Guatemala's Ministry of Health Rapid Response Team Manuals

Luis Hernandez,

Regional Emergency Coordinator — Central America, Center for Global Health, Centers for Disease Control and Prevention, Guatemala City, Guatemala

Kimberly M. Hanson, MPH, and

ORISE Research Participant, Center for Global Health, Centers for Disease Control and Prevention, Atlanta, Georgia

Lise D. Martel, PhD

International Emergency Preparedness Team Lead, Center for Global Health, Centers for Disease Control and Prevention, Atlanta, Georgia

Abstract

The function of public health rapid response teams (RRTs) is to quickly identify, investigate, and control an outbreak before it can spread. The Central America Regional Office in Guatemala provided assistance to the Guatemalan Ministry of Health and Social Assistance (MSPAS) to develop RRT manuals at the district and regional levels. The manuals are divided into 4 sections: background, activity lists, standard operating procedures, and annexes. The manuals outline Guatemala's RRT members' responsibilities and will be tested in the near future through tabletop exercises. The development of the manuals is a concrete and significant step toward the attainment of Guatemala's IHR goals and should be integrated into a larger emergency management system to promote "a world safe and secure from global health threats posed by infectious diseases."

THE PURPOSE OF PUBLIC HEALTH RAPID RESPONSE TEAMS (RRTs) is to quickly identify, investigate, and control outbreaks in a population before they have the opportunity to spread. Public health RRTs have recently become a priority for government entities. The World Health Organization's (WHO) International Health Regulations (IHR, 2005) includes a legal mandate to integrate RRTs into each national public health emergency response structure. The IHR (2005) defines these teams as:

> A group of multisectoral/multidisciplinary persons that are ready to respond on a 24 hour basis… to a public health event; trained in outbreak investigation and control, infection control and decontamination, social mobilization and communication, specimen collection and transportation, chemical event investigation and management and if applicable, radiation event investigation and management.[1(p35)]

In order to achieve IHR (2005) compliance, each member state submits an evaluation of each core capacity. The evaluation of the response capacity uses the existence of an

Address correspondence to: Lise D. Martel, PhD, International Emergency Preparedness Team Lead, Center for Global Health, Centers for Disease Control and Prevention, Atlanta, GA, Email: diz0@cdc.gov.

emergency response plan, standard operating procedures, and facilitated exercises as a means to measure the ability of a member state to respond to a public health emergency. In February 2014, the US government, in conjunction with WHO, the World Organisation for Animal Health (OIE), and 28 other nations, launched the Global Health Security Agenda (GHSA) as a means to strengthen global capacity to "prevent, detect, and respond" to infectious disease outbreaks.[2] Many of the technical areas in the GHSA were developed in order to assist partner nations to meet IHR (2005) capacities. Within the emergency management technical area of the GHSA, one of the core activities will be to "train and deploy an effective biosurveillance workforce" and "develop formal processes for rapid assessment and notification of potential public health emergencies" in ministry of health RRT structures in partner countries.[2] This formalization and documentation of processes will allow for better training of RRT members, continuity across RRTs, and faster and more coordinated responses to public health emergencies, whether natural, accidental, or intentional.

The US Centers for Disease Control and Prevention (CDC), through the International Emergency Preparedness Team (IEPT), has worked with ministries of health around the world to develop and formalize emergency response processes. The field office in Guatemala for the Central America Region (CDC-CAR) provides technical assistance to the Guatemalan Ministry of Health and Social Assistance (MSPAS) in support of its IHR goal to develop trained, functioning, multisectoral RRTs. While not formally a project of the GHSA, the process used to develop manuals in Guatemala can serve as an example for GHSA emergency management implementation in other countries.

RRTs in Guatemala, 2009 to 2013

The MSPAS first established RRTs in response to the influenza pandemic of 2009. Guatemala is divided into 29 regions, or *areas de salud*.[2] Each *area de salud* is subdivided into districts, or *distritos*, and there are 329 *distritos* in the country.[3] Within the MSPAS RRT structure, there is a regional-level team stationed in each *area de salud* and a district-level team in each *distrito.* The teams are multidisciplinary and are made up of MSPAS-trained employees. The functional roles of the members of the RRTs are based on recommendations from the MSPAS Office of Risk Management.

Each regional RRT has an epidemiologist, a physician, a nurse, a laboratory technician, an environmental health inspector, a rural health technician, a social worker, and a vectorborne disease coordinator. Similarly, each district RRT has a district coordinator, a physician, a nurse, a laboratory technician, an environmental health inspector, a community health worker, a social security extension worker, and a community volunteer coordinator. Specialized human resources at the district level are often limited; therefore, not every district RRT has a trained physician or social security extension worker. For district RRTs that lack a physician or social security extension worker, their responsibilities are absorbed by the RRT nurse and community health worker, respectively. At this time, the RRT structure does not specifically include members trained in veterinary health, but with the expansion of veterinary health programs in the country, this will be a consideration in the future.

The activation of RRTs is based on a surge capacity structure: District RRTs, as the most local teams, are expected to arrive first on the scene. When their capabilities are overwhelmed, the district RRT requests support from their supervising regional RRT. When the regional RRT is in turn overwhelmed, they reach out directly to the Office of Risk Management. A national-level RRT (ERI-Nacional) is in the development process. In the event of a national emergency, the RRT system can be activated in reverse order for a large, centralized emergency response.

MSPAS has outlined the roles and responsibilities for both regional and district RRTs for responding to pandemic influenza. The MSPAS has plans to use the RRTs in the pre-emergency, response, and recovery phases of any type of infectious disease outbreak or disaster. However, standard operating procedures have not yet been developed. MSPAS requested technical assistance from CDC-CAR to develop regional-and district-level RRT manuals to expand the response activities of each RRT member and to develop standard operating procedures for each activity.

Standardization of the Planning Process

The development of RRT manuals is aligned with the multiyear initiative of CDC-CAR and the Council of Ministries of Health of Central America and the Dominican Republic (COMISCA) to standardize emergency plans and manuals in the region. This formalization and standardization allows for the completion of IHR (2005) Response Capability Level 1 indicators, including the establishment of emergency response management procedures and the existence of standard operating procedures and/or guidelines for RRT deployment. The standardization also allows for progression into Capability Level 2 in which those standard operating procedures are tested.[1] Additionally, the impetus behind this standardization is the reality that the Central American region is much more likely to experience multinational public health emergencies and that a common format for emergency documentation will facilitate a faster, more coordinated response across national boundaries.

The process used in Guatemala to create the RRT manuals is modeled on the 5 phases of the plan development process used by federal agencies in the United States: (1) understand the situation, (2) determine goals and objectives, (3) plan development, (4) plan preparation and review, and (5) plan refinement through training, exercising, and execution.[4]

Understand the Situation

An initial meeting was held among CDC-CAR, the MSPAS emergency plan coordinator, and a representative of the National Epidemiology Center (CNE) to understand the situation and determine goals and objectives. In addition, existing MSPAS-RRT documentation, the WHO Emergency Response Framework, the Pan American Health Organization (PAHO) Regional Emergency Response Team Field Manual, and existing procedures were reviewed. Additionally, the priority threats to Guatemala were identified by MSPAS officials as naturally occurring infectious disease outbreaks and natural disasters.

Goals and Objectives

The ministry's main goals were to expand the functional roles of the RRTs at both the district and regional levels in compliance with IHR (2005) and to ensure documentation of those roles. In accordance with CDC-CAR and CO-MISCA's initiative to standardize emergency response plans and manuals throughout the Central America region, MSPAS agreed that manuals would follow the CDC-CAR format and be developed according to the modified process steps outlined by CDC-CAR.

Manual Development

A project timeline was created to complete the manual development, preparation, and review in less than 1 month. Subject matter experts from the US were limited to 1 month in-country, and the timeline was developed to maximize their ability to work directly with in-country contacts. The initial meeting was followed by 3 follow-up meetings with RRT members and MSPAS management to review and finalize all sections of the manuals (see Figure 1).

Manual Preparation and Review

The manuals developed are divided into 4 sections: background, activity lists, standard operating procedures, and annexes.

Background—The background information section provides: (1) a brief overview of the roles of MSPAS and the RRTs at their respective levels, and it outlines the priority threats faced in Guatemala; (2) a justification section defining the legal mandate under which the RRTs were created and how they are used to support the MSPAS mission in the field; (3) the general objectives of the RRT program at the national level; (4) the specific objectives of the RRT program at the regional and district levels; and (5) a list of all functional roles represented on each RRT level.

Activity Lists—The selection of activity categories was based on phases of the emergency management cycle in which RRTs play a role (ie, pre-emergency, emergency response, and recovery).In addition, since RRT pre-emergency and recovery activities during emergencies are largely the same, they were combined to minimize repetition. It was acknowledged that there may be specific activities that do not pertain to every emergency. The final activity categories were:

- Before an outbreak or natural disaster

- During an outbreak

- During a natural disaster

- After an outbreak or natural disaster

Activities were further subdivided by functional role in order to specify the exact actions that each RRT member is responsible for during each phase of an emergency.

Existing MSPAS-RRT documentation, the WHO Emergency Response Framework, and the PAHO Regional Emergency Response Team Field Manual were used to create an exhaustive

list of RRT activities. Each activity consists of a single action stated in measureable terms. All activities were put into chronological order within each subcategory and numbered.

Each activity table identifies the phase and type of emergency, while each line in a table identifies a specific activity, its corresponding standard operating procedure number, and the RRT member responsible for its completion. In addition to subsections for each functional role, there is a section of activities that each member of the RRT is required to participate in, such as updating emergency plans and obtaining proper vaccinations. While each member of the RRT participates, the leader of each RRT is ultimately designated as the point of contact to ensure that the activity is completed. These activities fall to the district coordinator for the district RRTs and to the epidemiologist for the regional RRTs. Figure 2 is a short example of the final activity list.

An electronic draft of the first activity lists was sent to the emergency plan coordinator and MSPAS-CNE representative for feedback. Comments and suggestions from the emergency plan coordinator and the RRT program lead were incorporated into a second draft. The second draft was reviewed and finalized by the emergency plan coordinator; it contained 154 total activities for district RRTs and 133 total activities for regional RRTs. Some activities from the district RRT manual were included in the regional RRT manual, because if the response capacity of the district RRT is overwhelmed, the activity will fall under the responsibility of the regional RRT. Activity delegation is noted in each of the standard operating procedures to ensure proper communication and hand-off between the 2 levels of RRTs.

Standard Operating Procedures—Whenever possible, existing protocols were used to develop the standard operating procedures to ensure that procedures were familiar and, therefore, more likely to be followed. Copies of all potentially related protocols were collected and analyzed. Standard operating procedures (Spanish acronym: POE) were formatted in a standard table incorporating the incident command system (ICS). The use of the incident command system in the standard operating procedures clearly delineates responsibility among various sectors using common terminology. The standard operating procedures table is divided into 2 sections that provide (1) the identification information for the standard operating procedure, and (2) the operational information necessary to carry it out (Table 1). A standard operating procedures template was created for each activity.

Portions of protocols applicable to various sections of standard operating procedures were tagged using the comment functions of Microsoft Word and Adobe Reader with the following format [SOP#, SOP section, comments]. The process was completed twice and compared to minimize internal data collection error. The tagged information was added to its corresponding standard operating procedure.

Information gaps in each standard operating procedure were highlighted and noted in a separate document to create an information gap list. The list was used by the emergency plan coordinator to identify subject matter experts at MSPAS to be interviewed in order to obtain additional information. The standard operating procedure development process was continued with subject matter experts by phone and email from the CDC-CAR office, and all

additional information was integrated into corresponding standard operating procedures. Approximately 70% of the information needed for all standard operating procedures was extracted from the existing protocol documentation and 20% from the follow-up interviews with MSPAS representatives and the CDC-CAR regional emergency coordinator. The remaining 10% of standard operating procedure information gaps were awaiting feedback from the RRT program lead and remained unfinished at the time of the planning team's departure. Each standard operating procedure is hyperlinked to its activity through the POE numbering column of the activity list. Clicking on the number code opens the standard operating procedure in a new window.

As a security measure, MSPAS representatives originally requested that standard operating procedures not be included in the actual manuals but in separate documents for internal use. Through the use of hyperlinks, the manuals were designed so that standard operating procedures were contained in digital folders linked to the manual, rather than in separate documents. This ensures that each standard operating procedure is located in only a single place and that MSPAS can control who has access to each of the folders and its contents. Because each manual relies heavily on the use of hyperlinks for navigation, the emergency plan coordinator received training on how to make, edit, and remove hyperlinks in Microsoft Word. A short visual document on hyperlinks was included with the digital copy of each functional manual. At the central level, the 2 manuals are maintained as electronic documents for ease of access and ability to update information. RRTs at the regional level have computer and email access through which the manuals can be shared. For district-level teams, computer access is not universal. Therefore, district RRT leaders will be responsible for coordinating with their supervisory regional RRT for obtaining printed copies of their manuals and any necessary updates.

Annexes—Each functional manual is supported with additional information through annexes. Each manual contains an annex for team contact information and a form for tracking available resources. During the final follow-up meeting, the emergency plan coordinator received a list of additional documents that could be added as annexes if deemed necessary by the RRT program lead. This list included, but was not limited to, items such as disease-specific procedures, other standardized forms, contact information for potential collaborating response agencies, and a timeline for training sessions.

Refining the Manual

At the final follow-up meeting, all progress was reviewed and the remaining gaps in standard operating procedures were identified. Formatting of the first full manual drafts was completed by a team in Atlanta and sent to the emergency plan coordinator for review. In the meantime, the emergency plan coordinator worked directly with the RRT program lead to finish the remaining standard operating procedures to be included in the final draft. Final versions of each manual were submitted to the RRT program lead for MSPAS approval and dissemination. Future plans include providing training sessions to staff on the manuals, developing exercises to practice using them, using them in real emergency situations, and continuing progress through improvement plans and after-action reports.

Discussion

In Guatemala, RRT members are likely to be first on the scene during an emergency. It is essential that each RRT member knows what is expected of him or her and when to call in reinforcements. The manuals outline RRT members' responsibilities in a clear and systematic fashion. However, the manuals need to be validated through a series of exercises. In addition, MSPAS is also working with CDC-CAR to create an exercise program for their newly developed emergency operations center (EOC). Integration of the RRT manuals into this EOC exercise program is being explored.

A limitation of this project was the inability to work directly with RRT members. As is often the case, procedures are determined at a central level without consulting those who will actually carry them out. Having input from those on the ground offers a unique perspective on the feasibility of activities and can identify specific challenges before they become an issue. Ultimately, in-person interviews with RRT members were not possible because of time constraints, but this challenge can be overcome through a tabletop exercise involving RRT members. This format would allow MSPAS to gather valuable feedback from team members and integrate any necessary changes to the manuals in a nonemergency setting.

The modified plan development process in the creation of RRT manuals was shown to be a successful approach in Guatemala. As other countries move toward standardizing their RRT structures in the GHSA framework, the process could be repeated both within the Central American region and around the world.

The development of manuals for RRTs is a concrete and significant step toward the attainment of Guatemala's IHR response goals. With continued testing and practice of these documented procedures, MSPAS will be able to refine their ability to respond to public health emergencies of any kind, ultimately leading to better health outcomes. The impact of the RRTs could further be enhanced by ensuring that complementary technical areas are simultaneously developed and coordinated.[5] In order to be truly effective, RRTs should be integrated into larger emergency management systems with functioning surveillance and laboratory net-works, adequate political support, funding mechanisms, and human resource development programs to fully achieve IHR (2005) compliance and to better promote "a world safe and secure from global health threats posed by infectious diseases."[6]

References

1. World Health Organization. IHR Core Capacity Monitoring Framework: Checklist and Indicators for Monitoring Progress in the Development of IHR Core Capacities in States Parties. Geneva: WHO; 2013. http://www.who.int/ihr/checklist/en/. Accessed August 6, 2014

2. US Department of Health and Human Services. Global Health Security Agenda launch. http://www.globalhealth.gov/global-health-topics/global-health-security/ghsagenda-launch.html. Accessed August 6, 2014

3. Cottom, H. Análisis crítico del sistema nacional de salud en Guatemala. Quetzaltenango, Guatemala: Universidad Rafael Landívar; 2004.

4. US Department of Homeland Security. The Integrated Planning System. Washington, DC: US Department of Homeland Security; 2009. http://www.hlswatch.com/wp-content/uploads/2009/01/dhs-integrated-planning-system-january-2009.pdf. Accessed August 6, 2014

5. Ijaz K, Kasowski E, Arthur RR, Angulo FJ, Dowell SF. International Health Regulations—what gets measured gets done. Emerg Infect Dis. 2012; 18(7):1054–1057. [PubMed: 22709593]

6. The Global Health Security Agenda. Washington, DC: US Department of Health and Human Services; 2014. http://www.globalhealth.gov/global-health-topics/global-health-security/ghsagenda.html. Accessed August 6, 2014

Date	Meeting	Goals
June 18, 2013	Initial Meeting	Determine manual format Map project timeline Determine activity categories
June 26, 2013	Follow-up #1	Review and finalize background and objectives Review and finalize activity lists Collect protocols for SOP development
July 3, 2013	Follow-up #2	Review SOPs Interview additional sources (if needed)
July 10, 2013	Follow-up #3	Review progress

Figure 1.
Timeline

2. During an Outbreak		
Responsible Party	SOP	Activity
RRT – ALL	TODO2.1 TODO2.2 TODO2.3 TODO2.4	1. Complete community visit 2. Complete rapid health needs assessment of district 3. Compile all outbreak information produced by the community 4. Enforce containment measures in necessary cases
District Coordinator	CORD2.1 CORD2.2 CORD2.3 CORD2.4 CORD2.5 CORD2.6 CORD2.7	1. Convene district RRT 2. Declare the local state of emergency based on rapid assessment 3. Establish and coordinate district health situation room 4. Coordinate actions and meetings of district RRT 5. Ensure the safety of the RRT 6. Communicate with supervisory regional RRT 7. Coordinate with other response agencies for response logistics

Figure 2.
Sample of Pre-Emergency Activity List (Translated)

Table 1

Example Standard Operating Procedure (Translated)

SOP Number: MED2.4

Incident	During an Outbreak
Department	MSPAS-SIAS
Division	District RRT
Activity	Request use of prepositioned resources from local authorities
Point of Contact	Physician

Sector	Tasks	Priority: High, Medium, Low	Term: Long, Short
Command	Request of District Coordinator	High	Short
Operations	1. Determine resources necessary for immediate response based on rapid needs assessment.		
	2. Locate resource on Available Resource Tracking Form to identify point of contact and contact information.		
	3. Call identified point of contact and activate agreement of use.		
	4. Organize transportation of resources based on pre-established agreement of use.		
Logistics	Depends on resources necessary. For transport: secure vehicle, 1 driver, gas		
Finance	Costs associated with use or transportation should be determined in the existing agreement of use. Refer to agreement for financially liable parties.		
Pre-Information	Available resource tracking form; contact information		

SOP number: Indicates the number of the standard operating procedure that corresponds to the numbering system established in the activity list.

Incident: Identifies what type of incident the standard operating procedure is to be used for. In this case, the field contains the phase and type of emergency to which the activity applies.

Department: Indicates the department responsible for the activity.

Division: Indicates the division within the department responsible for the activity. In this case, the field identifies whether the activity pertains to the regional or district RRT.

Activity: Contains the title of the activity. The wording corresponds exactly with that from the activity list to ensure consistency and easy identification.

Point of Contact: Identifies the functional role in an RRT that is responsible for the monitoring and completion of the activity.

Command: Identifies the trigger event for an activity. If no trigger event exists, the direct supervisor of the point of contact is included to indicate the chain of command.

Operations: Identifies the trigger event for an activity. If no trigger event exists, the direct supervisor of the point of contact is included to indicate the chain of command.

Logistics: Contains the logistical information needed to complete the activity such as additional points of contact, reporting frequency, number of samples needed, etc.

Finance: Indicates if there is a financial component to completing the activity—for example, purchasing sample transport materials—and to whom the fund request or bill should be directed.

Pre-information: Lists any preexisting information that is needed in order to complete the activity.

Priority: Indicates the priority of activity completion: high, medium, or low.

Term: Indicates the expected duration of the activity: short-term or long-term.