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# Developing an Emergency Action Plan for the Global Disease Detection Regional Center in Thailand

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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## Abstract

Developing an Emergency Action Plan for the Global Disease Detection Regional Center in Thailand

By Alleen R. Weathers

In 2010, the International Emergency Preparedness Team (IEPT) from CDC Headquarters in Atlanta, Georgia performed an emergency preparedness gap analysis of the CDC Global Disease Detention Regional Center in Thailand (TUC). The assessment highlighted the fact that TUC did not have a comprehensive emergency preparedness and response plan. Thus, in an effort to improve on the emergency preparedness of the TUC, an Emergency Action Plan (EAP) was drafted through collaboration between TUC program directors, IEPT members, and an Emory University's Rollins School of Public Health student researcher.

Information for the EAP was gathered through review of pre-existing TUC-specific emergency literature, observation, and interviews. Questions related to the activities that would have to be performed in preparation for and during an emergency were generated and used to illicit information in interviews with program directors and various subject matter experts (SMEs). The information was compiled into activity lists for the EAP. Once the accuracy of the activity lists was confirmed by the SMEs, standard operating procedures (SOPs) were created. The SOPs provide bulleted step-by-step instruction for completing activities.

The TUC's EAP contains 132 emergency preparedness and response activities. SOPs are still being developed for over 100 of these activities. Trainings, plan, drills, and exercises will be needed to ensure the EAP is understood and used during an emergency. Having a well-developed and practiced plan will help the TUC respond to future emergencies.

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# Chapter 1: Introduction to Thailand and the Center for Disease Control and Prevention's Global Disease Detection Regional Center in Thailand (TUC)

## Background

In recent years, natural and human-made disasters have increased in frequency and magnitude, affecting communities around the world[2]. Within the last 10 years, there have been 1,695 floods, 298 earthquakes, 272 droughts, and 52 wars worldwide[3]. Disasters kill an average of 60,000 people and affect over 200 million people annually[4].

### *Introduction to National Emergency Preparedness*

Historically, the U.S has primarily focused on the response and recovery aspects of emergencies rather than on preparedness[5]. There were a multitude of similarly tasked agencies and parallel policies related to disaster management and relief until 1979, when President Carter merged and streamlined these agencies and policies through Executive Order 12127. This order established the Federal Emergency Management Agency (FEMA)[6]. Since then, the U.S. government has developed the National Response Framework (NRF) and the National Incident Management System (NIMS) to provide emergency preparedness and response guidelines that can be used to manage and prepare for emergencies[7].

Many U.S. governmental agencies, as well as, non-governmental agencies, refer to the NRF when developing an all-hazards emergency

preparedness and response plan. These agencies also consult NIMS guidelines in the development of their Incident Command Structure (ICS). The U.S. government has mandated all federal agencies to develop an organizational emergency response plan.

### *The Centers for Disease Control and Prevention and Emergency Preparedness*

The Centers for Disease Control and Prevention's (CDC's) mission is to collaborate with partners to create tools, develop expertise, and generate information protecting the health of individuals and communities through health education and promotion, prevention of morbidity, and preparation for emerging health threats[8]. The CDC partners with the World Health Organization (WHO), the United Nations, as well as, various Ministries of Health/Public Health to achieve its mission.

In recent years, as mandated by the U.S. government, the CDC has been working at improving its preparedness to emergencies by developing emergency plans and applying recommendations from the NRF. The CDC established the Emergency Operations Center (EOC) as its command center to monitor and coordinate national and international public health emergency responses. The Office of Public Health Preparedness and Response manages the EOC. It is staffed around-the-clock to ensure awareness of any public health threat. CDC's subject matter experts (SMEs) are tasked with analyzing and verifying threats received and determining a threat's potential impact.

Since the CDC EOC's inception in September 2001, it has responded to more than 40 national and international public health emergencies[9] including Hurricane Katrina, the 2009 H1N1 influenza pandemic, the Haiti earthquake and cholera outbreak, the Deepwater Horizon Oil Spill, the Japan earthquake and tsunami, and Hurricane Irene[9]. The EOC has also been activated for planned events, such as the 2009 presidential inauguration, to monitor potential public health threats that could affect people gathering at these events. The EOC has developed numerous plans and uses them to respond to the various types of disasters.

***Overview of the CDC and Thailand's Ministry of Public Health Relationship***

Since 1980, CDC has been working with the Thai Ministry of Public Health (MOPH) and other key public health institutions, to address the major public health challenges of Thailand and of other countries of the Asia-Pacific region. In 2004, the CDC established a Global Disease Detection (GDD) Regional Center in Bangkok to better assist the MOPH of Thailand in its efforts to detect and respond to emerging infectious diseases in the region[10; 11].

The Thailand MOPH/ U.S. CDC Collaboration (TUC), also known as the CDC-GDD regional center in Thailand includes six programs: 1) the Global AIDS Program (GAP), 2) the International Emergency Preparedness Team Program (IEPT), 3) the International Emerging Infections Program (IEIP), 4) the tuberculosis surveillance program, 5) the Field Epidemiology and Training Program (FETP), and 6) the Immigrant, Refugee, and Migrant Health Branch's

Division of Global Migration and Quarantine (IRMHB-DGMQ)[10; 12]. Through its close collaboration with the Thai MOPH, WHO, and local partners, the TUC has participated to the development of a sustainable regional capacity in: 1) emerging infectious disease detection and response; 2) field epidemiology; 3) pandemic influenza preparedness and response; 4) laboratory systems and biosafety; and 5) zoonotic disease research and control[10].

***Disasters and Emergency Preparedness in Thailand***

The TUC office is located in Bangkok, Thailand. With over 50% of the total disasters in the world affecting the Asia-Pacific region, TUC is situated in the most disaster-prone region of the world[1; 12]. The region experiences typhoons, tsunamis, floods, droughts, fires, and other natural disasters[13]. Thailand was hit by Typhoon Gay in 1989 and by the Indonesia Tsunami in 2004[14; 15]. Since Thailand resides over 13 active fault lines, most major earthquakes occurring in neighboring countries are felt in Thailand as well. For example, in March 2011, two-7.0 quakes in Myanmar were felt in Bangkok and surrounding areas. Also in 2011, the majority of Thailand, including Bangkok, was flooded for months. The flood was responsible for 500 deaths and thousands of people becoming homeless[16].

Infectious diseases are also a concern in Thailand. Since 2004, the country has been heavily affected by avian influenza. In preparation for an epidemic, the MOPH developed two plans, the Thai National Strategic Plan for Avian Influenza and the Plan for Pandemic Preparedness[17]. The MOPH also

has plans to deal with outbreaks of vector-borne diseases, such as rabies and dengue fever[18].

Thailand is also susceptible to human-made hazards. For example, the national election of 2006 resulted in boycotts, post-election civil unrest, and the deaths of more than 90 people (Burapat, T., Maloney, S., & Slocum, W., personal communication, June 20, 2011)[19]. In 2010, the Hardliners set fire to the Thai stock exchange building in downtown Bangkok, resulting in over 92 fatalities, and more than 800 injured persons[19]. As recent as 2011, armed conflict developed at the Thai-Cambodian border, causing disruptions to much needed public health services in the refugee camps and internally displaced communities[18; 20]. The same year, days prior to the national election, violence erupted at political protest rallies in provinces near Bangkok (Burapat, T., Maloney, S., & Slocum, W., personal communication, June 20, 2011).

The Thai government recognizes the importance of emergency preparedness. Following the 2004 tsunami, the Royal Thai Government (RTG) launched “The Disaster Reduction and Mitigation Act of 2007” as a guide for emergency response management for governmental agencies [21]. The MOPH used the Act to create a business continuity plan for pandemic influenza that outlines steps each Thai department should take to ensure the safety of their staff and prevent disruptions to their operations. The plan sets the foundation for actions that should be considered during all types of disasters.

***Disasters and TUC***

In the past two years alone, the TUC had to deal with two major emergencies that threatened the lives and wellbeing of its staff. In 2010, the "Red Shirts" political riots posed imminent danger to TUC staff members working in the HIV clinics downtown. The U.S. Embassy had no prior knowledge of TUC staff members working in the downtown area. The lack of communication between the TUC and Embassy resulted in the TUC staff members not being notified of the mandatory evacuation until after the riots posed imminent danger. Making matters worse, some rioters hijacked Thailand's telecommunications network, Thaicom, disrupting communications throughout the province. Thaicom's headquarters was only a few minutes from the MOPH campus. Rioters breached the perimeter of the campus, threatening the safety of all persons on the MOPH campus, including the CDC staff members (Burapat, T., Maloney, S., & Slocum, W., personal communication, June 20, 2011).

In 2011, severe floods in Bangkok directly affected TUC staff members' access to their office building. Some of the staff members' homes were flooded. The TUC staff members did not have access to emergency provisions. As a result, CDC had to send meals-ready-to-eat and water purification tablets from Atlanta to Bangkok. The floods disrupted TUC's quarantine services for immigrants and refugees migrating to the U.S., the surveillance of various infectious diseases, and the monitoring of outbreaks. Operations did not return to normalcy for three weeks after the initial flood.

**CDC's Solution to TUC's Emergency Preparedness Needs**

CDC has ten GDD Regional Centers around the world. These centers are located in China, Kazakhstan, India, Guatemala, South Africa, Egypt, Kenya, Georgia, Bangladesh, and Thailand. Most of these offices are in disaster-prone areas. Preparedness measures are being taken to ensure these centers are well prepared for emergencies.

In compliance with the United States' emergency preparedness mandate, the CDC required all of its offices, within the U.S. and around the world, to develop an Emergency Action Plan (EAP) to help guide the office's preparedness and response activities. In 2010, the IEPT from CDC Headquarters in Atlanta, Georgia (CDC-Atlanta), performed an emergency preparedness gap analysis of TUC. The assessment highlighted the fact that TUC did not have an emergency preparedness and response plan[1].

The U.S. Embassy in Bangkok has an EAP that is used for all the U.S. Mission staff which covers CDC employees, but this plan does not go into the details of what each agency must do to ensure the safety of their staff members during an emergency. Also, the U.S. Embassy plan does not address issues related to CDC's specific mission and goals, such as which activities the office deems essential to maintain and which provisions the office would like to provide for its foreign-service nationals (FSNs) during emergencies[1].

**Purpose Statement**

The EAP was developed to fill this gap. The plan was developed through collaboration between TUC SMEs, IEPT, and an Emory University's Rollins School of Public Health student researcher. The EAP serves as a guide for preparedness and response activities at TUC.

**Research Aims of TUC's Emergency Action Plan**

The EAP's main goal is to provide a consensus-based document that contains: 1) the list of hazards that could disrupt TUC's operations, 2) a practical incident management system, 3) lists of activities and procedures to be conducted in preparation for and in response to emergencies, and 4) a compilation of useful tools, templates, contact lists, and reference documents.

**Emergency Action Plan's Significance**

The EAP enables TUC leadership, in-country staff members, and CDC-Atlanta to have a united preparedness and response approach to emergencies that might affect the TUC offices in Thailand. The EAP also ensures that TUC is prepared for a possible office closure. The plan provides information on how TUC can communicate and coordinate activities with the MOPH, RTG, the U.S. Embassy, and CDC-Atlanta during an emergency. It clearly defines who is responsible for performing emergency preparedness and response activities when a disaster strikes. It also highlights the response overlaps and gaps

between TUC's EAP and the U.S. Embassy's EAP. Most importantly, the plan serves as a tool to protect the lives and the wellbeing of TUC staff members and promote continuity of operations during emergencies.

*Note: The Glossary of Terms is located after the Acronyms table at the end of this document.*

# Chapter 2: Literature Review

## Overview

Globally, the growing number of large urban centers in disaster-prone areas increases the risk of simple hazards turning into major catastrophic events[22; 23]. TUC is located in the capital city of Bangkok, the most densely populated city of Thailand[18]. Emergency preparedness can play a major role in preventing large catastrophic events from negatively impacting the health and lives of all TUC staff working in Bangkok[24].

## Section 1: Emergency Planning

Emergency planning is a critical component in emergency preparedness. One of the critical tools used in planning are emergency plans. Plans should be developed through a collaborative and continuous process.

### *Emergency Planning Steps*

Perry and Lindell propose seven critical steps to use for the development of a plan: 1) creating a planning committee, 2) assessing risk and determining the vulnerability of the population, 3) developing lists of activities, 4) determining roles and responsibilities, 5) analyzing resources, 6) reviewing the management structure, and 7) recording the planning process[25].

Step 1: Creating the Planning Committee

The planning committee is responsible for leading the planning process. The committee should be kept to a manageable size, but needs to incorporate a representative from each participating entity[25; 26; 27]. The planning committee should write a mission statement and clearly state the purpose of the emergency plan[27; 28]. The committee should also establish a work schedule and establish deadlines for deliverables. The committee is responsible for drafting an initial budget, managing the timeline, and arranging meetings, interviews, and presentations necessary for developing the EAP[28].

Step 2: Assessing Risk and Determining Vulnerability

*Risk Assessment*

Risk assessment is determined by the following process: (1) identifying the hazard and its physical characteristics, (2) evaluating the likelihood a hazard would occur, and (3) assessing the magnitude of the hazard[29; 30]. Only when knowledge of the hazards being faced has been gathered can the nature and amount of resources needed to manage the hazard be assessed, and the effective and efficient deployment of the resources be assured[31; 32]. The National Oceanic and Atmospheric Administration's (NOAA's) Risk and Vulnerability Assessment Tool (RVAT) and the FEMA Community Risk Assessment model are two examples of good tools that can help identify and rank potential threats and establish planning priorities[33]. Even though there

are numerous models for assessing risk “regardless of the model, the assessment boils down to probability versus impact[34].”

*Vulnerability*

Vulnerability is a condition by which individuals are susceptible to or unable to cope with the adverse effects of a hazard or disaster[35]. Poor people and people living in large urban centers are highly vulnerable to disasters [36].

Ninety-eight percent of people killed and affected by natural disaster live in developing countries[36]. Poorer populations tend to live on land that is at high risk for disasters, that poses a potential threat to health, and/or that has been discarded by wealthier populations. As a result, the poor often live on floodplains, riverbanks, steep slopes, reclaimed land, highly-populated settlements of flimsy shanty towns, or land prone to flooding, droughts, or toxic waste exposure[36; 37]. In addition, poor communities lack the financial and educational resources to properly plan for emergencies. The limited resources they have are put towards basic daily needs rather than emergency preparedness. They are unable to save and invest in commodities such as emergency supplies and insurance that could help them better respond to and recover from disasters.

One risk factor that increases the vulnerability of people of all socio-economic status is living or working in a large urban center. Urban centers have a high vulnerability to disasters because: 1) their population density creates an overwhelming demand on response services during an event, 2) their large

infrastructures are dependent on services, such as running water and electricity, that are usually disrupted during emergencies, 3) there are hazardous materials at proximity, such as radiation materials from power plants, that can be released in the community during an emergency, and 4) the population lacks the preparedness to cope with a break down in basic services such as elevators, refrigeration, air conditioners, and bank machines.

Step 3: Developing an Activities List(s) and Standard Operating Procedures

Once risk and vulnerability have been assessed, the next step is to develop activities list(s) and standard operating procedures to address the defined threats and reduce vulnerability.

*Activities Lists*

Activities should be organized in exclusive lists. The name of each list should be chosen carefully and match the expectations of the users to make it easy for them to quickly locate information within the plan. For example, activities can be divided according to time (before, during, and after the emergency). This is often used for plan on slow-onset emergencies such as hurricanes. Alternatively, activity lists can be organized according to function. An example would be to divide activities into categories such as planning, operations, administration, and logistics. This type of classification is often used by EOCs. It ensures that many people are trained to perform each activity. Finally, activities can be organized according to who is responsible to perform

each category of activities. This way of organizing activities has the advantage of allowing each group to easily find the activities for which they are responsible and is commonly used by public health agencies.

A first draft of activity lists can be created using existing documents, a good literature review, observations, and a few key informants. This initial draft provides a starting point for discussion with all stakeholders. After an initial list of activities has been created, the list needs to be reviewed and modified by the various departments or programs within the organization through a series of individual and group interviews and discussions. Consensus about the accuracy, feasibility and acceptability of the list is essential to ensure that all stakeholders will perform the activities according to plan during an emergency. This is often a slow process. Heated discussions sometimes occur during this phase of the planning process. When done with respect, this step ensures that disagreements are resolved in non-emergency rather than emergency time. Until consensus is made on the list of activities, further development of the plan cannot take place.

All plans should include activities to address: 1) alerting people about an emergency, 2) communicating between staff members and with emergency responders, 3) accounting for all persons on the premise, and 4) ensuring the immediate care of the injured[28; 38].

Activities should be worded in simple, measurable, actionable, and easy to comprehend terms (Figure 1: Chapter 3). They should start with an action verb and use the least amount of words possible while still conveying a clear

message. Compound activities should be disaggregated. Activities should be written using the common language/ terminology of the organization.

*Standard Operating Procedures (SOPs)*

SOPs provide a step-by-step description of how to perform each activity. The development and use of SOPs are an integral part of a successful emergency preparedness and response plan. SOPs facilitate knowledge accuracy and consistency among staff members, aiding in decreasing miscommunication within the organization during the response [39].

Within each SOP, the person or group responsible for completing the action must be clearly specified and when possible a time frame for completion of the activity should be established. SOPs should be in the active voice utilizing the present tense (Figure 2: Chapter 3). They should be written in a concise, step-by-step format that is clear and simple to enable management, department leads, response personnel, and staff members to access and review information quickly and efficiently[28; 38]. SOPs should be tested to ensure their effectiveness and accuracy. Each organization or department should lead or play a very active role in developing SOPs for the list of activities it is expected to perform during an emergency.

Step 4: Determine Roles and Responsibilities

The plan needs to clearly define the roles and responsibilities of each stakeholder. Various organizations, departments, or people might be responsible

for the same activity. To mitigate the confusion that might arise from this, the plan should identify which group, department, or person will serve as the lead for the activity.

In assigning roles and responsibilities, each entity's regular scope of services should be considered. Activities that are normally not a part of the services an organization provides but are a natural extension of its services during emergencies are most easily added. For example, a security chief or a fire warden might be given the responsibility to coordinate all search-and-rescue operations. Assigning activities to functions rather than specific people is recommended by NIMS. A few people should be trained for each function to ensure that someone is present to perform the activity during the emergency. This is especially important in organizations with a high absence, travel or turnover rate[38].

Step 5: Analyzing Resources

"If a hazard exists and a risk exists, then resources are required to abate the hazard and to minimize the risk[40]." After risk and/or vulnerability have been assessed and stakeholders have reach consensus on the list of activities and the roles and responsibilities, planners need to assess which resources are needed and readily available. Analysis of resources entails reviewing and pairing existing resources with the correct hazard's response, and planning for missing resources. Resources vary in type. They include infrastructure and emergency equipment, as well as, people and training for staff members[41].

In some cases, required emergency preparedness and response resources will have to be purchased and/or gathered through cooperative agreements, memoranda of understanding, or mutual-aid agreements with other organization. It is preferable to have these systems in place before the emergency to ensure that supplies will be available, a payment and delivery mechanism is already in place, and that prices will be reasonable.

Step 6: Review Management Structure

In the United States, emergency preparedness and response are based on the NIMS and the NRF as directed by the President under the Homeland Security Presidential Directive 5[7; 42]. NIMS streamlines the preparedness and response efforts from the local to the federal government level. It provides an all-inclusive, unified, and systematic approach to incident management (i.e., emergency communication, standardization in resource management, and operations)[43]. Basic principles of NIMS can be integrated to the planning process even in countries that have not formally embraced this system to manage emergencies. Planners should only use NIMS principles that are compatible with the stakeholders' normal operations.

Step 7: Record the Planning Process

The planning process can be recorded through the changes of record, written agreements, and after-action reports (AARs). All modifications to the plan, including the time, date, and person making the changes, are captured in a

section called “the records of change.” The records of change are especially useful to ensure that the plan is being updated at least once a year, and to identify people who have an historical understanding of the plan and its development[7]. Exercises are used to test the plan. Each exercise should include the writing of an AAR that states the strengths and weaknesses of the plan when put in practice. Lessons from the AAR should be integrated in the plan and be listed as a change in the changes of record.

In addition to the seven steps, Lindell and Perry, Quarantelli, and Alexander each proposed their own 10 principles for emergency planning practice, whereas Rockett created 19[26; 44; 45; 46]. Eight principles were similar between all of these lists of principles. These eight principles should always be kept in mind while planning for emergencies.

***The Eight Principles of Emergency Planning[26; 44; 45; 46]***

1. Emergency planners should anticipate and address active and passive resistance to the planning process, prior to assessing risk and vulnerabilities, and should develop strategies to assuage the resistance.
2. Planning in the preparedness phase should be flexible enough to include all potential hazards.
3. Planning should clearly state defined responsibilities and agreements, as well as, participation among all stakeholders.

4. Planning needs to be derived from accurate assumptions about potential hazards, past and anticipated experiences and human reactions, and potential mutual-aid agreements and/or external support.
5. EAPs should identify the types of activities that seem most likely to be appropriate but encourage review and adaptation of these activities on continual bases.
6. Effective planning requires identifying risks and existing hazards and their potential impact on the community or organization. It should address the linkage of emergency response to recovery and hazard mitigation.
7. Planning should allow for the training of staff and the evaluation of the plan and of the emergency response at all levels (e.g., organizational, departmental, and individual).
8. All stakeholders should realize that emergency planning is a continuous process.

There is overlap between the aforementioned emergency planning steps and the eight principles. Six of the principles are addressed by Perry and Lindell's seven emergency planning steps[25]. The first principle, which is not mentioned in the emergency planning steps, captures the impact that resistance and lack of preparation can have on the planning process. It affirms that planners must be prepared to address opposition and staff members' fears,

especially when developing the activities and determining who (what position/department) will be responsible for a given activity.

## Section 2: Challenges of Emergency Planning

Planning for emergencies is a challenging task. Several factors, such as limited funds, inconsistency in terminology, lack of empirical data on the impact of planning, and little public education on emergency planning and preparedness, contribute to the challenges in comparability of various planning techniques and consensus on “best practices”.

### *Limited Funds*

International conferences and meetings on disaster preparedness, risk reduction, and the management of global threats are common. Well known examples include the United Nations and U.S. Agency for International Development’s Towards a Safer World Initiative, WHO’s Humanitarian Health Action, and the United Nation Educational, Scientific, and Cultural Organization in conjunction with its International Strategy for Disaster Reduction’s Global Platform for Disaster Risk Reduction[48; 49; 50]. However, despite this increase in global ideological support for emergency preparedness, emergency response still receives the majority of the funds [51; 52]. Also, even if emergency planning is heavily discussed in conferences and meetings, countries in most need for good emergency planning are often the ones that have the least resources and funds to spend on planning.

In addition, new trends in the allocation of funds to non-governmental organizations often encourage competition for funding[53]. Competing organizations, independent researchers, and institutions are less likely to collaborate, coordinate, and freely share information. Collaboration, coordination, and transparency are essential to the development of effective plans[54].

***Lack of Data and Language Uniformity***

Emergency preparedness and response involves stakeholders from a wide variety of fields and expertise. Each field has its own culture, focus, concepts, tools, and research and data analysis methods. Each field and organization tailors its metrics, data, training, and response to fit its specific mission and needs[51]. This lack of data uniformity makes it difficult for researchers, preparedness professionals, and policy-makers to identify “best practices” and to base programs on empirical data[51; 55].

The lack of a common terminology makes it difficult to even conduct a thorough literature review of the topic[51]. For example, many authors use terms like disaster preparedness, emergency preparedness, hazard mitigation, and disaster reduction interchangeably[52]. Without agreement on the terminology, preparedness studies and experimentations remain inconclusive[56].

### *Difficulty in Assessing the Impact of Emergency Planning*

Ideally, every emergency should be used as an opportunity to assess the impact of previous emergency planning efforts[57]. This is easier said than done. First, in an emergency, the focus is on saving lives rather than assessing the process. Second, even when documented, comparing the same type of emergency, for example two consecutive typhoons in Thailand, is difficult. The difficulty is increased significantly when attempts are made to compare different levels of response, responder groups, disaster type and size, and emergency management systems. The uniqueness of every community and every disaster makes it difficult to draft "best practices" that apply to most emergencies, and slows down the building of empirical evidence[56].

### *Lack of Public Education*

Education can drastically increase individual and community preparedness and planning for disasters [58; 59]. Families and individuals would benefit from having an emergency plan, but few people feel comfortable and driven to develop their own plan, to ensure it is known by every family member, and to maintain appropriate stocks of water, food, and other emergency supplies[59]. Education could be used to increase an individual's willingness to prepare for emergencies. An informed population would facilitate the challenging work of the response community.

**Section 3: Application of this Knowledge in TUC's EAP**

Developing plans is an essential component of emergency planning. Plans provide an overall organizational structure and strengthen leadership at every level by identifying specific roles, responsibilities, and activities for all stakeholders involved in preparedness and response[7; 60]. Plans allows organizations, such as TUC, to establish a common understanding and use of their emergency response capabilities [43; 60], and to develop a systematic program to train individuals, teams, departments and programs[60].

The TUC EAP planning process followed Perry and Lindell's seven steps for plan development and the eight guiding principles mentioned in Section one. The plan is in the process of being revised based on new information and recent analysis of capabilities. The response activities found within the EAP were fashioned, as all of the CDC emergency operation plans are, after NIMS, which has been tested both nationally and internally at CDC and proven reliable and flexible enough to handle different hazards.

**Summary**

Emergency preparedness is accomplished through a continuous planning process[25]. Quarantelli, Rockett, Lindell and Perry, and Alexander developed varying numbers guiding principles in plan development. Eight principles are found in all of these guiding principle lists[26; 43; 44; 45; 46]. There is considerable overlap between the seven steps and these eight principles.

Planners should keep in mind these two sets of guidelines to increase the quality and usability of plans.

Emergency planning is an essential part of emergency preparedness. Emergency plans should guide the response and decrease the impact of hazards on people, organizations, and the community. This calls for increased collaborations between emergency preparedness professionals, planners, researchers, community leaders, and policy-makers. Challenges such as limited funds, a lack of data and language uniformity, difficulty assessing the impact of emergency planning, and a lack of public education hamper the impact of emergency planning. Much still remains to be done before researchers, organizations, institutions, and communities can claim to have mastered the science and application of emergency planning.

# Chapter 3: TUC's EAP Document

## Overview of TUC's EAP Contents

The TUC EAP was developed to protect the lives and wellbeing of CDC staff members working in Bangkok during emergencies. The EAP will be used as a guide for emergency drills and exercises, and to respond to future emergencies.

## Sections of the EAP

The EAP's first few pages include a cover page, a table of content, and records of revisions. The remaining of the EAP is divided into six sections: 1) situation, 2) mission, 3) execution, 4) administration, resources, and funding, 5) oversight, coordination, and communication and 6) attachments. The plan is supplemented with attachments and annexes.

### *Situation*

The first section, titled "Situation" describes the circumstance in which the EAP was developed. It states the purpose of the EAP, which is to "detail TUC's preparedness and response activities for internal and external emergencies." The section provides background information, including the history of the GDD regional center and the exact location from various landmarks in Bangkok. It lists the threats to Thailand and the TUC.

The development of the plan is made on a series of assumptions that cannot be verified until an emergency occurs. For example, one assumption is that communication between the U.S. Embassy, CDC-Atlanta, and TUC can be maintained prior, during, and after an emergency. Another is that during an internal emergency, TUC staff members are likely to be the first to be on-site to respond to the emergency. One more assumption is the Country Director will be the lead during an emergency and if he or she is not available, then the Country Director's appointed designee will lead the response. There are nine assumptions included in the Situation section.

***Mission***

The second section, **"**Mission,**"** simply states the mission of TUC. The mission of the TUC office is to "promote the development and strengthen the global public health capacity to rapidly identify and contain disease threats through outbreak response, pathogen discovery, training, surveillance, and networking[10]." TUC's mission supports the CDC's mission to "collaborate to create the expertise, information, and tools that people and communities need for healthy living, through health promotion, prevention of disease, and preparedness for new health threats[61]."

***Execution***

The **"**Execution**"** section provides lists of activities to be performed by TUC personnel in preparation for or in response to an emergency. Activities are

grouped according to program and function. There are 15 groups with separate activities lists:

1. All Staff members
2. Program Directors
3. Country Director
4. IEPT's International Public Health Emergency Advisor (IPHEA)
5. Business Support Office (BSO)
6. TUC Human Resources (HR)
7. Information Technology (IT)
8. Motorpool
9. GAP
10. IEIP/GDD
11. IEIP Laboratory
12. FETP
13. Division of HIV/AIDS Prevention (DHAP) Laboratory
14. IRMHP-DGMQ
15. Floor Monitors and Floor Wardens

Within each list, activities were divided into two categories: preparedness and response. Activities were also color-coded to identify their stage of development. Activities tagged in red have not been confirmed by the unit lead nor had a corresponding SOP. Yellow-tagged activities have been confirmed by the unit lead but did not have an SOP. The activities with green tags have been confirmed by the SMEs and had a corresponding SOP ready for testing.

Many activities were coded in yellow and red. When activities are confirmed by the SMEs, their color is changed from red to yellow. Once the SOP is developed, it is changed from yellow to green. In an effort to help prioritize the work that remained to be done before all activities could be coded in green, activities that were considered more urgent for confirmation and for SOP development were bolded.

Below is the current list of common activities that are under the responsibility of all TUC programs and staff members. This list illustrates the division of activities into the two categories of preparedness and response, the color-coding system, and the use of bolding to prioritize activities. From this list one can conclude that "having an updated copy of the departmental phone tree" is considered a priority for emergency preparedness, has been confirmed by all TUC staff members as being a needed activity, and that an SOP that explains how this activity is performed has been developed.

| *Figure 1: Common Activities for All TUC Staff members* | |
|---|---|
| **Preparedness** | |
| | Read emergency preparedness and response section in the orientation packet |
| | Participate in emergency drills and safety training |
| | Update contact information with TUC HR |
| | **Have updated copy of departmental phone tree** |
| | Provide and update vaccination history with TUC HR |
| **Response** | |
| | Evacuate building or shelter in place-depending on the type of emergency |
| | Report emergency |

SOPs are written using bullets that provide a step-by-step procedure to accomplish the activity. Below is the SOP for the activity "Have updated copy of departmental phone tree."

*Figure 2: SOP for "Have Updated Copy of Departmental Phone Tree"*

**Task #4: Have an updated copy of departmental phone tree**
**Responsibility: Preparedness**
**Description**

- Phone trees located in the Emergency Preparedness and Response Section of Orientation Packet.
- Look on the TUC shared drive (:L) for most updated copies.
- Print out 3 copies of your department's phone tree.
- Place one copy on your desk, next to your phone.
- Take a copy home and place next to your house phone or wherever your important phone numbers are located.
- Carry the third copy in your personal belongings, e.g. purse, book bag, etc.

The lists of activities and SOPs developed for this plan are used as agreed upon guidelines to protect the health and lives of TUC staff members. They will not be used to assess individual accountability or evaluate staff members' individual performance.

### *Administration, Resources, and Funding*

The fourth section, **"**Administration, Resources, and Funding,**"** describes the mechanisms regarding finance and procurement, personnel augmentation and deployment, demobilization of resources, information technology, and information security.

This section was not completed. Administrative staff members explained that they are planning to use regular administrative procedures during

emergencies. If regular procedures are used, there is no need to include them in the emergency plan, as these procedures are already explained in the regular operations protocols.

### *Oversight, Coordination, and Communication*

The fifth section is titled **"**Oversight, Coordination, and Communication.**"** Oversight includes a description of the information flow. Coordination provides information on the mechanisms used to ensure internal and external coordination of response activities. Communication includes information about TUC's communication and networking capacities, and redundant systems. It defines how these capabilities and systems will be used during an emergency. This section addresses TUC's role in developing and providing the MOPH with risk communication support. It also provides the standard protocols for media communication, such as the "10 Golden Rules of Dealing with the Media."

Like the "Administration, Resources, and Finances" Section, this section has not been completed. IT and BSO plan to use the emergency communication activities in the Execution section and the Communication Annex to complete the Communication portion of this section. The Country Director and IEPT IPHEA plan to develop the Oversight and Coordination portion later this year.

### *Attachments*

The EAP's final section, Attachments, contains various support documents, many of which were reference throughout the previous sections. All

of the attachments are included to make key information and forms easy to access and use. They include: 1) detailed maps of the MOPH/TUC compound, 2) evacuation maps, 3) location of safety and emergency equipment, 4) departmental phone trees, 5) the EAP's acronyms list, 6) CDC-Atlanta contact information, 7) timelines, 8) checklists, and 9) additional guidance regarding actions for preparedness and response to emergencies.

Examples of Attachments

*Incident Review Timeline*

Every emergency should be followed by a review of lessons learned during the incident to improve the effectiveness of the EAP. The Incident Commander (IC) and Emergency Action Committee (EAC) use the Incident Review Timeline (Figure 3) following the end of the emergency. It provides a detailed list of activities with the responsible party and an appropriate timeline for completion of various post-emergency review tasks.

*Incident Review Checklist*

The IC is responsible for conducting the debriefing or formal incident review after the emergency response concludes and resources are demobilized. During the incident review, the EAC and IC discuss what went well, lessons learned, and activities to improve response procedures. An Incident Review Checklist (Figure 4) provides suggested discussion topics, such as assessment,

mobilization and use of resources, and response strategy, which assist in identifying strengthens and recommendations for improvement.

***Annexes***

Annexes are more elaborate than attachments and support the EAP by adding more detail on specific types of emergencies. They are like small plans within a plan. The annexes are placed at the end of the EAP to avoid breaking the flow of the main part of the document. For example, the Infectious Diseases Emergency Annex provides guidance for TUC staff members when dealing specifically with pandemics. The Infectious Diseases Emergency Annex contains a list of activities and corresponding SOPs that are not in the EAP document covering all types of disasters, and only apply to infectious diseases. Examples of infectious disease activities for which SOPs were developed are: 1) Train staff for Infectious Disease Emergencies, 2) Provide Personal Protective Equipment (PPE) for infectious diseases, and 3) Provide immunizations and post-exposure prophylaxis to staff.

Similarly, the Bomb Annex provides guidance for TUC to deal with a threat of a bomb or the discovery of a suspicious package that could be a bomb. Activities within this annex are organized according to the following sections: 1) Bomb Threat, 2) Bomb Search, 3) Discovery of a Suspicious Package, and 4) After Emergency Actions. The complete list of annexes accompanying the TUC's EAP is located in the Appendix.

**EAP Content Summary**

TUC's EAP is divided into six sections. The Execution section contains 132 emergency preparedness and response activities. SOPs are being developed for over 100 of the 132 activities. There are currently ten annexes associated with the EAP. In the current version of the EAP, the "Administration, Resources, and Funding" and the "Oversight, Coordination, and Communication" sections are at the beginning stage of development.

# Chapter 4: Methodology

## Prior to departure for Thailand

A template for the EAP was drafted at CDC-Atlanta, prior to the Emory-Rollins' School of Public Health student researcher travelling to Thailand. The EAP follows guidelines proposed by the NRF. Following the seven steps of plan development, a planning committee was selected[25]. The planning committee consisted of emergency planners (IEPT Lead and the Emory student researcher) and two office stakeholders (IEIP/GDD Director and IEIP Public Health Advisor). In addition, the IEPT IPHEA had a dual role as an emergency planner and an SME.

While in Atlanta, the Emory student researcher determined the potential vulnerability of the TUC offices. Information about tsunamis and coastal flooding in Thailand was gathered from NOAA. The RVAT was used to assess community's resilience concerning tsunamis and other national hazards in the Gulf of Thailand. Information about previous nation-wide human-made and biological emergencies and their impact was gathered from various sources, such as the Central Intelligence Agency's Factbook, Relief Web, and the WHO. This information was used to complete the "Situation" section of the EAP, prior to entry into Thailand.

## In Thailand

### *Development of Execution Section*

Most of the work done in-country to develop the EAP revolved around creating lists of activities, determining roles and responsibilities, and producing SOPs. The following steps were followed:

1. Review pre-existing TUC safety procedures and emergency SOPs
2. Combine notes with activities lists from the EAPs of the CDC-GDD regional centers in Guatemala and Kenya and observational data from the IEPT IPHEA during previous emergencies to create a tentative list of activities for program directors' review prior to their interviews
3. Develop comprehensive list of interview questions including general questions about office safety and emergency preparedness trainings
4. Provide questions to staff members prior to their interviews
5. Interview the program directors and SMEs, including the current Safety Officer, the two scientists within the Biosafety Committee, the IEPT IPHEA, and the IEIP's safety and emergency training coordinator, for information on
    a. Proper usage of emergency and safety equipment
    b. Lessons learned from previous emergency situations

c. Emergency preparedness and response activities their program performed daily during normal TUC operations and how these activities vary during an emergency
d. Key emergency POCs at MOPH and the U.S. Embassy to be included in the emergency contact list of the EAP
e. Frequently used documents to be included in the EAP for easy access during an emergency
    i. Departmental phone trees
    ii. Emergency communication templates
    iii. Evacuation map, etc.

6. Compile initial interview notes
    a. Within 24 hours of interview, the notes were emailed to all participants for review (asked for 72-hour turn around)
    b. Finalized copy of notes were saved to the TUC shared drive with a hardcopy filed with the IEIP Public Health Advisor
7. Develop activities lists for the EAP and identify known gaps in preparedness
8. Confirm activities lists with program directors and SMEs
9. Color-code and bold activities according to SMEs' recommendations
10. Generate SOPs for agreed upon activities
11. Email program directors and SMEs to obtain clarifications and ensure SOPs are correct

12. Generate questions for activities pending approval from program directors and SMEs
13. Review observational data and interview notes and make recommendations for improving the plan

***Collection of Observational Data***

In addition to the interview process, observations were made on each program and on the building where TUC resides. Per Step 5 of the Emergency Planning Process, on-site emergency and safety equipment were inspected for proper functioning, expiration date, and ease of accessibility. Evacuation stairwells were checked to ensure that there were no obstructions and that all doors could be opened.

**Prior to departure from Thailand**

The first draft of the EAP with accompanying annexes was presented to the IEIP/GDD Director and the IEIP Public Health Advisor. The documents were reviewed and the IEPT IPHEA made tentative plans for continuing the development of the plan. A meeting was scheduled with the CDC Country Director to provide an update on the development status of the EAP and provide a tentative timeline for the EAP's completion.

**Post-departure**

The Emory researcher continued to update the EAP. The IEPT Lead and staff members at CDC-Atlanta reviewed the final first draft.

**Remaining Actions**

Significant work and decisions must be made in-country to develop the remaining sections of the EAP: 1) “Administration, Resources, and Funding” and 2) “Oversight, Coordination, and Communication.” More internal discussions between staff members need to occur before consensus can be reached on who will be responsible for many of the activities that will be performed during an emergency. Once who will be responsible has been assigned, SOPs will need to be developed. To speed up this process, SOPs were created and questions and suggestions where included as placeholders inside incomplete SOPs.

By the end of the fiscal year, many of the persons who are currently in key positions will be relocating (e.g., the Country Director, IEIP/GDD Director, and the IEPT IPHEA). Also, there will be a new BSO Lead, as well as, a new Director for the IEIP Laboratory/ Head of the Biosafety Committee. Thus, the plan will need to be reviewed and approved by the new staff members. Also, the EAP development was conducted before the floods of 2011. The floods can provide insights on what activities and procedures are realistic. Lists of activities and SOPs should therefore be reviewed in light of this new experience.

Once completed, the EAP will need to be regularly updated and tested through tabletop exercises. IEPT IPHEA is responsible for the maintenance and future development of this plan. The IEPT IPHEA works in collaboration with the Country Director, the IEIP/GDD Director, program directors, SMEs across TUC, and IEPT at CDC-Atlanta to complete, review, and test this plan.

**Internal Review Board Note**

According to the CDC and Emory Internal Review Board protocols, approval was not needed for the development of this EAP, as it does not include research on human subjects.

# Chapter 5: Conclusion

## Reflections on the Development of TUC's EAP

The seven steps for plan development and the eight guiding principles provided a useful framework for the development of the EAP. Having a template and doing the vulnerability assessment prior to the in-country visit also helped the process.

The in-country interview process was not as easy as expected. TUC staff members use a lot of acronyms. Many of these acronyms were department-specific and staff members were only familiar with their own departmental acronyms. It would have been useful to have a pre-written list of acronyms to use as a reference during the interviewing process.

More should have been done to inform staff of the interviews purpose, process, and importance. Many interviewees were unsure what they needed to do to be helpful in completing the plan. A sample EAP from another GDD regional center was presented to the first few interviewees, but this sample created more confusion than clarity. Thus, in later interview sessions, only preliminary activities lists and prompting questions were provided to the interviewees. Many interviewees mentioned they expected the U.S. Embassy to be in charge of TUC emergency response and therefore did not see the relevance of having a separate plan for the office.

With the addition of many new senior staff members, the purpose and importance of the EAP will need to be convincingly presented again to ensure

buy-in from these members. As new staff members join TUC, efforts need to be made to ensure that new staff members are encouraged to participate in the planning, reviewing, and exercising process. Convincing the staff might be easier after the recent flooding. Major flooding prevented the majority of the staff members from going to work for several weeks. Flooded roads made it difficult for the Embassy to assist TUC, confirming the need for TUC to have a plan separate from the EAP of the US Embassy.

The floods also highlighted the importance of communication between TUC leadership, staff members, CDC-Atlanta, and key response organizations. One successful way TUC leadership communicated with the staff members during the floods was by sending short messages to personal cell phones. TUC was also able to use the EAP's contact list to maintain communication with staff, their partners at MOPH, RTG, Royal Thai Police, U.S. Embassy, WHO, and other entities. Successful communication procedures should be included into the "Oversight, Coordination, and Communication" section of the plan.

The majority of interviewees were able to provide insight into how previous emergencies were handled at TUC. The recent floods provided insight on needed activities and SOPs that were not needed in previous disasters. CDC-Atlanta had to expedite emergency supplies, such as chlorine tablets and meals-ready-to-eat to, TUC because the office lacked the necessary provisions to support critical staff members required to work. It was not clear how and by whom the costs incurred should be paid. The shipment was held in customs before reaching the TUC offices due to improper labeling. Having country-

specific customs guidelines would have helped CDC-Atlanta streamline shipment of any emergency items. TUC will now create SOPs that cover customs regulations for the reception of materials from CDC-Atlanta during an emergency.

**Summary**

The EAP outlines the activities and procedures that need to be performed by TUC's staff to ensure own safety and ensure the continuity of TUC's operations during an emergency. It clearly defines the TUC staff position(s) responsible for performing emergency activities and provides step-by-step instructions on how to properly complete these activities. Since emergency planning is a continuous process, the EAP will have to be continuously updated in order to remain effective and useful.

Working at the CDC-GDD regional center's offices in Thailand illuminated the importance of properly preparing for any emergency. The floods experienced in Thailand are a perfect example of why an emergency action plan needs to be easy to use, well thought out, and updated regularly. No situation will evolve exactly as planned, but with a rigorously continual preparedness program, TUC will be able to adapt the EAP to the evolving situation and respond effectively.

**Recommendations**

The floods experienced in Bangkok provided a natural opportunity to exercise the EAP. It would benefit the TUC staff members to take this opportunity to discuss the strengths and weaknesses of their response, and

incorporate any necessary changes into the EAP. These changes could include updates to activity lists, SOPs, and contact information. Once the EAP is updated and shared with staff members and CDC-Atlanta, it should also be shared with the regional safety officer at the U.S. Embassy in Thailand to ensure that the EAP is in compliance with the U.S. Embassy's EAP.

After the initial plan is finalized, a one-hour introductory training should be provided to all current staff members working at TUC. This would offer the staff members to become familiar with their potential roles and responsibilities in before and during a response. Under the guidance of IEPT, tabletop exercises should be conducted to practice and test the updated emergency action plan. The tabletop exercises would ensure the EAP is adequate for the situation at TUC and that all members understand their role and responsibility.

It would be advantageous for TUC to continue to allow Emory student researchers to come annually and work on the EAP and the further development of an emergency preparedness program. For example, in the summer of 2012, the student researcher could help propel the current version of the EAP into the second drafting process. He or she would provide a fresh prospective and energy that can be used to ensure a continuation of the process. For the student, this would be a good opportunity to contribute to the safety and protection of people dedicating their lives to public health.

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## Tables and Figures

Figure 3: INCIDENT REVIEW TIMELINE

| Action | Responsibility | Timeline |
|---|---|---|
| 1. Coordinate with EAC to lead incident/ EAP review process | Incident Commander | Before response termination |
| 2. Collect all incident information/ documentation | EAC | At response termination |
| 3. Conduct an initial debriefing session with TUC staff involved in the response to the incident (e.g. Floor wardens/monitors) | IEPT IPHEA/ Incident Commander | Within 24 hours |
| 4. Submit Sitreps to CDC-Atlanta | Incident Commander | Within 24 hours |
| 5. Determine if additional incident details are necessary. If so, conduct follow-up incident research. If not, proceed to step 8. | IEPT IPHEA/ Incident Commander | Within 24 hours |
| 6. Identify TUC Staff and other individuals to be interviewed as part of the incident research; Identify methods of gathering information: In-person interviews, telephone calls, or survey/questionnaire | IEPT IPHEA | Within 5 days |
| 7. Conduct interview and compile incident research data | IEPT IPHEA/ Designated EAC members | Within 7 days |
| 8. Write the draft incident after action report | IEPT IPHEA | Within 14 days |
| 9. Submit draft incident after action report to senior management for their review. Incorporate their edits and comments. | IEPT IPHEA | Within 30-59 days |
| 10. Submit final incident after action to Country Director and make necessary EAP modifications. | IEPT IPHEA | Within 60 days |

## Figure 4: INCIDENT REVIEW CHECKLIST

The Incident Commander (Country Director) is responsible for the incident review. During the incident review, the EAC (Core Leadership Team headed by the IEPT IPHEA) and Incident Commander discuss what went well, lessons learned, and activities to improve response procedures. This checklist provides suggested discussion topics to assist in identifying strengths and recommendations for improvement.

**DISCOVERY**

- ☐ How was the incident detected? By whom?
- ☐ Are improvements needed in incident detection? Could the incident have been detected earlier?
- ☐ Are there any equipment or procedures which might aid in incident detection in the future?

**NOTIFICATION**

- ☐ Were procedures followed in notifying appropriate response staff?
- ☐ Were procedures followed in notifying external agencies? Are improvements needed?
- ☐ Are improvements needed in providing initial incident information? Was the information accurate?
- ☐ When was the Incident Commander/ EAC notified? Are improvements needed in promptness?
- ☐ Are improvements needed in notifying TUC staff? Was the Phone Tree followed?
- ☐ Were all telephone and cellular phone numbers accurate?

ASSESSMENT

- ☐ What was the assessment of the magnitude of the incident when it started? Are improvements needed in determining an incident's potential?
- ☐ What means were used for this assessment? Who led the assessment?
- ☐ Are there any guides or aids needed to assist with incident evaluation?
- ☐ What sources or information were available on environmental conditions, such as winds and other weather conditions? How was this information used?
- ☐ Was the information needed to make informed decisions and incident forecasting available?
- ☐ Was the information needed on the facility and hazard available?
- ☐ Is additional information required for the facilities and hazards? What information is still needed?

MOBILIZATION AND USE OF RESOURCES

- ☐ What resources were mobilized?
- ☐ How were they mobilized?
- ☐ How did resource utilization change as the incident response progressed? Why?
- ☐ What other TUC resources were available and how were they used?
- ☐ What other resources were available to the TUC and how were they used?
- ☐ Could the use of resources have been improved?
- ☐ What additional resources could have been used? Where could they be obtained?

RESPONSE STRATEGY

- ☐ What established plans were used to respond to the particular incident? Are improvements needed?
- ☐ Are additional plans needed to cope with unexpected incident events?
- ☐ What was the initial strategy for response to the incident?
- ☐ Was this strategy defined in the Emergency Action Plan?
- ☐ Could the initial incident response strategy have been improved?
- ☐ How did the strategy evolve and change during the incident response? How were these changes implemented?
- ☐ What caused the changes?
- ☐ Is additional training needed?

RESPONSE MANAGEMENT SYSTEM

- ☐ What groups responded to the incident (e.g. Floor Wardens/Monitors)?
- ☐ How can the response organization be improved?
- ☐ Are improvements needed to surveillance for managing the incident?
- ☐ What were the primary means of communication? Are communication improvements needed?
- ☐ What about hardware and software improvements?
- ☐ Are improvements needed in financial services support and promptness?
- ☐ Are improvements needed in planning support and promptness?
- ☐ Are improvements in the safety response operations needed?

## Acronyms

| Acronym | Meaning |
|---|---|
| AAR | After Action Report |
| BSO | Business Support Office |
| CDC | U.S. Centers for Disease Control and Prevention |
| CDC-Atlanta | CDC Headquarters in Atlanta, Georgia |
| DGMQ | Division of Global Migration and Quarantine |
| DHAP | Division of HIV/AIDS Prevention |
| EAC | Emergency Action Committee |
| EAP | Emergency Action Plan |
| EOC | Emergency Operations Center |
| FEMA | Federal Emergency Management Agency |
| FETP | Field Epidemiology Training Program |
| FSN | Foreign Service National (locally employed staff members) |
| GAP | Global AIDS Program |
| GDD | Global Disease Detection |
| HR | Human Resources |
| IC | Incident Commander |
| ICS | Incident Command System |
| IEIP | International Emerging Infections Program |
| IEPT | International Emergency Preparedness Team |
| IPHEA | International Public Health Emergency Advisor |
| IRMHB | Immigrant, Refugee, and Migrant Health Branch |
| MOPH | Ministry of Public Health |
| NIMS | National Incident Management System |
| NOAA | National Oceanic and Atmospheric Administration |
| NRF | National Response Framework |
| RTG | Royal Thai Government |
| RVAT | Risk and Vulnerability Assessment Tool |
| SME | Subject Matter Expert |
| SOP | Standard Operating Procedure |
| TB | Tuberculosis Program |
| TUC | Thailand MOPH/US-CDC Collaboration; CDC's Global Disease Detection Regional Center in Thailand |
| WHO | World Health Organization |

## Glossary of Terms

1. **All-Hazards:** Any incident, natural or human-made, that warrants action to protect life, property, environment, public health, or safety to minimize disruptions of government, social, or economic activities[12].
2. **After Action Report (AAR):** Any form of retrospective analysis on a given list of actions previously undertaken. For TUC, an AAR will assess the usefulness of specific activities within the Emergency Action Plan either post emergency response or after preparedness exercises and/or drills.
3. **Assessment:** The evaluation and interpretation of measurements and other information to provide a basis for decision-making.
4. **Continuity of Operations**: The portion of an Emergency Action Plan that identifies possible or probable and unlikely events and the contingency resources needed to mitigate those events[62].
5. **Emergency**: Any incident, natural or human-made, that requires responsive action to protect life or property. Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, an emergency means any occasion or instance for which, in the determination of the U.S. President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the U.S.; (used interchangeably with disaster, in this document)[12].

6. **Emergency Action Committee (EAC):** An advisory group to the Incident Commander during an emergency response. For TUC, this group, headed by the IEPT IPHEA, will consist of all program directors. The alternative members will either be the Deputy Program Director or lead-program SME. The EAC will be responsible for full TUC participation and completion of emergency preparedness activities. The particular responsibilities for the EAC include oversight and support of the designated incident commander to ensure he or she has the time, tools, and participation needed to conduct a successful emergency intervention.
7. **Emergency Action Plan (EAP)**: A written plan containing general objectives reflecting the overall strategy of managing all-hazards. It may include the identification of operational resources and assignment. It may also include attachments that provide direction and important information for management of the incident during one or more operational periods; also known as an Incident Action Plan[12].
8. **Hazard:** Something that is potentially dangerous or harmful, often the root cause of an unwanted outcome[12].
9. **Incident:** An occurrence or event, natural or human-made, which requires an emergency response to protect life or property[12].
10. **Incident Commander (IC):** The individual responsible for all incident activities, including development of strategies and tactics and the ordering and release of resources. The IC has overall authority and responsibility

for conducting incident operations and is responsible for the management of all incident operations at the incident site[12].

11. **Incident Command System (ICS)**: A standardized, on-scene emergency management construct specially designed to provide for the adoption of an integrated organizational structure reflecting the complexity and demand of single or multiple incidents, without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to aid in the management of resources during incidents. It is used for all kinds of emergencies and is applicable to small, as well as, large and complex incidents. ICS is used by various jurisdictions and functional agencies, both public and private, to organize field level emergency management operations[63].
12. **International Emergency Preparedness Team (IEPT):** Nested in International Emergency and Refugee Health Branch in the Center for Global Health at CDC-Atlanta, the team works on developing strong and effective emergency preparedness programs at the CDC-GDD Regional Centers and CDC partners, such as the Ministries of Health/Public Health. IEPT members prepare emergency plans and hold exercises in countries around the world. In addition, the IEPT responds to international emergencies, such as the Pakistan floods and earthquake in Haiti[64].
13. **National Incident Management System (NIMS):** Emergency management doctrine used in the U.S. to coordinate emergency

preparedness, hazard management, and response among all levels of government, nongovernmental organizations, and private sectors. NIMS provides an all-hazards template for the management of hazards that is scalable and flexible[47].

14. **National Response Framework (NRF):** A guide for how the U.S. conducts all-hazards response. It is built upon coordinating organization that is adaptable and scalable, nationally aligning key roles and responsibilities, linking all levels of government, nongovernmental organizations, and private entities[7].
15. **Preparedness:** A continuous cycle of planning, organizing, training, equipping, exercising, evaluating, sand taking corrective action in an effort to ensure effective coordination during an emergency response. Within NIMS, preparedness focuses on the following elements: planning, procedures and protocols, training and exercises, personnel qualification and certification, and equipment certification[12].
16. **Response:** Refers to immediate actions to save lives, protect property and the environment, and meet basic human needs. Response also includes the execution of emergency plans and activities to support short-term recovery[7].
17. **Risk assessment tools**: Assists in the process of identifying and quantifying risk to a particular set of assets or processes and determining the impact. For example, the *RVAT by NOAA* focuses on assessing only critical facilities using several steps to determine a rank order based on

hazard, risk area, damage history, and structural and operational vulnerability. The ranking produces a numeric score and provides an objective scheme for determining response priorities[30; 33].

18. **Standard Operating Procedure (SOP)**: Document that provides the authorities, duration, and step-by-step details for the preferred method of performing a single activity.

## Final Note

Due to the sensitivity and confidentiality associated with some of the materials included in the EAP, the complete document cannot be included in this Special-Studies Project, but representative examples were provided when possible. TUC's EAP gives insight into the emergency preparedness and response activities needed to ensure the safety of TUC staff members and the continuation of essential TUC operations during a given emergency. For further information about TUC's EAP, to request permission to review the plan, and/or to gain insight into the role of the researcher in the development of the EAP, please contact Dr. Lise Martel or Emily Frant at the International Emergency and Refugee Health Branch in the Coordinating Office for Global Health at the CDC.

# Appendix

## *Media Communication Standard Protocols*

- Based on the lessons learned from exercises and real events CDC has agreed upon the media communication standard protocols listed below:
- Do not release the names of the injured or deceased.
- Follow the “10 Golden Rules of Dealing with the Media”
    1. Never lie.
    2. Never say “no comment.”
    3. It’s never “off the record.”
    4. Keep your answers short and focus on the audience.
    5. Stay calm and confident.
    6. Use simple language – avoid acronyms or jargon.
    7. Stay in control.
    8. It’s acceptable to say, “I don’t know, but I’ll find out.”
    9. Don’t speculate.
    10. Be conscious of reporters’ tactics.

## Annexes

### *Infectious Disease Emergency*

This Annex provides guidance for TUC staff members when dealing with biological emergencies. The following SOPs are contained within this Annex: 1) Train staff for Infectious Disease Emergencies, 2) Provide Personal Protective Equipment (PPE) for infectious diseases, and 3) Provide immunizations and post exposure prophylaxis to staff.

### *Biosafety*

This Annex provides guidance for TUC's laboratories in dealing with hazards in the laboratory.

### *Bomb*

This annex provides guidance for TUC to deal with a threat of a bomb or the discovery of a suspicious package that could be a bomb. Activities within this annex are organized according to the following sections: 1) Bomb Threat, 2) Bomb Search, and 3) Discovery of a Suspicious Package, and (4) After Emergency Actions.

### *Civil Unrest*

This Annex provides guidance for TUC staff members, when dealing with civil unrest. The SOPs are organized according to the following categories: (1) Situation Not Targeting TUC staff members or MOPH, (2) Peaceful Protest Targeting TUC staff members or MOPH, and (3) Violent Situation Targeting TUC staff members or MOPH.

### *Communication Systems*

This Annex contains the forms for collecting information on the communication systems operating at TUC. Below is the list of forms that are contained in this Annex:

- Information Technology Program
- Emergency Communications
- TUC Telephone System Information
- U.S. Embassy Pertinent Telephone Information
- Web-Hosting and Internet Access

***Fire Emergency***

This Annex provides guidance for TUC staff members, when dealing with a fire emergency. Fire, heat, and smoke develop with amazing speed within a building; thus it is critical that occupants are familiar with these procedures before a fire emergency. Activities and SOPs are organized according to the phases of a fire emergency: (1) Discovery of a Fire, (2) Arrival of Fire Firefighters, and (3) After Emergency Actions.

***Reduction to Critical TUC staff members***

This Annex provides guidance for TUC to follow when considering or implementing a reduction to critical TUC staff members or actions short of an evacuation. It consists of two sections: (1) Evaluation and Organization of Staff members Reduction and (2) Notifications.

***TUC/MOPH Perimeter Breach***

This Annex provides guidance to safeguard the lives of TUC staff members when a breach of the TUC/MOPH compound perimeter occurs that requires a TUC response. The SOPs are organized according to the following categories: (1) Threat of a Breach, (2) Defense of Outermost Perimeter, (3) Breach of Perimeter, and (4) After Emergency Actions.

***Tremors and Earthquakes***

This Annex provides guidance for TUC staff members in dealing with a tremor or an earthquake. The SOPs are organized according to the phases of a tremor or an earthquake: (1) During a Tremor or Earthquake, (2) Evacuation, (3) In case of Fire, and (4) After Emergency Actions.

***Continuity of TUC Operations amidst U.S. Employee Evacuation***

This Annex provides guidance for TUC to follow during the evacuation of U.S. employees from Thailand.

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