—along with the self-assessment and joint external evaluations - of validating IHR core capacities [8]. After action reviews/ lessons learned activities from real events also feed into cycle as illustrated in Figure 1.

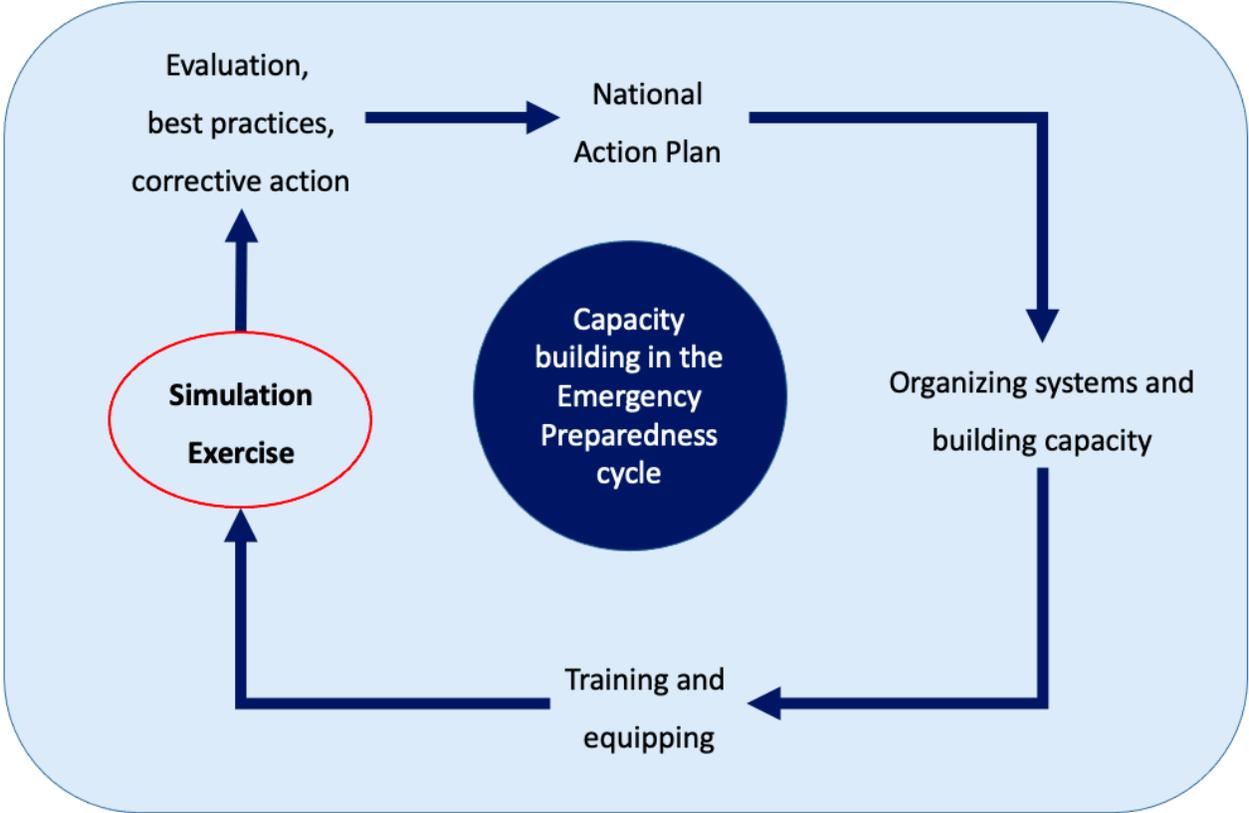


Figure 1. Simulation exercises in emergency preparedness cycle

Source: adapted from WHO, 2020 [9]

The next figure, Figure 2 describes the different simulation exercises forms to practice, training, monitoring or evaluation of capabilities, involving the description or simulation of an emergency [8,10]. As part of the emergency risk management, simulation exercises are used to identify and eliminate issues before an actual emergency occurs. Preparing for the public health emergencies (PHE) is also an ongoing process and involves vary approaches and tools [11]. The exercise recommendations and corrective actions are essential to improving response systems and mechanisms to manage emergencies effectively.



Tabletop exercises (TTX)



Drills (DR)



Functional exercises (FX)



Full-scale exercises (FSX)

Figure 2. Example of simulation exercises implementation

Source: MBDS, 2006-2016 [12–18]

The purpose of simulation exercises is to promote preparedness by testing policies and plans and training personnel for system/procedures improvement. Simulation exercises can help develop, assess, and test the functional capabilities of emergency systems, procedures and mechanisms to respond to outbreaks and public health emergencies before and during public health events. Details for the importance of simulation exercises are as follows [8,10,19]:

- Test and evaluate plans, policies, and procedures
- Reveal planning weaknesses in a controlled environment
- Reveal resource gaps
- Improve organizational coordination and communications
- Clarify roles and responsibilities, including the chain of command
- Develop enthusiasm, knowledge, skills and willingness to participate in emergency response
- Familiarize staff with new functions
- Gain public recognition and trust for the emergency management process
- Test equipment
- Test and evaluate plans and procedures, including operational guidelines and standard operating procedures (SOPs).

A.2.2. Type of simulation exercises

An effective simulation exercise must be designed and driven at country level. There are different types of exercises [8,10], as follow:

Table 1. Categories and types of simulation exercise

Discussion-based		Operations-based		
Orientation *)	Tabletop exercises (TTX)	Drills (DR)	Functional exercises (FX)	Full-scale exercises (FSX)
A orientation seminar is an overview or introduction. Its purpose is to familiarize participants with roles, plans, procedures or equipment. It can also be used to resolve questions of coordination and assignment of responsibilities.	A tabletop exercise is a facilitated discussion of an emergency situation that be designed to elicit constructive discussion between participants; to identify and resolve problems; and to refine existing operational plans. This is the only type of simulation exercise that does not require an existing response plan in place.	A drill is a coordinated, supervised exercise activity, normally used to test or train a single specific operation or function in a repeated fashion. A drill aims to practice and perfect one small part of a response plan, and should be as realistic as possible, employing any equipment or apparatus necessary for that part.	A functional exercise is a fully simulated interactive exercise that tests the capability of an organization to respond. A functional exercise focuses on the coordination, integration, and interaction of organization's policies, procedures, roles and responsibilities before, during, or after the simulated event.	A full-scale exercise simulates a real event as closely as possible and is designed to evaluate the operational capability of emergency management systems. This includes the mobilization and movement of emergency personnel, equipment and resources. Differing from the FX, a full-scale exercise typically involves multiple agencies and participants physically deployed in a field location.

*) i.e. seminar, workshop

Source: WHO, 2009, 2017 [8,10]

Each activity described above plays an important part in the overall exercise. Table 2 lists some of the reasons for conducting each type of exercise activities. The comparison is based on key characteristics of the five types of exercise activities [10,19]:

Table 2. Comparison of simulation exercise based on their key characteristics

Characteristic	Discussion-based		Operations-based		
	Orientation	Tabletop exercises (TTX)	Drills (DR)	Functional exercises (FX)	Full-scale exercises (FSX)
Format	<ul style="list-style-type: none"> - Informal discussion in group setting - Presentation methods (seminar, workshop) 	<ul style="list-style-type: none"> - Scenario-based group discussion - Scenario-based problem statements and proposed action 	<ul style="list-style-type: none"> - Actual field or facility response - Realistic/ actual equipment 	<ul style="list-style-type: none"> - Interactive, complex - Respond to events/ problems provided by simulators - Conducted in real time 	<ul style="list-style-type: none"> - Realistic event announcement and gather at assigned site - Visual narrative (enactment) - Actions at scene serve as input to EOC simulation
Functioning model	Facilitating discussion	Facilitator	Manager, supervisor, department head, etc.	Controller	Controller(s)
Participants	Based on concerned interest or roles	Scenario based or real situation based	Personnel for the function being tested	Policy, coordination, and operations personnel	All levels of personnel (policy, coordination, operations field)
Venue	Not specific	Convince space	Facility, field, or EOC	EOC or other operating centre	Realistic setting, EOC or other operating centre
Duration	short 1–2 hours	Short - medium 1–4 hours or longer	1/2–2 hours	3–8 hours or longer	2 hours to 1 or more days
Preparation time	Short duration Simple preparation ± two weeks	± 1 month preparation	± 1 month preparation, participants need the orientation	± 6–18 months preparation, significant allocation of resources	Extensive time, effort, resources with + 1 year to 18 months preparation development

Source: WHO, 2006, 2009 [10,19]

A.2.3. Selection of exercise types

It is critical that the correct type of exercise is selected and that generic materials are adapted to meet the required scope and country context. The adaptation is critical in order to ensure that the exercise is in line with the stated objectives, priority risks, and national response capability (national response plan) [8]. This part describes the selection process in considering several aspect as follows:

Based on preparedness cycle

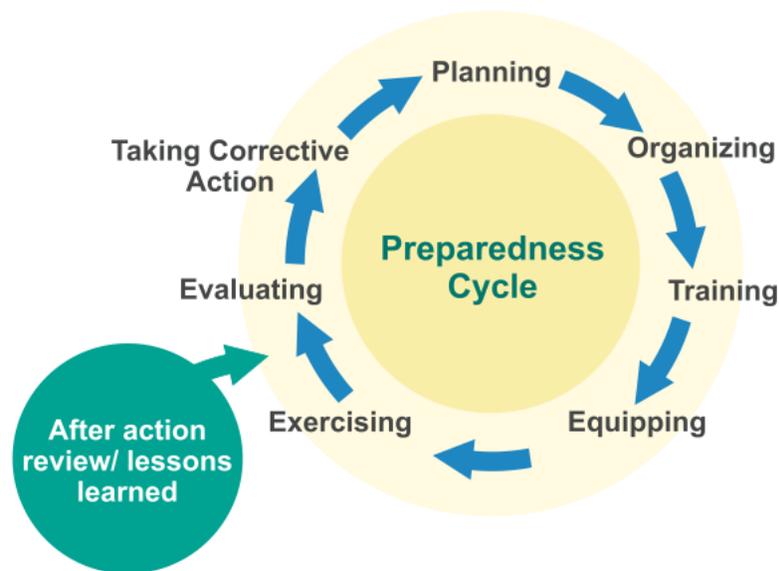


Figure 3. Preparedness cycle

Source: WHO, 2017 [8]

Exercises are not one-time events, but should be undertaken as part of a carefully designed exercise activities that ensures a common strategic objective is addressed. The exercise forms a vital component of the emergency preparedness cycle. The components of the preparedness cycle are planning, organizing, training, equipping, exercising, evaluating, and taking corrective action [8]. After action reviews or lessons learned activities from real events also feed into the cycle, as illustrated in Figure 3 above.

Table 3. Exercise type in different areas of the emergency preparedness cycle (EPC)

Type of exercise	Corresponding EPC component
Tabletop exercises (TTX)	Planning, organizing, training and taking corrective action
Drills (DR)	Training, equipping, exercising and evaluating
Functional exercises (FX)	Training, exercising and evaluating
Field/ full-scale exercises (FSX)	Training, equipping, exercising and evaluating

Source: WHO, 2017 [8]

Table 3 describes the overlapping components of exercises. For example, a field/ full-scale exercise is likely to include a series of drills, and will incorporate many elements of a functional exercise. EPC components in tabletop exercises are more comprehensive than other type of exercises, which corresponding EPC components for planning, organizing, training, and taking corrective action.

Based on exercise decision tree

The first step in selecting the type of exercise is to define the exercise purpose and objectives. Once these have been articulated, type of exercise selection can commence by considering which simulation exercise type could best measure and evaluate the exercise purpose and objectives. Other factors also influence the choice of simulation exercise. It includes exercise capacity, available resources, organizational experience of exercises, and time constraints. The time and resources required to conduct an exercise will vary widely depending on the type of exercise, and its scope and scale.

Although a comprehensive program made up of progressively complex exercises is ideal, it is recommended that organizations start with basic exercises before moving to more complex ones. In order to select the right exercise, a decision tree (Figure 4) including some key questions that can be considered in the selection process [8].

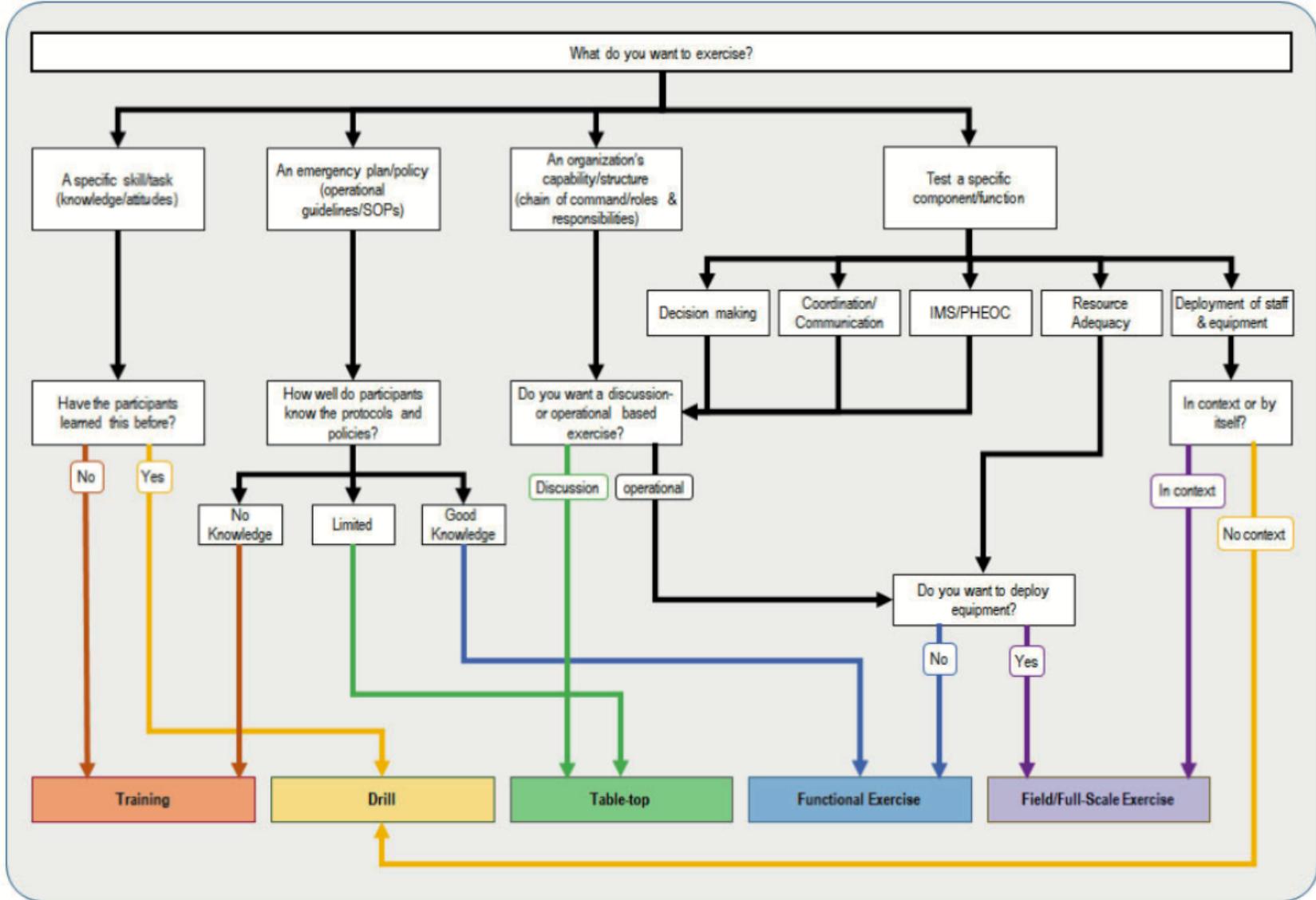
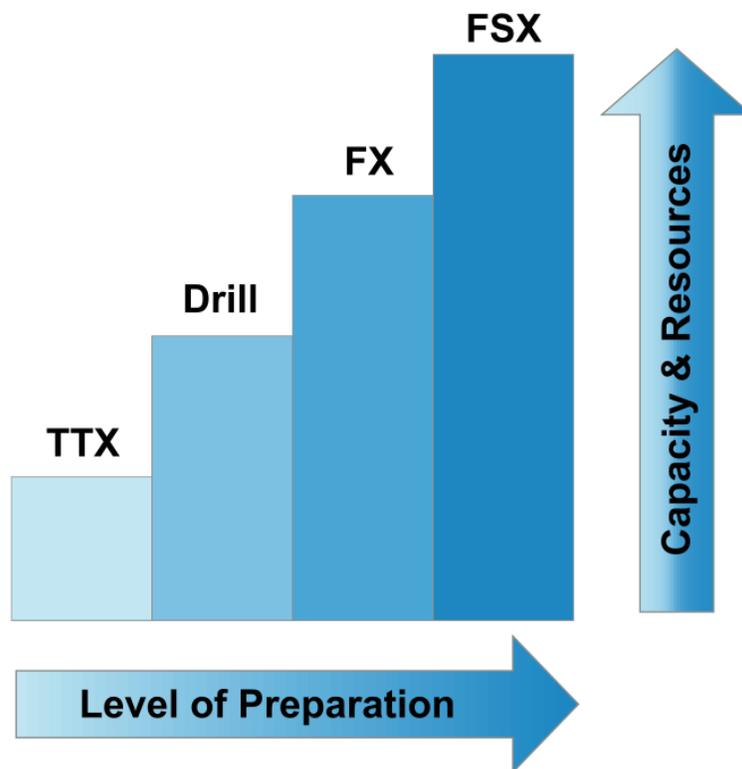


Figure 4. Exercise decision tree

Source: WHO, 2017 [8]

Based on preparation and capacity

Simulation exercises enable people to practice their roles and functions, and to gain experience in emergency settings. Exercises can also be used as training and quality assurance tools, and provide the evidence-based assessments for the monitoring, testing and strengthening of operational readiness to respond to emergencies. Choosing the right exercise require strategic approach and consider local context, current capacity and the long-term development plan, and in accordance with the organization’s strategic priorities and objectives [8]. Figure 5 provides an illustration of the levels of preparation and capacity needed for each exercise type.



* *Tabletop exercises (TTX), Drills (DR), Functional exercises (FX), Full-scale exercises (FSX)*

Figure 5. Level of preparation and capacity per exercise

Source: WHO, 2017 [8]

Tabletop exercises does not require high efforts on preparation, capacity and resources. TTX is the only type of simulation exercise that does not require an existing response plan in place.

Based on research articles

Table 4. Application of tabletop exercise based on literatures

Research Authors	Purpose of TTX	Format	Participant	Benefit
Descatha, et al (2009)	training in health disaster and emergency medicine	facilitator explaining the model in large tabletop followed by scenario in tabletop exercise which also illustrating their each roles	health and safety professionals (e.g. occupational physicians and hygienists)	could be used to train different categories of participant, did not impact daily activities, cost-effective
Nagendran, et al (2019)	practicing the institution's response plan	TTX took place in large auditorium (specific group per table). TTX discuss and follow-up on same topic from previous exercise followed by scenario and "game" to simulate what would occur in a real event	hospital department, regional critical care referral, paramedic service	provide comprehensive analysis for current situation and issues, help to improve readiness for incidents
Wendelboe, et al (2020)	not only identify and apply areas in the emergency response plan that address the COVID-19 outbreak scenario, but also promote competencies in public health emergency preparedness	using prepared module, facilitator start with introduction and followed by discussion session. It also contains detailed instructions, objectives, timeline, table of events, and debriefing questions. Discussion for further plan development also has been conducted	senior administrators at the University	effective communication among participating agencies and personnel, adaptable, potential for groupthink and large-group-based problem solving

Source: Descatha, et al 2009 [20], Nagendran, et al 2019 [21], Wendelboe, et al 2020 [11]

As one of discussion-based exercises, tabletop exercises (TTX) simulate what would occur in a real event and illustrating each roles of stakeholders, promote group-based problem solving, provide comprehensive analysis for current situation and issues, strengthen effective communication and coordination among participating agencies, and refine existing operational plans for further plan development [8,10,20,21].

A.2.4. Importance of tabletop exercise

A tabletop exercise is a facilitated discussion that uses a progressive simulated scenario based on current events, together with series of scripted injects, to elicit constructive discussion between participants, to identify problems and practice group problem solving, and to refine existing operational plans. A TTX simulates a situation in an informal or semi-formal setting, stress-free environment, and no-time pressures [8,10].



Figure 6. Tabletop exercises are one of several key inputs for improving preparedness

Source: Fall, 2007 [22]

As one of discussion-based exercises, tabletop exercises (TTX) facilitated discussion and training, promote group problem solving, assess and strengthen interagency or interdepartmental coordination, observe information sharing, and refine existing operational plans. In providing a comprehensive analysis, TTX involves anyone with a policy, planning, or response role for the type of situation used. TTX does not require high efforts on preparation, capacity and resources needed as well as does not require an existing response plan in place [8,10,20,21].

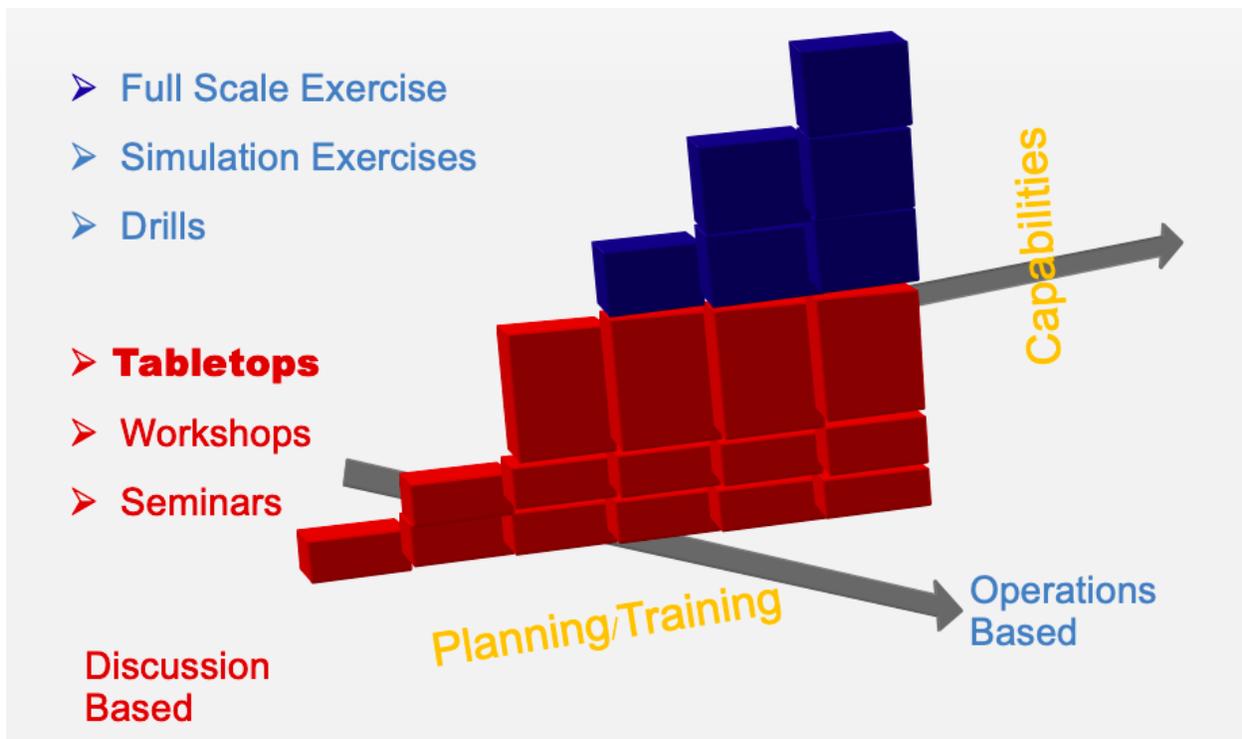


Figure 7. Importance of tabletop and simulation exercise

Source: MBDS, 2006-2016 [12–18], WHO, 2006, 2009, 2017 [8,10,19]

Tabletop exercise is a facilitated discussion and one of the tools designed to simulate the emergence of a public health emergency and address some or all of the phases of emergency management such as mitigation, preparedness, response, and recovery. Typically, TTX are designed to include participation of stakeholders from diverse and complementary backgrounds, including command, operations, logistics, planning, and finance. Components of the emergency preparedness cycle corresponded by tabletop and simulation exercises are very comprehensive from planning, organizing, training until stage of evaluating and taking corrective action [8,10,11,20–22].

Effective tabletop exercises provide a plausible scenario that requires cooperation and communication and require forward thinking and planning in a variety of scenarios based on realistic assumptions. When a public health emergency occurs, decision makers may be overwhelmed with decisions that need their immediate attention. Tabletop exercises can provide

a framework to help decision makers anticipate future challenges, and the model encompassing knowledge and insights that inform both current and future decisions [11,22].

To support countries' preparedness effort on COVID-19 outbreak, tabletop and simulation exercises with COVID-19 - based scenario play an important role [7]. TTX can able to confirm public health emergency event through existing mechanism for sharing information among stakeholders or countries and International Health Regulation (IHR). It can also improve the collaboration and communication, enhance common expectations on rapid information exchange during public health emergency, highlight strengths and limitation of current mechanism in sharing information and communication as well as for better preparedness and joint response.

B. MBDS experiences on TTX

This chapter presents overview of MBDS network, MBDS activities and experiences regarding tabletop and simulation exercise, including hybrid model for conducting the innovative tabletop and simulation exercise.

B.1. Overview of MBDS network

The MBDS (Mekong Basin Disease Surveillance) cooperation is a self-organized sub-regional network commenced in 2001. It is a collaboration effort among six Mekong Basin countries including Cambodia, China, Lao PDR, Myanmar, Thailand and Vietnam (Figure 8). It aims to strengthen national and sub-regional capabilities in infectious disease surveillance and outbreak response, especially on 18 currently designated priority diseases (*i.e. H1N1, AFP, SARS, Cholera/ Severe Diarrhea, Encephalitis, Tetanus, Meningitis, Diphtheria, PHEIC, Leptospirosis, Chikungunya, Dengue Fever, Typhoid Fever, Measles, Malaria, Pneumonia, HIV/AIDS and Tuberculosis*) including Ebola, MERS, Zika, Malaria, Dengue and Public Health Emergency of International Concern (PHEIC) to rapidly and effectively control them. The cooperation focuses on collaborative cross-border disease surveillance and response activities, through programming at approximately 25 designated “cross-border sites” and implementation of seven core strategies aimed at building capacity and advancing programming in the following areas: (1) cross-border cooperation, (2) animal-human interface and community surveillance, (3) human resources in epidemiology, (4) information and communications technologies, (5) laboratory, (6) risk communications, and (7) policy research.



Figure 8: MBDS cross-border sites
Source: <http://www.mbdnet.org/>

The MBDS network operates based on its core values of mutual respect and trust. Memorandum of Understanding (MOU) signed by The Health Ministers of each MBDS member country signed three memoranda of understanding, the first in 2001, the second in 2007 and the third in 2015, in Geneva renewed the formal cooperation to provide an agreed framework for the governing structure and processes of the consortium. MBDS leaders have also emphasized the need to align MBDS programming with the requirements of the International Health Regulations (IHR 2005), to build core capacities to respond promptly and effectively to Public Health Emergencies of International Concern (PHEIC). There are also an operational MoU at cross-border level for activities implementation under guidance of Ministerial MoU.

B.2. MBDS TTX activities

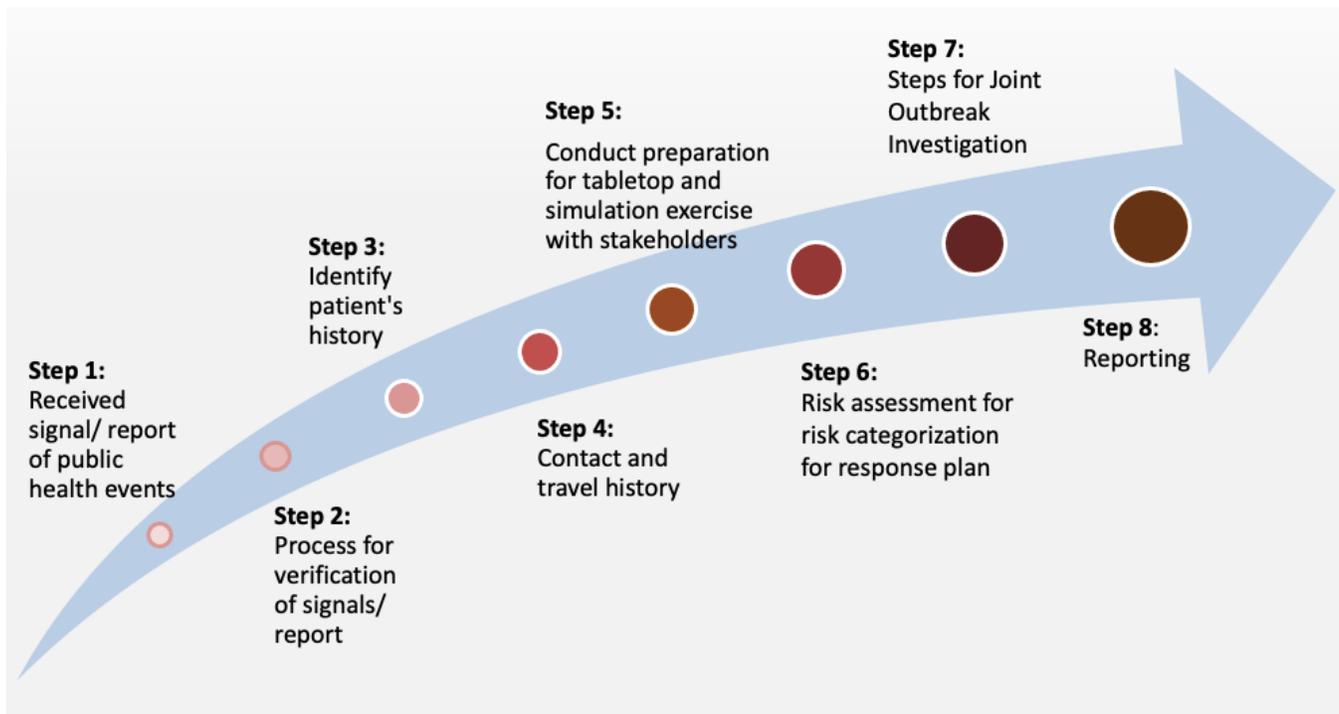


Figure 9. MBDS strategic roadmap for TTX and joint outbreak investigation

Source: MBDS, 2006-2016 [12–18]

With more than 20 years of existence, MBDS country coordinator works closely with cross-border coordinators responsible for designated sites. A network secretariat would organize regular meetings with country and cross-border coordinators and support the network's activities. Moreover, MBDS Executive Board, who usually is a senior level official from each member country, would set policy and engage the network with higher levels of government. Together with partners, MBDS designed strategic roadmap for TTX (Figure 9) and carried out a series of tabletop simulation exercises to explore national and regional cross-border strategies in the pandemic emergencies, identify priorities to improve preparedness and response, and develop recommendations to help guide further MBDS programming and donor investments. During TTX, risk assessment for response plan and joint outbreak investigation plan are also prepared as part

of post-exercise phases. Challenges relating to disease surveillance, epidemiologic investigations, communications, and command and control are some of common set of challenges that mostly identified during TTX [23].

In 2006, after the outbreak of H5N1 avian influenza in the region, MBDS countries recognized the urgent need to strengthen national and regional preparedness to face new pandemic threats. From August to October 2006, MBDS network brought together representatives from the public health, agriculture, foreign affairs, defense, and finance sectors and from WHO, OIE and UNSIC to develop scenarios and plan and carry out a series of tabletop simulations within each country. In March 2007, Cambodia hosted the first ever regional level pandemic preparedness simulation exercise, attended by 85 participants. The simulation focused on pandemic capabilities with the greatest relevance to transnational cooperation, surveillance and information sharing, disease prevention and control, and communication. Those exercises contributed to greater confidence and ownership at the national level, improved communication, trust and collaboration at the regional level. They also led to other applications of tabletop simulation methodology. Myanmar used the methodology in 2008 to plan its response to a severe outbreak of diarrhea; Lao PDR used it in 2009 to plan medical emergency preparedness while hosting the Southeast Asian Games; and Vietnam conducted tabletop simulation exercises in 2009 and 2010 for the control of animal-to-human disease transmission [24]. Details of MBDS experiences on tabletop exercises are described in Table 5.

Table 5. MBDS experiences on tabletop exercises

TTX Activity	Setting	Objective	Participants
Country pandemic tabletop exercise	Mukdahan - Thailand, Aug 23-24, 2006	Sharing the common goals of exercising national preparedness and response in control and prevention of avian influenza pandemic	<ul style="list-style-type: none"> • MBDS representatives • National and provincial governments • Partner organization representatives
	Phnom Penh – Cambodia, Sept 5, 2006		
	Yunnan – China, Sept 26, 2006		
	Vientiane – Laos Oct 10, 2006		
	Yangon – Myanmar Oct 16, 2006		
	Hanoi – Vietnam, Oct 19, 2006		
Regional pandemic influenza tabletop exercise	Pre-exercise orientation: Siem Reap – Cambodia, March 12, 2007	Orientation meeting prior the exercise to familiarize MBDS country leaders with the exercise (i.e., design, scope, content, structure, objective, procedures), review and make final revisions to the exercise, and prepare the exercise facilitators to lead designated group discussions	<ul style="list-style-type: none"> • MBDS country team leaders • Partner organization representatives • Small group facilitators
	TTX exercise: Siem Reap – Cambodia, March 13-14, 2007	Strengthening regional and cross-border preparedness and response to an evolving pandemic emergency; including surveillance and information sharing, disease prevention and control and communications	<ul style="list-style-type: none"> • MBDS countries representatives • national and provincial government officials • observers and facilitators from partner organizations (i.e. WHO, CDC, RF, NTI, RAND Corporation, UNICEF, Google Foundation, INSTEDD, Kenan Institute, Mekong Institute)
	Post-exercise meeting: Siem Reap – Cambodia, March 15, 2007	Follow-up meeting after the exercise was designed as a round-table discussion to allow for more detailed feedback on the exercise and further planning for future MBDS cooperative activities	<ul style="list-style-type: none"> • MBDS country team leaders • Partner organization representatives • Small group facilitators

TTX Activity	Setting	Objective	Participants
Joint pandemic influenza tabletop exercise	June 2008, April-May 2009	Follow up on specific priority actions from regional pandemic preparedness TTX to develop joint action plan for prevention and control at border provinces	<ul style="list-style-type: none"> • MBDS representatives • National and provincial governments • Partner organization representatives
Joint tabletop exercise	2012	Strengthen and promote border health collaboration on prevention and control of HIV/AIDS, TB, Malaria and disease surveillance and outbreak response	<ul style="list-style-type: none"> • MBDS representatives • National and provincial governments from selected border sites in Thailand and Myanmar • Partner organization representatives
Cross-border cross-sectoral tabletop exercise	Consultation meeting: Jan 21-22, 2016	Review TTX topic and objective. Facilitator meeting also provide a briefing of the TTX's contents and tips for facilitator (one facilitator from each MBDS country except Lao PDR) to support group work during TTX conducting.	<ul style="list-style-type: none"> • MBDS country directors or coordinators • Partner organization representatives • Small group facilitators
	TTX exercise: Vientiane capital - Lao PDR, March 23-24, 2016	Strengthening collaboration and communication to share information among MBDS countries for better preparedness and joint response.	<ul style="list-style-type: none"> • MBDS countries representatives • national and provincial government officials (public health surveillance, animal health, laboratory and risk communication officer) • observers from partner organizations (i.e. Canada GPP, CORDS, FAO, USCDC, WHO)

Source: MBDS, 2006-2016 [12–18]



Preparation meeting, 2016



Tabletop exercise, 2016

*) details for another MBDS experiences on tabletop exercises can be accessed at <http://www.mbdnet.org/>

During TTX, risk assessment for response plan and joint outbreak investigation plan are also prepared as part of post-exercise phases. The following represents recently conducted MBDS risk assessment and joint outbreak investigation:

- Outbreak response and risk assessment exercises in Thailand, 2018
- Joint outbreak investigations exercise in Thailand, 2018
- Outbreak response and risk assessment exercises in Cambodia, 2019
- Joint outbreak investigations exercise in Lao PDR, 2019



Risk assessment, 2018



Joint outbreak investigation, 2018



Risk assessment, 2019



Joint outbreak investigation, 2019

**) details for another MBDS experiences on RA and JOI can be accessed at <http://www.mbdnet.org/>*

MBDS countries (Cambodia, Lao P.D.R, Myanmar, Thailand, Vietnam, and Yunnan-China) and MBDS partners conducted tabletop exercises at sub-national, national, and regional level which culminated in a broadly multi-sector regional tabletop exercise in early 2007 [12,13,15,18,22,25]. TTXs were developed and executed through an active collaboration among MBDS country stakeholders from a wide range of sectors. TTXs were conducted regularly [Table 5] demonstrating the strong commitment of MBDS countries and their partners to collaborate around issues of mutual concern [18,22]. There was also unanimous agreement that the TTXs were valuable at both national and regional level. MBDS member countries also agreed to develop and to carry out more TTXs at a local level. The follow up activities to TTX recommendations will be incorporated into action plans of each strategy [14,16,17] to improve collaboration and communication among MBSD countries, enhance common expectations on

rapid information exchange among member countries during public health emergency, and highlight the strengths and limitations of current mechanism for improvement in sharing information and communication.

B.3. Hybrid model for TTX and simulation exercise

The COVID-19 is affecting 219 countries and territories around the world [1]. The challenge to achieve sharing of best practices for risk mitigation during the current COVID-19 pandemic is high [4]. Cross-country and cross-sectoral information sharing along with experience and skills are important to strengthen cooperation and coordination, regionally and globally. In response to the COVID-19 pandemic, MBDS conducted “Regional Tabletop and Simulation Exercise” on 14-15 January 2021. This is the very first innovative tabletop and simulation exercise activity focusing on COVID-19, that using the hybrid model through face-to-face and virtual platforms, parallelly and simultaneously. With member countries' involvement, this meeting can identify and simulate the current practices, case management, and risk-based mitigation action in addressing COVID-19. Regional, national, and sub-national multisectoral stakeholders have discussed the simulated emergency situation provided. This exercise allows countries to strengthen capacity, logistic management, public health risk communication, information and experiences sharing, as well as multisectoral coordination and collaboration, nationally, regionally, and globally.



Figure 10. MBDS Regional TTX and Simulation Exercise using Hybrid Model

Source: <http://www.mbdnet.org/>

Recommendations such as to conduct next tabletop and simulation exercise with different scenario (e.g. vaccine related scenario), to strengthen capacity building and logistics support, and to continue collaboration among MBDS countries have been proposed. Whatever effects one country, it can affect its neighboring countries and vice versa. Addressing the issue by regional perspective, collaboration and knowledge sharing play an important role in mitigating regional pandemic situation. Drawing from the countries' experiences, the lessons learned can be applied to daily activities. One of the outputs of simulated exercise is the videos from countries described below:

- Cambodia: <https://www.youtube.com/watch?v=mfgb2M9Mjx0&t=31s>
- Myanmar: https://www.youtube.com/watch?v=aqI_7QFdkmM&t=4s
- Thailand: <https://www.youtube.com/watch?v=xc6jMuxHBS0&t=1s>
- Vietnam: <https://www.youtube.com/watch?v=8GfcjonkpAg>

C. Preparation and implementation

This chapter presents management guidance and sample of tools and templates to assist in planning, conducting and reporting the tabletop and simulation exercise, based on the MBDS network experiences [*chapter B*].

C.1. Principles for tabletop exercise process

The exercise process is flexible and some of principles that should be managed [8] are :

1. Senior management commitment

It is obvious that articulating the benefits and expected outcomes of the exercise are needed to gain the support of senior management. Other crucial factors include a clear mandate and authorization to plan and implement, availability of necessary resources, evaluation of the exercise outcomes, and results/ recommendations from TTX which are used and followed up by those responsible persons. Exercise concept note can help provide overall vision and obtain senior management commitment.

2. Exercise needs assessment

A risk assessment helps identify the risks a country is most likely to face. This helps define the reasons for conducting the exercise, and identifies the functions to be exercised. Assessing what needs to be exercised also entails a review of relevant emergency plans, systems, people and resources already in place. This review can also extend to previous exercise reports, input, “lessons learnt” and after-action documents.

3. Exercise purpose, scope and objectives

The purpose is the overarching reason for undertaking the exercise, broken down into specific objectives. It helps define the scope, and relates to the size and scale of the exercise (e.g., range of different sectors involved, number of participants, etc.) as well as describes the specific outcomes to be achieved and evaluated. There are five key elements of the scope such as type of emergency, location where the simulated event will occur, functions that the participants will practice, participants, and exercise type.

4. Time and resources

The available resources and stakeholder buy-in will often dictate the type, scale and scope of the exercise. It is important to emphasize the utility and added value of an exercise, highlighting linkages to ongoing projects and the wider preparedness strategy. As an integral part of an emergency risk management program, exercises should be integrated within the annual work plan, with sufficient time and resources allocated in advance.

5. Exercise capacity & management

Exercise management team will be responsible for planning, developing, implementing and following up on the exercise and its outcomes. The composition of an exercise management team varies according to scope and type. The exercise management team may include members from outside the organization. The main roles in the exercise management team include:

- **Exercise director:** the person who provides strategic oversight and direction for the planning, conduct and evaluation of an exercise. The exercise director is responsible for approving the exercise's purpose, objectives and supporting documentation, including concept note, exercise plan and exercise instructions.

- **Exercise controller/lead facilitator:** a single person who supervises the overall conduct of the exercise, ensuring that it proceeds as planned and that its objectives are reached. The exercise controller is required for drill, functional and full-scale exercises. The exercise director appoints the exercise controller.
- **Evaluator:** a person who gathers data from the exercise and analyses whether the objectives and the targets of the exercise were met. Their evaluation will include overall performance, operational effectiveness, quality control, capabilities, strengths and weaknesses, and areas for improvement.
- **Facilitator (exercise facilitator):** a person responsible for delivering injects and monitoring progress during an exercise. The facilitator is the first point of contact for any questions, clarifications or requests.
- **Role-player (or actor):** a person who simulates a specific pre-scripted role in the exercise.

6. Selecting the exercise participants

Identifying exercise participants is a responsibility of the exercise management team. Mapping the response system and stakeholders is a useful method of defining the target audience (participants). Participants should be selected according to the purpose, scope and objectives of the exercise.

7. Exercise scenario

A simulation exercise is more effective and efficient when a simulated scenario is used that is close to reality and based on current events. The scenario is designed to stimulate involved participants to participate and respond actively to certain a public health events. TTX scenario should rename the real name of country, province, or city with particular words (e.g. lovely color, name of fruits, etc.). Those scenario can be presented through various means (including through sample of press articles), face to face through actors, virtual platform, or audio and visual material (including video clips) [9].

8. Exercise evaluation

Evaluation is process of observing and recording exercise activities, comparing the performance of the participants against the objectives, and identifying strengths and weaknesses [10]. An evaluation of the outcomes should be conducted immediately after completion of the exercise. This could be through the facilitator(s) and the evaluator(s) feeding back their observations verbally to the assembled participants: what aspects of the plan worked well; what did not work; and what needs improvement [19]. Evaluation could use more variation in the scores (e.g., on scale from 1-10 instead of 1-5).

All participants, facilitators, evaluators, and observers should complete a pre-exercise evaluation in the beginning of first day activities and a post-exercise evaluation at the end of second day activities. All participants should have the opportunity to provide individual inputs and feedback into the final evaluation reports. It should also be noted which stakeholders or agencies have committed to undertake adjustments to their individual action plans according to the issues arising in TTX [19].

C.2. Facilitator and participant

The criteria and role for facilitator and participants on tabletop and simulation exercise are as follow:

C.2.1. Facilitator criteria

TTX facilitator is a person responsible for delivering injects and monitoring progress during an tabletop exercise. The facilitator is the first point of contact for any questions, clarifications or requests [8]. The facilitator must have good communication skills and be well informed on local plans and organizational responsibilities [10]. TTX facilitators have common criteria as follows:

- Relevant persons (right person, right place, right task) based on the purpose, scope, and objective of tabletop exercise

- Experienced in managing group discussion for the type of situation used
- Equipped with leadership, communication, and listening skills
- Facilitators could be from partner organizations

C.2.2. Role of facilitators

The facilitators in tabletop exercise should [18] :

- Help to review the agenda, session outlines, expected outcomes and debrief strategy to ensure that the necessary sessions are allocated appropriately within the available time.
- Facilitate team briefing prior to the tabletop exercise with the TTX management team
- Provide background of project/ program to exercise participants on the first day
- Leads the tabletop discussion, guide the discussion process and exercise scenario. Decides who gets a message or problem statement, calls on others to participate
- Take into account the differing knowledge among participants, particularly in the small group discussions
- Emphasize the multi-sector nature of the TTX through pay special attention to engage non-health participants in discussion. The non-health questions in the facilitator guide should be used as reference.
- Enable participants to have a constructive and solutions-driven conversation among themselves. Do not need to cover all of questions in the facilitator guide.
- Avoid domination by individual participants during small group deliberations
- Maintain a balance between talking too long about a problem and moving along so fast that nothing gets settled
- Engage quiet participants, ensure everyone plays an active role, and clarify points (no “right” or “wrong” answer) made by participants
- Encourage participants who do not function well in English to speak their native language when necessary. Colleagues with good command of English can help translate.

- Mediate heated debates and focus on regional cooperation rather than country-specific
- Summarize the session outcomes at the end of the TTX

C.2.3. Participant criteria

TTX participants is persons involved in the exercise and who is performing their function and tasks as they would [8,10]. The common criteria for participants are as follows:

- Relevant persons (right person, right place, right task) based on the purpose, scope, and objective of tabletop exercise
- Strategic, operational and tactical staff of the different functional areas needed
- Anyone who has a role in policy decision (e.g., country director, country coordinator), planning and rapid response (e.g., public health officer, surveillance officer), and risk communication (e.g. provincial coordinator, communication officer) for the type of areas and situation used
- Participants could be from multi-sector with diverse and complementary backgrounds
- Participants could be representing government and humanitarian partners

C.2.4. Role of participants

The participants in tabletop exercise should [18,22] :

- Specify and recognize the need
- Identify priority need and challenges (e.g. manpower, infrastructure, multi-sector cooperation) at all stages of the evolving exercise scenario
- Suggest ways to overcome the need and challenges at the strategic and operational levels
- Identify priority actions and associated challenges
- Suggest a number of potential avenues and responsible party, both what to do and how to do the priority actions

- Suggest a possible 6-12 months timetable (especially for the near-term priority actions), including identify the resources needed
- Consider new opportunities for cooperation
 - Actions should take place in conjunction with relevant sector and investment partner
 - Should determine future activities and assure that appropriate legal frameworks are in place to facilitate such work/ actions
- Take action to learn from the exercises, respect each other opinion, and incorporate what they have learned into further planning, training, and evaluation

C.3. Tabletop exercise management

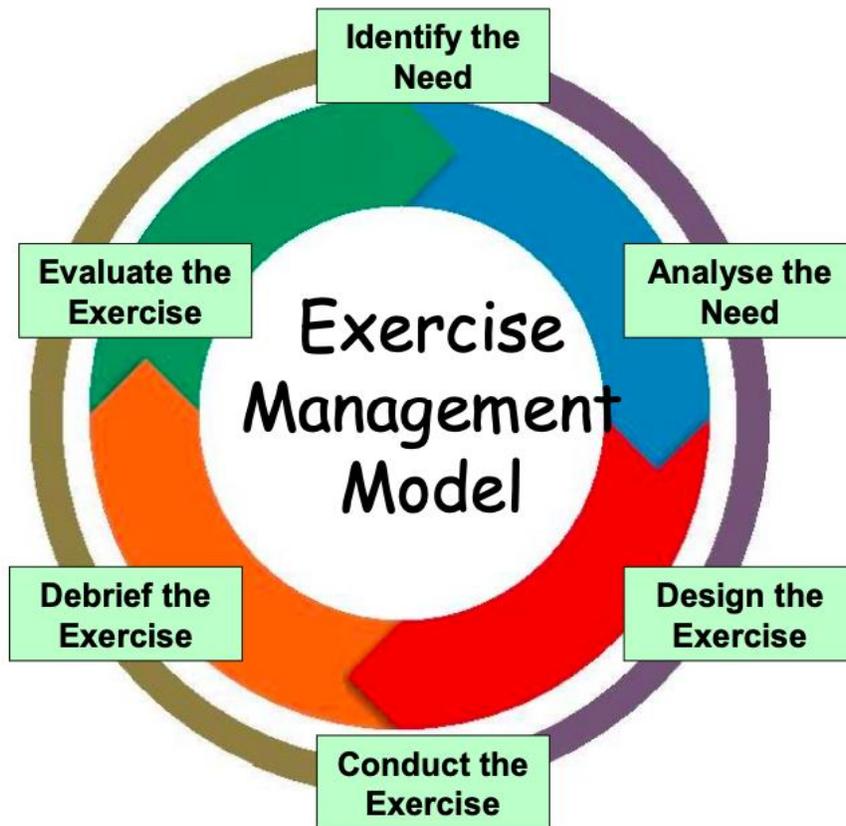


Figure 11: Tabletop exercise management model
Source: MBDS, 2006-2016 [12–18]

Figure 10 and Figure 11 describe TTX management model and process that had been developed and implemented by MBDS countries. The TTX management begin with identifying and analyzing

the need, and prepare the TTX design, the TTX implementation, debrief and evaluation [26] following specific steps, process and activities.

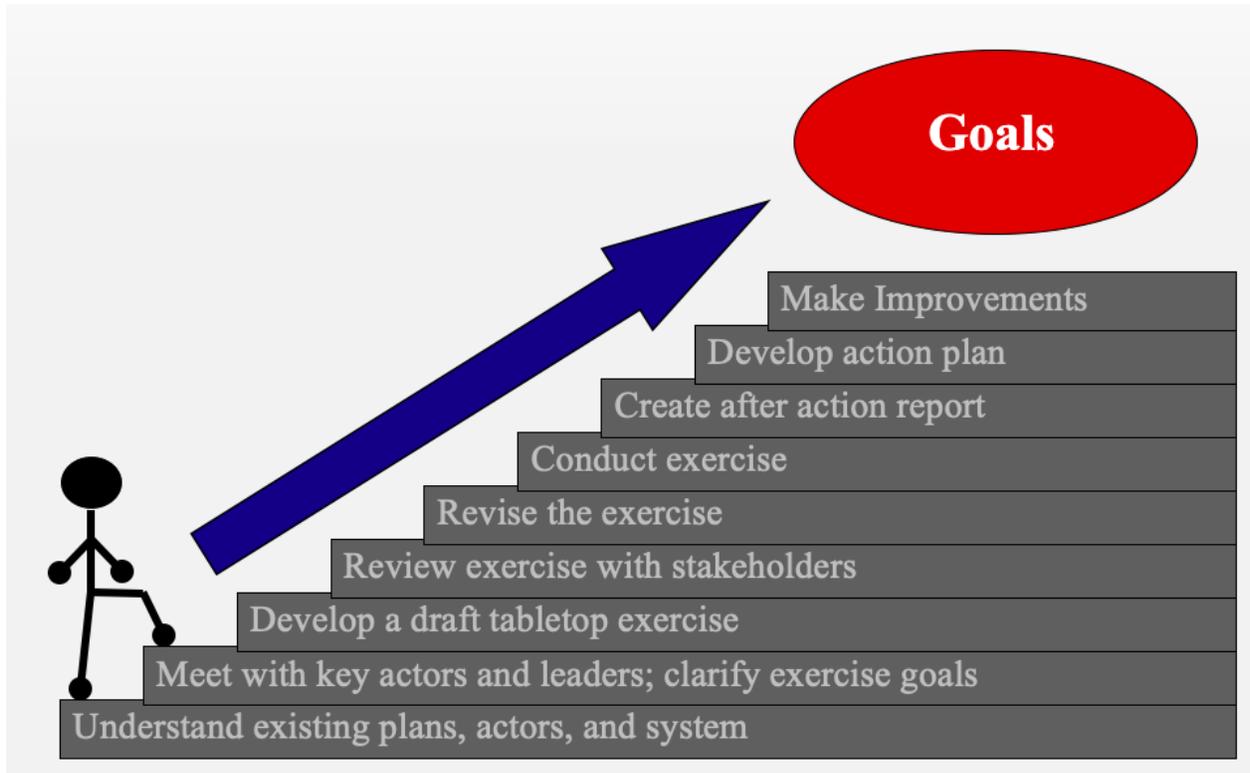


Figure 12. Tabletop exercise development process

Source: MBDS, 2006-2016 [12–18]

Once the need has been identified and analyzed, the TTX and simulation exercise process and activities can be categorized into three main phases [8]:

- a. Pre-exercise planning, material development and set-up
- b. Conducting the exercise
- c. Post-exercise reporting and handover

C.3.1. Phase 1: Pre-exercise

Planning and preparation stage is crucial before conducting the TTX. In the developed scenario, country exercised as host country and neighboring country. As host country, the focus is on how to control national mitigation program, while as neighboring country focuses on how to prepare public health communication and contact tracing. The normative step will be followed by lesson learned from MBDS Regional Tabletop and Simulation Exercise.

1. Needs assessment

- a. Identify and collect signal/ report of public health event that could be a serious risk to public health and might signal an outbreak
 - b. Verification and analyze of signals/ report by experience epidemiologist or team from national and sub-national health authority
 - c. Identify source or origin of event and identify travel history if there is any
 - d. Coordinate and share information with originated country and related countries.
- This preparedness process is a planning phase to respond to that current event.

Needs assessment for MBDS Regional Tabletop and Simulation Exercise

- Public health event : COVID-19 pandemic
- Source of information : country data
- Process : event detection, verification, and risk assessment
- Need : best practices and information sharing for preparedness and collaborative response action in addressing COVID-19 pandemic

2. Understanding existing plans, actors, and system

a. Scope and concept

- Discuss on the exercise purpose, scope and objectives
- Discuss on the target audience, expected outcomes, resources, and timeline

Objectives for MBDS Regional Tabletop and Simulation Exercise

- To contain the spread and transmission of disease
- To identify each member country's ability to share transmission of outbreak information, individual and collective responses, case management, and collaboration with all stakeholders
- To deploy human and material resources, including logistic management in a timely manner to control as simulated outbreak

b. Establish the TTX management team

- Once the TTX director/ leader has been appointed, the TTX management team can be formed to plan TTX in detail; develop the required material; conduct the TTX; and write the post-TTX report.
- The TTX management team should be selected based on the skills required, and should be fully briefed on the TTX process and concept note.
- The TTX management team should not be participating in the exercise.

c. Define the project management plan

- Once the TTX management team is formed, the TTX leader should define the project plan and tasks required (e.g., administrative, logistics, ITC, etc.)

- The plan needs to take into account of all the exercise details and available resources as per the concept note (e.g. budget, available time, participants, facilitators, venues, materials, equipment, etc.).
 - The TTX director should review the plan with the TTX management team. Regular team meetings are recommended to keep the project on track.
- d. Identify the participants
- Stakeholders, functions and target audiences should be mapped as required to define and invite the TTX participants (right person, right place, right task)
 - In determining the number and whom to invite, it will be necessary to review the concept note, the venue setup and the available facilitators.
 - The participants may be facilitated as a single group, or can be separated into smaller focus groups (break-out groups).
- e. Define the evaluation strategy and methodology
- For a TTX, the evaluation can be built into each session or run as a separate activity at the end of the exercise.
 - Capture and report the discussion points related to the TTX purpose and objectives. This would include solutions, comments, recommendations and ideas on how to improve
 - TTX debrief should result in an action plan (designed by the participants), that clearly defines the exercise tasks, in priority order, along with who is responsible and deadlines for completion.
- f. Manage the administration and logistics
- Weekly or daily review of the administration and logistics task list ensures that each activity is tracked and those assigned tasks are accountable.

Plan and Method for MBDS Regional Tabletop and Simulation Exercise

- TTX team: MBDS country team leaders (facilitator), MBDS secretariat
- Participant: national and provincial stakeholders, partner organizations
- Method and venue: hybrid model through the face-to-face (in conference meeting) and virtual discussion (with “ZOOM” platform)
- Time: 14-15 January 2021 (*details in the agenda*)

g. Additional elements

- *Media, PR and communications*

Appoint a designated spokesperson (i.e. communications officer, media focal point) to develop external communications material and to manage all communication with the media and the public, including the organization, donors and partners.

- *Safety and security*

The local security advisor or appropriate security agency should provide guidance on the necessary security arrangements if needed.

3. Meet with key actors and leaders; clarify exercise goals

- a. Clarify and agree on the exercise purpose, scope and objectives
- b. Clarify and agree on the expected outcomes, target audience, and resources
- c. Clarify and agree on the project management plan, timeline, and tasks required
- d. Agreements are captured in a concept note and signed off by all the key stakeholders involved.

Pre-exercise preparation for MBDS Regional Tabletop and Simulation Exercise

Preparation has been done for at least 2 months before conducting tabletop and simulation exercise. The concept note has been discussed via teleconference meeting between MBDS Secretariat and MBDS country team leaders

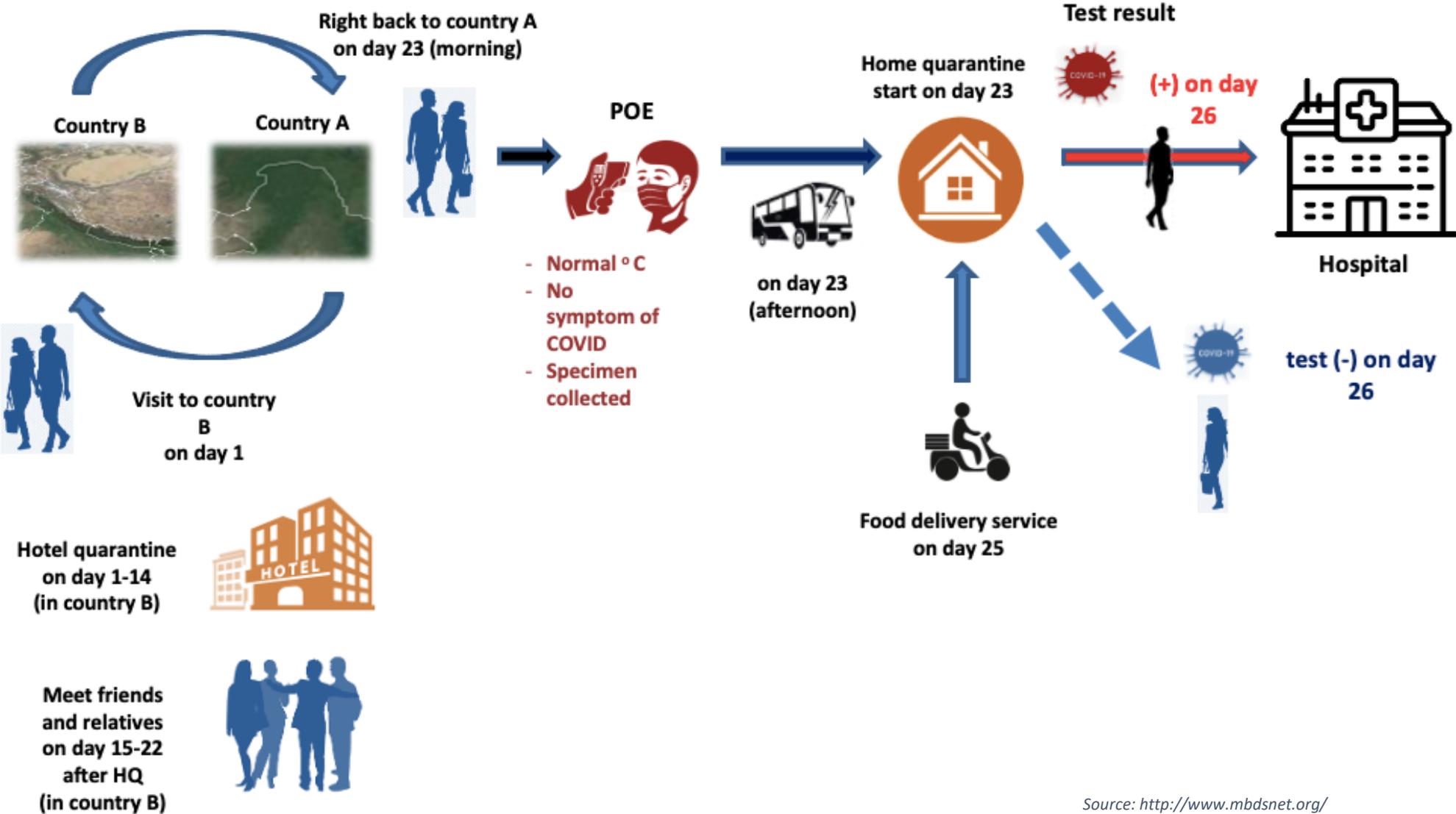
4. Develop a draft of TTX process and materials

- a. Review the concept note
 - Review the TTX purpose, objectives and expected outcomes in the concept note that will lead the development of TTX process and materials
 - Make sure the exercise management team is clear on the key elements of the tabletop exercise.

- b. Gather context-based references
 - Understanding on the local context and operating environment for which the tabletop exercise is planned.
 - Interviews with key stakeholders and local subject matter experts can also aid in the development of realistic and appropriate process and material for the tabletop exercise.

- c. Develop problem statements and scenario
 - TTX requires both a realistic and appropriate exercise scenario and discussion questions posed by the facilitator to the group(s).
 - Each session should have a description of the scenario (narrative), followed by questions or problem statements that trigger constructive discussion.

Figure 13. Scenario on MBDS Regional Tabletop and Simulation Exercise



Source: <http://www.mbdnet.org/>

Discussion points for MBDS Regional Tabletop and Simulation Exercise

a. If you are stakeholders from country A

1. What is your clinical management plan for COVID-19 patient?
2. What is the risk assessment in your country?
3. How to do for contact tracing?
4. How to manage people who have contact with COVID-19 patient?
5. What is your reporting mechanism (national and cross-border)?
6. How you will work and coordinate with stakeholders in country B?
7. What is your public health risk communication mechanism?
8. How do you manage rumors and misinformation?
9. Multisectoral stakeholders involved?
10. Any other preventive measure?
11. What is your logistic management plan as country A?

b. If you are stakeholders from country B

1. What did you do after getting this information from country A?
2. How to do for contact tracing?
3. How to manage places where have contact with those patient?
4. What is your reporting mechanism (national and cross-border)?
5. How you will work and coordinate with stakeholders in country A?
6. What is your public health risk communication mechanism?
7. How do you manage rumors and misinformation?
8. Multisectoral stakeholders involved?
9. Any other preventive measure?
10. What is your logistic management plan as country B?

d. Write the Injects

- Injects can be made up of any information delivered by the exercise management team to one or many participants during the TTX
- Injects can be written, oral, televised or transmitted via other means (e.g. PowerPoint, fax, phone, e-mail, voice, radio, or sign) by one of facilitators.
- The injects will only be shared with the participants during the TTX and should stimulate the participants to engage with the TTX objectives

e. Develop evaluation material

- Defining the required indicators and evaluation criteria for reporting on or measuring achievement of TTX objectives and expected outcomes, both in evaluating the participating group's performance or knowledge of specific plans or procedures and feedback for TTX design improvement
- The evaluator or note-taker should capture all achievements, challenges, gaps, and recommendations made by the participants during the TTX
- The evaluator or note-taker should track the expected outcomes are listed per session, including some additional evaluation.

f. Draft briefings

- To ensure that all participants and the TTX management team know how the TTX will work and what is expected from each person, clear instructions and information must be prepared.
- The TTX management team will be briefed during the venue setup, and the participants will be briefed on the day of the tabletop exercise.

- g. Develop the agenda and timing
 - Ensure that the TTX delivers on the planned purpose and objectives
 - It is the responsibility of the lead facilitator to review the agenda, session outlines, expected outcomes and debrief strategy to ensure that the necessary sessions are allocated appropriately within the available time.

- h. Opening or closing remarks
 - In general, an official opening or closing remarks is made by a representative from the government, minister, agency director or representative of the host organization.
 - To support this person, the TTX management team may be required to provide a brief on the exercise and draft the opening or closing remarks.
 - The closing session can include a certificate ceremony for participants and/or a press conference as appropriate.

Agenda for MBDS Regional Tabletop and Simulation Exercise

	Country 1	Country 2	Country 3	Country 4
Venue	X prov	Y prov	X city	Y city
Participants				
FACE-TO-FACE MEETING: Day 1				
Registration				
Opening remarks				
Background and scenario				
TTX and discussion the question based on scenario				
<i>Group photo and coffee break (30 mins.)</i>				
Finalize and complete the presentation for the next day and prepare for afternoon field trip				
<i>Lunch break (1 hr.)</i>				
Field trip related with scenario (Please take photos, VDO for next day presentation)				
<i>End of day 1</i>				
VIRTUAL MEETING: Day 2				
Presentation from country 1				
Presentation from country 2				
Presentation from country 3				
Presentation from country 4				
Q&A (All participants)				
Lessons learnt				
Closing remarks (10 mins)				
<i>End of day 2</i>				

5. Review exercises with stakeholders

- a. The TTX process and materials that have been drafted will be reviewed by the key actors/ stakeholders and TTX leader/ director
- b. Clarify and agree on all the exercise details and available resources as per the concept note (e.g. agenda and timing, budget, participants, facilitators, venues, equipment, administration, logistic, communication materials etc.)
- c. Clarify and agree on scenario and problem statement for brainstorming
- d. Clarify and agree on evaluation materials, indicators, strategy and method

Pre-exercise review for MBDS Regional Tabletop and Simulation Exercise

Review on preparation at least 2 weeks before conducting tabletop and simulation exercise. The developed scenario and agenda have been discussed via teleconference among TTX management team.

6. Revise the exercise and setting up

- a. The TTX process and materials that has been reviewed will be finalized by the TTX management team and TTX leader/ director
- b. At this stage, most of the tasks and checklist should be completed, with all equipment and materials ready for the tabletop exercise setup
- c. Ensure that all necessary equipment are onsite (e.g. power supply, projector, air conditioning, laptops, tables, chairs, etc.), and that it has been set up and checked the day before the tabletop exercise.

- d. Pre-exercise briefing to the TTX management team
 - The lead facilitator will have a team briefing prior to the TTX with the management team.
 - Ensure the TTX materials, run through the agenda and set up for the day
 - Ensure that each team member is clear on his/ her roles and responsibilities during the tabletop exercise.

Briefing for MBDS Regional Tabletop and Simulation Exercise

Setting up the platform and briefing with the TTX management team 1-2 weeks before conducting tabletop and simulation exercise. The agenda and materials have been discussed and prepared.

C.3.2. Phase 2: Conducting the exercise

On the day of the tabletop and simulation exercise, the planning and preparations end, and the focus shifts to conducting the TTX. The normative step will be followed by lesson learned from MBDS Regional Tabletop and Simulation Exercise.

Step by step approach

The section below outlines the necessary steps in conducting a TTX:

1. Welcome and opening

- a. The TTX leader/ director or the lead facilitator will run through the planned agenda for the day, introduce the exercise management team, and ask the participants to introduce themselves.

- b. The TTX leader/ director or a senior official from the host organization to give a brief overview of the rationale for the TTX, and the wider context or strategy.
- c. For a more formal opening ceremony, a senior official of the host organization can welcome the participants and officially open the TTX exercise.

2. Participant briefing

- a. Give the participants guidance and managing their expectations.
- b. Start the day with a brief overview of the purpose and objectives of the exercise
- c. Explain of how the simulation process, how the TTX will be facilitated, and their respective roles during the exercise
- d. Explain of how discussions, recommendations and lessons identified will be recorded, and how the debrief process and action planning will work.
- e. This session should include time for questions and clarification, to ensure all participants are clear on how to participate.

3. Starting the TTX

- a. TTX usually begins with the presentation of the narrative (effectively the first inject). This is a piece of information given to all players to set the scene, and provide background information for the simulated situation.
- b. Be sure to include in this first narrative any backstory or any actions taken prior to the start of the TTX.

4. Facilitating the TTX

- a. Facilitators leading the participants through the planned sessions flexibly
- b. Adapting the sessions as required to ensure that focus is maintained on the objectives and expected outcomes. A TTX is not tightly structured, so the exercise can be facilitated in various ways:

- The facilitator can present general problems verbally, which are then discussed one at a time by the group.
 - Problem statements and related discussion questions can be given to individuals to answer from the perspective of their own function and/or organization and role, and then discussed in the group.
- c. Technical experts, advisors, or observers can be available to ask questions and share ideas to support the participants in discussions and decision-making.
- d. There are many ways to communicate during TTX:
- Using the message box or white paper in organizer table
 - Write down the question and answer on the color paper
 - Heading of paper should specify “from”, “to”, and “question or answer”
 - Messenger will deliver the message to relevant team

5. Capture the discussions

- a. During the discussion sessions, one or more evaluators are assigned to capture the discussions, decisions, key comments, and recommendations.
- b. Summarize the session outcomes at the end of every discussion to capture all findings and to build consensus. This information will be used in the TTX debrief.

6. Ending the TTX

- a. The end of the exercise (ENDEX) will be declared by the lead facilitator when:
- The objectives have been met; or
 - The time allowed for the TTX has been exceeded; or
 - An unexpected interruption has occurred.
- b. Remind all participants and the TTX management team that the debriefing session is the most important part of the exercise.

7. TTX debriefing

- a. Conducted by the lead facilitator or evaluator, and it provides an opportunity for participants to:
 - capture what participants have learned during the exercise
 - reflect on the session outcomes (in the context of the TTX's objectives)
 - draw out achievements, challenges (in the context of the TTX's objectives)
 - proposed recommendations (in the context of the TTX's objectives)
 - give feedback on the exercise design and conduct
- b. Should be allocated sufficient time

8. Closing the TTX

- a. TTX will be closed at the end of the debrief session.
- b. It can be done informally by the TTX leader/ director, or more formally as required.
- c. This session can include a certificate ceremony for the participants and/or a press conference as appropriate.

9. Field trip for simulation exercise

Based on the discussion of scenario, MBDS country team leaders and local stakeholders conducted field trips activity for simulation exercise based on preparedness plan from tabletop exercise. The simulation exercise at three level is focus on preparedness and response in addressing COVID-19 pandemic at point of entry. Some member countries can choose for airport point of entry or ground crossing point of entry. The result of the simulation exercise activity will be documented as short video based on scenario/ practice and can be presented as knowledge/ practice sharing to other member countries.

Process and discussion

On 14 January 2021, the member countries conducted the Tabletop and simulation exercises in parallel at respective countries. The participants are from national and sub-national health officials and have discussed the simulated emergency situation provided by MBDS.

On 15 January 2021, the member countries met up via Zoom platform. The meeting was chaired by Dr. Htun Tin (Current Chair of MBDS, Deputy Director General, Department of Public Health, Ministry of Health and Sports, Myanmar). Dr. Teng Srey from Cambodia, Dr. Thet Su Mon, Dr. May Tha Ra Phu, Dr. Thet Wai Nwe from Myanmar, Dr. Darika Kingnate and Ms. Sakonwan Kaewklin from Thailand and Dr. Luu Thang from Vietnam shared the outcomes of discussion based on the scenario provided. In addition, Dr. WANG Lili (Center for Global Public Health, China CDC) shared the Strategies and Measures of COVID-19 in China.

Based on the scenario described on the day-1, member countries have prepared plans and experiences (including documentation) related to preparedness and response in addressing COVID-19 pandemic. MBDS country team leaders from each country facilitated activities and discussions both face-to-face meetings, field trips activity related with scenarios, and virtual discussions. As for participants, national and provincial stakeholders were very active in discussing and sharing their experiences on day-2 among multisectoral stakeholders.

The following section represents the collected information from countries based on the scenario and problem statement or discussion point provided.

1. Cambodia



Figure 14. Country group discussion from Cambodia

Source: <http://www.mbdnet.org/>

a. Clinical management plan

As country A

- Transfer him (patient) to isolated room at hospital for treatment
 - Collect sample in the next 5 days – 3 days or 72 hours interval
 - Follow the clinical guidelines

- Transfer his wife (as close contact to the patient with high risk) to continue her quarantine at the hospital
 - Collect sample in the next 48 hours
 - If negative – will collect on day 13 → If negative from day 13 test, discharge (Last contact with her husband is the day 0 for his wife)
 - If positive – will collect another sample in the next 5 days

b. Risk assessment

As country A

Country identified COVID-19 is very high risk

c. After getting information from country A

As country B

- Issue the press release to disseminate the information to the public
- Call for urgent meeting with partners and stakeholders
- Activate EOC (national, sub-committee, provincial level, partners)
- Conduct contact tracing (friend and relative) to get them to quarantine center and collect sample
 - Travel history
 - Identify contact – high risk, low risk
- Regularly communicate with Country A to share and get further information

d. Contact tracing

As country A

Count back within 14 days to do contact tracing:

- Conduct interview to get information on their travel history to see where and who he has contacted
- Develop a list of contact → classify them into high or low risk (follow WHO definition)

- High risk → need to get their sample
- Low risk → follow up and get their samples for whom has sign and symptom – using 115 auto call system or direct call

As country B

- Using travel history from Country A and get additional information from their friend and relative
- Develop a list of contact → classify them into high or low risk (follow WHO definition)
 - High risk → need to get their sample
 - Low risk → follow up and get their samples for whom has sign and symptom – using 115 auto call system or direct call

e. Manage people who have contact with COVID-19 patient

- Direct contact
 - Move to QC and collect sample
 - Negative → follow up and collect sample in the next 13 days
 - Positive → Move to hospital for treatment
- Indirect contact
 - Home quarantine and follow up within 14 days
 - Collect sample if any sign and symptom
 - Direct contact to RRT or CDC

f. Manage places where have contact with COVID-19 patient

- Collect sample from close contact at any places the patient used to visit
 - Temporary close and wait for result
 - Positive → close and wait until the technical decision is made
 - Negative → re-open and spray for disinfection

- Political involvement but also based on technical report
- Indirect contact will ask to stay for home quarantine and get day 13 test

g. Reporting mechanism

- National Level
 - IHR focal point at national level
 - ASEAN EOC
 - Update and share information during EOC daily meeting or/and other group i.e. high management, RRT countrywide
- Cross-border
 - MBDS focal point for MBDS's target province
 - IHR focal point at provincial level (cross-border)
 - MBDS-EBS mobile application (available now only in Cambodia and Thailand)

h. Stakeholder coordination

- Sharing information through IHR or ASEAN focal point
 - ASEAN EOC WhatsApp group
- Notes Verbales (Diplomatic Note)
- District meeting for cross-border provinces
- Video conference or direct calls in emergency cases
- MBDS cross-border reporting mechanism

i. Risk communication

- Daily Press Release to inform the public
- Press conference with journalist in case needed
- Using social media – Facebook, News, TV, Radio...
- IEC/BCC:
 - Local authorities
 - NGO/INGOs, Development Partner

- Cambodia Red Cross
- Union of Youth Federations of Cambodia

j. Manage rumors and misinformation

- Inform in public on trusted sources (MoH page and Facebook, CDC page and Facebook, Daily MoH Press Release)
- Rejection letter to any misinformation
- Press Conference for clarification in case needed
- Law re-enforcement on creating misinformation

k. Multisectoral stakeholders involved

- Government:
 - RGC, MoEF, MOI, MPTC, MoH, NIPH and relevant departments
 - Provincial governor, provincial departments – PHD/OD, RH, HC
 - Covid-19 national sub-committee, provincial sub-committee
 - Local authorities
 - National Hospitals (KSF, NPH, CENAT) and HC Chak Angre)
- Development Partner: WHO, IPC, US-CDC, World Bank, ADB, DFAT, UNICEF, IOM, GIZ, KOICA
- NGO/INGO: PSI, inSTEDD, FHI 360, MSF, CHAI
- Private Sector: Hotel and Charity...

l. Other preventive measures

- Social distancing, wear face mask, sanitizer, temperature control
- Avoid the Three Cs: Crowded places, Close-contact settings, Confined and enclosed spaces
- Use Scarf/Krama to protect and promote greeting (Khmer Culture/Sam Pah)

- Stay at home and not go out if not necessary
- Re-enforce on quarantine mechanism – not allow to gather in group during quarantine period

m. Logistic management

- Estimate and purchase needed equipment: PPE, UTM, mask, ventilator, oxygen machine, alcohol, gel for preparation
- Logistic and other equipment will store and manage at Central Medical Store (CMS) located in Phnom Penh
- Develop distribution plan to all 25 provinces and prioritize to cross-border province in case needed.

n. Possible challenges

- Laboratory – late result as collect on 23 and result delay until 26
- POE at country B – not mentioned on screening measure
- Measure control for quarantine process
- Could not get information on time or late response from country to country
- Misinformation or source of information is not true after verified
- Information is not clear from the interview during contact tracing
- Non-formal cross-border checkpoint
- Limited human resource, mean of transportation (ambulance, sample transfer)

o. Proposed solutions

- Improve laboratory to get the result on time
- Country B should conduct screening include sample collection on arrival
- Restrict measurement control for quarantine process (complete quarantine)
- Improve information sharing between country to country
- Using multi-source information to verify and reject using press conference or press release in case needed

- Using multi-source surveillance to verify the information and conduct additional interview
- Work with military to set up a team at non-formal border checkpoint
- Provide capacity building, training, workshop... upgrade laboratory capacity for diagnostic onsite

p. Conclusions

- Multi-sectoral approach for a key success
- Quickly share information is very important using country focal point during the emergency
- Identify country focal point and quickly response
- Regularly conduct EOC meeting via Zoom call or other virtually approach with stakeholder
- Available resources (logistic arrangement, medical supply, SOP and guideline)

q. Recommendations

- Sharing information on time (IHR focal point, ASEAN-EOC and MBDS reporting mechanism)
- Continue to cooperate at cross-border checkpoint and improve/restrict on non-formal cross-border checkpoint
- Continue to conduct TTX, outbreak response and risk communication, simulation exercise and drill
- Continue to strengthen on Covid-19 prevention, case management and response

r. Related SOP and document

- SOP and other documents are available on CDC's website
- MoH Cambodia

Website: www.moh.gov.kh/ FB: ក្រសួងសុខាភិបាលនៃព្រះរាជាណាចក្រកម្ពុជា

- CDC department/MoH Cambodia
Website: <http://www.cdcmoh.gov.kh/> FB: ព័ត៌មានក្រុមប្រឹក្សាជាតិប្រយុទ្ធនឹងជំងឺឆ្លង CDC
- Daily COVID-19 update with map <http://covid19-map.cdcmoh.gov.kh>

2. Myanmar



Figure 15. Country group discussion from Myanmar

Source: <http://www.mbdnet.org/>

a. Clinical management plan

As country A

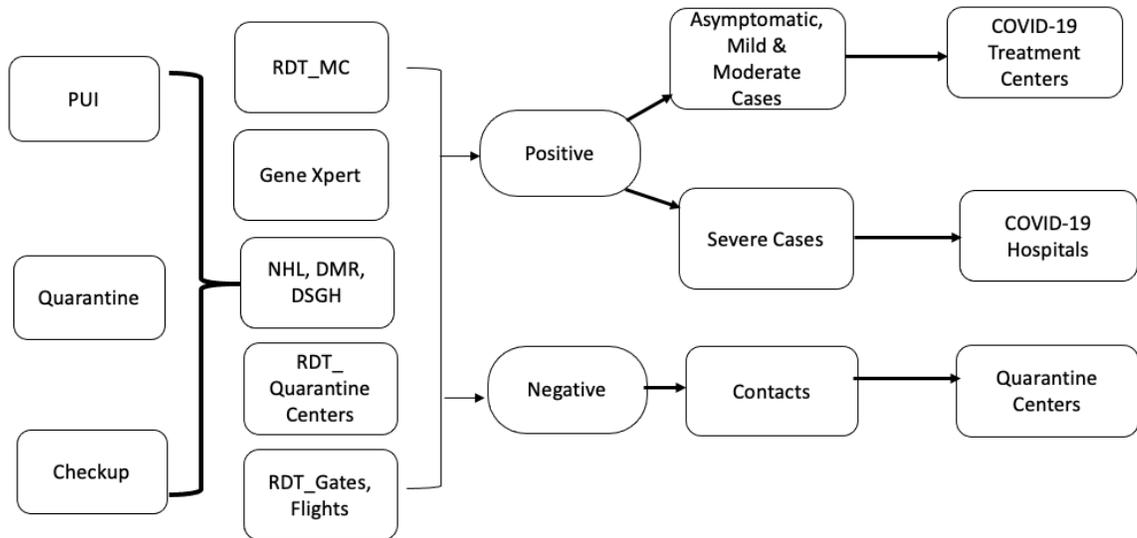


Figure 16. Case flow of mechanism

- According to Management Protocol for Acute Respiratory Disease (Version- 9)
 - Category A, B & C
 - PUI for suspected pneumonia
 - Depends on severity – mild pneumonia, pneumonia (suspected), severe pneumonia suspected
 - Manage according to result
- In the scenario, positive patient has normal temperature and asymptomatic at the time of specimen collection.
- According to Myanmar Clinical Management Guideline, he would be categorized and managed as Category A and hospitalized in COVID-19 treatment center.

b. Risk assessment

As country A

Country identified COVID-19 is very high risk

c. After get information from country A

As country B

- Trace the places and close persons during the two days before swab sampling. (on day 21)
- Manage the contacts according to the guideline.

d. Contact tracing

As country A

- Contact tracing team: District teams (approximately 100 members each) are supervised by regional coordinators
 - Interviewing cases and contacts
 - Co-ordinating with quarantine and treatment centers
 - Receiving information at Township Health Department
- Functions of contact tracing team:
 - Counselling
 - Health Education
 - Co-ordinate with transportation team
 - Co-operation with contact persons
 - Co-ordination with related centers
- As contact tracers:
 - Patient's confidentiality is kept in first priority.
 - Offensive languages are avoided
 - Professionally act
 - Heated arguments are refrained and
 - Criticizing people, their behavior, their culture, beliefs, and other related issues are avoided.

As country B

- During Day 21 to Day 23, close contacts are
 - Household members
 - Relatives
 - Friends
- Confirmed cases, contacts, crowded places (Mass meetings, ceremonies, etc.)
- Unprotected/risky behavior present or not.

e. Manage people who have contact with COVID-19 patient

- Someone who was within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period* starting from 2 days before illness onset (or, for asymptomatic patients, 2 days prior to test specimen collection) until the time the patient is isolated. (CDC)
- Contacts will be determined according to CDC definition.
- Interviewed all confirmed COVID-19 cases via phone
 - date of onset of illness,
 - infectious period and close contact groups: flight passengers (2 rows : front and back, 2 next seats) , bus passengers,
 - family members
 - food delivery
- Informed to the township medical officers and focal persons of the related quarantine centers.
- Transfer the close contacts to the facility quarantine centers by the respective township COVID-19 committee.
- At quarantine site, contacts are examined according to the guideline.
- Depending on the result, they are referred to the treatment center if positive or re-examined on day 7 of quarantine if negative.

- In this scenario, his close contact person (his wife) would be sent to quarantine center and tested on day 3 and day 7 of quarantine and managed according to the result.
- Food delivery person would not be considered as a contact according to CDC contact definition.

f. Manage places where have contact with COVID-19 patient

- Crowded places: notify and announce the issue to identify contacts
- Hotline numbers set up to contact
- Encourage to self-notify and self-report to authorities and health department.
- Prohibit those places from the public and disinfect the enclosed areas.
- Inform the local authorities.

g. Reporting mechanism

- Reporting the positive cases to the central epidemiology unit of nation level via emails and phone calls.
- National: Report to central epidemiology unit and National Central Committee for COVID-19 Prevention, Control and Treatment
- Cross-border – number of cases found in close contacts through IHR focal point and MBDS Co-Ordinator.

h. Stakeholder coordination

- Inform to Country B through IHR Focal Point.
- Video Conferencing and email for case and contact tracing if necessary
- Co-operate Airlines & Airport authorities from Country A

i. Risk communication

- Mass media (Newspaper, Television, Radio, SMS)
 - Announce MOHS Webpage, Facebook page – Countries, Detected Townships
 - Update daily COVID-19 situations to avoid public panic (e.g. daily short health message)
- Social Media (Facebook, Viber)
- Awareness raising - Campaigns
- Health talks
- Co-ordination with social influencers and celebrities.

j. Manage rumors and misinformation

- Feedback mechanism by the reliable authorized person/ assigned media spoke person.
- Provide accurate and timely information at all levels.

k. Multisectoral stakeholders involved

- National Central Committee for COVID-19 Prevention, Control and Treatment
- State/Region Committee for COVID-19 Control and Emergency Response Committee
- Township Committee
- IHR National Focal Point, MBDS Co-Ordinator
- COVID-19 Control and Emergency Response Committee.
- Regular Meeting: Bi-weekly
- Information collection, dissemination, response, action taken for misinformation's and rumors.

l. Other preventive measure

- Strengthening the surveillance system (POE)
- Additional travel measures (Stay At Home, Lock Down, Temporarily suspend international and domestic flights and highway transportation) , if necessary
- Risk communications to flights and bus passengers (Date and Time, Bus Gates, Bus Route)
- Active case finding via contact tracing.

m. Logistic management

- Central COVID-19 Committee for Procurement and Supply (Deputy Minister of MOHS is Secretary)
- Procurement, Grants/ Aids, Donation
- Supply & Distribution based on Logistics Management Plan by MOHS
- mSupply software for supply chain management and inventory control
- Emergency resource mobilization

n. Possible challenges

- Contact tracing – detailed information, Incomplete personal data to trace
- Complete and timely information sharing through IHR and MBDS focal points.
- Rumors and misinformation
- Difficult co-ordination and deny to be isolated
- Limited resources and logistics – Costs for facility quarantine
- Individual complaints

o. Proposed solutions

- Rumors and misinformation : Assure the public via social media, Enforce law and legislation dealing with fake news
- Incomplete personal data to trace : Encourage to fill the data correctly and completely

- Difficult co-ordination and deny to be isolated : Counsel patients and contacts well
- Limited resources : Well-prepared and manage.
- Individual complaints : Proper and empathetic communication

p. Conclusions

- Better understanding of information sharing among regional countries
- Effective contact tracing and risk communication.
- By doing this table top exercise, it is useful for health staffs and related staffs working in field of COVID-19 response.
- Existing bi-lateral, tri-lateral cross-border MOU are helpful to manage this scenario.
- MBDS risk assessment tool is useful to practice this scenario

q. Recommendations

- Bi-lingual IEC materials (pamphlets, posters)
- Bi-lateral agreement on consensus travel measures among regional countries.
- Pre-departure Screening: At least 72 hours before departure, PCR result is needed for flight passengers.
- WHO technical support
- Collaboration between MBDS countries should be strengthened and MBDS Coordinators should connect regularly.

r. Related SOP and document

- <https://www.mohs.gov.mm>
- <https://covid19communicationnetwork.org/featured-resource/rumors-misinformation/>
- DoMS - COVID-19 clinical guidelines version 3 as of 7-3-2020

3. Thailand

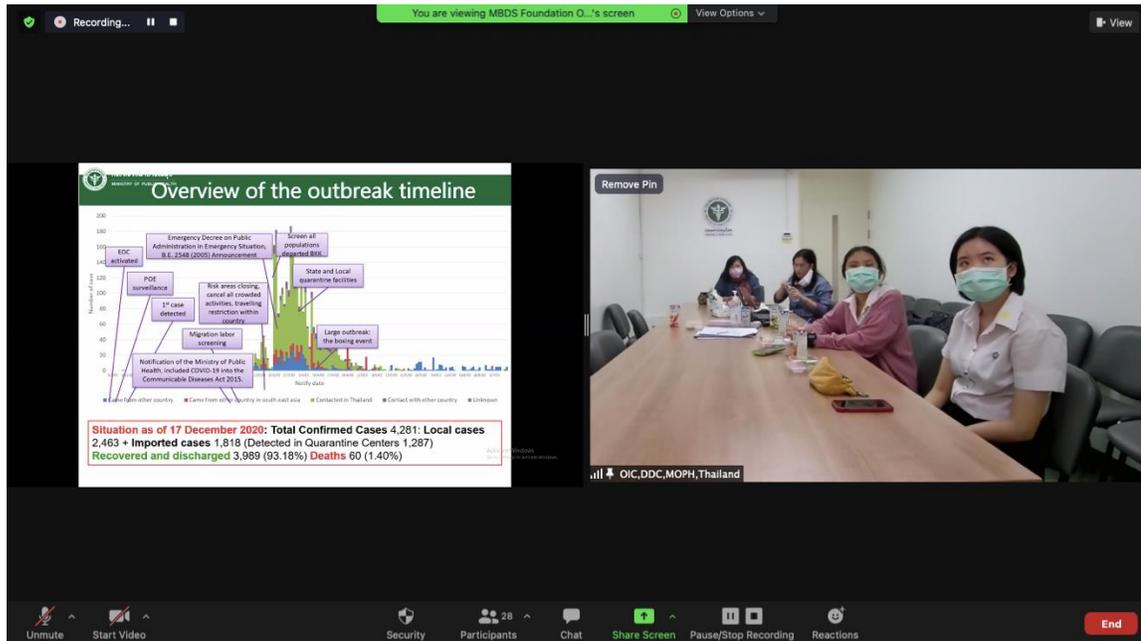


Figure 17. Country group discussion from Thailand

Source: <http://www.mbdnet.org/>

a. Clinical management plan

As country A and country B

- The husband will be sent for treatment immediately at the provincial hospital.
- The wife will be sent to the local quarantine center in the province.

b. Risk assessment

As country A

Country identified COVID-19 is very high risk

c. After get information from neighboring country

As country A and country B

- National Medical Emergency Preparedness and Response Committee, established during early period of the first wave, has been continuously providing guidance to all concerned MOPH departments.

- The continuously updated clinical practice guideline (CPG) has been established and followed country wide for provision of effective medical services.
- Information database system on hospital capacities such as number of healthcare providers, ambulances, cohort ward, isolation rooms, beds, antivirals, ventilators, equipment, PPE/surgical mask (CO-WARD system) has been collected and continuously updated for easy utilization and decision making at all levels.
- Guideline on referral system and hospital infection prevention and control for public, university, private and field hospitals, concerned agencies, and state quarantine centers has been established.
- ARI Clinics set up in all hospitals, including establishment of field hospitals: emergency multi-sectoral and whole of society approaches

d. Contact tracing

As country A and country B

- Communicable Disease Control Unit (CDCU) closely monitors the COVID-19 situation, i.e., by notification from the POE screening mechanism, village health volunteers' screening of at-risk populations, by information from database of the "Thai Chana" and the "MorChana" applications as well as database from the Influenza-like-Illness (ILI) surveillance
- Communicable Disease Control Unit (CDCU) operates the contact tracing of the couple: collect lab samples. Investigate exposure history, etc.
- Coordinate on the laboratory testing results
- Report the results to responsible units

e. Manage people who have contact with COVID-19 patient

- Screen passengers at POE level : International, provincial, community and village.
- Collect all the contact names and addresses
- Make a list of contacted persons by dividing, according to the guideline, into no risk, low risk and high risk

- Carry out the contact tracing of the low risk and high risk persons
- Refer them to the State Quarantine Centers accordingly or ASQ Provincial level : LQ , ALQ
- Provide lab testing and investigation
- Note: Training on "Communicable Disease Control Operations Unit" has tripled establishment of the CDCU in all districts.

f. Manage places where have contact with COVID-19 patient

- Community surveillance in risk populations and risk areas
- Management of state quarantine centers using the developed guideline and SOPs

g. Reporting mechanism

- National surveillance system
- National notifiable disease surveillance
- Event-Based Surveillance and warning notification
- PHEM surveillance, reporting and response
- MBDS cross border surveillance and response mechanism among the twin cities, i.e., twin city focal points, ports of entry focal points
- Provincial COVID-19 application for surveillance and reporting of travelers has been developed using the QR code

h. Stakeholder coordination

- The National IHR Focal Point (Department of Disease Control, by the Division of Epidemiology) contacts the National IHR Focal Point of neighboring country.
- The MBDS Twin City Focal Point contacts the MBDS Twin City Focal Point of neighboring country.
- The POE Focal Point contacts the POE Focal Point of neighboring country.

- MBDS EBS mobile application: the 2 years pilot project has been starting from November 2020 in Chiangrai, Mukdahan, Nan, Nongkhai provinces funded by the Rockefeller Foundation to support regional collaborative platform.
- The cooperation program development between Thailand and neighboring countries in border areas on strengthening preparedness and response to pandemic of COVID-19 supported by Thailand Department of International Cooperation (TICA), MFA.

i. Risk communication

- Single source risk communication, e.g. by the spokesperson of the national or provincial Center for COVID-19 Situation Administration (CCSA).
- Press conference and press interview during emergencies.
- Multi-language public relations materials, e.g., posters, pamphlets, booklets.
- Knock on the door communications by both Thai and foreign village health volunteers.
- Risk communication using websites and social media, e.g., Facebook , IG, Line
- D-M-H-T Measures to strictly prevent COVID-19 pandemic during the new year 2021 in various locations, i.e., D: Distancing space between each other M: Mask wearing H: Hand washing T: Testing body temperature before entering places and events.

j. Manage rumors and misinformation

- Hold daily bi-lingual press conferences during emergencies by well-trained and experienced spokespersons.
- Single source information and clear attractive infographics.
- Community communication, e.g. VHV's and radio broadcast to directly communicate in certain situations.
- Manage fake news closely with law enforcement.

k. Multisectoral stakeholders involved

- The multi-sectoral National and the Provincial Communicable Disease Committees
- The Public-Private Partnership (PPP)
- The Whole of Society approach, e.g. donations for medical supplies and equipment, setting up of field hospitals

l. Other preventive measure

- Preventive guidelines for specific risk populations, e.g. migrant workers, prisoners.
- Prevention and control guidelines for specific settings, e.g., schools, transportation
- Strategic plans on vaccine R&D, procurement, production, and immunization

m. Logistic management

- The Preparedness Plan for Influenza and Other Pandemics has included the logistics management plan including antivirals, diagnostic kits, vaccine and Personal Protective Equipment (PPE), etc.
- Current stockpiling of supplies and equipment at all levels is available
- COVID-19 response experiences will be taken into account.

n. Lessons learnt

- International cooperation based on mutual benefits and trust is crucial
- The country has primary health care facilities or “health promoting hospitals” providing primary healthcare services to their beneficiaries.
- Thai government has provided essential health care to all infected people, including foreigners. All COVID-19 patients have accessed essential treatment without financial barriers.

- Contributions of village health volunteers (VHVs) in complement with primary healthcare services at the community level. They have conducted door-to door visits for health education, active case finding, disease surveillance, quarantine, and even made cloth mask for the people.
- Thailand started to screen passengers from Wuhan and found the first case outside of China within five days. This prompt strong public health measures and campaigns on hand hygiene, social distancing and the universal use of facial masks have effectively helped to hammer down the first wave.
- Nationwide public cooperation on effective social measures. A daily press conference by the Center for COVID-19 Situation Administration (CCSA)'s spokesperson and risk communication by the MOPH executives and experts have provided essential information to the public and continuously motivated health behaviors.

o. Related SOP and document

- The DDC website at www.ddc.moph.go.th , e.g. Surveillance and control guideline;
- The Department of Medical Services, e.g. Clinical Practice Guideline (CPG)
- The Department of Medical Sciences: the Regional Public Health Laboratory (RPHL) Network
- The Department of Health
- The WHO Thailand Country Office

4. Vietnam



Figure 18. Country group discussion from Vietnam

Source: <http://www.mbdnet.org/>

a. Clinical management plan

As country A

- Patients are transferred to the Ha Tinh hospital and isolated in a separate room of dedicated department (Department of Infectious disease)
- COVID-19 patient receives general preventive treatment or supportive treatment by their clinical symptoms.
- Nasal swap or throat swap samples are taken every 2-4 days until the test is negative.
- Treating doctors, nurses and all related staff must follow IPC (infectious prevention control) regulation when doing direct-contact activities.
- Patients are discharged from hospital when:
 - Fever free at least 3 days.
 - The clinical symptoms are improved,
 - Three patient samples (taken at least 1 day apart) tested negative for SARS-CoV-2 by real-time RT-PCR method.

b. Risk assessment

As country A

Country identified COVID-19 is very high risk

c. After get information from country A

As country B

- Asking neighboring country's focal point to provide
 - Travel schedules and patient information
 - Epidemiology marks (places and time) related to the positive case
- Implement the activities of control and prevent COVID-19 (Contact-tracing, testing, treating, quarantine and isolation)

d. Contact tracing

As country A and country B

- To do contact tracing of F1 (Close contact under 2 meters to positive case within 3 days)
 - Identify the epidemiology marks. (shared by country focal point)
 - Notify all epidemiology marks to the designated head quarter so they can forward information to local authorities and surveillance system and activate all RRTs
 - To do tracing by all means (RRTs, Local media, related Health declaration).
- To do contact tracing of F2 (Close contact under 2 meters to positive case within 3 days)
 - F1 list down all the close contact
 - The designated head quarter summarize all the lists and send to local health center to monitor home quarantine.

e. Manage people who have contact with COVID-19 patient

- F0 - The positive case: the husband is transferred to isolation room in hospital
- F1 - The close contact to the positive case: the wife and 2 grocery store employees. They were moved to the isolation ward in centralized quarantine site in order to prevent infection to new cohort of quarantined people. Samples were again taken
- F2 - All those who have been in contact with 2 store employees: Notify to local health centers and do self-quarantine at home until the F1 test is available.
 - If the store employees are negative for COVID-19, all contacts are terminated.
 - If the store employees are positive, all contacts will be moved to centralized quarantine site.

f. Manage places where have contact with COVID-19 patient

- If positive cases and/or close contacts are detected:
 - Investigate, do tracing contact, isolate and take samples all close contact.
 - To do disinfection in high-risk areas
 - Consider area block down if necessary

g. Reporting mechanism

- Steering committee system: Report to the Provincial steering committee and district steering committee. The National steering committee headed by deputy prime minister are also reported.
- The health system: Inform MoH by making reports to NIHE and GDPM. Inform district health center.
- Report to neighboring countries. Telephone to inform Covid-19 patient's status. Report by email monthly and hold meetings between two bordering provinces twice a year.

h. Stakeholder coordination

- Email and phone notification to neighboring country (follow the guidance in MOU) to provide
 - Patient status and information
 - Contact status and information
 - Sites and people that couples visited in neighboring country
- Inform MBDS about the cross-border positive case.
- Tighten the quarantine at the border gate.

i. Risk communication

- Content: Communicate about the epidemic situation, the risk of the epidemic spreading and measures to prevent and control the epidemic.
- Activate the risk-com plan to collaborate with all means of communication (Media, TV, social networks)
- Establish the “community COVID groups” to do the door-to-door surveillance and communication

j. Manage rumors and misinformation

- The health department coordinates police and media agencies to prosecute people who provide false information.
- Request media agencies, websites to remove false information
- Provide correct information about the epidemic situation promptly, accurately and widely

k. Multisectoral stakeholders involved

- To control and prevent COVID-19 is the responsibilities and duties of whole political system from national to local levels
 - Main actors include Health sector, local authorities, Military, Security force, border guards, media, custom officers, etc.
- All people participate to control and prevent COVID-19 by follow all rules and regulations, communicate the risk of disease and join the “community COVID groups” if necessary. The slogan is “each people is a soldier in the battle against COVID-19”

I. Other preventive measure

- Prepare plans to all level of COVID-19 that include
 - Training for the RRTs (Simulation, TTX)
 - Enhance the current risk-com plans
 - Allocate budget for COVID-19 control and prevention
- The force working at the border gate must be strictly protected, not to be infected.
- Ensure that vehicles transporting people entering from the border gate to the quarantine area must not stop.
- Implement centralized isolation strictly to avoid infection in the quarantine area.
- Test all citizens preparing to travel abroad to limit the spread of the epidemic to another country.
- Note: COVID-19 vaccine is still on phase I. Vaccine Purchasing is still on discussion

m. Logistic management

- For testing: Ensure the sufficient of test kits for Real-time PCR and trained staff to do the sample collecting and test
- For Treating: Allocate provincial hospitals and field hospital for isolating and treating COVID-19 Patients (Room capacities, medicine, equipment, breathing apparatus, PPE)
- For quarantine: Collaborate with multi sectors to establish centralized site and allocate budget for those sites to receive people in 14 days (PPE, foods and supplies)
- For public measurements: Strengthen border quarantine, improve capabilities of RRTs, promote risk communication

n. Possible challenges

- The shop employee turns into positive case which lead to all F2 become close contact (F1) and expand the scale of all activities.
- People enter country in open way without going through PoE.

o. Proposed solutions

- To call for national support and even international support to implement area block down.
- Improve network of surveillance in hospital and in public to early detect cases.

p. Conclusions

- Multisector collaboration is the key to control and prevent COVID-19
- Measurements must be done as soon as possible
- Communicate to all people and gain the support and participants from communities
- Ensure logistics, and human resources during period of COVID-19
- Promote international participation by sharing information and risk assessments

C.3.3. Phase 3: Post-exercise

After the tabletop exercise ends it is the task of the TTX leader/ director and the lead evaluator to draft the post-exercise report and close all project admin. The normative step will be followed by lesson learned from MBDS Regional Tabletop and Simulation Exercise

Step by step approach

The section below outlines the necessary steps for post-exercise of TTX activity:

1. Debriefing the management team

- a. Reflect on the TTX planning and implementation, as well as to confirm responsibilities and timelines for completion of the TTX report.
- b. Lead by the TTX leader/ director, lead facilitator or TTX controller, in order to identify lessons and opportunities for similar future projects

2. The TTX report

- a. Set up an initial meeting to report back to leadership or senior management.
- b. Share the initial findings of the TTX, including challenges, achievements and recommendations.
- c. The report will be completed by the lead facilitator and evaluator(s), and will draw on the debrief notes and reports from observers and other facilitators.
- d. Ensure lessons identified are incorporated into the workplan and that action is taken on key recommendations.
- e. Endorsement of the post-exercise report by the senior management or key stakeholders is essential to ensure the implementation of key recommendations or an action plan.

3. Closing TTX activity

Ensure all outstanding admin and logistics for the TTX are finalized and closed.

4. Create after action report

- a. Exercise summary that covering goals and objectives, pre-exercise activities, participants and agencies, description of exercise scenario
- b. Analyze the result during pre-exercise, conducting the exercise, and post-exercise meeting, including group discussion findings
- c. Analyze critical capabilities (i.e. selected capability, action, challenge, how to overcome challenge, responsible party, timeline, resource needed, etc.), including participant thoughts and concerns
- d. Analyze observed strengths, technical challenges, and feedback (both what worked well and opportunities for improvement)

5. Develop action plan

- a. The TTX management team should also write a short post-mission report for the supporting organization(s) to develop and implement the action plan.
- b. This report should cover the lessons identified from the project and potential future opportunities (ways forward) for TTX activities.
- c. Preparing the risk assessment for response plan
- d. Preparing for joint outbreak investigation plan which cover field investigation, lab/patient transport, hospital management, evaluation, etc.

6. *Make improvements*

- a. Set up the improvement plan according to the identified lessons, feedback and recommendation, and action plan in the TTX report, the internal mission report, and the after-action report
- b. Follow up and prepare for the opportunities of future TTX projects

Post-exercise documentation

1. *Executive summary*

MBDS Regional Tabletop and Simulation Exercise (14-15 January 2021) allowed the countries to strengthen capacity, logistic management, public health risk communication, information sharing, and multisectoral coordination and collaboration, nationally, regionally, and globally.

- **Cambodia** emphasized that multi-sectoral approach is a key for success. Identifying country focal point and quick response, sharing information quickly using country focal point during the emergency, regular EOC meeting via Zoom call or other virtual approach with stakeholders are of importance. Recommendations include continuance of multi sectoral cooperation at cross-border checkpoint and improve/ restrict on non-formal cross-border checkpoint and continue conducting TTX, outbreak response and risk communication, simulation exercise and drill.
- **Myanmar** highlighted the usefulness of TTX and simulation exercises especially for health and related staff working in the field of COVID-19 responses. It also allowed health personnel to better understand the information sharing among regional countries. Recommendations also comprise of having bi-lateral agreement on consensus travel measures among regional countries, bi-lingual IEC materials (pamphlets, posters) and collaboration between MBDS countries.

- **Thailand** stated that international cooperation based on mutual benefits and trust is crucial. Thailand shared measures to flatten the coronavirus curve including nationwide public cooperation on effective social measures. A daily press conference by the Center for COVID-19 Situation Administration (CCSA)'s spokesperson and risk communication by the MOPH executives and experts have provided essential information to the public and continuously motivated healthy behaviors.
- **Vietnam** also mentioned that multisector collaboration is the key to control and prevent COVID-19. Engagement and communication with communities (including public private partnership) and gain their support and ensuring logistics, and human resources during period of COVID-19 are of the essence.
- **China** has presented the strategy and situation of COVID-19 response, characteristics of imported cases, prevent spreading caused by import cases, prevent transmission caused by contaminated goods and vehicles and rapid response of outbreak. In addition, China stated that PCR testing screening plays important role in outbreak control and risk-based community lockdown mitigates impact on societies.

2. *After action review*

After action review (AAR) has developed based on step by step approach. Those steps are categorized into 3 phases: pre-exercise, conducting the exercise, and post-exercise activities. AAR document has been prepared as ***“A Guideline for Innovative Tabletop & Simulation Exercise: Lesson Learned from MBDS Experiences”*** for planning and implementing the innovative tabletop and simulation exercise based on lesson learned from MBDS experiences in line with existing relevant references/ guidelines.

3. Lesson learned

a. Observed strengths of TTX

The public health emergency response capacity that MBDS countries had built through training, tabletop, and simulation exercises, national and sub-regional planning, multi-sector engagement, and political leadership in each country enabled what health leaders across the MBDS community perceived as effective responses [25] in areas that had been identified as problematic during the MBDS regional tabletop and simulation exercises. Based on MBDS experiences [16,18], there are some observed strengths regarding tabletop and simulation exercise design that had been implemented:

- *Effective communication*

It is not easy for every stakeholder to meet at one place at the particular time, especially when the stakeholders are in different countries. With virtual platform and on site meeting, hybrid model is an effective method of communication that increased level of flexibility, where distance is not a barrier in the implementation process. This method offers a strong and effective platform for participation, communication, and information sharing between two or more remotely placed individuals or groups across the globe.

- *Cost-effectiveness*

Hybrid model offer the innovative method which is more efficient and accessible, both in term of time-saving and cost-effectiveness. This platform allows the organizer to interact with all participants even in the short time period.

- *Participant engagement, concrete outputs*

The innovative scenario led to meaningful small group discussions. These deliberations yielded concrete proposed actions and associated challenges, which were subsequently shared with the groups and the fed into initial action planning at the end of the exercise.

- *Stakeholder diversity and commitment*

The exercise involved a remarkable number of participants across countries, sectors and organizations, demonstrating the firm commitment of MBDS countries and partner organizations to the regional approach.

- *Commitment to regional cooperation*

Discussions during the exercise reflected a shared view among participants of the importance of MBDS regional collaboration and regional group of stakeholders. Joint activities require a framework for cooperation and operational guidelines.

- *Valuable observer input*

Technical resources personnel provided rich input and shared valuable insights to the exercise at every step, from review and comment on early drafts of the exercise, pre-exercise orientation, exercise deliberations and post-exercise review meeting.

- *Springboard to further planning*

Outcomes from the exercises are useful for revising certain element of national plans and potentially guiding future MBDS program, especially related to COVID-19 pandemic.

b. Observed challenges of TTX

There are some challenges encountered by MBDS networks that need to be considered for the tabletop and simulation exercise design and implementation [14,18] :

- *Technical barriers*

Team can organize virtual platform at any proposed time and in any location, but internet connection is very crucial aspect. Disconnection is always possible while participating in virtual meeting which can reduce the effectiveness of communication.

Note:

It is important to prepare and maintain standardized-quality equipment and high-quality connection, as well as using updated software.

- *Communication errors*

Face-to-face communication, facial expression, and body language are important for effective communication. While, interact through an online meeting, it is not possible to understand a person, but some of things may be missed which there is a chance of misunderstanding.

Note:

Planning and preparation for the format/ design of meeting or discussion is important to be well-prepared to ensure the implementation and goals are achieved as expected. In addition, the users must be well versed with the techniques of hybrid model, so that everything can be presented in a dignified manner.

- *Language barriers*

Not all exercise participants have English language proficiency that allowed them to fully engage in the exercise.

Note:

Each country arranges for translation for delegation members and use common terms that are clear to all participants.

- *Size of small groups*

Given the language constraints and other factors, in retrospect smaller groups may have resulted in more dynamic discussions. This would have required fewer participants, or more facilitators and more plenary presentations.

Note:

Maintain diverse composition of small groups (multi-country, multi-sector) and reduce the size of groups to a maximum of 10-12 participants each.

- *Multi-sector engagement*

The comprehensive and diverse composition of country delegations presented challenges to facilitation of meaningful interactions among the various sectors. Facilitator might be faced potential tradeoffs between useful health-oriented focus and useful multi-sector dialogue.

Note:

Multi-sector approach (including One-Health approach) is the right choice and remain opportunities for improvement. Multi-sector should sufficiently engage non-health sector participants and prepare/ well-informed them in advance.

- *Initial action plan*

Multi-sector participation is still low and planning requires a longer deliberative process than permitted by the time and plenary format at the exercise.

Note:

Delegations could discuss initial action plan among themselves before being able to discuss such planning with larger group. Discussion by a smaller group of stakeholders following the exercise may offer better opportunities for more deliberative planning, or manage the expected output in day-1 and day-2 of tabletop and simulation exercise.

- *Final planning step*

Participant found difficulty to follow the planning for activities that they did not discussed in their own small group.

Note:

Final plenary session should provide the time or comfortable environment for careful deliberation and full participation, maintain the objective of concrete action planning to be more conducive format based on their earlier discussions, including more time overall. Further planning can take place in follow-up meeting/s with smaller group of stakeholders

4. Recommendations

Recommendations include:

- to conduct next tabletop and simulation exercise with different innovative scenario (e.g. vaccine related scenario),
- to strengthen capacity building and logistics support, and
- to continue multisectoral collaboration among MBDS countries

Key takeaway:

Whatever effects one country, it can affect its neighboring countries and vice versa. Addressing the issue by regional perspective, collaboration and knowledge sharing play an important role in mitigating regional pandemic situation. Drawing from the countries' experiences, the lessons learned can be applied to daily activities.

C.3.4. TTX design at COVID-19 situation

Based on the “MBDS Regional Tabletop and Simulation Exercise” and MBDS experiences, the following is a modified design in preparing and conducting tabletop and simulation exercise in adapting COVID-19 situation:

Aspect	Description
Purpose and area	Purpose, scope, and objective based on the needs
Target audience	Multi-sector with different functional areas and background
Exercise method	Hybrid model (in-person/ face-to-face and online) or full online
Virtual platform	<i>[optional]</i> such as: ZOOM, WHOVA, SIXSHEET, 6Connex, Accelevents, BigMarker, Brella, Communique Conferencing, Engagez, Hopin, Localist, Pathable, SpotMe, vFairs, Virtual Summits Software, WorkCast, etc.
Exercise resources	<ul style="list-style-type: none"> • TTX leader/ director supported by TTX management team • Experienced ITC team who familiar with virtual meeting/ conference • Experienced facilitators who familiar with virtual meeting/ conference • Technical experts, observers, evaluator as required • Administrative and logistics support as required
Exercise time-frame	<ul style="list-style-type: none"> • Three to eight hours depending on the objectives <i>[2/3 of the time for the exercise itself, and 1/3 of the time for the debriefing]</i>. • Agenda can be designed for 1-2 days with the specific output according to the scope and objective
Venues setting	<ul style="list-style-type: none"> • Virtual participation from any place (for hybrid- or full-online model) • Meeting room or conference room with applied public health measures (for hybrid model)
Process format	<ul style="list-style-type: none"> • A TTX is a discussion guided by a facilitator (or sometimes 2 facilitators who share responsibilities) around an exercise scenario or narrative • Maximum of 10-12 participants (multi-country, multi-sector) per group

Aspect	Description
	<ul style="list-style-type: none"> • Facilitator guiding the participant into plenary or parallel discussion room as required with specific discussion room code • Scenario and discussion questions will be delivered using the screen sharing. Participant will give any responses verbally or via chat, which is guided by facilitator
Planning time-frame	<ul style="list-style-type: none"> • 2-3 scoping meetings (4-8 weeks prior to the TTX) • 2-5 days to build the TTX implementation plan • One day for setup the IT system followed with pre-briefing • 1-2 day to implement the TTX (including the debriefing) • 1 week for post-exercise reporting and improvement plan
Exercise materials	<ul style="list-style-type: none"> • Development of scenario based on the actual public health events • Evaluation form will be delivered using real-time online survey platform • Electronic materials and video will be distributed to participants
Key success factors	<ul style="list-style-type: none"> • Participation of relevant and appropriate participants • Clarity on the objectives and purpose of the TTX • Balanced representation of key functional areas.

References

1. Abideen AZ, Mohamad FB, Hassan MR. Mitigation Strategies to Fight the COVID-19 Pandemic - Present, Future and Beyond. *J Heal Res.* 2020;34.
2. Worldometers. COVID-19 Pandemic [Internet]. 2021. Available from: <https://www.worldometers.info/coronavirus/>
3. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 Infection: Origin, Transmission, and Characteristics of Human Coronaviruses. *J Adv Res.* 2020;24.
4. Bruinen de Bruin Y, Lequarre AS, McCourt J, Clevestig P, Pigazzani F, Zare Jeddi M, et al. Initial Impacts of Global Risk Mitigation Measures Taken During the Combatting of the COVID-19 Pandemic. *Saf Sci.* 2020;128.
5. World Health Organization. Regional Office for South-East Asia. SHIFTS – The COVID-19 Pandemic: Shifting The World and Shaping Its Response [Internet]. World Health Organization; 2020. Available from: <https://apps.who.int/iris/handle/10665/334221>
6. World Health Organization. WHO Concept Note: Development, Monitoring and Evaluation of Functional Core Capacity for Implementing The International Health Regulations (2005) [Internet]. World Health Organization; 2015. Available from: https://www.who.int/ihr/publications/concept_note_201507/en/
7. World Health Organization. Coronavirus Disease (COVID-19) Training: Simulation Exercise [Internet]. World Health Organization; 2020. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/simulation-exercise>
8. World Health Organization. WHO Simulation Exercise Manual [Internet]. Geneva: World Health Organization; 2017. Available from: <https://extranet.who.int/sph/docs/file/3581>
9. World Health Organization. Simulation Exercise [Internet]. World Health Organization; Available from: <https://extranet.who.int/sph/simulation-exercise>
10. World Health Organization. Regional Office for the Western Pacific. Emergency Exercise Development [Internet]. Geneva: World Health Organization. Regional Office for the Western Pacific; 2009. Available from: http://iris.wpro.who.int/bitstream/handle/10665.1/6755/9789290614197_eng.pdf
11. Wendelboe AM, Miller A, Drevets D, Salinas L, Miller EJ, Jackson D, et al. Tabletop Exercise to Prepare Institutions of Higher Education for an Outbreak of COVID-19. *J Emerg Manag.* 2020;18.
12. MBDS Coordinating Office. MBDS Coordinating Committee & Executive Board Meeting in China [Internet]. MBDS; 2009. Available from: <http://www.mbdnet.org/mbds-meeting-document-for-the-year-2009/>
13. MBDS Coordinating Office. MBDS Multi Countries Cross Border Meeting [Internet]. MBDS; 2014. Available from: <http://www.mbdnet.org/mbds-meeting-document-year-2014/>
14. MBDS Coordinating Office. MBDS Cross-Border Cross-Sectoral Tabletop Exercise Narrative & Financial Report [Internet]. MBDS; 2016. Available from: <http://www.mbdnet.org/mbds-meeting-document-2016/>

15. MBDS Coordinating Office. Thailand-Myanmar Joint Work Plan on Disease Surveillance, Prevention and Control at the Border Areas for 2011- 2012 [Internet]. MBDS; 2012. Available from: <http://www.mbdnet.org/mbds-meeting-document-for-the-year-2012/>
16. MBDS Coordinating Office. MBDS Coordinating Committee Meeting [Internet]. MBDS; 2008. Available from: <http://www.mbdnet.org/mbds-meeting-document-year-2008/>
17. MBDS Coordinating Office. Report of Regional Forum by Strategy Lead Coordinators [Internet]. MBDS; 2008. Available from: <http://www.mbdnet.org/mbds-meeting-document-year-2008/>
18. Moore M, Dausey DJ. Regional Pandemic Influenza Tabletop Exercise: Mekong Basin Disease Surveillance Partners [Internet]. MBDS; 2007. Available from: <http://www.mbdnet.org/mbds-tabletop-exercise-ttx/>
19. World Health Organization. Regional Office for South-East Asia. A Guide for Conducting Table-top Exercises for National Influenza Pandemic Preparedness [Internet]. WHO Regional Office for South-East Asia; 2006. Available from: <https://apps.who.int/iris/handle/10665/204728>
20. Descatha A, Loeb T, Dolveck F, Goddet N-S, Poirier V, Baer M. Use of Tabletop Exercise in Industrial Training Disaster. *J Occup Environ Med.* 2009;51.
21. Nagendran M, Cocco C, Cartotto R. The Tabletop Exercise: A Useful Strategy for Practicing Your Institution's Burn Mass Casualty Response Plan. *J Burn Care Res.* 2019;40.
22. Fall. Improving Pandemic Influenza Preparedness in Southeast Asia [Internet]. RAND Corporation; 2007. Available from: <https://www.rand.org/content/dam/rand/www/external/health/globalhealth/docs/Influenza.pdf>
23. Dausey DJ, Buehler JW, Lurie N. Designing and Conducting Tabletop Exercises to Assess Public Health Preparedness for Manmade and Naturally Occurring Biological Threats. *BMC Public Health.* 2007;7.
24. Phommasack B, Jiraphongsa C, Oo MK, Bond KC, Phaholyothin N, Suphanchaimat R, et al. Mekong Basin Disease Surveillance (MBDS): A Trust-Based Network. *Emerg Health Threats J.* 2013;6.
25. Moore M, Dausey DJ. Response to the 2009-H1N1 Influenza Pandemic in the Mekong Basin: Surveys of Country Health Leaders. *BMC Res Notes.* 2011;4.
26. Oo MK. Cross-Border Collaboration for Disease Surveillance Between Chiang Rai and Bokaeo, Thailand [Internet]. MBDS; 2008. Available from: <http://www.mbdnet.org/mbds-meeting-document-year-2008/>