Guidelines for Developing Emergency Simulations and Drills

Pan American Health Organization
Regional Office of the World Health Organization

Guidelines for Developing Emergency Simulations and Drills

Area on Emergency Preparedness and Disaster Relief

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INTRODUCTION

To respond effectively to the impact of disasters it is necessary to have a preparedness and response plan to facilitate organized and coordinated actions during an event. Plans are not theoretical exercises: they must be tested frequently so that they can be evaluated, adapted, and updated before and after an actual event.

Simulation exercises and drills are among the most useful tools for evaluating and testing these plans, and they have been used systematically over the years by organizations that work in disaster preparedness and response. They are also excellent tools for training, for evaluating tools and procedures, for decision making exercises, for developing team work, and for inter- and intra-sectoral coordination.

The Pan American Health Organization has worked with a group of experts from Latin America and the Caribbean to prepare a series of practical guidelines for planning and carrying out simulations and drills. This manual has the following objectives:

- To provide the conceptual framework and methodological aspects of simulations and drills, and to the identify skills and abilities that are necessary to carry them out.
- To guide the planning, design, organization, development, and evaluation of simulations and drills for emergencies and disasters.
- To provide practical tools for planning, design, organization, development and evaluation of drills and simulations.

This handbook gives the guidelines for organizing, developing, and evaluating simulations and drills and describes different uses for the exercises in the context of emergencies and disasters. It has been written primarily for health sector organizations that are in the process of reviewing and updating emergency preparedness and response plans, but institutions from other sectors will also find it useful.

Simulations and drills are used by different disciplines and in different professional settings, such as medicine, education, sociology, or economics. The concepts and definitions in the guidelines are used in the context of emergencies and disasters.

There are three important parts to the guidelines. **The first two sections** introduce the concepts and methods that guide the design and development of simulations and drills. **The second section** (Annexes 1–19) includes forms that will assist in the practical and hands-on work of designing, carrying out, and evaluating exercises. Forms for two examples of actual exercises are included: a flood simulation and a drill for treating mass casualties. Annexes 1 to 9 pertain to simulation or tabletop exercises, and Annexes 10 to 19 pertain to drills. **The third section** (Annex 20) presents an evaluation tool for simulations/drills

that was developed in the Caribbean primarily for exercises involving mass casualties. It is a model that can be adapted to a variety of other simulation scenarios.

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I. SIMULATIONS

A simulation is a tabletop exercise that recreates a hypothetical disaster scenario where a group of participants must make decisions based on information that they receive during the exercise. Each participant is assigned a role in the exercise that can match his or her actual occupation. The events in the exercise happen in "simulated time" (representing days or weeks), during which the players receive information about situations that might arise during an emergency or disaster.

The exercise is based on a scenario and script of realistic events and participants are required to provide realistic responses. To have any validity, responses must be based on existing procedures and resources.

This type of exercise aims to evaluate different reactions to particular circumstances as well as the effectiveness of coordination mechanisms. The results of the evaluation serve as lessons learned that can help in adapting and improving preparedness plans.

A. Objectives of simulations

- Evaluate the decision-making capacity of personnel responsible for emergency and disaster preparedness and response, in the context of an organization's existing emergency plans and procedures.
- Validate the emergency preparedness and response plan for a specific facility or organization.
- Test the effectiveness of mechanisms meant to coordinate the response of different sectors and agencies in emergency situations.
- Prepare persons who have decision-making authority to manage the crisis and manage information in emergency situations.

B. Methodological features

- The simulation is an exercise for information management and role-playing. It focuses on individual and collective decision making.
- It is a theoretical exercise, also called a desk- or tabletop exercise since it can take place in a single, closed space, or among several interconnected sites.
- It is built from a scenario and a script that define the activities, the flow of information, and the roles played by the participants.
- Each of the participants is assigned a role that can be based on his or her normal work, or another role. Basic information about the character being played is necessary for correct interpretation of the role.

- The development of events takes place in simulated time identified in the script. This is controlled by the simulation's coordinating team.
- Each plot of a scenario takes place in a relatively short period of time, so "time jumps" are used.
- The planned scenario, which includes different situations, problems, and resources, is played out sequentially in a way that advances the exercise.
- The time required for the simulation includes time for preparation, identification or review of roles, analysis of information gathered before the exercise, a reasonable amount of time to resolve different situations, and time needed for evaluation

C. Operational features

- Information is provided through messages distributed at different times in exercise; they can be transmitted orally, in print, or digitally, among other ways.
- Conditions similar to what might exist in a disaster situation can be created. For example, by causing noise, manipulating lighting and temperature, interrupting services (water, light, communications), creating uncertainty, and providing contradictory or incomplete information, among others.
- The controller has the current information about the scenario. If necessary he or she can assume roles of participants that are not represented in the situation described.

D. Value of simulations for preparedness and response

The simulation allows an organization to use operational tools, procedures, and forms to evaluate their systems and performance. It also provides for training and for practicing tasks that require decision making and coordination. The process of evaluating the results of a simulation helps to identify critical areas of management and aspects that need to be strengthened.

Advantages to using simulations for disaster preparedness and response are:

- They test or evaluate preparedness or emergency plans;
- They allow for training and updating knowledge;
- They evaluate the decision-making process and coordination mechanisms;
- They help to strengthen coordination within an organization and with other sectors and institutions;
- They validate the instruments and processes used to collect and organize information;
- They evaluate how participants react in specific situations.

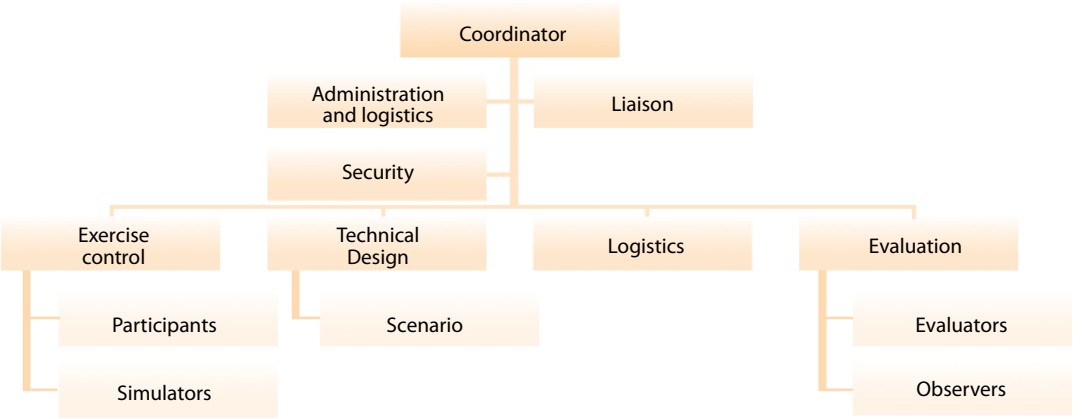
Remember:

A simulation exercise is of little use if an organization for emergency and disaster response is lacking, there is no emergency plan, or personnel are not trained to respond to emergencies. In such cases it is better to initiate a training and emergency preparedness program.

E. Organizational structure for simulation exercise

A team should be formed to organize and carry out the simulation under the supervision of a Coordinator as shown in Figure 1:

Figure 1. Organizational structure for simulations



Annexes 3 and 4 provide forms that can be used to describe the organizational structure and record the names of participants. Figure 2 summarizes the tasks related to different areas of responsibility.

F. Planning and executing the simulation

1. Planning

For proper development of the exercise, it is necessary to maintain contact with all of the different working groups throughout the preparation process in order to approve content, validate the tools, establish guidelines, monitor compliance with the activity schedule, correct divergence from the script, and facilitate coordination.

Planning activities are undertaken by the General Coordination group and define the fundamental parameters and general characteristics of the exercise, as outlined below.

- **Purpose:** Establishes the intention and motives for what is to be achieved. It is defined in terms of a problem or need, and the wording should answer the question as to why the simulation should be done, as well as provide ideas for drafting the objectives.

Figure 2. Areas of responsibility and tasks for simulation exercises

Work area	Tasks
General coordinator	• Establish and coordinate the teams responsible for different tasks in the preparation and execution of the simulation. • Approve the premises for and all parameters of the exercise according to the items to be tested. • Direct the internal and external activities before and during the exercise. • Coordinate the self-assessment of the overall process of organizing the exercise. • Prepare the budget. • Coordinate documentation on lessons learned for the exercise. • Prepare the relevant reports, including financial report.
Exercise controller	• Review functional and methodological details for execution of the simulation with other teams. • Ensure that all resources and details have been addressed for the exercise. • Ensure that all participants understand the methodology and expected tasks of the exercise Oversee the development of the different events and time periods elapsed during the exercise, following the script.
Participants	• Perform the assigned tasks and follow procedures as they pertain to participant specialties.
Simulators	• Act as simulated characters according to the roles assigned.
Technical Design Team	• Develop the script of the exercise and prepare all the related devices. • Determine the logistical requirements for the exercise in accordance with the script.
Scenario Team	• Design the scenario of the likely effects in collaboration with a team of specialists on topics related to the event being simulated.
Logistics Team	• Ensure the availability of facilities and equipment. • Provide necessary supplies for the working groups. • Provide adequate transportation for participants, guests, simulators, evaluators, and observers. • Ensure the efficient and timely availability of all the resources required for the development of the simulation, including the purchase of necessary supplies and materials.
Evaluation Team	• Know the details of the script and all related mechanisms for the exercise, especially the evaluation instruments. • Evaluate the decisions taken by participants during the exercise in accordance with the script and expected actions and use evaluation instruments to record the observations. • Conduct the plenary session of the exercise evaluation. • Provide a final exercise evaluation report to the Coordinator.
Evaluators	• Use the evaluation forms during development of the simulation. • Participate in the plenary analysis sessions and evaluation sessions. • Give explanations for the criteria used in the simulation evaluation form.
Observers	• Observers have the experience or level of authority to evaluate specific processes or activities, and are part of the evaluation team. • Participate actively during the exercise and present general evaluation criteria during the plenary analysis session immediately following the exercise. • Observers may use specific observation guidelines or use their own criteria based on their experience.

- **Scope:** Determines the extent of the actions or effects of the activity. It defines the scale of the exercise in terms of geographic coverage, topics covered, level of complexity, and number of participants, among others factors.
- **Objectives:** The qualitative expressions of the level of performance and results expected from the activity. These guide the evaluation of the exercise.
- **Target audience:** The organizations and individuals who participate in the exercise. Their selection is based on the themes or issues examined by the simulation.
- **Timeline:** The planned timing of the various activities to be carried out during the preparation and execution of the exercise. This allows those responsible to track the entire process. (The form in **Annex 5** lists activities to be considered in this schedule.)

- **Budget:** Provides for sufficient financial resources to organize and develop the exercise. **Annex 1** has a form that can be used to prepare the simulation budget.
- **Inter-institutional coordination:** If the exercise involves the participation of several agencies or institutions, mechanisms for coordinating and distributing responsibilities and actions must be clearly defined.
- **Technical Fact Sheet:** A brief description of the characteristics of an exercise that can serve as a record of the event. (See the form in **Annex 2**.)

2. Technical Design

During the technical design stage the various components of the exercise are planned, including the events to be addressed by the simulators, the tasks to be performed, the resources that will be available, and all other necessary items for the exercise.

Script

This presents the common theme and is the key element of the exercise. It establishes the timeline of events and the involvement of the players in each of the situations described, and therefore must be logical and realistic. The script establishes the sequence of messages and the actions expected of the participants in the situations encountered. The time allocated for the development of each activity must be clearly established.
Given that one of the objectives of a simulation is to test the relevance and practical applications of response plans, the script must contain situations that require the players to respond using a variety of protocols and procedures. (See the master list of events in **Annex 6**.) The script generally also includes:

- **Scenario**: This is a complete description of the specific features and other information addressed in the simulation. The description of the scenario must have at a minimum the following components:
  - Historical background and general description of the region or locale;
  - Geopolitical characteristics: geographical location, political boundaries, types of occupation, climate, and other aspects;
  - Characteristics of the target population: number, gender, age groups, socio-cultural characteristics, and others;
  - Economic characteristics: type of production activities, services, and others;
  - Health conditions and description of the health services structure;
  - Resources, including: material, financial, and human resources; service networks; transportation and communications systems; and others;
  - Risk levels, specifying hazards and vulnerabilities;
  - History of events resulting in damage, specifying the area of coverage and levels of impact of previous disasters and emergencies;

- Reports and studies specifically relating to disaster management in the country, and the lessons learned;
- Identification of international agencies and organizations present in the country and that can provide assistance at the national, regional, or local level.

- **Development of the situation:** The development of the triggering event and the impacts of the event form part of the general script. This consists of a description of the features of the phenomenon and its effects on the population, infrastructure, services, environment, and general impact on the affected area. These features should include the following:
  - Type of event
  - Time and date of incident
  - Place of occurrence
  - Other associated events generated
  - Number of fatalities
  - Number of injuries (severe, moderate, and mild)
  - Number of missing
  - Number affected
  - Damage to public facilities (total collapse or with serious, moderate, or slight damage; number damaged and type of damage; consequences, etc.).
  - Damage to private facilities (total collapse or with serious, moderate, or slight damage; number damaged and type of damage; consequences, etc.).
  - Damage to critical networks and infrastructure (total collapse or with serious, moderate, or slight damage; number damaged and type of damage; consequences, etc.).
  - Damage to critical services (total collapse or with serious, moderate or slight damage; number damaged and type of damage; consequences, etc.).

- **Roles of the participants:** Each participant must act according to a role that will be assigned. Usually this role corresponds to the participant's actual occupation, although it may vary. It is very important that the roles are realistic.

- **Messages:** The messages inform participants of the development of the simulated events, pose problems, and provide instructions. They are delivered sequentially as established by the script. They can be delivered orally, in print, or electronically. (Annex 7, Message cards for simulation exercises, provides a sample format for preparing messages.)

Evaluation instruments

The evaluation instruments should consider issues such as:

- The flow of information, the overall dynamics and coordination of the exercise;
- The ability of the participants to take appropriate and pertinent decisions under pressure;
- The quality of the decisions taken by the participants, given the possible consequences that these decisions would have in a real situation;
- The logic and consistency between the decisions made by the participants and what was anticipated in the plans, protocols, and procedures that were applied;
- The practicality of the decisions taken by participants in terms of the type of resources available in the context of the exercise;
- The use of different tools and application of innovative alternatives where resources are lacking;
- The specific performance of each of the participants (leadership, involvement, interest, teamwork, etc.);
- The ability to work and take decisions as a group;
- The achievement of goals, given the assumptions under which participants are working.

The evaluators will receive forms well in advance of the exercise so that they can familiarize themselves with the evaluation material (**Annex 8** provides a sample format for an evaluation form).

Support materials

Organizers will make all types of resources available, such as photographs, maps, diagrams, manuals, reference books, etc., to support the decision making of exercise participants.

Duration of the exercise

This is the period between the start and completion time. It is variable but experience suggests that the exercise should last between 4 and 6 hours to achieve the full psychological effect of an emergency situation for participants. In special circumstances, such as when a simulation is of regional or national scale and involves the travel of participants over long distances, the exercise may last two or more days in the interest of maximizing resources.

All of these features and procedures will be subject to discussion with the rest of the teams for validation and approval.

3. Organization

The organization process allows the work of different teams or areas (identified in Figure No. 1) to be integrated and to better coordinate the development of the exercise. The process is led by the exercise coordinator and includes:

Determination of logistical requirements

In general, the organization and development of a simulation requires at least the following:

- **Exercise materials:** the list of participants, scenario, script, and the messages that are to be printed, and any other materials that must be used in the exercise.
- **Physical space:** To decide on the location, the situation that will be simulated must be taken into account. For example, the scenario might require that participants be in uncomfortable conditions, or alternatively that work is to take place in an atmosphere of total quiet. It is also necessary to consider that controllers, evaluators, and observers will need to have room to move around.
- **Furniture and equipment:** Tables, chairs, flipcharts, whiteboards, PCs or laptops, projectors, and any other supplies of the type and quantity specified for exercise. These will be used by participants as well as organizers.
- **Supporting materials:** Maps, inventories of resources, diagrams, response plan, and any other resources needed for the exercise.
- **Communication system:** System to allow participants to receive messages and communicate with each other during the exercise.
- **Transport, accommodation, travel expenses, refreshments:** Determine what is required for simulation participants, including special guests, coordinators, controllers, evaluators, and observers.

Selection of participants

The characteristics of people who will take part in the simulation depend on the objectives of the exercise. When various institutions are involved, each will provide a list of its representatives who will participate.

Selection of evaluators

Evaluators are responsible for assessing the actions and decisions of participants and for that reason are selected according to their knowledge, experience, and ability to critique the subject and characteristics of the exercise. Evaluators should be selected well in advance and must receive sufficient information regarding their roles and appropriate use of evaluation tools.

Observers

Observers are usually authorities, experts, or others invited to witness the execution of the exercise without playing an active role. They are not part of the evaluation team but may give their opinions and observations during the evaluation period if they so wish.

- **Final verification of the preparations**

  Apart from monitoring the schedule, a general meeting that includes all work groups should take place to confirm that all activities have been completed and to identify gaps and correct faults.

4. Execution of the simulation

At the time of the exercise, the general coordinator and the person responsible for monitoring the exercise (controller) explain the methodology and the roles assigned to participants. Once they have all the required materials, the order to start is given.

The evolution of the exercise and the sequence of messages that reveal the situations, problems, and resources are determined by the script. The control team manages this aspect.

Participants take individual or collective decisions according to situations that are presented in the script. The controller can intervene in the work of the group if he or she detects actions or decisions that do not correspond to real response capabilities. For this reason, the sequence of messages can change, they can be omitted, or complexities can be introduced as a way to examine the questionable actions.

Depending on the objectives of the simulation participants may be subject to an environment corresponding to an actual event and the likely conditions of isolation, discomfort, and confusion. To promote these sensations certain actions can be taken, such as having participants go without sleep the night before the exercise, manipulating lighting and temperature levels, having faulty computer and communication systems, making noise, etc.

Evaluators and observers should be located where they can observe the work of the participants, but they must not interrupt the simulation at any time.

Everyone at the simulation site must be properly identified so that it is clear what roles and actions each will perform within the area designated for the exercise.

5. Evaluation

Two types of evaluation are made in each simulation:

- **Evaluating the performance of participants during the exercise**
  - The team of evaluators rates the performance of participants and how they meet the objectives of the simulation.
  - During the exercise, the evaluators closely monitor the deliberations and actions of the participants without intervening in any way in the group dynamics. They use an evaluation form to record their assessments (included in Annex 8).

- At the end of the exercise, the coordinator of the evaluation team begins the evaluation period by asking the participants to express their perceptions of the exercise, individual and group performance, and also their views on the quality and relevance of the exercise and methods used.
- Following this, observers and controllers share the reasoning they use for evaluating performance, and finally the evaluation team communicates its views and findings on how the exercise was conducted.
- The evaluation team should meet to exchange notes, and to analyze and gather the individual assessments in order to compile a comprehensive assessment. This is delivered to the general coordinator of the event for use by the organization that sponsors the simulation.

Evaluation of the organization of the simulation

- Evaluation of the process of planning, design, and execution of the exercise serves to document and provide feedback on the process in order to improve the organization of future events.
- The general coordinator should plan a time to perform this activity, and all team members should participate.
- A final evaluation document must be prepared to record these discussions and make recommendations to improve future exercises.

Remember:

Evaluators and observers should be located where they can observe the work of the participants, but they must not interrupt the simulation at any time.

6. Documenting lessons learned

Documenting lessons learned from the simulation provides the feedback needed to update disaster and emergency response plans, and to correct any shortcomings with a view to planning subsequent exercises. It requires analysis and compilation of all technical and administrative documentation generated at various stages, including problems faced and how they were solved. Responsibility for this process must be designated from the start so that all the necessary documentation can be collected.

7. Following-up on evaluation results

The coordinator of the simulation is responsible for submitting a detailed report with results of the evaluation of the exercise to the institution or institutions involved. The authorities of the relevant institutions are responsible for monitoring and implementing the recommendations and updating their preparedness and response plans.

II. DRILLS

A drill is a practical exercise in managing operations which simulates damage and injuries in a hypothetical emergency situation. Participants face mock situations, using the skills and techniques that would be applied in real situations. Unlike the simulation exercises described in the previous section, drills require the actual mobilization and use of personnel and material resources.

Drills allow for the evaluation of procedures, tools, skills, and individual and institutional capacity in relation to disaster preparedness and response. Drills are carried out in "real" time and each of the participants assumes the role that he or she customarily performs in his/her regular work. Others will perform as victims or other roles.

A. Objectives of drills

- Test the relevance and effectiveness of plans, protocols, procedures, guidelines, and other operational mechanisms for emergency response.
- Evaluate abilities and the use of techniques, tools, resources, and actions related to the organization of emergency response operations.
- Improve coordination and application of specific techniques for risk reduction and control of consequences on the part of multiple actors and organizations.
- Evaluate general response of community groups, professional groups, administrative personnel, response teams, and others that have specialized training in response to specific emergencies.

B. Methodological characteristics

- The drill takes place in real time.
- The exercise primarily consists of practical actions, performed by participants who have experience in emergency management, including persons who can play specific roles.
- As the drill proceeds, an environment is created that is as similar as possible to what would exist in a real emergency situation.
- The times for the drill are measured beginning with the activation of alarms or an order given to begin operations. Time "jumps" are not allowed in carrying out actions that correspond to one scenario.

C. Operational characteristics

- The characters and materials used are real, except for performers acting as victims, relatives of victims, bystanders, journalists or other roles that are considered necessary for the exercise.
- The execution of drills may involve a degree of risk for participants and observers, so there must always be an emergency plan for the exercise itself.
- The exercise will be interrupted immediately if a situation creates real danger for the participants.

D. Value of drills for preparedness and response

Drills are effective methods for training and for evaluating or validating preparedness and response efforts in a variety of areas, including:

- Identification of responsibilities, confirmation of established roles, use of techniques, evaluation of performance and skills, and use of resources.
- Performance of coordination and control systems in the field and under conditions that is similar to reality.
- Inter-agency coordination, operational relationships, and implementation of instruments that give relevance, authority, and responsibility to agencies depending on the event being simulated.
- Time required for response or carrying out actions, as well as the behavior of persons acting under the pressure generated by an emergency situation.
- The use of techniques and skills learned by individuals who have received specialized training.
- The implementation of safety procedures and standards by health workers and emergency medical personnel.

The drill has educational value, since it allows participants to put theory into practice, ensuring that knowledge gained can be applied.

E. Necessary conditions for carrying out drills

Prior to planning a drill, the team must ensure that certain basic conditions exist, such as:

- An established, organizational structure for emergency management which has an action plan;
- Clear identification of the elements to be evaluated during the drill;
- A risk scenario that considers hazards, vulnerabilities, and capacities;
- A location with suitable physical and environmental conditions for recreating the emergency situations with minimal risk to participants;
- Institutional backing, financial resources, and adequate logistical support.

The form in **Annex 11** can be used to help determine whether adequate conditions exist for planning a drill.

Remember

The development of scenarios must be based on existing and proven risk conditions. Operational response must be planned in accordance with the human and material resources that are available. It is also necessary for the personnel involved to have the background and skills required to perform the roles and tasks demanded by the exercise.

F. Types of drills

Drills have different characteristics depending on the number of persons who will be involved, whether those involved have prior knowledge that it will take place, and the degree of complexity. They can be classified as:

- **Partial or full-scale drills:** This depends on whether all or only some services or agencies are involved. For example, a partial drill would be a simulation of the arrival of injured at the emergency department of a hospital; the complete evacuation of a workplace would be a full-scale drill.
- **Pre-announced or surprise drills:** This depends on whether the participants and the public are informed prior to the exercise, or whether only the coordinating committee know of it. Unannounced or surprise drills must be part of a process that includes earlier exercises that were announced, and should be used only when there are established response plans. If the drill is announced, the public will be informed about the objectives and the location, date, and time of the exercise, but will not be given details about the staging, impacts of the simulated event, or the script.
- **Simple or complex:** This depends on the variables to be evaluated. In a simple drill, only a single activity is carried out, for example the evacuation of a building, with neither injuries nor potential risks. A complex drill has a variety of situations associated with the main event, for example, multiple injuries or potential risk scenarios for higher numbers of the population.

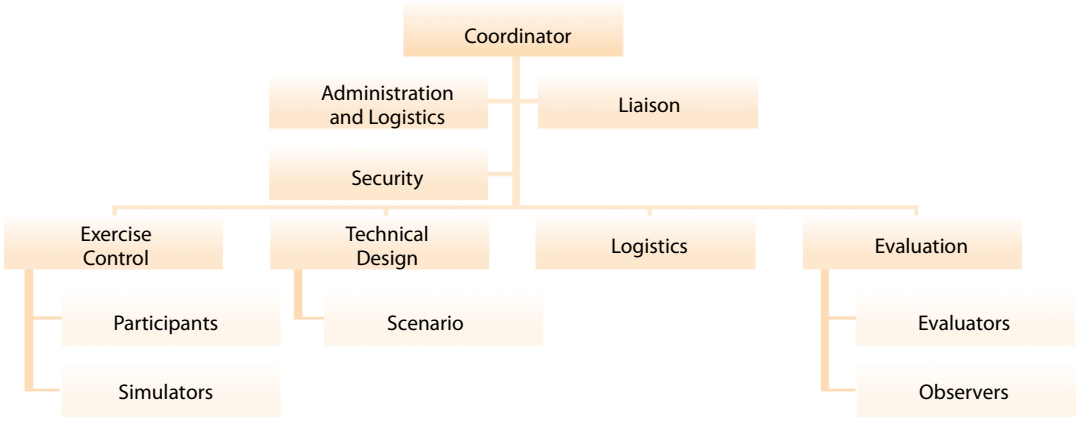
G. Organizational structure for drills

A team should be formed to undertake the tasks of organizing and executing the drill, under the supervision of a coordinator. Figure 3 shows the organizational chart.

Forms included in Annexes 12 and 13 can be used to record the names of persons designated in the organizational structure and those assigned different roles in the exercise. In the case of drills involving large numbers of participants and simulators, only the participants from institutions and coordinators will be listed in **Annex 13.**

Figure 4 summarizes the tasks related to different areas of responsibility.

Figure 3. Organizational structure for drills



H. Preparing for and executing drills

Throughout the preparatory process, it is necessary to maintain close contact with the different working groups to approve content, validate the tools, establish guidelines, monitor compliance with the activity schedule, correct deviations, and for other aspects of coordination to ensure proper development of the exercise.

In cases where the drill involves community participation, preparation and coordination meetings with community leaders should be considered.

The activities for carrying out the drill are outlined below.

1. Planning

The planning function is undertaken by the General Coordination group who define the fundamental parameters and general characteristics of the exercise, as detailed below:

- **Purpose:** Establishes the intent and reasons for what is to be achieved. It is defined in terms of a problem or need, and the wording should answer the question as to why the drill should be done, as well as provide ideas for drafting the objectives.
- **Scope:** Determines the extent of the actions or effects of the activity. It defines the scale of the drill in terms of geographic coverage, topics covered, level of complexity, participation, and types of procedures to be carried out, among other things.
- **Objectives:** The qualitative expressions of the level of performance, efficiency, product, or results to be expected from the activity. These guide the evaluation of the exercise.
- **Target audience:** Organizations and individuals who participate in the exercise. Their selection is based on the themes or issues to be validated through the drill.
- **Timeline:** The planned timing of the various activities to be carried out during the preparation and execution of the exercise. This allows those responsible to track the entire process. (**Annex 14** includes the items to be considered in this schedule.)

Figure 4. Areas of responsibility and tasks in emergency drills

Work area	Tasks
Coordinator	• Establish and coordinate the teams responsible for the different tasks in the preparation and execution of the drill. • Approve the premises for and all parameters of the exercise according to the items to be tested • Choose the location for conducting the drill in collaboration with the technical design team. • Oversee internal and external coordination before and during the exercise, including with authorities and community leaders from the place where the drill will occur. • Coordinate the self-evaluation of the overall process of organizing the exercise and prepare relevant reports. • Stop the drill should a real emergency occur.
Administration and finance	• Prepare the budget for the exercise. • Coordinate with the logistics team to procure necessary supplies and materials. • Prepare financial reports.
Security	• Design and coordinate a plan for the safety of all participants, including alerts in the event of an actual emergency during the exercise. Make an inspection visit to the area where the drill will be held. • Coordinate and control all aspects of security during the exercise, including control of access and the perimeter.
Controller	• Review the methodology and procedures for the drill in conjunction with the coordinating committee and the evaluation team. • Conduct an inspection visit to the areas where the drill will take place for familiarization and to verify that the locations are appropriate for the script. • Carry out the exercise and control the script sequence and timing of activities.
Participants	• Perform tasks in accordance with the role assigned.
Simulators	• Act as victims or other characters according to the roles assigned.
Technical design team	• Develop the overall plot and all components of staging and script, including the human and material resources required. • Choose, together with the coordination team, the location for the drill. • Define and communicate to the staging team any necessary props and special effects for simulating the events. • Prepare instructions for the participants. • Prepare evaluation instruments for the different situations that take place in the exercise.
Staging team	• Prepare, in conjunction with the technical design team, the scenario and special effects necessary to simulate events. Carry out an inspection visit to the site where the drill will be held. • Install and organize items for staging different components of the exercise and install devices for special effects. • Ensure adequate preparation and training of simulators and test the operation of devices for special effects.
Logistics and equipment team	• Ensure that all resources needed for the drill can be procured efficiently and in a timely manner, including the purchase of necessary supplies and materials.
Evaluation team	• Prepare an evaluation instrument based on the objectives of the exercise in conjunction with the technical design team. • Identify, convene, and train the evaluation and observation teams. • Lead the pre- and post-event evaluation process. • The evaluation coordinator is responsible for the synthesis and presentation of the final evaluation report.
Evaluators	• Use the evaluation form during the exercise. • Participate in plenary analysis sessions and any sessions specifically for evaluation. • Justify the criteria used in the simulation evaluation form.
Observers	• Observers have the experience or authority to evaluate specific processes or activities, but because of multiple responsibilities cannot be part of the evaluation team. • Participate actively during the exercise and present their general assessment during the plenary analysis session after the exercise. • Use specific observation guides or criteria based on their own experience.

- **Budget:** It should provide sufficient financial resources for organizing and carrying out the exercise. (See the form in **Annex 1**.)
- **Inter-agency coordination:** If the exercise involves the participation of several organizations, it should clearly define the mechanisms for coordinating and distributing responsibilities and actions. When the drill involves the participation of the public, local authorities and/or community leaders should be involved in the planning and coordination. Each institution or organization should have a representative on the general coordination team.
- **Technical fact sheet:** A description of the characteristics of the exercise that can serve as a record of the event. **Annex 10** is a form that can be used to prepare this.

2. Technical design

This is the process in which technical features are defined, ranging from the staging to the timeline. It aims to give the drill the greatest possible realism. It is advisable for the design team to have previous experience with drills, and extensive knowledge of the plans, procedures, risks, and resources that exist at the site where the exercise will be held. It is important to incorporate the existing emergency and disaster response plans, protocols, and procedures that are appropriate for the drill. The general script and components are defined in the technical design process.

Script

This is the common thread of the exercise and is the key element of the entire plot. It establishes the content and sequence of specific instructions for response teams, and describes the activities and expected results.

In contrast to simulations, messages are not delivered in this type of exercise; rather the controllers provide general instructions. The general script also includes:

- **Scenario:** Defines the context, space, and the environment in which the activities take place. It includes all staging elements required to mimic the conditions of a real emergency. The design of the scenario corresponds to what is defined in the scope and objectives of the exercise.
- **Development of the situation:** This includes a general description of the event or events that impact on people, areas, or facilities and that provide the scenes for the work of the participants. The events most commonly included are earthquake, flood, hurricane, fire, explosions, or disease outbreaks. The description of the event should include the type of event triggering the emergency, hour of the event, magnitude, intensity, location of event, and generation of other damages or events. The development of the situation is related to the triggering event and includes:
  - Actions expected from participants at the time of the alarm or opening signal, and from organizations responsible for carrying out the actions;
  - Characterization of the injured (severe, moderate, and mild), the type of injuries, and location of injured;

- The number of fatalities expected and their locations;
- Expected damage to the facilities and types of damage (total collapse, or with serious, moderate, or slight damage; type of damage; consequences; etc.);
- Availability (or not) of critical services during the exercise;
- Conditions expected in the immediate vicinity that should not be altered in order to maintain realistic conditions;
- Expected duration of the events;

Additional situations that can be added to complicate the event, (also known as complications).

The form included in **Annex 15** will assist in designing the general plot of the exercise.

- **Roles of participants:** Staff members of the organizations involved in the exercise perform actions according to their specialties and the roles assigned them. Drills may involve entire communities and in those cases the public are also participants.
- **Simulators:** People acting as victims and other characters simulated in the drill. The general script of the exercise is subject to the approval of the Coordinator and the institutional representatives that form part of the organizing committee.
- **Staging:** Physical representation of the impacts of the event, as well as the conditions and complexities that allow evaluation of the performance of the individuals and organizations participating. It relates directly to what is described by the general script.

  A list of activities required for assembling the scenes should be prepared, indicating who is responsible for setting it up, the amount and type of materials needed, the time required for installation, and any other requirements.

  Well in advance of the drill, it is essential to check that all materials, equipment, and devices used in staging are available and operate correctly. There must be close coordination between the design and scenario teams to define the staging guidelines.

  A checklist for staging should include the schedule of preparations for the scenario, those responsible for coordinating specific activities, and the availability of equipment and other supplies, including:

  - Selection and training of simulators
  - Requirements for makeup or moulage
  - Training the personnel involved
  - Transport and other equipment
  - Communications systems
  - Refreshments and snacks
  - Relations with communications media
  - Evaluation of the exercise

- **Length of exercise:** This depends on the scope of the drill, the number of organizations involved, and the type of operations. It can range from 20 to 30 minutes in the case of evacuating a facility, or 3 to 4 hours in the simulation of response to road or aircraft accidents. Drills of search and rescue operations may last for 12 hours or more. Long drills should include time allowing personnel to rest.

3. Organization

The organization process integrates and coordinates the work of different teams in developing the drill exercise (identified in **Figure 4**). The process is led by the coordinator and includes:

Determination of logistical needs

The organization and development of a drill requires, at a minimum:

- **Teams:** List of participants making up each team, the responsibilities assigned to them, and their addresses, phone numbers, e-mail address, and any other contact information.
- **Physical space:** Depending on the type of exercise, this can vary from a building in use (typically for hospital drills or evacuation of facilities), an open area where the scenario is installed, an abandoned building adapted for the proposed exercise, or an entire community.
- **Equipment and furniture:** Tables, chairs, blackboards, flip charts. Equipment such as sound systems, televisions, and closed circuit television are used to enhance viewing and monitoring for observers and the control team.
- **Photography and film team:** It is useful to have a photographic and film record of the exercise; this requires a crew and equipment.
- **Supplies:** Materials for staging and other supplies needed to develop the exercise as well as office supplies and materials.
- **Support materials:** Maps, triage cards, lists of resource, diagrams, response plan, and any other materials needed for the exercise. These materials should be carried and used by the emergency response teams as part of the exercise.
- **Documentation:** The documentation and forms described in this manual should be completed before the exercise begins.
- **Communications system:** A communications plan must be developed for maintaining contact among the different levels of coordination and the operational response teams during the exercise. This plan must regulate the use of radio frequencies of the institutions involved so as not to interfere with normal operations.
- **Food and drink:** Water and food for those involved in the exercise.
- **Identification:** Name tags or badges for people involved with the event, including observers, evaluators, support staff, media, participants, and others.

- **Personal expenses:** Finances for transport, accommodation, and other expenses for persons involved in the event.

Reconnaissance and review of sites

Prior to the exercise the coordinating team and technical personnel responsible for the drill should make a reconnaissance visit to the sites where the drill will take place.

When the scope of the exercise includes multiple injuries, activation of the health services, hospital transfers, or mobilization of the population, the review should include access routes to areas being evacuated, emergency routes, signage, identification of possible hazards and obstacles, as well as the condition and designation of security zones.

The evaluation team should know the location of the bases of the responding institutions such as fire-fighters, paramedics, police or others, and the location of resources. This helps them to evaluate response times.

The team responsible for the drill must know in detail the areas, building plans, and location of critical features such as fire hydrants, emergency exits, etc., that might be required in the event of a real emergency.

Selection and preparation of simulators

The team of simulators and performers should be coordinated by an individual with in-depth knowledge of the script and general design of the exercise.

The selection of simulators should be done early enough to allow for proper preparation. It is advisable to get the cooperation of groups such as medical students, nurses, and first aid volunteers. Theatre groups or drama students can be recruited; they also may have experts in makeup available.

Where there are adverse environmental conditions (such as extreme heat, cold, or precarious terrain or staging elements), it is extremely important to take safety measures for the simulators, particularly for adolescents. Avoid using children and older adults in simulator roles.

In order to give more realism to their performance and ensure their safety, simulators should receive prior training on the role they will play and on their mock injuries. General instructions should be given to a group and then the performance of individuals can be tested. Immediately prior to the exercise the actions simulators are expected to take should be reviewed. Expert advice should be sought for realistic makeup and moulage for victims and their injuries.

A card should be prepared for each simulator describing all the relevant information about his/her role, whether as a victim or another player (a sample of the simulator card is in **Annex 16**). This will serve to guide those applying moulage and makeup and those giving instructions to the performers. The card should include the description of the injuries and of the character represented by the simulator; expected behavior of the simulator taking into account the injuries sustained and the situation encountered, and expected behavior of characters who are not victims.

Remember:

The control team must have a list and map of the positions of all the simulators and should verify that all have been located during the drill. They must act quickly to locate any simulators who were not located by the end of the exercise.

In cases where moulage is not available, these cards will specify the type of injury so that responders can decide the kind of assistance needed. In such cases the card is placed on the victim.

Selection of evaluators

Evaluators are responsible for assessing the actions and decisions of participants and for that reason are selected according to their knowledge, experience, and ability to critique the subject and characteristics of the exercise. They should be selected well in advance of the exercise and must receive sufficient information regarding their responsibilities and appropriate use of assessment tools.

Prior to the exercise, the evaluators should visit the different staging areas in order to determine the best observation sites and review any difficulties that may arise. They should have a thorough and accurate understanding of procedures and the sequence of activities.

Observers

These are usually authorities, experts or other persons who are invited to be present during the exercise, without having an active role. They are not part of the evaluation team but may give their opinions during the evaluation period, if they so choose.

Mass media: Drills are expected to arouse public interest, so it is important to inform the media about the objectives of the exercise and its value in raising community awareness about emergency and disaster preparedness. Depending on the scale of the drill, it may be appropriate for the institution sponsoring the exercise to hold a press conference and invite the media to cover the event. It should be explained to the media that a simulation is performed to assess preparedness and any faults that are detected should not be sensationalized as they will be corrected as part of the exercise.

Medical and safety plan

Every drill should have a security plan that includes medical attention and management of in the case of real emergencies. The plan should consider public safety issues, coordination with relief organizations and hospital networks, and also include the delineation of the perimeter of the exercise, fire fighting capacity, and evacuation routes. As part of this plan, the team should consider:

- Availability of first responder teams that are not participating in the drill and who can respond to real emergencies (paramedics, fire-fighters). Designate an alarm or message to indicate that this is to be treated as an emergency. For example, "real emergency" can be used.
- In the event of an actual emergency during the exercise, the persons nearest or directly involved in the incident should draw attention to it to ensure the safety of other participants.
- When a real emergency occurs, the general coordinator or the designated security officer will be responsible for ordering the end of the exercise.
- In cases where the drill involves simulated victims, it is necessary to coordinate specifically with participating hospitals to:
- Avoid confusion between real patients and simulated patients. In that regard the methods of identification for the drill must be disclosed.
- Ensure that health personnel are prepared to deal both with actual patients and those simulating injuries.

Information for non-participants

Notification that the drill will take place must be given to non-participants (e.g., users and visitors in the facilities or services where the event will take place) in order to avoid confusion or panic.

Final verification of preparations

Days before the date of exercise, a meeting of all the working groups should be held to check the status of all required activities and issues, to identify gaps and correct problems. The form included in **Annex 17** can be used as a checklist to confirm preparations before the drill.

Summary document

All information regarding the drill will be entered on the Technical Data Sheet (see **Annex 10**). This serves as the official summary and outline for carrying out the exercise.

4. Execution of the drill

Responsibility for the execution phase lies with the control team, which is in constant contact with the coordination team. The development of the drill and sequence of actions are dictated by the script. Some considerations at this stage are:

- Coordination of teams: Those responsible for each of the areas of work will be linked by radio to enable them to coordinate with their counterparts.
- Control team: The controller will intervene in the work of the participants only if he or she detects actions or decisions that do not correspond to actual response capacities or that put the simulators and participants at risk.

Start order/alarm: The control team gives the order for activating the alarm and thereafter the activities take place in the order dictated by the script.

Information for spectators: During the course of the drill, information about the exercise and the actions being taken is typically provided to the public or the media. It is important to continuously announce that it is a drill, and the public should be notified as soon as the exercise ends.

Evaluators and observers: They should be located so that they can observe the work of the participants without intervening at any time during the exercise.

Identification and location of participants: All persons connected with the event must have identification that is visible and clearly specifies the role they are playing. They must remain in the area to which they have been assigned.

5. Evaluation

The evaluation process corresponds to two different aspects of the exercise: the performance of participants and organization of the drill.

Evaluation of the performance of participants

This evaluation is done by the evaluation team during the exercise to measure the performance of the participants and the fulfilment of the exercise objectives. This part of the evaluation should take the following into account:

- The team should receive the drill evaluation form (see **Annex 18**) far enough in advance so they know what aspects are to be evaluated and they can familiarize themselves with the form. Evaluators should receive identification (badges, vests, or armbands) in a color that differentiates them from the rest of the participants.
- The evaluators should be located strategically so they can easily observe the actions and reactions of the participants/simulators without intervening in any manner in the group dynamics.
- At the end of the exercise, the drill coordinator initiates the preliminary evaluation by asking participants to express their opinions on the drill, their individual performance, and the performance of the team.

  Following this, the observers and controllers share their views in a plenary session and finally the evaluators will report their general views and findings.
- The evaluation team must meet to exchange notes and to analyze and compile individual evaluations, which are synthesized into the overall evaluation. The final evaluation is given to the coordination team for use by the organization sponsoring the simulation.

Evaluation of the organization of the drill

This aims to evaluate the process of planning, design, and execution of the exercise. This will serve to document and provide feedback on the process in order to improve response in future events.

The general coordinator should set aside a time for completing this activity. It is a

self-evaluation in which all members of the coordination committee articulate their observations. A final evaluation document should record these observations and include recommendations for improving future drills.

The final activity of the drill is the delivery of the final report, which is the responsibility of the coordinating committee. The evaluation committee is responsible for collecting and processing comments and observations and producing the final evaluation report.

6. Documenting lessons learned

Documenting and synthesizing the lessons learned from the exercise is a necessary part of providing feedback for and updating the disaster and emergency response plans, and for planning future drills. This involves the analysis and compilation of all technical and administrative documentation generated at various stages of the drill, including the graphical record (photographs, diagrams, and videos).

The documentation process has two phases: the first involves the compilation of materials related to planning, technical design, and organization that are included in the official document of the drill. The second phase includes production of the evaluation report and synthesis of experiences from the drill, which is incorporated a few weeks after finishing the exercise.

7. Following up on the results

The coordinator of the drill is responsible for submitting a detailed report of the evaluation of the exercise to the sponsoring institution or institutions. The report will be delivered officially to the institution's authorities in writing or presented in person. The institution's authorities are responsible for implementing the recommendations and updating preparedness and response plans.

Remember the differences and similarities between simulations and drills:

✓ **Simulation**

- It is a tabletop exercise and normally takes place in a confined space.
- Generally, time "jumps" are used, which allows more flexibility in the use of time.
- It requires minimal resources and costs less.
- It is an exercise in managing the information that is used for making decisions.
- The Controller is in charge of developing the exercise.
- The scenario and script must provide very detailed information to recreate the events and facilitate understanding and monitoring of actions.
- There are no major security risks.

✓ **Drill**

- It is a field exercise, with a scenario that is as close to reality as possible.
- It takes place in real time.
- It requires many and diverse human and material resources.
- It is an exercise for practical operations in which the actions are evaluated. The way actions are carried out and decisions made in the situation determine the development of exercise.
- The scenario is as realistic as possible.
- Security plans are needed for participants because of their exposure to real physical risks.

✓ **Similarities between both exercises**

- They are useful for evaluating and validating preparedness and response plans.
- They both facilitate training, evaluation of tools and processes, and the exercise of decision making, teamwork, and inter-sectoral coordination.
- They are both developed from a script prepared in advance.
- All aspects of both types of exercises have to be evaluated and the results obtained from the evaluation should lead to updating preparedness plans.

Annex 1

Budget for preparing simulations and drills [1]

Type and name of exercise			
Institutions involved			
Place		Date	
Responsible party		Time	

Item	Unit of measure	Quantity	Unit price	Total price

(1) Each institution, organization, or entity will prepare the budget for the lines or elements that are their responsibility. When an institution has a form that is already in use, it can replace the one presented here.

Annex 2

Technical fact sheet for simulation exercises

Type and name of exercise			
Institutions involved			
Place		**Date**	
Responsible party		**Time**	

Item	Description
General features	
Specific objectives	
Description of the event	
Area or section to be evaluated	
Date of exercise	
Time of exercise (start and end times)	
Site of exercise	
Resources required	
Human resources	
Means for transmitting messages	
Space and materials	
Elements to distract participants and complicate scenario	
Graphical resources	
Other resources	
Budget	
Documentation/forms	
OBSERVATIONS[1]:	

(1) Use this space to write any other relevant information.

Annex 3

Designation of the organizational structure for simulations

Type and name of exercise			
Institutions involved			
Place		Date	
Responsible party		Time	

Responsibility	Full name	Telephone(s)	E-mail	Institution
Coordinator				
Technical Design Team				
Logistitcs Team				
Conrol Team				
Evaluation Team				

Annex 4

Assignment of roles in simulation exercises

Type and name of exercise			
Institutions involved			
Place		Date	
Responsible party		Time	

Role	Full name	Telephone(s)	E-mail	Institution

Annex 5

Timeline for preparing simulation

Type and name of exercise			
Institutions involved			
Place		Date	
Responsible party		Time	

Activity[1]	Responsible party	Wk. 1[2]	Wk. 2[2]	Wk. 3[2]	Wk. 4[2]	Wk. 5[2]	Wk. 6[2]	Wk. 8[2]	Wk. 9[2]	Wk. 10[2]	CK list[3]
Define general parameters											
Prepare budget											
Plan inter-agency coordination											
Prepare script and related items											
Determine logistical requirements											
Identify participants											
Select evaluators											
Prepare evaluation instruments											
Carry out exercise											
Evaluate organization of exercise											
Deliver documentation on lessons learned											
Deliver reports											
OBSERVATIONS[4]:											

(1) This list of activities can be changed depending on the context of the exercise.
(2) The time range here is in weeks but can be changed to days or months, as needed.
(3) Write YES or NO to indicate whether the activity has been completed.
(4) Include any additional information here.

Annex 6

Development of the scenario—Master list of events for simulation

Type and name of exercise			
Purpose			
Objectives			
Institutions Involved			
Place		Date	
Coordinator		Tima	

Real time	Simulated time	Message	Delivery method	Expected action	Responsible parties	Possible complications

Annex 7

Message card for simulation exercises

Message number			
Delivered by			
Addressed to			
Place		Date	
Responsible party		Time	

MESSAGE[1]
INDICATE ACTIONS TAKEN[2]:

(1) Indicate the events that develop in the simulation; propose problems/complications and provide instructions.
(2) Indicate what actions were taken to resolve problems or to follow instructions.

Annex 8

Simulation evaluation form[1]

Type and name of exercise					
Purpose					
Specific objective					
Institutions involved					
Methodologica issues					
Location			**Date**		
Evaluator			**Time**		
Ponderación	**1= Poor** (Procedures lacking; serious problems.)	**2= Average** (Elements of the process are evident, but with deficiencies and gaps.)	**3= Good** (The process is evident, but there are gaps.)	**4 = Very Good** (The complete process is evident.)	**5 = Excellent** (Additional elements are created and complement the guidelines established.)

Item evaluated	Score (1 to 5)	Observations
Organization		
Establishment of responsibilities		
Performance as a team		
Distribution of roles according to the established tasks		
Information management		
Data capture or collection (include time of capture and transmission)		
Verification and classification of information		
Establishment of priorities		
Information processing		
Updating information		
Use of management tools		
Use and application of maps, diagrams, etc.		
Use and application of forms, guidelines, and resource lists		
Use and application of tools to capture, process, and update data		

(1) These are proposed evaluation items that should be adapted to the actual exercise.

Annex 8

Simulation evaluation form (continued)

Item evaluated	Score (1 to 5)	Observations
Use and application of the procedures established in the organization's emergency plan		
Preparation of situation reports (initial, intermediate, and final)		
Decision making		
Identification of problems		
Establishment of priorities		
Choice of courses of action for operational response		
Channelling and implementing decisions taken		
Coordination and overall management of the situation		
Compliance with the established protocols and procedures		
Inter-agency and on-scene coordination		
Balance in results achieved in the four previous areas (i.e., organization, information management, use of management tools, decision making)		
Consistency between the situation and actions taken		
OBSERVATIONS:[1]		

(1) Include additional comments about the exercise in this space.

Annex 9

Example of a simulation (tabletop) exercise

1. Technical data sheet for simulation

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Features	Description
General features	
Purpose	Strengthen the capacity of the Health Department's EOC of Good Hope Department to respond in an organized manner to severe flooding, and evaluate the efficacy of the plans, protocols, and procedures.
Specific objectives	This simulation aims to evaluate the abilities of decision makers in the health sectors to deal with complicating factors that are presented during an exercise simulating flooding, as well as their knowledge of and ability to manage existing plans, protocols, and procedures.
Description of the event	
Area or section to be evaluated	
Date of exercise	16 March 2010
Time of exercise	Begins at 09:00 hours and ends at 16:00 hours.
Location of exercise	EOC Meeting Room of the Good Hope Health Department Directorate
Participants	Members of Emergency Operations Center (EOC) of Good Hope Department
Necessary resources	
Human resources	
Methods for transmitting messages	
Space and materials	
Elements to distract, exert pressure on participants	
Graphical resources	
Other resources	
Budget	
Documents / forms	
NOTES:	

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

2. Structural organization of the simulation

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Responsibility	Full name	Telephone Nos.	E-mail	Institution
Coordinator	Julio Harper	Off. 2234-5627 Cel.5934-2201	harperju@moh.gov.arc	Ministry of Health, National coordinator for emergencies and disasters
Technical design team	Rebecca Pinto, Coordinator	Off.224-35321	repinto@gmail.com	Ministry of Health; Environmental Health
	William Rogers	Off. 2245-1243	wrogers@crarc.org	Arcadian Red Cross
	James Wilcox	Off. 2256-8856	jwilcox@gmail.com	Ministry of Health; Epidemiology
	Martha Benning	Off. 2266-3531	mbenning@cadss.arc	Arcadian Social Security Fund
Logistics team	Dianne Smith, Coordinator	Off. 22334245	dsmith@moh.gov.arc	Ministry of Health; Administration
	Tom Dooley	Off. 22334245	tdooley@moh.gov.arc	Ministry of Health; Administration
Control team	Mark Bennet, Coordinator	Cel. 5912-2377	benitemar@moh.gov.arc	Ministry of Health
	Ramiro Ramos	Cel. 5991-2343	ramosramirez@moh.gov.arc	Ministry of Health
	Eugene Vidal	Cel. 5923-7327	vidaleugen@moh.gov.arc	Ministry of Health
Evaluation team	Samuel Jackson, Coordinator	Off. 2234-5627 Cel.5934-2201	jacksonsam@gmail.com	Good Hope Public Services Company (GHPSC)
	Robert Caravaca	Cel. 5992-0806	caravacarober@ops.arc	Pan American Health Organization
	Pamela Chapin	Off. 2254-9174	chupinapamela@moh.gov.arc	Ministry of Health
		Off. 2230-91283	atompkin@crarc.or	Arcadian Red Cross

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

3. Roles assigned for simulation

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Role	Full name	Telephone Nos.	E-mail	Institution
Director, Departmental Health Division	Ray Chaudhuri	Off. 22345627 Cel.5934-2201	rchauduri@moh.gov.arc	Ministry of Health (MoH)
Good Hope Department of Health, Coordinator for Disasters and Emergencies (EOC Coordinator)	Cedric Kerr	Off. 22565791 Cel 5976-4788	cedkerr@moh.gov.arc	MoH
Good Hope Department of Disasters and Emergencies Division	Glenda Hughes	Off. 22565792 Cel 5933-0071	glhughes@moh.gov.arc	MoH
Epidemiologic surveillance	Joseph Lopez	Off. 22565793 Cel 5967-1134	jlopez@gmail.com	MoH
Epidemiologic surveillance	Laurence Fox	Off. 22565793 Cel 5931-5201	laurenfox@moh.gov.arc	MoH
Epidemiologic surveillance	Edward Miller	Off. 22565793 Cel 5968-1214	edmiller@moh.gov.arc	MoH
Environmental health	Maxine Naidu	Off. 22565794 Cel 5967-0099	manaidu@gmail.com	MoH
Environmental health	Nigel Gibson	Off. 22675412 Cel 5933-0633	gibsonnig@edsp.gov.arc	Good Hope Public Service Company (GHPSC)
Administration and logistics	Susan Thomas	Off. 22565795 Cel 5913-3217	thomassus@moh.gov.arc	MoH
Administration and logistics	Mary Singh	Off. 22565795 Cel 5903-8785	marysingh@moh.gov.arc	MoH
Health services	Penny Cruz	Off. 22566332 Cel 5933-0104	cruzpenny@moh.gov.arc	MoH
Health services	Roxanne Miller	Off. 22566332 Cel 5933-8856	millerrox@moh.gov.arc	MoH
Temporary shelters	Peter Kumar	Off. 22565790 Cel 5933-0071	kumarpeter@moh.gov.arc	MoH
Temporary shelters	Sandra Boswick	Off. 22567441	boswicks@isw.gov.arc	Institute of Social Welfare
Information and communications	Andrea Harris	Off. 22565796	harrisand@moh.gov.arc	MoH
Information and communications	Dennis Knepper	Off. 22565796 Cel 5824-7845	knepperdenl@moh.gov.arc	MoH
Hospital emergency department	Karla Prieto	Off. 22045231 Cel 5967-5642	prieto@ssocial.gov.arc	Social Security Agency
Hospital emergency department	Clara Monsma	Off. 22045231 Cel 5968-2215	monsmacl@ssocial.gov.arc	Social Security Agency

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

3. Roles assigned for simulation

Role	Full name	Telephone Nos.	E-mail	Institution
External and NGO support	Patricia Ramos	Off. 22298562	ramospat@moh.gov.arc	MoH
Search and rescue team	Rex Philburn	Ofi. 22451243	philburnrex@crarc.org	Arcadian Red Cross
Search and rescue team	Chris Campos	Ofi. 22451243 Cel 5134-7856	chriscampos@crarc.org	Arcadian Red Cross
Journalist	Elizabeth Paxtono	Ofi. 22134461	paxtoneliz@moh.gov.arc	MoH

4. Budget for the simulation[1]

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Item	Unit of measurement	Quantity	Cost per unit	Final cost

(1) Each institution, organization, or entity will prepare the budget for the lines or elements that are their responsibility. When an institution has a form that is already in use, it can replace the one presented here.

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

5. Timeline for preparation of simulation exercise

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Activity	Responsible party	W1[1]	W2[1]	W3[1]	W4[1]	W5[1]	W6[1]	W7[1]	W8[1]	W9[1]
Define general parameters	Coordination Team; Participant: Technical Design Team									
Inter-institutional coordination	Coordination Team									
Development of script and related elements	Technical Design Team									
Determine logistical requirements	Technical Design Team Participants: Administrative and Logistics Team									
Establish budget	Administrative and Logistics Team									
Procure logistic requirements	Administrative and Logistics Team									
Assign participants	Coordination Team; Participant: Technical Design Team									
Select evaluators	Coordination Team									
Develop evaluation instruments	Evaluation Team									
Verify progress	Coordination Team									
General verification of exercise	Coordination Team									
Carry out exercise	Coordination Team									
Evaluate organization of exercise and prepare documentation for lessons learned	Coordination Team									
Develop and deliver reports	Coordination Team									
OBSERVATIONS:										

(1) The timeline shown here is for weeks, but can be changed to days or months, depending on requirements.

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

Scenario for the simulation exercise

The Department of Good Hope (in the southwest part of the country) has a population of 1,041,300 in an area of 6,846 km2 which is divided into four municipalities: Eden, the capital; Azalea, on the Pacific coast; Walden, in the most mountainous region of the department; and Mount Evans. Some 80% of the department is mountainous and historically it has been affected by weather-related events that cause severe flooding, resulting in loss of life and damage to property, basic services, and the environment.

Problems such as unplanned growth, logging, and population settlements in inappropriate areas have increased the vulnerability and exposure of the population throughout the department to adverse events

Good Hope Department is not the most prosperous in the country. Departmental authorities often have differences with national authorities due to the excessive concentration of resources and political authority exercised from the national capital of Kensington. Recently, the Good Hope Agricultural Federation was formed to bring together producers of rice, bananas and oil palm and to defend their interests. These farmers produce the raw goods that are industrialized and commercialized by intermediary companies, mainly multinationals.

The department's fishermen must compete with large, modernized fishing fleets, and they have called for greater involvement by the authorities in regulating the fisheries. The recent installation of a processing plant for shellfish export provides an alternative market for local fishermen, but export of products brings a very low price. Fishermen are able to sell their fish to coastal hotels at higher prices.

In recent years, there has been considerable growth in tourism including "all inclusive" services as well as for area attractions in the mountains and along rivers, increasing adventure tourism.

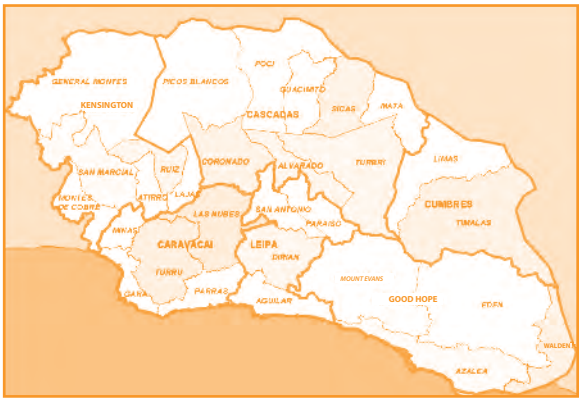
The Chamber of Tourism has increased campaigns taking advantage of the expansion of the second runway at the Eden airport. Although the airport cannot handle nighttime arrivals, it is able to serve charter flights with tourists. Different festivals are part of the strategy the tourism campaign, including a livestock show held every year. Production in the tourism sector had increased due to government support.

The road network of the department is of acceptable quality, but many roads and bridges have maintenance problems due to landslides, subsidence, and flooding during the rainy season.

Paved roads interconnect with other departments with the exception of Cumbres Department. Land transport in Cumbres is along undeveloped roads and trails crossing the mountain range to the many indigenous communities in the south of the department.

Rail services operate exclusively for companies that produce cane, bananas, and pineapple. Currently, there is a complaint against the pineapple company because their farming methods contribute to erosion, thereby increasing the danger of flooding in surrounding communities.

At the end of this month, an election will be held to choose mayors in all municipalities. The races have been extremely close, and surveys reveal no clear frontrunner. As a result, candidates have had to increase their campaign efforts to gain votes.



Map of the Republic of Arcadia

Eden, the departmental capital of Good Hope, has a population of 565,000 and is nestled at the foot of the southern mountain range. Because of steep slopes that characterize its topography, it is prone to flash flooding. The depletion of the watershed and poor maintenance of sewage systems in recent years have caused serious urban flooding, with major losses in commercial and residential areas, and leaving large sections of the city isolated.

Eden is crisscrossed by a river system of creeks, streams, and small tributaries of the Sierra and Platte rivers. The accumulation of garbage in some of these tributaries is an ongoing problem in the city.

Eden is a thriving city, with an economy based mostly on goods and services. Its shops, department stores, and markets offer diverse types of commerce and make the city an attractive place for business.

St. Jerome Hospital, with a 188-bed capacity, is the largest hospital in the department. Over the years it has repeatedly been affected by flooding. Owing to its age, it has structural weaknesses and deficiencies in terms of organization and internal design.

An article published last week gave an account of problems faced by the hospital: its exposure to flooding, ongoing problems of overcrowding and sanitation, and labor issues, among others. According to the article, the resources needed by the hospital have been assigned to other activities. When questioned about these issues, the Hospital Director told the press that he could not be held responsible for conditions in the hospital. Meanwhile, the Director of Social Security stated that the hospital should be relocated rather than repaired.

St. John's Hospital is newer and smaller, with a capacity of 90 beds. It was built with a modern design that takes into account flood prevention measures that are required in a health facility.

Eden also has one health clinic and 80 small health posts. There are two private hospitals in the city, one with a capacity for 38 beds and another for 40 beds. The private hospitals have a contract with the Social Security Department to provide services, since demand for health care is far greater than can be provided by the public health sector. (See Tables 9.A and 9.B showing health resources in the Department.)

The municipality of Mount Evans, with 98,300 inhabitants, is located about 1,500 meters above sea level. Logging in the mountains have contributed to high levels of erosion and depleted topsoil in this area. Jute River originates in this area, fed by streams and creeks. The town has a drinking water and sewerage system that serves 80% of the population; electricity service reaches 60% of the city and some of the villages scattered on the periphery.

The inter-departmental highway that connects with Kensington, the nation's capital, has become the source of economic growth for Mount Evans and major commercial and service activities are located along the highway. Indeed, this concentration of activity along the highway has also resulted in a high rate of road accidents. Because of this, a primary health post was established here. It is staffed by a physician who is in mandatory social service and two assistant nurses. Mount Evans also has a clinic run by the Social Security and eight other smaller clinics.

Azalea, a municipality with 303,000 inhabitants, is located on the Pacific coast and is vulnerable to flooding due to its proximity to the Platte, Sierra, and Blue Rivers and their tributaries. The areas most affected by flooding are the central coastal area and plains. Generally, these areas suffer from slowly developing floods that worsen when high tides prevent or slow drainage.

Azalea has a 90-bed hospital which is not 100% operational at this time. In addition to the Social Security clinic, there is a network of 95 health clinics distributed throughout the municipality.

Activities related to construction in wetland areas have increased the incidence and risk of flooding because there is a high water table and rapid saturation of soils occurs.

In the port area there are several shipping companies and facilities for handling cargo. Fleet & Handling Services is installed on a property with space for up to 40 containers (20 foot) as well as some 10 power stations that service refrigerated containers. This port handles domestic shipping for the different towns along the coast. It should be noted that Happy Shrimp Company has leased half of the facilities in the port to establish a plant to process seafood for export.

The fourth annual surfing championship at Bastos beach, in eastern Azalea, is taking place now. This area is famous for its beauty and is known internationally for surfing. Some 500 tourists and participants have gathered for the competition this year.

Walden, whose main town is Cobre, is one of the poorest municipalities in the department. Walden is inhabited by about 75,000 people who are mostly indigenous and speak the

Health resources in Good Hope Department

Public facilities

Type of service	EDEN (Capital of the departament)	AZALEA	WALDEN	MOUNT EVANS	TOTALS
Population	56,5000	303,000	75,000	98,300	104,300
Hospitals	2	1	0	1	4
Hospital beds (see note below)	278	90	0	50	458
Clinics	5	2	1	1	9
Health posts	80	15	5	8	103
Dental offices	15	7	2	1	25
Operating theatres	15	6	0	0	21
Intensive Care Units	2	1	0	0	3
Birthing rooms	5	2	0	0	7
X-ray rooms	5	2	0	0	7
Clinical laboratories	5	3	0	0	8
General physicians	500	125	8	25	728
Nurses	1500	620	16	60	2196
Other specialists	150	80	0	10	240
Ambulances	25	4	2	3	34
Note: St. Jerome Hospital in Eden, public, 188 beds; St. John Hospital in Eden, public, 90 beds; St. Martin Hospital in Azalea, public, 50 beds; El Paso Hospital in Mount Evans, public, 50 beds.					

Private facilities

Type of service	EDEN (Capital of the departament)	AZALEA	WALDEN	MOUNT EVANS	TOTALS
Population	56,5000	303,000	75,000	98,300	104,300
Hospitals	2	0	0	0	1
Hospital beds	78	0	0	0	78
Clinics	15	2	1	1	19
Doctor offices	85	15	1	2	103
Dental offices	25	7	1	2	35
Operating theatres	5	0	0	0	5
Intensive Care Units	1	1	0	1	1
Birthing rooms	5	0	0	0	5
X-ray rooms	5	0	0	0	5
Clinical laboratories	20	1	0	0	21
General physicians	400	100	4	10	514
Nurses	25	0	0	0	25
Other specialists	15	0	0	0	15
Ambulances	10	3	0	1	14

Urari language. Most of these people live in the relatively isolated mountain villages of Uras, Brimbe, Acabenar, Terribas, and Barkiri Catongue. Access to these remote villages is through a network of roads and trails. Every year there are a large numbers of accidents due to the dangerous trails and river crossings.

These communities engage in subsistence farming and the sale of crafts which they transport every weekend to markets serving the people of the lowlands. They live in precarious conditions with limited or no access to basic services. This situation has been denounced repeatedly by various national and international organizations that manage projects in the region.

Non-indigenous people of the Walden municipality live primarily in the plains and coastal regions and engage in agriculture, livestock, and tourism. Most settlements are located along the banks of the Tepescoele River. Cobre, the small county seat has the largest population concentration, and every weekend there is intense commercial activity, mainly for the sale of agricultural products from the area. A clinic and a network of health units serve the health needs in Walden.

The Cooperative in Support of Indigenous Peoples (CSIP) published a study showing almost total neglect of this population by the authorities. Doctors of the World oversee several primary health care programs and have established a network of clinics in the area. In their latest report they describe many cases (including deaths) of severe malnutrition in children as well as high incidence of illness related to the use and consumption of unsafe water, and various parasitic diseases such as lice and scabies.

The rural areas of the municipalities are usually the most affected by flooding due to their own levels of vulnerability. It is not uncommon for rural communities to become isolated when main access roads are blocked. Both unsanctioned settlements and massive logging of wooded areas in central areas of the mountains have damaged the watersheds of many rivers. This leads to the accumulation of large amounts of sediment which dam natural drainages during the rainy season. There have been small mudslides and landslides that put the population at risk.

In recent years outbreaks of dengue, malaria, and leptospirosis have been reported in Good Hope Department, as well as significant episodes of cholera. This situation is exacerbated by poverty and the limited access that much of the population has to health care or to basic services like safe drinking water and sewerage.

The Public Service Company of Good Hope (GHPSC) proposed a plan for increased water rates with the justification of investing in the required infrastructure improvements. However, the Clean Water Association prepared an assessment of the current state of urban and rural water access to reveal company mismanagement of these resources. The following text is an extract from the Association's assessment.

Status of water services in the Department of Good Hope

Of the 565,000 inhabitants of Eden Municipality, only 70% are connected to the public network, but service is intermittent. Ten percent of the population, mainly in marginal urban areas do not have water service and are supplied by delivery trucks or individuals obtain their water through other means. The remaining 20% of the population collects water from streams and domestic wells, especially in rural areas.

In Mount Evans, 80% of the population is connected to water service and 20% collect water from streams and wells. In Azalea, of 303,000 inhabitants, only 50% are connected to the public network with the same problem of intermittent operation; the other 50% obtain water from wells, rivers, and trucks. Many wells have salinity problems and during the dry season the water levels drop. Almost none of the wells are treated to improve water quality.

In Walden the situation is much more critical. The only public network is in Cobre and it serves some 20,000 people; the remaining 55,000 obtain water from rivers and wells. According to the same assessment, the current rates being charged are too high taking into account the quality and coverage of the service. It is recommended that the company first invest in improvements and then review fees.

Although the GHPSC has installed raised catchment tanks to improve water distribution in each of the municipalities, they are frequently out of order for different reasons. One example is a tank in Azalea which was built in an area prone to landslides. Its foundations are sinking, causing a dangerous incline of the tank, so it is necessary to keep it empty or only half full.
Facilities that house the pumping stations are easily accessible and do not have security measures. As a result there have been many thefts and vandalism is ongoing.

A common problem in the country is the poor treatment of waste, and the Department of Good Hope is no exception. Each municipality has its own landfill, but none of them meet basic technical standards and most have exhausted their useful life.

In the municipality of Azalea, the situation has worsened since the landfill has exceeded its capacity. No trash has been collected for 15 days and the streets are filled with waste. Birds and stray dogs destroy the trash bags and spread the trash, increasing the problem of odors and clouds of flies. Organizations representing different communities have given an ultimatum to the municipal authorities, including the Ministry of Health (MOH), to solve the problem. They have threatened street protests if there is no satisfactory response.

In the last five days it has rained heavily and soils are saturated. Rivers are rising rapidly, especially those with limited capacity, and some have overflowed their banks. Any increase in rainfall could cause damage, so authorities have taken the warnings seriously.

As a result of severe flooding last year, the national government decided to review and strengthen existing mechanisms for dealing with emergencies. A warning system was established for all departments, but particularly for Good Hope Department. Based on its

history of flooding, topography, and current conditions, the department could suffer the most damage.

The National Agency for Emergency Prevention and Response (NAEPR) initiated a process at the departmental level to review disaster plans and make visits to the most disaster-prone areas. Their objective was to inspect areas that are most at risk and to establish a network of community emergency committees and systems for monitoring and warning in the region's most critical watersheds. These committees are made up of brigades of local volunteers who have received some basic training on emergencies. In Azalea and Eden members of committees and brigades are people living at risk. As a result, a disaster response plan has been prepared that includes basic issues such as evacuation, shelters, communications, etc.

Unfortunately, the municipality of Walden has not had the same success in organizing for emergency response because NAEPR staff does not speak Urari and there are difficulties reaching many of the isolated indigenous communities located in the mountains. As a result, committees are made up mainly of people from the valley. Local health personnel have taken advantage of their contact with the population during medical visits, and have addressed risk management issues for several months. However these efforts have not been sufficient, considering the multiple needs of these communities, the level of their exposure to hazards, and their isolation.

Due to the weather situation and warnings issued by NAEPR the Emergency Operations Center for Good Hope (EOC-GH) was activated in order to assess the situation and set the emergency plan in motion (preventively).

There has been extensive coverage in the media about the rainfall and reporters have been following how institutions are preparing to respond to an emergency. While flooding in this region has always occurred, in recent years even limited rainfall has brought about flooding, and areas that historically have not flooded are being affected. This topic is being addressed by politicians in their campaign speeches in some municipalities.

Last week, residents of several communities were taken by surprise by the level of some rivers in places where flooding had never been recorded. While nothing has happened yet, there are fears that the rivers will overflow.

Several health officials are not from Good Hope and often return to their home departments on weekends. This is the reason that the health sector's Emergency Operations Center (EOC-H) was not operational during the intense rainfall of the previous week.

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

6. Scenario for the exercise: Development of the situation

Type and name of exercise	Flooding in Good Hope Department		
Institutions involved	Members of Emergency Operations Center (EOC) of Good Hope Department		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party	Ministry of Health—Dr. Julio Harper, National Coordinator for Emergencies and Disasters	**Time**	09:00–16:00 hours

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
09:00		Explain exercise and its objectives. Distribute role assignments. Allow time for participants to take on their roles.	Informal talk.	Provide instructions, clear up questions from participants, distribute initial materials. **Time: 20minutes**	Coordinator of the exercise; control team.	
09:20	08:00 Friday	**(Message card #1)**: Bulletin No. 1 National Agency for Emergency Prevention and Response (NAEPR) declares green alert at the national level and yellow alert for Good Hope Department	Fax to Departmental Director of Health.	Review emergency plan for the health sector. (EP-H). **Time: 10 minutes**	Departmental coordinator for emergencies and disasters. From this point on: Coordinator of the EOC for the Health Sector (EOC-H).	
09:30	17:00 Friday	**(Message Card # 2)**: The director of the Good Hope Department EOC (EOC-D) calls the Good Hope Departmental Directorate of Health (DDH-GH) to announce that there are major possibilities of damage and they are recommending preparedness actions by institutions.	Call Director of DDH-GH	Activate Health Sector Emergency Plan (EP-HS). Summon to the health sector's EOC first thing the next day to assess the situation and to make preparations. Activate the situation room for monitoring and follow up. Report EOC-H activation to the internal structure of the MOH and the EOC-D. **Time: 10 minutes**	Director (DDH-GH); Coordinator (EOC-H).	Several health officials are not from Good Hope and return to their homes for the weekend.
09:40	08:00 Saturday	**(Message Card # 3):** El DDS solicita al COESS la The DDH-GH requests the EOC-H to put preparations into effect prior to impacts.	Written communication	Review the epidemiological profile of the department and update information for the situation room. Prepare a reporting and surveillance system for monitoring and updating epidemiological information and detection of increases in morbidity. Send copies to the situation room. **Time: 20 minutes**	Coordinator, EOC-H and those responsible for epidemiologic surveillance, environmental health, and shelters.	

6. Scenario for the exercise: Development of the situation (cont'd)

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
10:00	08:00 Saturday	**(Message Card #4):** The Arcadia Health Minister asks the DDH for information about the operational status of the health network and its needs, taking into account the possible escalation of the emergency and the additional demand on health services.	Fax to DDH (Good Hope)	Prepare report on availability of resources (personnel, equipment, medical and other supplies, communications) for emergency and outpatient services and establish the plan for providing needed medical supplies. Check system for referral of patients to hospitals inside and outside the network. Send copies to the situation room. Time: 20 minutes	Health services; hospital emergency departments; relief agencies; administration and logistics.	
10:20	12:00 Saturday	**(Message Card #5):** Reports of damage in several communities. Media are pushing for information on health status of population.	Multiple calls from the press to DDH-GH.	Define public information strategy to communicate health sector activities and to inform the public through the mass media. Consult relevant technical information. Send copies to the situation room. Time: 20 minutes	Information and communication. Participants: Environmental health, NGOs, and external support.	
10:40	13:00 Saturday	**(Message Card #6):** Bulletin No. 2: National Agency for Emergency Prevention and Response (NAEPR) declares yellow alert nationwide and red alert for Good Hope region. Report of damage to various areas of the department.	Fax to the EOC situation room.	Request situation reports from local health facilities in affected areas (use existing formats for health damage assessment and needs analysis—DANA/Health). Begin to fill out information forms on impact for situation room. Carry out rapid assessment and projection of urgent needs for the department. Send copies to the situation room. Time: 20 minutes	Coordinator, EOC-H; Epidemiological surveillance; environmental health; administration and logistics; health services; hospital emergency departments.	
11:05	15:00 Saturday	(Message Card #7): The Minister of Health notifies DDH-GH that many reporters are calling his office complaining that they have not received requested information; Minister requests action.	Call from Minister of Health.	DDH-GH calls a press briefing to explain health sector preparations to respond to this emergency. Time: 20 minutes	Director, DDH-GH; Coordinator, EOC-H.	

6. Scenario for the exercise: Development of the situation (cont'd)

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
11:25	16:00 Saturday	**(Message Card #8):** Report that service aqueduct services interrupted in almost all affected communities, as well as contamination of wells and other water sources.	Fax to the EOC situation room with reports from the field.	Enter reports on damages and effects in data logs at EOC-H and relay information to the situation room. Activate plan for safe water supplies (describe actions). Develop recommendations on basic measures for food safety, both for possible shelters and for the general population. Send copies to the situation room. **Time: 20 minutes**	Environmental health; epidemiological surveillance; information and communications.	
11:45	18:00 Saturday	**(Message Card #9):** Massive evacuations reported; temporary shelters opened in facilities designated previously, but also in improvised sites without the necessary conditions for safe accommodation of large numbers of people.	Fax reports from the field to EOC situation room.	Enter data on shelters in the EOC-H registry; relay information to situation room. Establish a health monitoring plan that includes the essential elements for operation of shelters (minimally: epidemiological surveillance and reporting, water and sanitation, food safety, nutritional surveillance of vulnerable populations, mental health). Send copies to the situation room. **Time: 30 minutes**	Shelter managers; emergencies and disasters; epidemiology; administration and logistics; relief agencies; Information and communications.	
11:55	20:00 Saturday	**(Message Card #10):** Reports of damage to infrastructure and performance problems in many health facilities. Outpatient networks having serious difficulties meeting demand for services.		Enter data on damage to health infrastructure in EOC-H registry; communicate information to the situation room. Activate plan to support hospital and outpatient services (describe actions). Send report to situation room on the status of health services. **Time: 20 minutes**	Health services; hospital emergency departments; relief agencies.	

6. Scenario for the exercise: Development of the situation (cont'd)

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
12:15	08:00 Sunday	**(Message Card #11):** Situation reports indicate significant damage to public services; effects on population are extremely serious. Epidemiological impact can be anticipated.		Activate the rapid epidemiological surveillance system to estimate (at a minimum): • General magnitude of the impact (geographical area, number of people affected, estimated duration); • Health impact (morbidity and mortality); • Conditions of health care services; • Damage to other services (electricity, water, sanitation); • Capacity of local authorities to respond. Design plan for basic training on rapid epidemiological surveillance for health personnel, NGOs, and the community. Prepare an epidemiological report on the emergency situation and send to the situation room. **Time: 30 minutes**	Epidemiological surveillance; Emergencies and disasters; Environmental health; Health services; Hospital emergency departments.	
12:45	10:00 Sunday	**(Message Card #12):** Widespread rumors of possible epidemics; population alarmed by reports in the media and demand vaccinations to protect against epidemics.		Develop technical information on myths about disease outbreaks and need for vaccinations in disaster situations; address alternative health measures. Prepare and disseminate public information to neutralize alarmist media reports about other aspects of public health. Send copies to the situation room. **Time: 25 minutes**	Information and communications; environmental health; epidemiological surveillance.	
13:10	12:00 Sunday	**(Message Card #13):** The demand for medical care because of injuries or other consequences of the emergency is significant; it is unclear whether the health system has the capacity to meet the demand for services. Shortage of resources has led to a breakdown of health services when people are in urgent need.		Propose strategy to support health centers in the municipalities affected. Identify health supplies needed to replenish these centers and propose a plan to restock supplies. Send copies to the situation room. **Time: 20 minutes**	Health services; Hospital emergency departments; Relief agencies.	

6. Scenario for the exercise: Development of the situation (cont'd)

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
13:30	14:00 Sunday	**(Message Card #14):** Problems with the proper handling of dead bodies, especially where there have been incidents with multiple victims. Similarly, the number of animal carcasses scattered through different areas creates a public health problem.		Establish and communicate a specific list of actions for the management of human corpses. Establish and communicate a specific list of actions for the safe management of animal carcasses. Consult technical information on the subject. Send copies of action lists to the situation room. **Time: 20 minutes**	Environmental health; epidemiological surveillance; administration and logistics; relief agencies.	
13:50	14:30 Sunday	**(Message Card #15):** The situation in affected areas is constantly changing; information must be updated frequently so that response activities adequately meet what is needed in the field.		Update information on damage to health infrastructure (at a minimum): • Effects on the condition of infrastructure in health facilities; • Operation of health services; • Effects on the population; • Updated information on needs. Use existing DANA formats for health sector. Send report to the Situation Room. **Time: 20 minutes**	Disaster and emergency response agencies; environmental health; hospital emergency departments.	
14:10	15:00 Sunday	**(Message Card #16):** The media are asking the public for donations of any kind for the victims. Large amounts of supplies are arriving at collection points.		Develop guidelines on suitable donations to reduce unsolicited donations and inappropriate supplies. Publish information on web site about donations required. Mobilize a health team to work with LSS/SUMA, indicate what type of health professional is the most appropriate and the activities to be undertaken as an LSS/SUMA team member. **Time: 20 minutes**	Administration and logistics; disasters and emergencies; information and communications; external support and NGOs.	
14:30	16:00 Sunday	**(Message card # 17):** Most shelters do not meet basic requirements for the numbers of displaced persons. Not all shelter managers have sufficient knowledge of operations.		Define inter-institutional actions to support operation of shelters. Develop guidelines on ways to improve shelter management. Consult relevant technical documentation (PAHO guidelines on shelters; SPHERE Handbook). **Time: 20 minutes**	Shelter managers; administration and logistics; relief agencies.	

6. Scenario for the exercise: Development of the situation (cont'd)

Real time	Simulation time	Message	Method	Expected actions	Responsible parties	Possible complications
14: 50	18:00 Sunday	**(Message Card #18):** Problems with waste, including debris swept away by flood waters and filling streets, and waste generated in shelters.		Prepare a plan for solid waste management, including collection, transport, treatment and final disposal, as well as inter-institutional coordination to address the problem. Evaluate the status of solid waste management in shelters and propose corrective actions. Prepare a general progress report on solid waste management and send it to the situation room. Consult relevant technical documentation (guidelines on waste management in disaster situations). **Time: 30 minutes**	Environmental health; epidemiological surveillance; shelter management; information and communications.	
15:20	08:00 Monday	**Message Card #19):** The effects of floods on the department's environmental health have been devastating. When the rains stop and the flood levels lessen, emergence of new environmental conditions, if not managed properly, will increase hazards for health.		Develop an assessment of environmental health and recommend basic urgent interventions in the sector. Develop a plan for surveillance and monitoring and sanitation activities developed by different institutions. Define the approach for monitoring the health and sanitation conditions in shelters. Report all activities to the situation room. **Time: 30 minutes**	Health services; disasters and emergencies; epidemiological surveillance; shelter management; information and communications.	
15:50		Completion of exercise		Notify participants that exercise has concluded.	Control team	
16:00		Evaluation of performance of participants		Participants share their general impressions and opinions about the exercise. The evaluators individually present their observations on aspects they evaluated during exercise.	Evaluation team	

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

7. Development of the situation: Message card for the simulation exercise*

Message number	#1		
Issued by	Departmental Emergency Operations Center--Good Hope		
Directed to	Director, Good Hope Health Department Directorate		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party		**Time**	09:20
Message			

Heavy rain is forecast.
Declaration of yellow alert for Good Hope region.
Declaration of green alert for the rest of the country.

BULLETIN NO. 1: National Agency for Emergency Prevention and Response (NAEPR)

According to the National Weather Service (NWS) there are conditions for atmospheric disturbance in the next 72 hours causing rainfall of variable intensity across the country. It is important to take measures to reduce the impact of rain and all necessary precautions to avoid emergency situations.

Green alert has been established at the national level based on monitoring by NWS.

Disaster response institutions comprising NAEPR outside of Good Hope Department have been advised to be on watch for any contingency, to be aware of information generated in the coming hours, and to maintain alert status internally.

Due to the saturation of soils and rising levels of major rivers caused by heavy seasonal rains occurring for the last five days in the southwestern region of the country, a yellow alert has been declared for Good Hope Department.

Disaster response institutions that make up the Good Hope Emergency Prevention and Response Agency have been requested to activate their response plans and be on standby to address severe flooding.

* Because of space limitations, only three message cards are included here as a sample. For the actual simulation, a card for each message should be prepared.

7. Development of the situation: Message card for the simulation exercise (cont'd)

Message number	#10		
Issued by	Departmental Emergency Operations Center--Good Hope		
Directed to	Director, Good Hope Health Department Directorate		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party		**Time**	09:20

Message

An urgent meeting has been called for the Emergency Operations Center (EOC)
An emergency has been declared in the country due to heavy rains.

Due to the increased demand for assistance from residents in Good Hope Department, all disaster response agencies are summoned to a meeting at the national EOC in order to take necessary actions for emergency response. This meeting will provide updated information about the emergency and about preparing the coordinated response of institutions.

All emergency response institutions and agencies in Good Hope Department are requested to activate their response plans and have logistical and financial resources in order so they can meet the needs that the rains have caused in the region. They were also asked to share all the information generated in the coming hours and to remain on alert status.

ACTIONS:

Prepare for the President of the Red Cross to attend the meeting in the EOC. He will request that the inventory of financial and logistical resources of the Red Cross be made ready to meet the country's emergency needs.

Message number	#18		
Issued by	Departmental Emergency Operations Center--Good Hope		
Directed to	Director, Good Hope Health Department Directorate		
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010
Responsible party		**Time**	09:20

Message

Call a **PRESS CONFERENCE:**

Due to the emergency situation in the country, the Minister of Health calls on members of the press to attend a press conference to address issues related to the effect of floods on the health of residents of Good Hope, epidemiological risks, the situation in shelters, future vaccination campaigns, among other topics.

Date: 17 March 2010
Location: Hall of the Ministry of Health (MOH) in Good Hope
Time: 8:00 a.m.

ACTIONS:

The communications division of the MOH should prepare messages that will be presented by the Minister of Health or the person he/she delegates. Also, contact the media (radio, newspaper, Internet, television) via mail, fax, e-mail, and telephone.

Coordinate logistics for the press conference: logos, information kits, microphone, and performers.

Annex 9

Example of a simulation (tabletop) exercise (cont'd)

8. Simulation evaluation form

Name of exercise	Flooding in Good Hope department				
Purpose	Strengthen the capacity of the health sector's Emergency Operations Center (EOC-H) to respond in an organized way to an emergency caused by intensive flooding in the department of Good Hope. Evaluate the effectiveness of the EOC plans, protocols, and procedures.				
Specific objectives	1. Practice the distribution of responsibilities and team performance in emergency situations. 2. Apply procedures for gathering and processing the information which is a critical input for decision making. 3. Use tools to assist in making decisions based on technical criteria. 4. Carry out exercises in prioritization, choosing courses of action, and implementing these actions. 5. Examine the capacity for coordination within the EOC and among different institutions. 6. Identify EOC weaknesses in order to promote improvement.				
Scope	This simulation aims to assess the abilities and skills of decision makers in the health sector to deal with a variety of complex factors presented during a flood simulation exercise. Likewise, it is meant to assess their knowledge and ability to manage plans, protocols, and procedures.				
Institutions involved	Members of the health sector's Emergency Operations Center (EOC-H) of Good Hope Department.				
Location	EOC Meeting Room of the Good Hope Health Department Directorate	**Date**	16 March 2010		
Evaluator		**Time**			
Evaluation score	1 = Poor (process lacking, serious problems)	2 = Average (identified elements of the process, but with gaps)	3 = Good (identified the process as a whole, but gaps are observed)	4 = Very Good (identified the entire process)	5 = Excellent (additional items created to complement the established guidelines)

8. Simulation evaluation form (cont'd)

Item evaluated	Scoring (1 to 5)	Observations
Organization		
Establishment of responsibilities	2	Frequent confusion between the Coordinator of the EOC and the Director of the Departmental Directorate of Health regarding the scope of their respective responsibilities.
Distribution of roles according to established tasks	4	For individual tasks the responsibilities of each person are clearly defined.
Performance as a team	3	Little support was provided with tasks that were not assigned to individuals but assistance was needed.
Information management		
Data capture or collection (time of capture and transmission)	2	Need to improve all procedures in the area of information management; the speed and difficulty of gathering information affect all other components.
Verification and classification of data	2	See under data capture.
Establishing priorities	2	See under data capture.
Processing information	3	Although the procedures should be improved, there was good flow of available information
Updating information	3	Frequently updated information where it was available
Use of information management tools		
Use of maps, graphs, etc.	4	Good preparation of graphic and geographic resources to locate the affected areas.
Use of charts, handbooks, and resource lists	3	Frequently consulted technical resources in print and online formats. More information is needed on where to find technical literature.
Use of tools for capturing, processing, and updating data	2	See "Information management."
Application of procedures set out in the institution's emergency plan	3	It seems that procedures are applied out of habit and/or from knowledge of responsibilities rather than by consulting the institutional plan. This could be positive but there is the risk that some areas of response will be overlooked.
Preparation of situation reports (initial, intermediate and final).	4	Reports are concise and have relevant content.
Decision making		
Identification of problems	4	Despite problems with information, prior knowledge of the affected areas made it possible to foresee the magnitude of the problems.
Establishment of priorities	4	See "Identification of problems."
Choice of courses of action for operational response	3	In many cases the lack of information about available resources affected the ability to carry out decisions.
Channeling and implementing decisions	3	See "Selection of courses of action for the operational response."
Coordination and integrated management of the situation		
Compliance with established protocols and procedures	4	The different groups are very familiar with their responsibilities and response mechanisms.
Coordination among agencies/institutions and at disaster sites	3	Need to improve coordination procedures, particularly among-institutions.
Balance among results achieved in the four previous sections	4	
Coherence between the situation and actions taken	4	Given the quality of information available, actions taken were fairly well reasoned.
OBSERVATIONS: Except in a few cases, participants took the exercise seriously and tried to solve problems as they would in a real situation. Sometimes the speed at which messages were delivered prevented them from developing better actions.		

Annex 10

Technical fact sheet for drills

Type and name of exercise			
Institutions involved			
Location		Date	
Responsible party		Time	

Item	Description
General features	
Purpose	
Specific objectives	
Type of drill	
Participating institutions	
Description of the site(s) of drill	
Brief description of the situation, including the events being simulated and their locations	
Signal to begin exercise	
Signal concluding the exercise	
Notification for actual emergency	
Location of central control for exercise	
Location of meeting point for players	
Location of health posts for simulators	
Distribution and number of victims according to triage categories and damage	
Type and number of other players	
Plan for medical care and safety of players (in event of actual emergency)	

Annex 10

Technical fact sheet for drills (cont'd)

Item	Description
Resources required	
Human resources	
Staging	
Fire control equipment	
Search and rescue equipment	
First aid kits	
Communication equipment and frequencies to use	
Equipment used to secure drill perimeter	
Budget	
Food for personnel involved and refreshments for guests	
Sleeping accommodations (if required)	
Transport	
Documents, forms, office supplies	
Other resources	

Annex 11

Verification of conditions needed to prepare a drill

Name of exercise			
Institutions involved			
Location		Date	
Responsible party		Time	

Items to verify	✓
1. Existence and regular operation of an entity responsible for disaster preparedness and response[1]	☐
2. Existence of a response plan for emergencies and disasters	☐
3. Existence and use of methods for disseminating the emergency and disaster response plan	☐
4. Existence of an up-to-date inventory of human and material resources	☐
5. Existence of protocols and procedures that address the responsibilities of participants	☐
6. Existence of a recent assessment of hazards and vulnerabilities indicating risk conditions to be tested in the exercise	☐
7. Existence of an adequate level of coordination among institutions, agencies, and NGOs working in the disaster management field according to their roles and responsibilities in the response process	☐
8. Results and evaluations of previous drills that identify critical areas and difficulties	☐

OBSERVATIONS[2]:

(1) Provide the names of the disaster management office, civil defense committee, or other institution responsible for emergency and disaster preparedness and response.

(2) Include additional information here.

Annex 12

Designation of organizational structure for drills

Type and name of exercise			
Institutions involved			
Location		Date	
Responsible party		Time	

Responsibility	Full name	Telephone	E-mail	Institution
Coordinator				
Technical design team				
Evaluation team				
Staging team				
Control team				
Administration/finance team				

Annex 12

Designation of organizational structure for drills (cont'd)

Type and name of exercise			
Institutions involved			
Location		Date	
Responsible party		Time	

Responsibility	Full name	Telephone	E-mail	Institution
Security team				

Annex 13

Assigning roles for drills

Type and name of exercise			
Institutions involved			
Location		Date	
Responsible party		Time	

Position	Full name	Telephone	E-mail	Institution	Role
Participants/ Simulators					
Evaluators					
Observers					

Annex 14

Timeline for preparation of drills

Type and name of exercise			
Institutions Involved			
Place		Date	
Responsible party		Time	

Activity	Responsible party	Wk 1[1]	Wk 2[1]	Wk 3[1]	Wk 4[1]	Wk 5[1]	Wk 6[1]	Wk 7[1]	Wk 8[1]	Wk 9[1]	Ck list[2]
Collect necessary background information											
Define objectives of the drill											
Design the exercise according to the objectives and scope of the drill											
Determine the parameters to be evaluated according to the purpose, objectives, and scope of the drill											
Designate the participants and assign them specific responsibilities											
Write the script and scenario for the drill											
Define the evaluation methodology and instruments											
Identify the site for construction and staging; make site visits											
Identify administrative and logistical needs and seek resources											
Construct scenes and prepare the work area											
Advance verification of preparations											
Develop emergency plan for the drill											
Write documentation for the drill											
Disseminate public information about drill											
Prepare simulators/performers and other participants											
General verification of preparations											
Carry out drill											
Evaluate performance of participants											
Evaluate general organization of drill											
Deliver final report on drill											

(1) Time is indicated in weeks in this sample but can be changed to days or months, as required.
(2) Mark YES or NO depending on whether the activity has been completed.

Annex 15

Development of scenario—Master list of events in drill

Type			
and name of exercise			
Purpose			
Objectives			
Institutions involved			
Place		Date	
Coordinator		Time	

Hour	Event	Expected actions	Duration	Responsible parties	Complications

Annex 16

Simulator card for drill

N° **Time of action:** **Name** **Age** **Sex**	**Location: (indicate according to the diagram showing location of simulators)**

Character and behavior	Action of the character	Type of injuries	Health status according to elapsed time (Report signs and symptoms)
OBSERVATIONS[1]:			

(1) Include any additional information here.

Annex 17

Verification of activities before drill

Name of exercise		Institutions Involved	
Place		Time/Date	

Features of organization	Status of item	Required actions
Assumptions and all parameters of the drill are clearly defined according to elements to be tested.		
A person has been designated to document the lessons learned from the drill.		
The general script and components of staging have been prepared.		
The methodology and procedures for the drill have been jointly reviewed.		
Status of the budget for conducting the drill.		
Coordination with different actors established (participating institutions, relevant authorities, community leaders).		
Participants have been designated.		
Reconnaissance visits made to drill locations		
Requirements for staging and special effects for simulating events have been defined.		
Necessary equipment and materials have been obtained.		
Operation of devices for special effects has been tested.		
Date is set to install and organize staging.		
Evaluation instruments for different scenes of the drill have been prepared.		
Evaluators have been selected and trained.		
Simulators/performers have been selected and trained.		
Film and photography teams have been coordinated.		
Arrangements made for necessary food and drink for participants.		
Participation of the media has been arranged		
Identification badges have been prepared for persons involved in the event.		
Medical and security plan has been prepared and coordinated with different stakeholders		
OBSERVATIONS:[1]		

(1) Include additional information here.

Annex 18

Evaluation form for drills[1]

Name of exercise					
Purpose					
Specific objectives					
Institutions involved					
Place			Date		
Evaluator			Time		
Evaluation score	**1 = Poor** (The process does not exist; serious problems)	**2 = Average** (Elements of the process observed, but with deficiencies and gaps)	**3 = Good** (The entire process is evident, but gaps are observed)	**4 = Very Good** (The complete process is observed)	**5 = Excellent** (Additional elements are created and complementary to the guidelines established)

Items to be evaluated	Score 1 - 5	General comments/ Observations
Response to the event		
Search and rescue		
Fire fighting		
First aid		
Mass casualty care		
Response time		
Between the event and alarm		
Between the alarm and arrival		
Between arrival and commencement of operations		
Between start and end of operations		
Organization of the response		
Leadership		
Internal coordination		
External coordination		
Allocation of responsibilities		
Performance as teams		
Discipline		
Development of the operations		
Application of existing plans, protocols, and procedures		
Safety measures		
Intervention techniques applied		
Establishment of priorities		
Solution of unforeseen problems		
Appropriate use of equipment, supplies, and tools		

(1) This form is a sample but can be adapted to different types of exercises, depending on the situation.

Evaluation form for drills (cont'd)

Items to be evaluated	Score 1 - 5	General comments/ Observations
Hospital component		
Preparation of emergency services		
Hospital triage system		
Stabilization of patients		
Surgical and medical treatment of injured		
Support services such as diagnosis and therapy		
Internal and external communication and coordination		
Coordination and activation of emergency plan		
Availability and dissemination of action cards		
Staff availability and knowledge of tasks		
Availability of supplies		
Resource management		
Transport		
Personnel		
Finances		
Facilities		
Other		
Termination of operations		
Evaluation of control of situation		
Protocols applied to end operations		
Discontinuation of the alert or signal that scene is controlled		

Annex 19

Example of a drill

1. Technical details of the drill

Type and name of drill	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Location	Richard Fulton Stadium and Macondo University Hospital	**Date**	30 March 2010
Responsible party		**Time**	

Purpose	Evaluate the response of institutions to a mass casualty situation, both at the site of the event and at the site where medical care is administered, using the inter-institutional emergency and disaster plan.
Specific objectives	• Assess the viability of the University Hospital's disaster response plan for assisting mass casualties. • Evaluate the training of hospital staff for treating a large number of casualties; • Promote and improve coordination among institutions in disaster situations.
Type of drill	Pre-announced; Multiple scenarios: Prehospital and hospital care for victims
Participating institutions	• Macondo University Hospital • Ministry of Health • Social Security Institute • Armed Forces • Red Cross • Fire Department • Civil Defense • Public Prosecutor's Office • Traffic Department
Description of the site(s) of drill	Richard Fulton Stadium, Macondo UniversityHospital
Brief description of the situation, including the events being simulated and their locations	During a sporting event in the Richard Fulton Stadium, a low-intensity tremor occurs, which produces collective panic. The spectators stampede, and during the chaos, several food kiosks are knocked over. A stove in one of the kiosks starts a small fire, and several people are burned. The end result is 63 people with various types and degrees of injury. Drills at the stadium will simulate: crowd control, installation of incident command system, triage, patient stabilization, and removal and transport of victims. Drills at the hospital will simulate: activation and operation of the emergency plan for receiving and treating a large number of casualties.
Signal to begin exercise	Police receive a call reporting the situation; the police notify the other participating institutions.
Signal concluding the exercise	Announced at the conclusion of the drill on frequencies reserved for drill communications.
Signal for actual emergency	At both the stadium and the hospital, controller will use megaphone to announce an actual event by saying "Real emergency, attention: real emergency." This alert can also be transmitted on radio frequencies reserved for the exercise.
Location of central control for exercise	On the west stadium bleachers and in the hospital emergency reception area.
Location of meeting point for participants	In the north stadium parking lot; in the hospital's main conference room.

1. Technical details of the drill (cont'd)

Location of health posts for simulators	In the north stadium parking lot.
Distribution and number of victims according to triage categories and damage	**Beyond help (expectant) and dead: Black tag (6 people)** 1. Female adult: Deceased, presented various injuries 2. Male adult: Crushed skull and exposure of cranial tissue; hypotensive; tachycardia; unconscious 3. Male adult: Spine and skull trauma; unconscious; faint vital signs 4. Male adolescent: Chest trauma with multiple rib fractures; thoracic instability; multiple lacerations; severe shock 5. Male adolescent: Multiple traumatic injuries; multiple soft tissue wounds to extremities and scalp; blunt abdominal trauma; unconscious 6. Female adolescent: Thoracic trauma; hypovolemic shock, shallow breathing **Life-threatening injury: Red tag (10 people):** 1. Female adult: Multiple traumatic injuries; open abdominal trauma; signs of shock 2. Female adult: Open fracture of tibia and fibula with vascular involvement; profuse bleeding 3. Male adult: Chest trauma; fractured ribs; severe respiratory distress 4. Male adult: Unconscious; multiple injuries; hypotensive; tachycardia 5. Male adult: Spine trauma; unable to move; multiple lacerations 6. Adult male: Conscious, disoriented; penetrating wounds to chest (foreign bodies); agitation, shortness of breath 7. Male adult: Multiple traumas; abdominal bleed from penetrating wound; signs of shock 8. Male adult: No apparent injuries. Symptoms of myocardial infarction, acute chest pain, hypotension, sweating profusely 9. Male adolescent: Pelvic trauma; unable to move; restless; pain; shock 10. Female adolescent: Scalp lacerations **Non–life-threatening injury: Yellow tag (20 people)** 1. 12 adults (male and female): Multiple lacerations and contusions on the torso and extremities; fractures of upper extremities; acute pain 2. 3 (2 adolescents, 1 adult): Second-degree burns on arms/legs; abrasions on the body; acute pain 3. 5 adolescents: Multiple lacerations and contusions, uncomplicated fractures of lower extremities (femur and/or tibia and fibula) **Minor injury: Green tag (27 persons):** 1. 17 male adults/adolescents: Multiple small abrasions and lacerations; evidence of panic reaction 2. 10 female adults/adolescents: Minor abrasions; distress reaction; pain syndrome; conversion disorder
Type and number of other players	15 people in a panic looking for their relatives among the wounded; they try to cross the security perimeters at the event site. 10 people looking for their relatives among the injured at the hospital emergency service. 5 journalists walking around restricted areas. 1 individual identifies himself as a doctor and tries to take command of operations in the area of the stadium.
Plan for medical care and safety of players (in event of actual emergency)	Five paramedics equipped with life support kits; 5 firefighters equipped with fire-fighting equipment; 3 advance ambulances; 10 police on stand-by, located in areas close to site of drill. The function of these safety personnel is to intervene only in of actual emergency situations; they have no role to play in the drill. They establish a perimeter to keep spectators away from the exercise that is distinct from the perimeter established by teams in the drill. Hospital services will be available in the case of an actual emergency. Emergency services that are supporting the drill will be advised of an actual emergency through megaphones and the radio network with the statement: "Real emergency, attention, real emergency," followed by a description of the situation.

1. Technical details of the drill (cont'd)

Resources required	
Human resources	Drill participants: 29 on the organization team; 10 evaluators; 94 players; 6 observers. Security team in the event of an actual emergency: 5 paramedics, 3 ambulance drivers, 5 firefighters, 50 police officers. About 150 players from different institutions.
Staging	Moulage (disaster make-up), fire at stadium food kiosks, smoke machines, loud speakers for sound in the stadium.
Fire control equipment	5 class ABC extinguishers distributed close to fires at the stadium.
Search and rescue equipment	Not available.
First aid kits	5 kits.
Communication equipment and frequencies to use	10 walkie talkies distributed among the organization team. For communications in the stadium scenario, use Channel 6 for simplex communication. For communication with teams in the hospital scenario, use Channel 2 of the inter-agency frequency used by the Civil Defense.
Equipment to secure areas	Drill perimeters defined by perimeter tape, safety flags, and water tanks with rope.
Budget	US$ 10,500
Food for personnel involved and refreshments for guests	Breakfast and lunch for all participants.
Sleeping accommodations (if required)	Not available.
Transport	2 minibuses to transport evaluators and observers; 2 buses to transport players, 4 vehicles to transport coordinating team, 1 cargo truck.
Documents, forms, office supplies	Evaluation forms, cards for players, informational brochures for observers and the public.
Other resources	Video, film, and photography equipment.

Annex 19

Example of a drill (cont'd)

2. Organizational structure of the drill

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Location	Richard Fulton Stadium and Macondo University Hospital	**Date**	30 March 2010
Responsible party		**Time**	

Responsibility	Full name	Telephone	E-mail	Institution
Coordinator	John Welch	3534-8846	jwelch@moh.gov.arc	Ministry of Health
Technical design team	Rex Gibson	3534-9874	regibson@hosuni.arc	University Hospital
	Ana Rodríguez	8785-2256	arodriguez@yahoo.arc	Fire brigade
	Samuel Maxwell	3539-2529	maxwellsam@ssi.gov.arc	Social Security Institute
	Marta Williams	8716-6690	martawilliams@moh.gov.arc	Ministry of Health
Logistics team	Erik Bermudez	3524-0041	ericbermudez@moh.gov.arc	Ministry of Health
	Phillip Chen	3535-2298	chenphillip@civdef.gov.arc	Civil Defense
	Renate Wilcox	3533-8981	wilcoxren@ civdef.gov.arc	Civil Defense
	Alex Conwell	8731-0103	alexconwell@moh.gov.arc	Ministry of Health
Evaluation team	Mark Borges	8726-7873	borgesmark@moh.gov.arc	Ministry of Health
	Robert Carson	9532-8386	carsonrobert@paho.arc	Pan American Health Organization
	Pamela Chapin	3533-0044	chapinpamela@ redcross.org	Arcadian Red Cross
	Eugene Boswell	3537-2211	boswelleug@ civdef.gov.arc	Civil Defense
Staging team	Graciela Testa	3516-4901	testagrac@moh.gov.arc	Ministry of Health
	Michael Parker	8724-3232	parkermich@redcross.org	Red Cross
	James Huggins	8816-5132	hugginsjames@hosuni.arc	University Hospital
	Betty Delgado	8716-2024	delgadobetty@yahoo.com	Fine Arts University
Control team	Joan Marshall	3539-9921	marshalljoan@moh.gov.arc	Ministry of Health
	Arthur Medford	3567-2120	mefordart@moh.gov.arc	Ministry of Health
	Will Bradshaw	8856-8902	bradshawwill@ssi.gov.arc	Social Security Institute
	Maxine Joseph	8880-2314	josephmaxine@divdef.gov.arc	Civil Defense
Finance/ administration team	Stella Gooding	3531-4542	goodingstella@moh.gov.arc	Ministry of Health
	Martin Davis	3501-2215	davismart@civdef.gov.arc	Civil Defense
	Andrea King	8993-2201	kingandrea@ssi.gov.arc	Social Security Institute
Security team	Howard Edwards	3531-0001	edwards@mil.gov.arc	Armed Forces
	Jackie Williams	8993-0103	williamsjack@dot.gov.arc	Transportation Department
	Alan Nelson	3599-9111	nelsonalan@pol.gov.arc	Police
	Simon Walters	3599-0000	swalters@gmail.com	Fire Brigade

Annex 19

Example of a drill (cont'd)

3. Roles assigned for drill

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Site	Richard Fulton Stadium and Macondo University Hospital	**Date**	30 March 2010
Responsible party		**Time**	

Position	Full name	Telephone	E-mail	Institution
Participants	John Ambrose	3533-2210	ambrosej@ hosuni.arc	University Hospital
	Sarah Michaels	3533-0109	michaelssarah@ civdef.gov.arc	Civil Defense
	Alex Punnett	8867-6771	punnettalex@yahoo.arc	Fire Brigade
	Thomas Slater	3533-8181	slaterthom@mil.gov.arc	Armed Forces
	Dianne Stryker	3531-0902	strykerdianne@pol.gov.arc	Traffic Police
	Edward Smith	3531-2210	smithedward@rc.arc	Red Cross
	David Lawton	3531-8233	lawtondave@pol.gov.arc	Traffic Police
	Susan Davis	3522-2553	davissusan@ ssigov.arc	Social Security Institute
Simulators	Tom Ballantyne	8853-3321	ballantynetom@gmail.com	Southern College
	Ian Richardson	3322-1214	richardsian@gmail.com	Technical Education Institute
	Jack Weekes	3232-4142	weeksjack@yahoo.arc	School of Drama, University of Good Hope
	Rachel Paulson	8892-0420	paulsonrachel@gmail.com	Scouts of Arcadia
Evaluators	Elena Franklyn	3527-6130	Franklynelena@paho.org	PAHO/WHO
	Eric Quashie	8891-2150	quashieeric@moh.gov.arc	Ministry of Health
	Dylan Browne	3369-8811	browned@hosuni.arc	University Hospital
	Tim Alleyn	3321-9219	alleynetim@hosuni.arc	University Hospital
	Rita Holder	3322-9091	holderrita@gmail.com	Medical Faculty of Good Hope
	Ceci Wiseman	3352-6153	wisemanceci@yahoo.arc	Fire Brigade
	David Mathis	8892-5167	mathisdavid@civdef.gov.arc	Civil Defense
	Jorge Dasilva	8878-1234	dasilvaj@rc.arc	Red Cross
	Brian Francis	3376-4558	francisbr@civdef.gov.arc	Civil Defense
	Sally Brown	3392-3543	brownsally@paho.org	PAHO/WHO
Observers	Betty Huggins	3531-2329	hugginsbet@moh.gov.arc	Ministry of Health
	Cristina Bushay	8891-0125	bushaycris@minint.gov.arc	Ministry of Interior
	Sam Morgan	8832-1013	morgansam@pres.gov.arc	Delegate of President's Office
	James Dougan	35319190	douganj@pres.gov.arc	Cabinet Office of the President
	Pedro Gonzales	3357-6372	gonzalesp@paho.org	PAHO/WHO

Annex 19

Example of a drill (cont'd)

4. Timeline for preparation of drill

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Goodrich Department		
Location	Richard Fulton Stadium and Macondo University Hospital	Date	30 March 2010
Responsible party		Time	

Action	Responsible party	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
Gather necessary background information.											
Define objectives of the drill.											
Design exercise based on drill objectives and scope.											
Determine evaluation parameters based on the purpose, objectives, and scope of the drill.											
Define participants and assign specific roles.											
Write script for the exercise and define staging.											
Define evaluation methodology and tools.											
Choose site for construction and/or development of staging. Make site visits.											
Identify administrative and logistical requirements and track resources.											
Build sets and prepare work area.											
Verify progress in preparations.											
Develop plan to respond to actual emergency during drill.											
Write drill documentation.											
Distribute public information; publicize the drill.											
Prepare simulators and other drill participants.											
Verify overall preparations.											
Carry out drill.											
Evaluate performance of drill participants.											
Evaluate overall organization of drill.											
Deliver final report on the exercise.											

Annex 19

Example of a drill (cont'd)

5. Master list for events of drill

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Site	Richard Fulton Stadium and Macondo University Hospital	Date	30 March 2010
Manager Responsible party		Time	

Time	Event	Action	Duration	Responsible parties	Complications
06:00	Players and make up personnel meet in Richard Fulton Stadium	Divide players in three groups for moulage	15 min.	Staging team	
06:15	Distribute and eat snacks	Eat snacks	15 min.	Logistics team	
06:30	Begin make up	Make up according to simulator cards	3 hrs.	Staging team	
10:00	Final review of preparations	Make overall inspection	20 min.	Technical design, staging, logistics, and control teams	
10:00	Players take their places	Victims take positions in conditions as stipulated in the script	20 min.	Staging team	
10:00	Evaluators and observers take their places	Five evaluators/ observers in the stadium and five in the hospital; they will move around the scene according to their observation needs.	20 min.	Evaluation and control teams	
10:30	Beginning of exercise: police receive call notifying them of the situation	Police advise other participating agencies according to procedures in emergency plan	10 min.	Police	
10:40	Arrival of first responder groups at stadium	Control fire and secure area	10 min.	Fire brigades	
11:10	Action of first responder groups in stadium	Locate and attend to victims	30 min.	Red Cross, firefighters	Large number of people wandering around site searching for relatives and friends
11:10	Action of first responder groups in stadium	Establish security perimeter and rope off	10 min.	Police, military	Massive presence of media wandering around restricted areas

5. Master list for events of drill (cont'd)

Time	Event	Action	Duration	Responsible parties	Complications
11:10	Action of first responder groups in stadium	Organize command post	10 min.	Red Cross, firefighters, police, traffic police, military, civil defense	Massive presence of media wandering around restricted areas
11:20	Command post is functioning	Coordinate all emergency operations at the event site	Until end of drill	Red Cross, firefighters, police, traffic police, military, civil defense	
11:20	Transport victims to hospital	Coordinate in the command post transport operations to clear roads for emergency vehicles	Until end of drill	Red Cross, firefighters, police, traffic police, military, civil defense	Congestion in streets because of large number of vehicles and pedestrians attempting to leave site. Many curious spectators are arriving at site.
11:40	Victims begin to arrive in massive numbers at hospital	Plan for hospital emergency with mass casualties activated and operational	Until end of drill	University Hospital	A large number of people are wandering around hospital emergency area, looking for family and friends among the injured.
	Treatment of victims	Medical treatment of triaged victims			
11:30	Operations at the site of the event	Operations coordinated through the command post continue	Until end of drill	Red Cross, firefighters, police, traffic police, military, civil defense	
13:30	Conclusion of exercise	Order is given to terminate exercise even though teams are still working.		Control team	
14:30	Conclusion of exercise	Gather equipment and supplies. All personnel transported to University Hospital.		Control team	
15:00	Distribute snacks	Distribute snacks as participants enter the University Hospital conference room		Evaluation team	

Annex 19

Example of a drill (cont'd)

6. General instructions for simulators and simulator cards

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Site	Richard Fulton Stadium and Macondo University Hospital	Date	30 March 2010
Responsible party		Time	

Instructions

- Arrive on time at training sessions.
- Arrive promptly at 06:00 on 30 March to receive make-up and final instructions.
- Do not forget the card you received at the previous meeting that provides information that will guide in making-up players and first responders. There are instructions on how to act and what you should do during the drill (for example, if the card says that you are unconscious, you should not speak or interact with the people who are assisting you). The number that you will find in the upper left corner of the card is your simulator identification number.
- Arrive at the stadium wearing old clothes and shoes, as they can be torn or soiled during make-up and other activities, or lost during the exercise.
- Do not bring valuables to the drill as they can be lost during the exercise.
- While waiting for make-up and throughout the simulation, you must keep order, be alert, and obey the instructions given by the drill coordinators, who will be wearing a blue bracelet.
- Once you have been made up, follow instructions and go to the appropriate location. You should move as little as possible in order to preserve the moulage.
- When given the instructions to be at your location for the beginning of the exercise, do so in an orderly and serious manner and wait for the signal to begin your activity. The success of the exercise depends on this.
- If you feel ill or have an accident during the course of the exercise, immediately inform first responders and coordinators, so you can get the necessary assistance.
- Be aware of the drill coordinators. If an order is given to suspend the simulation, obey the order and go immediately to the site designated in advance. Do not leave the exercise until the end of your performance.
- Once your performance is completed, go to the designated site for moulage/make-up removal by the designated staff. If you have moulage materials, return them to those responsible so they can be used in future exercises. These materials are hard to come by and have no value for the actors.
- Refreshments will be served when you present the tickets you received in the morning.

Annex 19

Example of a drill (cont'd)

7. Simulator card*

N° 25 **Time of action**: 11:40 **Name**: Jordan Caldwell **Age**: 27 years **Sex:** Male		**Location:** (follow the diagram for simulators). At the foot of the section B bleachers; victim was pinned against the metal fence.	
Role and behavior	**Actions of the simulator**	**Type of injuries**	**Medical condition according to the amount of time elapsed** (indicate signs and symptoms)
Injured. Is conscious but disoriented and erratic. Agitated, with difficulty breathing.	Has extreme pain, and frightened by his injuries. He was pinned against the wall by the crowd.	Penetrating injuries to thorax (foreign bodies)	
OBSERVATIONS: Red patient			

N° 38 **Time of action**: At same time as arrival of first responders **Name**: Ed Williams **Age**: 35 years **Sex:** Male		**Location:** (follow the diagram for simulators). Walking throughout emergency and triage zones, and areas where response teams are working.	
Role and behavior	**Actions of the simulator**	**Type of injuries**	**Medical condition according to the amount of time elapsed** (indicate signs and symptoms)
Looking for person who came with him to the stadium but was lost during the stampede.	Hysterical; moving through area checking each injured person, looking for his relative. Causing a lot commotion and disturbs the first responders. Could become violent.	None	
OBSERVATIONS:			

* In this example, only two types of cards are shown. In the actual drill one card for each simulator should be prepared.

Annex 19

Example of a drill (cont'd)

8. Checklist of actions before the drill*

Type and name of exercise	Mass casualty drill; outpatient and hospital		
Institutions involved	Members of the health sector's Emergency Operations Center, Good Hope Department		
Site	Richard Fulton Stadium and Macondo University Hospital	Date	30 March 2010
Responsible party		Time	

Organizational aspects	Status of organization	Actions required
All exercise assumptions and parameters are clearly defined according to the elements to be tested.	Completed	Requires a final review by the team.
Person responsible for documentation of lessons learned in exercise has been designated.	Designated	Review final format for documentation
General script and components of the staging have been established.	Completed	Requires a final review by the team
Methods and procedures for the exercise have both been reviewed.	Completed	Requires review session with the team.
Status of budget for the exercise	Contributions from three institutions are outstanding	Administrative team, with support of the coordinator, must contact institutions who have not sent funds.
All arrangements have been made with the different actors (participating institutions, relevant authorities, community leaders, etc.).		Still need permission from the owners of the quarry where vertical rescues will be made.
Participants have been identified.	Each institution provided a list, by department, of participants who will be involved in the exercise.	
Visits have been made to sites where exercise will take place.	Completed	One site will have to be changed because it does not meet safety standards.
Requirements for make-up and special effects to simulate events have been defined.	Completed	Work is being done on models and sets. Follow up needed for removal of debris.
Necessary equipment and materials have been acquired.	Majority has been acquired.	Requires follow up on the smoke machine which should be delivered next week.
Operation of devices needed for special effects has been tested.	In process	Final tests will be made in situ this week.
Date has been selected for installing and organizing the set	Timetable for installation has been completed.	
Evaluation instruments for different scenes of the drill have been developed.	Completed.	Requires final revision with the evaluation team.
Evaluators have been selected and given instructions.	Completed	Requires detailed review of the evaluation instruments.
Simulators have been selected and given instructions.	Actors for different roles have been procured.	Requires final review of roles at middle of next week.

* These actions should be carried out at least one week prior to the simulation.

8. Checklist of actions before the drill (cont'd)

Organizational aspects	Status of organization	Actions required
Teams for filming and photography have been arranged.	Completed.	Carry out photo shoot and filming prior to the exercise to document the site and facilities.
Food and drink for participants have been arranged.	Completed.	
Arrangements for participation of the media have been made	Completed.	Instruct media about specific areas where they can work.
Identification badges for participants have been made.	Done	Badges will be distributed hours before the exercise.
Medical and safety plan for real emergency has been developed and coordinated with relevant agencies.	Done	Obtain the list from relevant institutions of medical and safety personnel who will be stationed at the event for contingencies.

Annex 20 - Evaluation tool for drills

This evaluation tool was designed in the Caribbean as a joint effort between the Pan American Health Organization, the Department for Disaster Management of the British Virgin Islands, and with the support of a private consultant. It has been developed primarily for use in mass casualty management drills. The tool can be adapted for other types of exercises by selecting the components that are most relevant to an exercise's characteristics and procedures and applying the relevant sections of the following forms.

Objective evaluation

The following should be determined when making an evaluation:

- Whether the objective can be measured: This is achieved by defining the task or procedure to be achieved and then determining how to measure it.
- How to record the results: Often the person doing the evaluation does not have firsthand or sufficient knowledge of all the areas be assessed. For this reason, the method used to quantify the task or procedure should be reviewed and it should be attached to the evaluation form. In most cases, tasks and procedures are measured with some type of standard tool.

Standards

When using this format, you must define the standards to be used. It is likely that there are already standards that must be met, such as laws, ordinances, and departmental policies or procedures. These standards may define the schedules, equipment, methods, or personnel needed to complete a given task or procedure. Evaluators using this format should verify what standards or plans already exist locally. There may be standards covering any number of situations, ranging from how to splint a broken bone to the number of firefighters needed to raise a ladder.

There may be situations where no standards exist or they cannot be established. In such cases, the "standard" will be what is considered acceptable or reasonable. For example: How long will it take an ambulance to respond to a call for assistance? It is impossible to establish a time in a situation like this because it depends on many unpredictable factors.

The weighting factor

The weighting factor in the evaluation tool is an adjustment method used to improve the way a task or procedure is graded. Some tasks or procedures are very important and must be completed: for example, identification of the officer in charge of safety. Failure to have a safety officer present increases the probability that responders could be injured or even killed. Other tasks or procedures are less critical but still must be completed. For example, failure to designate an information officer may cause problems in dealing with the media, but it is unlikely that anyone will be hurt or killed as a result. Clearly, certain tasks or procedures carry more importance (weight) than others, and should therefore be assessed differently.

Allowing for differences in the importance of certain tasks is done simply by weighting factors differently. Elements with a high weighting factor will have a negative impact if not performed correctly or in compliance with standards. Conversely, items with a low weighting factor reduce the efficiency of the operation if not done correctly or in compliance with standards. The weighting factor is multiplied by the score to obtain the total.

Scoring

To evaluate a task or procedure one must specify whether:

- It was done according to standards or without difficulties or problems. (Give a score of 3.)
- It was done according to standards or with some difficulties or problems, but it was completed. (Give a score of 2.)
- It was not done in accordance with standards or was not done at all. (Give a score of 1.)

There may be times when something is done as well as possible, but not optimally. For example, let us return to the question of how long it takes for an ambulance to respond to a call. Under given conditions, the unit may have arrived on the scene as quickly as possible, but taking into consideration the "critical time" and how important that is to saving lives, it was not fast enough.

In situations like this, there might be a low score, but evaluators should make a notation that it was not the performance of staff that caused the low score. The problem, rather, is caused by the system and should be addressed by administrators or the government.

There are times when there is no way to measure the success of a task or procedure. Instead, one only wants to verify whether or not something was done. For example: Was safety equipment delivered in a timely manner? The question is not whether the equipment was used or if it was used correctly, only whether it was delivered on time. The standards for how safety equipment should be used are stipulated in the manufacturer's instructions. However, it is unlikely that there is a standard on the way safety equipment should be distributed. In such a case the evaluator should be objective in evaluating how easily, quickly, and efficiently distribution was carried out.

Using the evaluation tool

This evaluation tool was designed to be used in any scenario. However, not all scenarios will include the same departments or agencies or the same areas, tasks, or procedures. For this reason, the scenario and the evaluation tool should be reviewed together to determine what elements of the tool are needed.

For example, if a department or agency is not included in a particular scenario, the pages pertaining to that entity should be removed. In the same way, if a task or procedure is not included, it must be removed. Whenever something is removed, it will change the total

score possible for the entity in question and the simulation, so it is necessary to note adjustments in the total possible score.

We appreciate the participation of the following people in designing this evaluation tool: Dana Van Alphen, Pan American Health Organization; Sharleen Dabreo, Zebalon McLean, and Carishma Hicks of the Department for Disaster Management of the British Virgin Islands; and Ron Mobley, Consultant.

Annex 20 - Evaluation tool for drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Exercise design	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Were objectives of the exercise clearly defined?			
Were necessary agencies and organizations clearly defined?			
Did necessary agencies and organizations participate in design of the exercise?			
Were necessary resources of the agencies and organizations identified?			
Were necessary resources of the agencies and organizations made available?			
Was a disaster plan included in the design of the exercise?			
Was the community included in the design of the exercise?			
Were resources for local media included in the design of the exercise?			
Was the Emergency Operations Center (EOC) included in the design of the exercise?			
Was the drill site adequate?			
Did complexity of the drill reflect actual conditions?			
Did the length of the drill reflect actual conditions?			
Was there enough safety equipment available?			
Were safety officers identified?			
Was a tabletop exercise conducted?			
	TOTAL FOR THIS AREA		
High: 99–126			
Average: 71–98			
Low: 42–70			

Emergency signal	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Was the 9-1-1 call handled according to established procedures?			
Were the call and information documented correctly?			
Were dispatch procedures followed?			
Were resources dispatched in accordance with established procedures?			
Were agencies dispatched without delay?			
Were messages and information complete and precise?			
Was the early warning system activated using appropriate procedures?			
	TOTAL FOR THIS AREA		
High 61–78			
Average 44–60			
Low 26–43			

COMMENTS

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Telecommunications	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Could different agencies/institutions communicate verbally?			
Could different agencies/institutions communicate in writing?			
Could different agencies/institutions communicate by radio?			
Could different agencies/institutions communicate by telephone (cell or land line)?			
Could different agencies/institutions communicate via computer?			
Did all agencies/institutions have necessary telecommunications equipment?			
Was telecommunications equipment delivered to agencies that needed it?			
Did agencies receive training in use of telecommunications equipment?			
Was standardized terminology used in communications?			
Were messages accurately recorded?			
Were telecommunications messages adequately documented?			
Were messages effectively distributed?			
	TOTAL FOR THIS AREA		
High: 82–105			
Average: 59–81			
Low: 35–58			

Coordination among Agencies	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Was the incident commander clearly identified?			
Did the command structure follow the procedures set out by the officer in charge?			
Was a command post established in accordance with the procedures set out by the officer in charge?			
Were liaisons established among agencies?			
Were all relevant agencies represented at the command post?			
Was a unified command established?			
Were operational decisions responsive to the concerns of all the agencies involved?			
Were priority areas clearly identified?			
Was information accurately relayed to all the agencies involved?			
	TOTAL FOR THIS AREA		
High: 88–111			
Average: 63–87			
Low: 37–62			

COMMENTS

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Fire Brigade and Rescue Services at the Airport	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Did units and personnel arrive at the scene without delay?			
Was the officer in charge clearly identified?			
Was the command post clearly identified?			
Was there a clear line of command and control?			
Did the officer in charge establish an incident command system?			
Did the officer in charge contact and communicate with other agencies at the site?			
Was a plan of action developed in conjunction with other agencies at the site?			
Was a unified command established?			
Was the site evaluated to determine any hazards?			
Were appropriate procedures for hazardous materials (HAZMAT) followed?			
Were appropriate procedures for biological hazards followed?			
Did personnel evaluate the site to establish priorities?			
Were the site, perimeters, and areas for bystanders secured?			
Did agencies request additional resources?			
If requested, did additional resources arrive without delay?			
Were agencies requested to provide additional resources?			
If requested, did additional resources arrive without delay?			
Did personnel have necessary safety equipment?			
Did personnel use safety equipment correctly?			
Was the accountability system for personnel used?			
Was appropriate basic medical treatment provided for victims?			
Was initial triage carried out on victims?			
Were departmental procedures followed for this type of incident?			
Were the roles and responsibilities as stated in the plan followed?			
	TOTAL FOR THIS AREA		
High: 192–252			
Average: 141–196			
Low: 84–140			
COMMENTS			

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Police Department	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Did units and personnel arrive at the scene without delay?			
Was the officer in charge clearly identified?			
Was the command post clearly identified?			
Was there a clear line of command and control?			
Did the officer in charge establish an incident command system?			
Did the officer in charge contact and communicate with other agencies at the site?			
Was a plan of action developed in conjunction with other agencies at the site?			
Was a unified command established?			
Was the site evaluated to determine any hazards?			
Were appropriate procedures for hazardous materials (HAZMAT) followed?			
Were appropriate procedures for biological hazards followed?			
Did personnel evaluate the site to establish priorities?			
Were the site, perimeters, and areas for bystanders secured?			
Were agencies requested to provide additional resources?			
If requested, did additional resources arrive without delay?			
Did personnel have necessary safety equipment?			
Did personnel use safety equipment correctly?			
Was the accountability system for personnel used?			
Was a temporary morgue set up?			
Was appropriate basic medical treatment provided for victims?			
Was initial triage carried out on victims?			
Were departmental procedures followed for this type of incident?			
Were the roles and responsibilities as stated in the plan followed?			
	TOTAL FOR THE AREA		
High: 204–261			
Average: 146–203			
Low: 87–145			
COMMENTS			

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Health and Medical	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Did units and personnel arrive at the scene without delay?			
Was the officer in charge clearly identified?			
Was the command post clearly identified?			
Was there a clear line of command and control?			
Did the officer in charge establish an incident command system?			
Did the officer in charge contact and communicate with other agencies at the site?			
Was a plan of action developed in conjunction with other agencies at the site?			
Was a unified command established?			
Was the site evaluated to determine any hazards?			
Were appropriate procedures for hazardous materials (HAZMAT) followed?			
Were appropriate procedures for biological hazards followed?			
Did personnel evaluate the site to establish priorities?			
Were the site, perimeters, and areas for bystanders secured?			
Were agencies requested to provide additional resources?			
If requested, did additional resources arrive without delay?			
Did personnel have necessary safety equipment?			
Did personnel use safety equipment correctly?			
Was the accountability system for personnel used?			
Was appropriate basic medical treatment provided for victims?			
Was secondary triage carried out on victims?			
Was a temporary morgue established using PAHO/WHO standards for management of dead bodies?			
Were PAHO/WHO standards used for transport of dead bodies in mass casualty situations?			
Were communications established with the hospital?			
Were departmental procedures followed for this type of incident?			
Were the roles and responsibilities as stated in the plan followed?			
	TOTAL FOR THE AREA		
High: 218–279			
Average: 157–217			
Low: 95–156			
COMMENTS			

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Firefighters and Rescue Services	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Did units and personnel arrive at the scene without delay?			
Was the officer in charge clearly identified?			
Was the command post clearly identified?			
Was there a clear line of command and control?			
Did the officer in charge establish an incident command system?			
Did the officer in charge contact and communicate with other agencies at the site?			
Was a plan of action developed in conjunction with other agencies at the site?			
Was a unified command established?			
Was the site evaluated to determine any hazards?			
Were appropriate procedures for hazardous materials (HAZMAT) followed?			
Were appropriate procedures for biological hazards followed?			
Did personnel evaluate the site to establish priorities?			
Were the site, perimeters, and areas for bystanders secured?			
Were agencies requested to provide additional resources?			
If requested, did additional resources arrive without delay?			
Did personnel have necessary safety equipment?			
Did personnel use safety equipment correctly?			
Was the accountability system for personnel used?			
Was appropriate basic medical treatment provided for victims?			
Was initial triage carried out on victims?			
Were departmental procedures followed for this type of incident?			
Were the roles and responsibilities as stated in the plan followed?			
	TOTAL FOR THE AREA		
High: 197–252			
Average: 141–196			
Low: 84–140			
COMMENTS			

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Incident Command Post	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Was the incident command post activated without delay?			
Was communication established with all the agencies at the site?			
Were the necessary personnel assigned to the incident command post?			
Were the requested resources obtained?			
Were updates provided regularly, accurately, and frequently?			
Were procedures followed for documenting actions taken by the agencies?			
Was a unit established for administrative and financial operations?			
Did agencies provide ongoing support?			
Was the incident documented on noticeboards?			
Were informational meetings among organizations held?			
Were resources used to control events?			
Was a chronological record of events kept?			
Was a method used to control rumors?			
Were situation reports maintained?			
	TOTAL FOR THE AREA		
High: 89–114			
Average: 64–88			
Low: 38–63			

Emergency Operations Center (EOC)	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Was the EOC activated without delay?			
Was communication established with units at the scene?			
Were the necessary personnel assigned to the operational posts at the EOC?			
Were coordination procedures used?			
Did the EOC take necessary decisions?			
Were the requested resources obtained?			
Were updates provided regularly, accurately, and frequently?			
Were procedures followed for documenting actions taken by the agencies?			
Was a unit established for administrative and financial operations?			
Did agencies provide ongoing support?			
Was the incident documented on noticeboards?			
Were informational meetings about organization held?			
Were resources used to record information about the events?			
Was a chronological record of events maintained?			
Was a method used to control rumors?			
Were situation reports maintained?			
	TOTAL FOR THE AREA		
High: 137–174			
Average: 98–136			
Low: 58–97			

COMMENTS

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

Form for evaluation of drills (cont'd)

To score (evaluate) a task or procedure:
1. If it was done according to standards or without difficulties or problems, give a score of 3.
2. If it was done according to standards or with some difficulties or problems, but it was completed, give a score of 2.
3. If it was not done in accordance with standards or was not done at all, give a score of 1.

Public Information Management	Score (1 -3)	Weighting factor[1] (1 - 5)	TOTAL[2]
Was a public information office established?			
Were public information officers assigned to the field?			
Were the information centers established?			
Was an information management plan used?			
Were informational meetings/press briefings organized for the media?			
Were press representatives selected appropriately?			
Were accurate and frequent updates provided to the media?			
Was a plan used to control rumors?			
Were telephone "hotlines" set up to provide public information?			
	TOTAL FOR THE AREA		
High: 53–66			
Average: 38–52			
Low: 22–37			
COMMENTS			

(1)The weighting factor indicates the importance of a task or procedure in relation to others, according to the type and objectives of the drill. It should be given the highest possible value between 1 and 5.
(2)The total is the result of the sum of scores and the weighting factor.

TERMINOLOGY

The following terms are commonly used for risk management and disaster relief. They were compiled from the definitions established by the United Nations International Strategy for Disaster Reduction (UN/ISDR). Additional terms can be consulted at the UN/ISDR website: http://www.unisdr.org/we/inform/terminology.

Biological hazards: Processes of organic origin or those conveyed by biological vectors, including exposure to pathogenic micro-organisms, toxins, and bioactive substances, which may cause the loss of life or injury, property damage, social and economic disruption, or environmental degradation. Examples of biological threats: outbreaks of epidemic diseases, plant or animal contagion, insect plagues, and extensive infestations.

Capacity development: The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

Capacity: The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals.

Contingency plan: Instrument designed to respond to a specific event or phenomenon, whether a landslide, earthquake, hurricane or another. It is commonly related to a predetermined scenario.

Disaster management: The organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.

Disaster preparedness plan: An instrument that establishes the general framework for action of a system in a specific geographical area and time, providing a number of contingency plans according to the type and quantity of threats applicable, the magnitude of events that can be triggered, and the complexity of geographical and other physical factors, without ignoring social, economic, and cultural elements.

Disaster: A serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Early warning: The provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response.

Emergency Operations Center (EOC) for the health sector: Site where technicians and specialists monitor, coordinate, and support actions in the health sector and track the development of a disaster.

Emergency Operations Committee for the health sector: High-level group in the health sector with the authority to make decisions on plans of action to counteract the effects and damages of a developing disaster.

Emergency services: Specialized agencies that have specific responsibilities and objectives in serving and protecting people and property in emergency situations.

Geological hazards: Internal Earth processes (endogenous) of tectonic origin such as earthquakes, tsunamis, geological fault activity, and volcanic activity and emissions; as well as external processes (exogenous) such as mass movements: landslides, rock falls, avalanches, surface collapse, liquefaction, expansive soils, marine landslides, and subsidence, which cause loss of life or property damage, social and economic disruption, or environmental degradation.

Hazard: A potentially damaging physical event, phenomenon, or human activity that may cause the loss of life or injury, property damage, social and economic disruption, or environmental degradation. Hazards can be single, combined, or sequential in their origin and effects. Each is characterized by its location, magnitude or intensity, frequency, and probability.

Mitigation: The lessening or limitation of the adverse impacts of hazards and related disasters.

Natural hazards: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Prevention: The outright avoidance of adverse impacts of hazards and related disasters.

Procedures: Procedures complement protocols because they establish a detailed sequence of steps or actions to be carried out by agencies to respond to certain situations or scenarios according to their specialty or responsibility.

Protocols: Protocols are practical arrangements or steps established to put a plan into operation.

Recovery: Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk. Recovery (rehabilitation and reconstruction) affords an opportunity to develop and apply disaster risk reduction measures.

Response capacity: The ability of a population, organizations and systems, to deal with and manage adverse conditions, and emergency or disaster situations.

Response/Relief: The provision of assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected. It can be of an immediate, short-term, or protracted duration.

Risk Assessment: A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Risk management: Risk management comprises risk assessment and analysis, and the implementation of strategies and specific actions to control, reduce, and transfer risks. It is widely practiced by organizations to minimize risk in investment decisions and to address operational risks such as those of business disruption, production failure, environmental damage, social impacts and damage from fire and natural hazards.

Risk: The combination of the probability of an event and its negative consequences.

Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Technological hazards: A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities, that may cause loss of life, injury, illness or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. Examples of technological hazards include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires, and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard event.

Vulnerability: The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

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Conducting simulations and drills is the most effective way to evaluate and test disaster preparedness plans; these exercises are used widely by organizations and institutions working in development and in disaster response. Drills and simulations are also excellent tools for training, and for assessing decision making processes, teamwork, and coordination.

The Pan American Health Organization has worked with a group of experts from Latin America and the Caribbean to prepare a set of practical guidelines for planning and carrying out simulations and drills. The Guide describes the basic features of both types of tools, and provides a full complement of sample forms that can be adapted for the planning, execution, and evaluation phases of the exercises.

The Guide is written primarily for organizations and individuals who work in the health and disaster management fields, and will assist them in reviewing and updating emergency preparedness and response procedures.

This publication can be viewed on the Internet at:
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