

Health Sector Multi-Hazard Response Framework

Operational model
for implementing
public health emergency
response functions



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Washington, D.C.

2019

Title of the original version:
Marco de respuesta multiamenaza del sector de la salud
ISBN: 978-92-75-32119-5

Health Sector Multi-Hazard Response Framework
ISBN: 978-92-75-12119-1
eISBN: 978-92-75-12120-7

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Suggested citation. Pan American Health Organization. *Health Sector Multi-Hazard Response Framework*. Washington, D.C.: PAHO; 2019.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://iris.paho.org>.

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Preface

This document has been created based on the need expressed by the Member States of the Pan American Health Organization to improve their preparedness for the response to health emergencies and disasters, in accordance with the overall goals of the Sendai Framework for Disaster Risk Reduction 2015–2030, as well as with the countries' commitment to the application, implementation and compliance with the International Health Regulations (IHR).

The main objective of the Health Sector Multi-Hazard Response Framework (MRF) is to contribute to improving the capacity of countries to manage with emergencies and disasters in a more efficient and timely manner, through an operational model that allows for identifying and performing common functions to manage the response, whatever its origin and magnitude.

The MRF is geared towards authorities and those responsible for health sector emergency risk management, at national and sub-national level, with the aim of guiding the implementation of the functions for the response with their corresponding protocols and procedures.

The document describes the operating model, the functions necessary for the response, and how these can be executed by the different actors within and outside the health sector. For these functions to be executed, standardized operating procedures that describe objectives, scope, actions and responsible persons must be updated or developed.

A parallel or concurrent process, to facilitate the implementation of the operational model, is the identification and analysis of the health sector preparedness and response tools, as well as an organizational analysis, so that functions are reassigned in accordance with the level of competence and capacity of all institutions, agencies, offices or areas of the health and related sectors involved in the response.

Finally, tools are included for the planning of specific contingencies whose development should arise from the strategic evaluation of health risks, which identifies those risks that must be managed with the highest priority. These contingency plans integrate the functions described in the operating model, with the particularities demanded by each of the specific hazards.

By applying the information in this document countries will have an Operational Model for the implementation of health emergency response functions, with their necessary operational procedures and specific contingency plans.



Dr. Carissa F. Etienne.
Director of the
Pan American Health Organization



Participants at the workshop “Development of the operational model for implementation of health emergency response functions,” which took place in Santo Domingo, Dominican Republic, in April 2019.

Acknowledgments

The Pan American Health Organization would like to thank all of the individuals and organizations that were involved in the preparation of this document, especially the professionals who participated in the different technical meetings and consultations.

The production of this document and its tools, as well as the implementation of solutions in the pilot testing phase, was made possible through the financial support provided by the United States Agency for International Development (USAID).

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Abbreviations and acronyms

ConOps: Concept of operations

EMTs: Emergency medical teams

EOC: Emergency Operations Center

IHR: International Health Regulations

MRF: Multi-Hazard Response Framework

PAHO: Pan American Health Organization

SOP: Standard Operating Procedure

WHO: World Health Organization

I. Introduction

According to the 2016 Global Climate Risk Index, three of the five countries at the greatest risk of being impacted by a climate-related disaster are in Latin America and the Caribbean: Haiti, Honduras, and Nicaragua. Guatemala is in tenth place (1). Disasters, whether natural or human-induced, may significantly aggravate the impact of outbreaks or epidemics, and can cause high case-fatality rates.

An outbreak, epidemic, or pandemic may cause panic reactions and unravel social and economic structures; they entail costs to the health sector and may limit the ability to treat routine medical illnesses. The financial impact of these events is not trivial. For example, the estimated annual cost of the AH1N1 influenza pandemic was roughly US\$500,000,000 (0.6% of global income), including loss of income and the intrinsic costs of increased mortality (2). By negatively affecting trade and discouraging investment, these events reduce the growth of a country's gross domestic product.

The Centre for Research on the Epidemiology of Disasters (CRED) reported in the international disasters database (EM-DAT) that the Region of the Americas experienced more than 2,000 major disasters from 1970 to 2015, which affected more than 250 million people. The most recent severe disasters in Latin America and the Caribbean include the Haiti earthquake in 2010 (that caused 7.8 billion dollars in economic losses and 300,000 deaths); the earthquake in Chile in 2010 (30 billion dollars in economic losses and 500 deaths); flooding in Colombia in 2010–2011 (5 billion dollars in economic losses and 400 deaths), and the 2016 earthquake in Ecuador (3.3 billion dollars in economic losses and 660 deaths) (3).

The emergencies and disasters that affect the health of a country's population may have various causes and different degrees of impact. These events can be more efficiently addressed with a response management model that considers all hazards, regardless of origin or magnitude, and the specific contexts in which they occur, i.e., a multi-hazard approach.

A multi-hazard approach integrates common emergency and disaster response functions, regardless of the type of hazard, magnitude, frequency, or type of onset, whether slow or sudden; this approach facilitates better use of available resources and provides greater flexibility in the response to any type of event (4).

In this context, specific steps should be taken to respond to priority situations and implement the functions described in this document along with their respective mechanisms, procedures and protocols, at the same time that the different risk scenarios are being prepared, defined and updated, in order to ensure effective management capacity to respond to health emergencies and disasters.

To ensure the effective development or updating of the response management functions described in

this document, the following actions are required: (i) identification and systematic analysis of the relevant international agreements signed by the country, as well as national laws and regulations, and regulatory, administrative, and operational tools (e.g. plans), and any other existing documents deemed pertinent; (ii) an organizational analysis of the institutions involved in the performance of such functions; (iii) a successive review and pertinent adjustment of such national tools, in order to consistently develop, describe, and document response management functions with a multi-hazard approach, as part of a national reference health emergency and disaster response framework, i.e. the Multi-Hazard Response Framework (Figure 1).

General objective

The objective of this document is to guide the development and updating of the health sector's health emergency management response functions with a multi-hazard approach, as part of a national response framework focused on the organization of the health sector.

Specific objectives

- More specifically, the purpose of this document is to:
- Provide a methodology for the systematic analysis and review of the legal, regulatory, administrative and operational tools that constitute the national framework for health emergencies, so that the appropriate modifications can be made to ensure consistency with the MRF;
 - Guide the organizational assessment of health sector institutions, organizations, or offices involved in emergency response, for the purpose of implementing health emergency response functions with a multi-hazard approach;
 - Introduce the functions required for the health sector's management of response actions, which should be performed in any emergency that has or could have an impact on health, including the respective operational mechanisms, procedures and protocols; and
 - Describe the response management issues that should be coordinated at the different administrative levels within the national health sector, as well as issues that should be coordinated between sectors.

Multi-Hazard Response Framework for the Health Sector

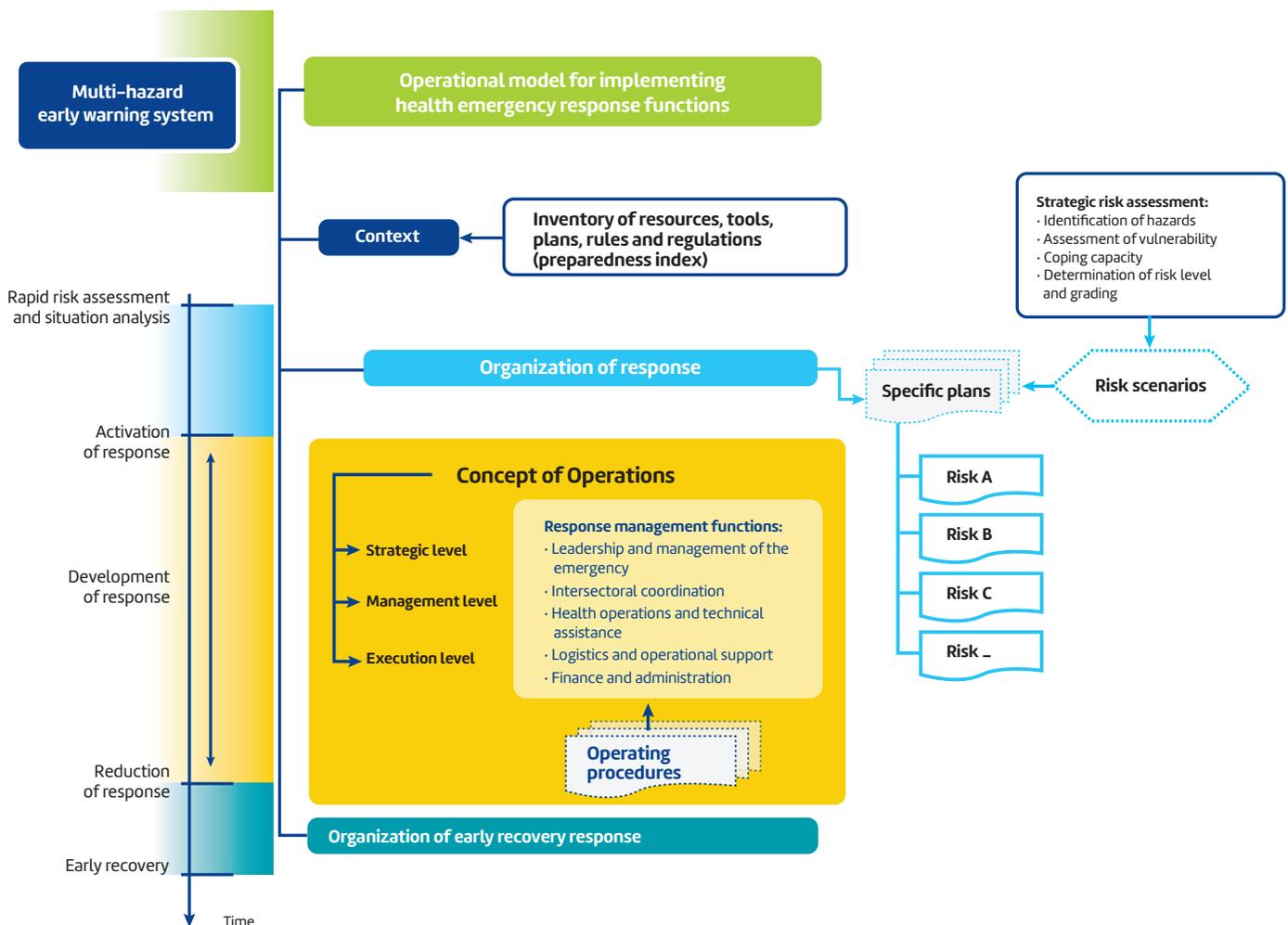
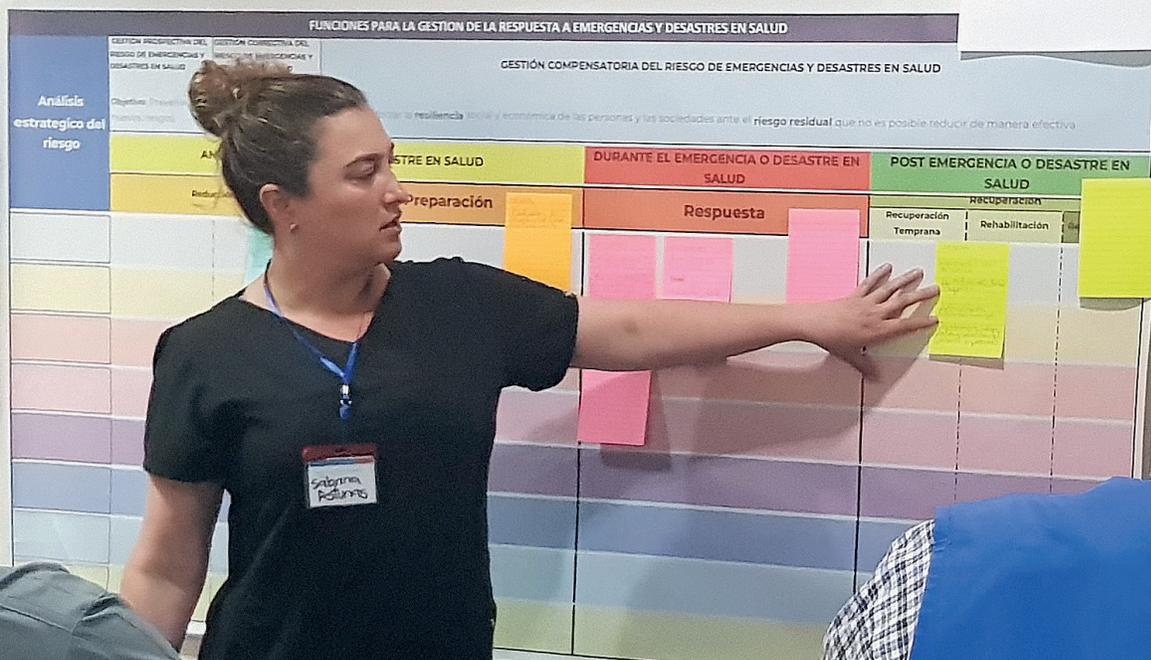


Figure 1. Multi-hazard response framework with operational model for implementing health emergency response functions.

GRUPO 1



Health emergency and disaster management professionals should systematically analyze national documents and tools in order to consistently develop, describe, and document response management functions as part of a national health emergencies framework

II. Process for adapting existing tools to the multi-hazard response framework

The steps described below must be consistent with the national public health preparedness strategy and executed in a continuous cycle, and they must be reflected not only in the national health strategy but also in the health sector's programmatic tools to ensure the availability of the required resources.

The national health sector authorities responsible for planning and executing the response to emergencies or disasters with a potential impact on health should work together to formulate a timeline of the activities required for each of the described steps and should have the respective human and financial resources.

The execution of all steps will culminate in a harmonized document that includes the operational model for implementing multi-hazard response management functions, in a manner that is fully adapted to the national context. Its title and structure should clearly reflect its complete integration in a national health emergency framework (Figure 2).

This document must be approved by the respective authorities and will be continuously improved and revised on a periodic basis, as well as after any events that had an impact on health or after simulation exercises and drills (7).

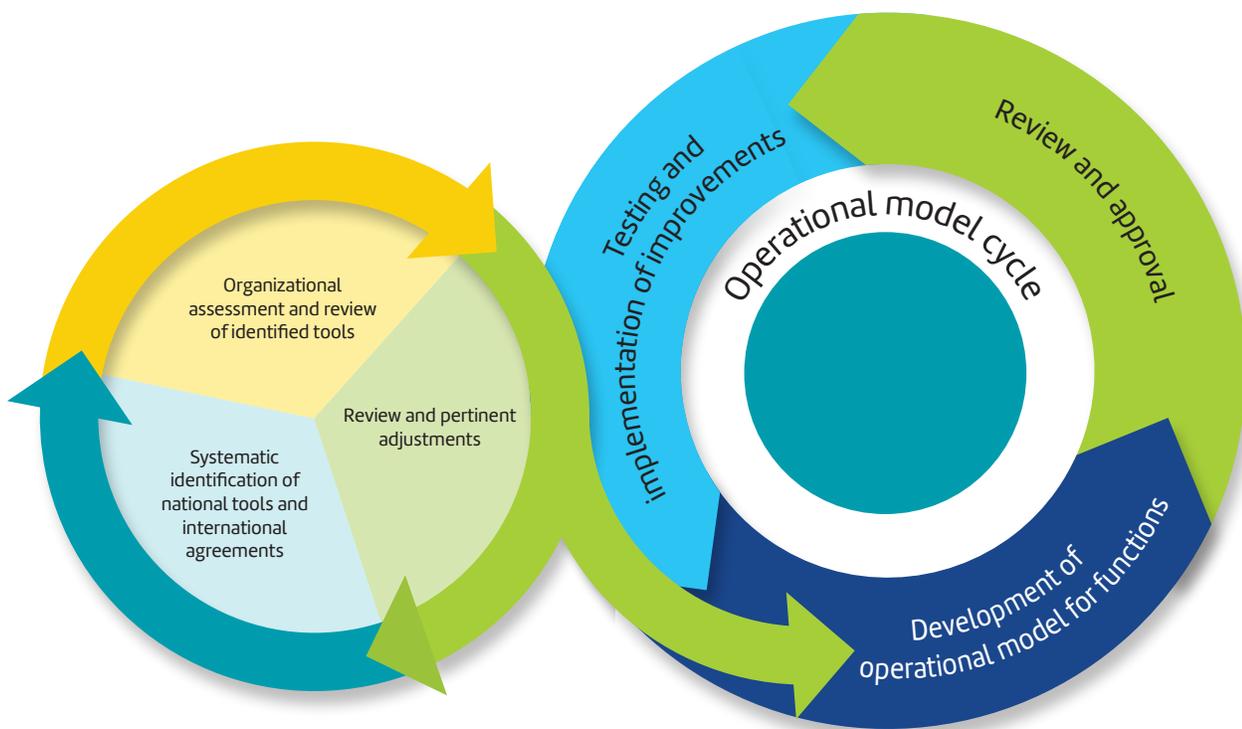


Figure 2. Process to incorporate national tools and international agreements into the operational model for response management functions.

Identification, review, organizational assessment and respective adjustments to existing tools and agreements

In parallel with the process of developing the operational model for implementing multi-hazard response management functions, the following actions are recommended:

- Systematically identify: a) laws, policies, and regulations on health protection and care in the event of health emergencies; b) laws, policies, and regulations on risk reduction and care during current disasters and emergencies in the country, and c) international conventions and agreements signed by the country or by the national health sector or its institutions;
- Consolidate all of the identified documents in a repository that is accessible to all institutions, agencies, organizations, or departments that currently have response responsibilities or could have them under the completed operational model for implementing multi-hazard response management functions;
- Systematically analyze all of the identified documents and tools to determine their consistency, redundancy, sufficiency of content and relevance of titles, as well as their compatibility with the operational model that is developed;
- Conduct an organizational assessment of the institutions, agencies, or areas of the health sector involved in the performance of functions in the operational framework, through diagrams of their structure or organizational charts, including, in addition to response, the mechanisms that contribute to the functioning of multiple-hazard early warning systems, rapid risk assessment and early recovery mechanisms, through the hierarchical mapping of these agreements and tools and their intra- and inter-sectoral connections and different administrative levels; and
- Review all national tools and make any pertinent adjustments in order to consistently develop, describe, and document response management functions within the national health emergencies framework.

III. Process to develop the operational model for implementing health emergency response functions

All actors that have been assigned one or more response management functions and responsibilities should be involved in the development or updating of the operational model. This document includes a suggested form that can be used as support to guide activities (Annex 1). To carry out the process, we recommend forming a work team to carry out the process or making any other coordination arrangements that allows intersectoral participation, with the following principal activities:

- Coordination with the different work groups;
- Inventory of existing plans and related documents that are associated with the health sector's response to health emergencies;
- Preparation of the draft document;
- Final review; and
- Presentation to the health authority for approval.

Development of the operational model

The work groups involved in the development and review of the document, including its technical aspects, may be comprised of different units or offices of the ministry of health¹ or other health sector institutions, based on their level of specialization and degree of involvement in this process and the functions or activities included in the operational response framework (Figure 3).

¹ In this document, it is understood that the "ministry of health" is responsible for stewardship of the national health sector.

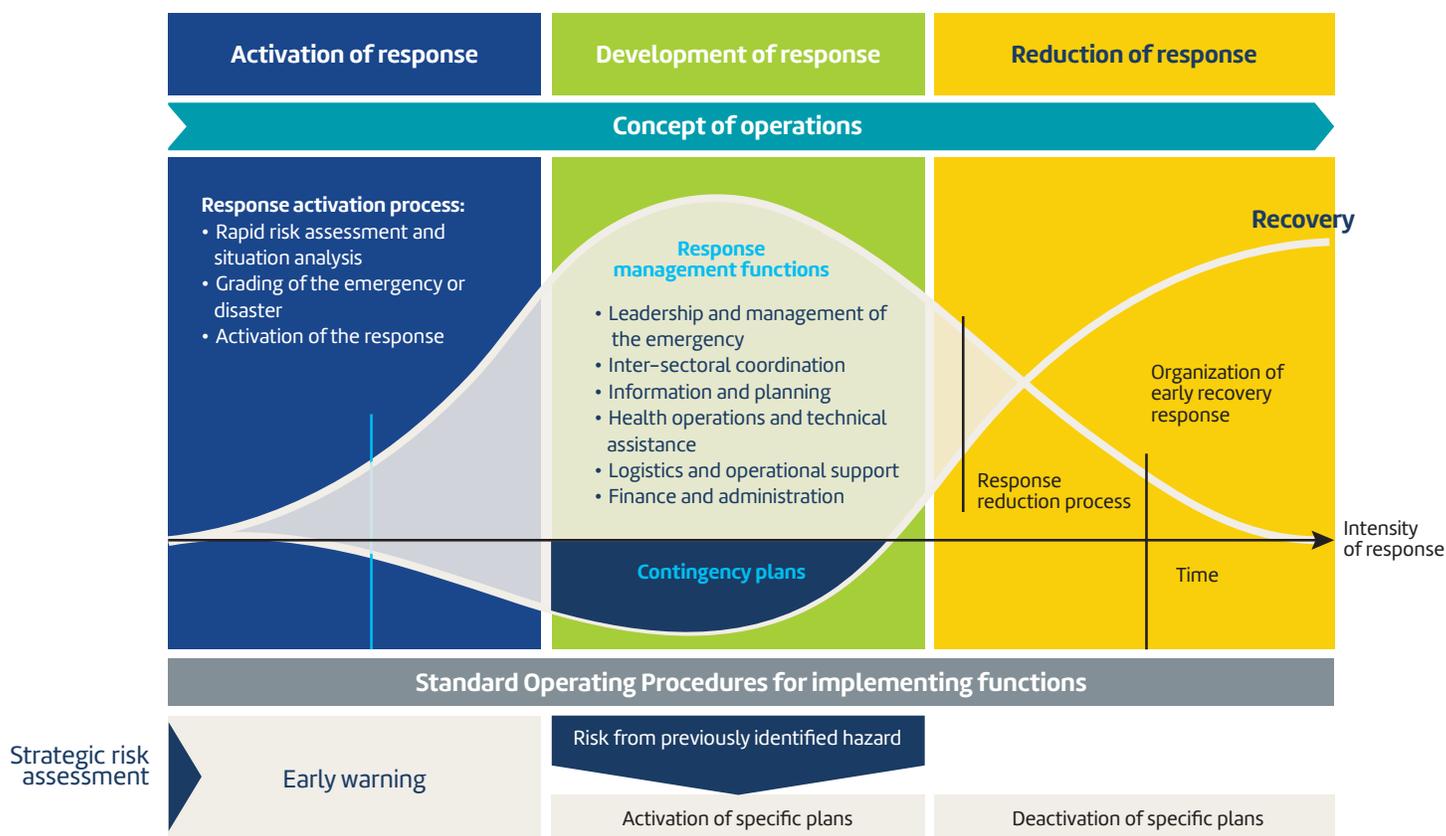


Figure 3. Conceptual map of the operational model for implementing health emergency response management functions.

To prepare the document, the work group should take into account the multi-hazard response management functions described in this document, as well as the country's previous experience, based on the following recommendations:

- Formulate the most appropriate operational model for performing the functions in the national context and determine the title/name and structure considering the national health emergency framework;
- Develop the concept of operations (ConOps) that supports the performance of multi-hazard response functions, taking into account all administrative levels, other sectors and partners, as well as their activation and activities in the course of the response;
- Identify the institution, agency, organization, or department in the health sector that is responsible for each multi-hazard response function (leadership and management of the incident, intersectoral coordination, information and planning, health operations and technical assistance, logistics and operational support, finance and administration, response phase-out and deactivation functions);
- Identify the operational mechanisms (e.g., Emergency Operations Center [EOC], health sector Emergency Operations Committee), procedures and the protocols required to perform the functions (e.g., vertical and horizontal internal communications); and
- Use Annex 2 as support to facilitate the preliminary review of the document, which may also be useful for subsequent updates.
- Issues that pertain to all parts of the document are gender, disability, and multiculturalism. These issues should be taken into account starting with the strategic risk assessment and should be addressed by all functions during the response.

Validation and approval

During the process of developing or updating the model, and with a view to its approval, the model should be harmonized with the current laws and regulations of the country where it will be implemented.

The validation and approval mechanism should be described in the document and may constitute an operating procedure.

Documentation and improvement

Once the operational model has been developed or updated, all functions should be tested through simulation exercises or drills, based on the organizational analysis that led to the assignment of each function.

Information obtained from the exercises or from their use in the real world will be considered for inclusion in a continuous improvement cycle. The frequency of this cycle will be determined in accordance with current laws and regulations in the country, although it is recommended that this be done on an annual basis.



Photo: PAHO/WHO

Emergency response drill to improve performance in the real world.



An emergency medical team (EMT) transporting patients within their EMT facilities.

January 2010, a massive earthquake hit Haiti, approximately 10 miles southwest of the country's capital, Port-au-Prince.

IV. Operational model for implementing health emergency response functions

A. Contextual framework of the model

Setting

This operational model should be situated in a regional and national geographical context, with an implicit timeline. The updating process will be associated with administrative changes in the structure of the country's health sector and the institutions involved in health emergency response, in order to provide continuity and make adjustments related to capacities and competences. The entire health sector should be familiar with the model.

Objectives of the model

The document containing the operational model should have a well-defined overall objective, as well as specific objectives based on the strategic assessment of potential risks that may be declared. In general, the overall objective is to establish an operational framework for the health sector so that it is able to respond to any health emergency; however, the objectives may be more specific based on the implementation context.

Implementation context

Information on the country

This refers to data that provide an overview of the country and make it possible to visualize the risks it is exposed to, as well as geographical factors that could affect the response to a health emergency.

Organization of the national health sector

This refers to the way the national health sector is routinely organized, including public, private, and social institutions. This information provides a broader view of how the existing structure of the ministry or secretary of health should be related to command and control systems in the disaster management structure after the response is activated.

B. Response activation process

Rapid risk assessment, situation analysis and assessment of damages and needs

The starting point for activating a response is the identification and confirmation of an event or threat to public health based on a rapid risk assessment and situation analysis conducted following a sudden onset emergency.

In the case of a public health event, identification of the source of information may facilitate its verification, especially when the occurrence, nature, or scope of the event are unknown, and sources of information must be compared. If the information comes from a secondary or unknown source, existing technical capacity, experience, and instruments or tools should be verified, as should the methodology used to generate the information. The individual or team in charge of identifying and confirming the information must avoid false alerts issued by unofficial sources. This includes those responsible for the epidemiological surveillance or disease control section of the ministry of health, which should identify sanitary, infectious, or noninfectious hazards.

When the impact of a natural threat, serious conflict, or other acute emergency with obvious consequences on health occurs or is expected, an assessment of damages and needs should be conducted to determine

the nature and grade of the emergency, as well as the consequences and risks to public health and the health sector's ability to respond to it (8) An assessment is suggested once the event occurs.

There are three possible scenarios for confirming information related to the emergency: it is confirmed that the information is false; the event or threat is confirmed but does not pose a risk to public health; or the information is confirmed and shows that there is a high public health risk. Not all events reported in a country's surveillance system are relevant to a public health risk. However, there should be an emphasis on events that must be reported under the IHRs as well as any events that exceed the health sector's response capacity (9).

Grading of the emergency or disaster

The grading of a health emergency facilitates the response by those responsible for managing it, by identifying the structures, resources, procedures, and activities required to ensure proper response.

For any public health event, the authorized or responsible entity or entities, the time when the event should be graded, and the criteria for clearly defining the grade of the emergency must be explicitly specified. In the event of hazards, it may be useful to characterize them based on their magnitude, intensity, frequency, probability of occurrence, duration, and likelihood of being associated with other hazards in order to determine the extent of the response that is launched (Figure 4).

This document recommends the use of a three-level gradient based on the most common classifications used in the world. This makes it possible to determine increasing requirements for more resources for the response. The higher an incident's grade, the more resources and management will be required (10).

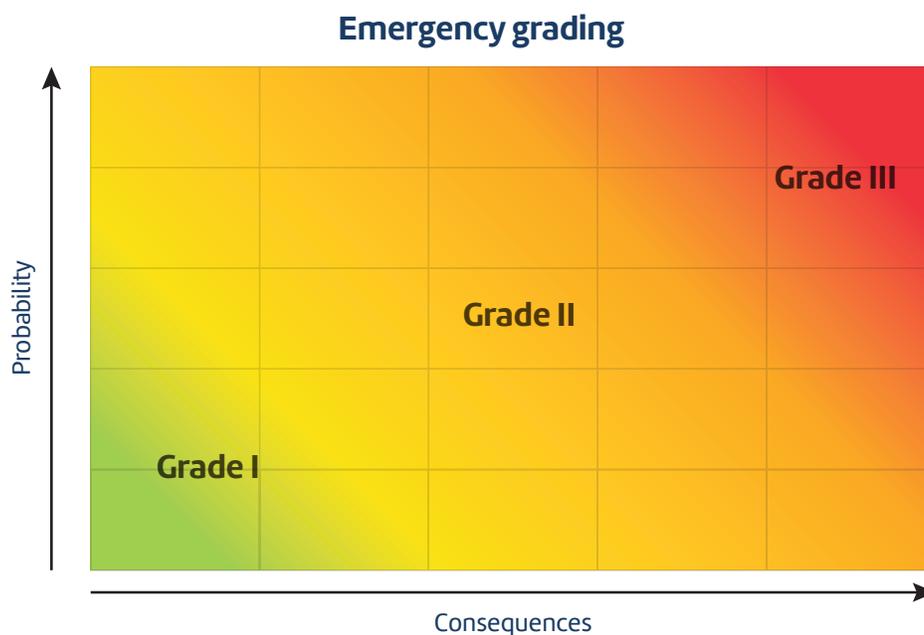


Figure 4. Representative diagram of health emergency grading.

The Emergency Operations Center (EOC) or similar national structure should be responsible for the grading activity. Based on the emergency’s grade, the group, committee, or national health organization responsible for directing and managing emergencies will be activated (11).

Response activation

The entity or individual in charge of leadership and management functions is the best one to notify the sector’s highest authority regarding the results of grading the event or emergency. After an internal communication is delivered to the highest authorities, the response should be activated.

The activation criteria are the parameters that, based on the grading and characterization of the

emergency, enable the national health authority to make the decision to activate the response process. Key elements must be identified that will help the health sector predict the probable course of the emergency. These elements may include the expected level of impact, consequences on infrastructure and organization and other issues, taking into account the specific context of each country.

Accordingly, the operational model should provide a procedure for activating the response, the respective criteria for doing so, the channels of information, and those involved in the emergency in the context in which it occurs (sudden or unexpected) once the early warning has been issued (2). The procedure should include the chain of communications with the responsible entity or entities in charge of managing the response.

C. Concept of operations (ConOps) in the response

The ConOps defines the expected functioning of the entire health sector, identifies duties and responsibilities in a coordinated response, and describes how and when to involve the different branches and levels of government, as well as other partners (including international agencies) in the response.

ConOps are key for providing details on how multisectoral action and transnational coordination will function at the strategic, management and execution levels (12). They should be adapted to the structure and organization of the health sector and the country's regulatory framework (Figure 5).

Once the emergency has been graded, the response is activated. The higher the grade of an emergency, the more resources will be required, so the grade of an emergency should be in line with the resources that will be used in the response:

- The lowest grade generally refers to a health emergency that the health sector structures are relatively well-equipped and capable of responding to. Even if additional personnel and resources are temporarily required, the management and coordination of the response will remain at the local level.
- The highest grade is characterized by health emergencies that have a major impact on the population and put a great deal of stress and burden on the health sector. This will require a coordinated and multisectoral response and possibly international assistance.

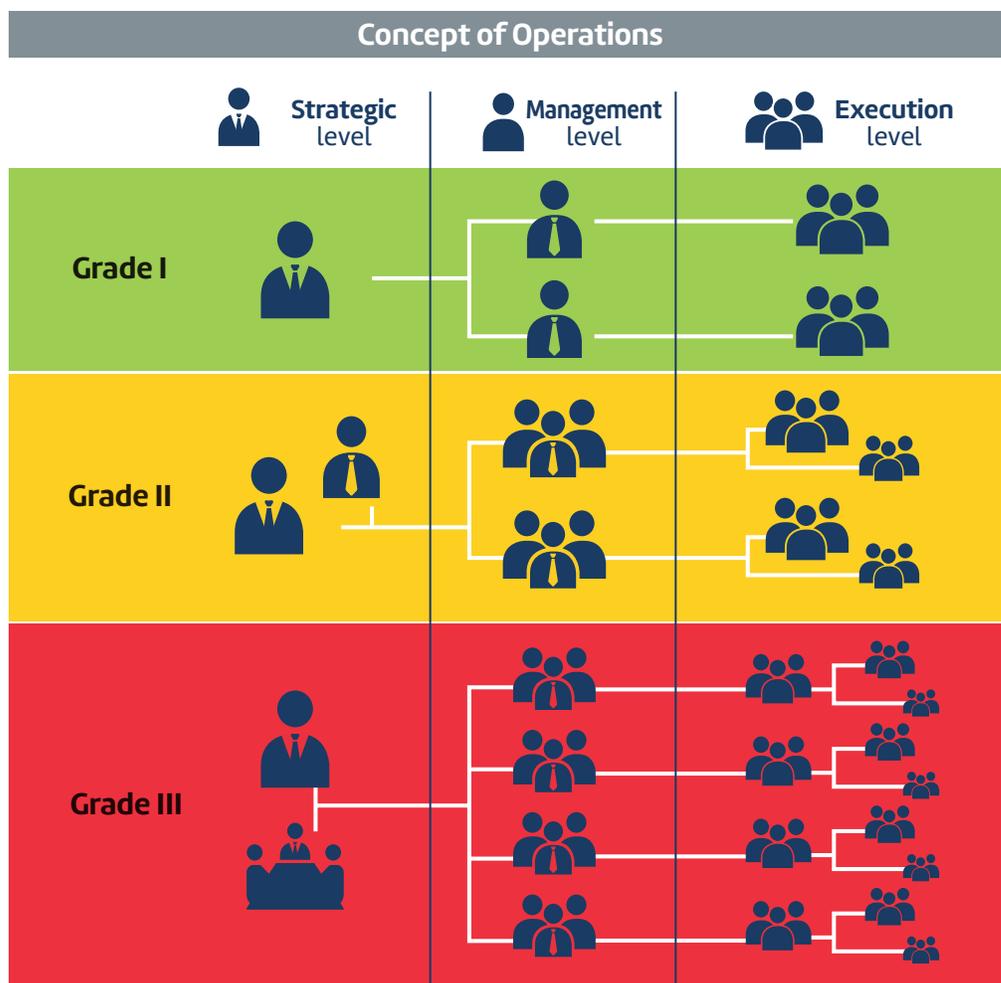


Figure 5. Diagram showing the concept of operations in the response.

In any health emergency, the coordination involved in integrating response management functions with the hierarchical order established by the regulatory authority in charge of the health sector should be clearly stated in writing in the operational model. The entity responsible for planning should consider an organizational chart for each grade of emergency. Each organizational chart should mention the members of the coordination team involved at the strategic level, the management level, and the execution level (13).

This operational model for the health sector is characterized by:

- A flexible and adaptable management structure that can be scaled up or down during the course of the emergency;
- Unified management (command and control) achieved through the joint participation of various areas in making and implementing joint decisions;
- Functions and responsibilities of the entities involved in the response that are in line with their areas of competence, and are carried out based on operating procedures; and
- Common terminology and functions shared by all levels of the response structure to support interoperability.

Responsibilities at the strategic level

The strategic level is the highest level in the structure. It is responsible for the strategic coordination and management of the response and makes decisions based on the most recent information.

It is headed by a high-ranking person who becomes the emergency response director and is accountable to the country's highest authorities. Depending on the emergency's grade, the strategic level may be headed at the local level by a junior officer of the ministry of health (for low-level emergencies), or directly by the minister of health for more complex emergencies at the national level. When a multisectoral response is

required, the strategic level may even be anchored by the national health disaster management authority or the cabinet of the prime minister or office of the president.

Health sector emergency operations committee ⁽¹⁴⁾

In Latin America and the Caribbean, the use of the health sector emergency operations committee as a model of operation in emergencies and disasters led, at each territorial level, by the highest health authority (minister of health, secretary of health, etc.), has become widespread. The Emergency Operations Committee must make decisions and prioritize needs with due technical support, determine the required support from other sectors and entities, and develop planning to face the emergency and avoid further health risks.

Regardless of how the positions and the organizational structure of each country are designated, it is important that all essential functions are represented in the committee to deal with the emergency or disaster, and the processes of gathering information, to respond to the health needs of the population and facilitate decision-making based on technical knowledge and evidence. The Emergency Operations Committee becomes an effective mechanism for decision-making based on the assessment of damages and the analysis of the health situation at all territorial levels and by the different sector entities, jointly and sharing the information and analysis from situation rooms.

Setting up a health sector emergency operations committee has the following advantages:

- Facilitates decision making and reduces the margin of error.
- Provides a command and control unit, enhancing leadership in the health sector.
- Establishes a simplified organization, establishing clear lines of authority, decision and control.
- Facilitates crisis management.
- Facilitates the orderly handling of information.

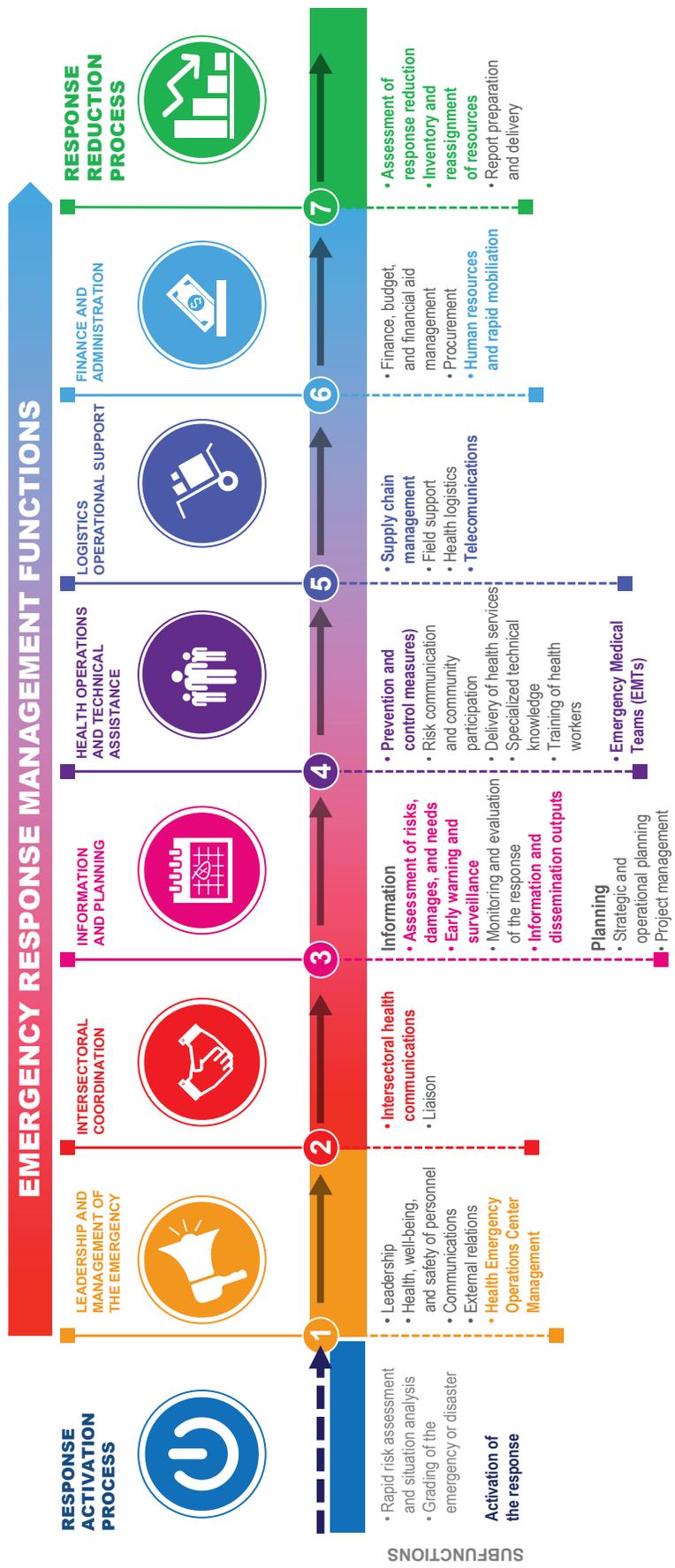


Figure 6. Map of functions and subfunctions that should be executed in the response. Functions and subfunctions in color are those for which an operating procedure is highly recommended.

Responsibilities at the management level

The management level is responsible for the effective coordination of all elements of the response and for keeping the strategic level informed of the current situation. It provides technical and administrative leadership for the operational response based on the strategic guidelines.

It is headed by the emergency manager, who is responsible for implementing the response. The directors of institutions and heads of units or areas in the health sector or the ministry of health will be responsible for analyzing needs for support based on available information, so that the intervention areas can better respond to the emergency. This level is responsible for making the decisions necessary to ensure the continuity of health services.

Responsibilities at the execution level

The execution level is responsible for the daily actions that will achieve the established strategic targets and objectives. It directly implements the health response support strategy stipulated in the plan, using available resources to achieve the desired results. Decisions related to operational actions should be made at the most territorial or local organizational level possible. Execution is the core of the stipulated actions, since this is what makes it possible to address priorities, considering the resources and mechanisms designed to reestablish health services.

The execution level is comprised of personnel whose functions are included in the regular programs of the ministry of health or institutions but have been reassigned to respond to the needs of the emergency or disaster.

Emergency Operations Center

The health EOC is the specialized physical space set up to coordinate and control health emergency response

activities. In this document, EOC is the equivalent to a situation room, with the emergency management center's work considered the basic concept.

The EOC is an essential tool for the implementation and performance of health emergency response functions, surveillance and monitoring of the situation, response activation and organization, resource mobilization, identification of risks and needs, evaluation of interventions, coordination with response partners, preparation of reports for decision-making, and production of information for risk communication.

D. Health emergency management functions

Health emergency management functions are indispensable functions that must be performed to ensure effective management of the emergency, starting in the first few hours of the response. They are based on certain functions of the proposed incident management system in the emergency response framework (14). However, they are adapted for specific execution of the response by the health sector in each country. These functions define the key responsibilities and related actions for each entity involved in the response (Figure 6).

Leadership and management of the emergency

The leadership and management level is responsible for the overall management of the response. This function includes key responsibilities and activities related to decision-making and management of the emergency, the health, well-being and safety of personnel, communications, external relations, and management of the health EOC.

Leadership

This subfunction should be delegated to whoever has been designated as manager or coordinator of the emergency. Leadership activities should be coordinated with all sector partners for the purpose

of setting the priorities and strategic objectives of the response and assigning responsibilities to perform other fundamental functions.

Health, well-being and safety of personnel

This subfunction involves monitoring and adopting specific measures to ensure the safety and well-being of all staff deployed in the response and includes a psychological care program. It should ensure that all personnel have access to health services, nutrition and hygiene, as well as evacuation for medical reasons.

Communications

This is a strategic subfunction that coordinates the health sector's response with the media's and the public's demand for information, including the management of information on social networks, in addition to developing and disseminating communication outputs for the health sector and the public. This subfunction should ensure universal access and a multicultural approach that is consistent with risk and crisis-related communications. An additional responsibility will be to meet victims' requests for information.

External relations

The party responsible for this subfunction is in charge of coordinating activities related to the mobilization of external resources, relations with foreign agencies or organizations that provide donations, and promoting the execution of plans and protocols.

Management of the health EOC

The manager of the EOC is responsible for proper functioning of support systems and tools and ensuring their availability in the facilities provided for the emergency management teams, whenever they are needed.

Intersectoral coordination

Intersectoral health communications

The purpose of this subfunction is to include partners in activities involving risk and needs

assessment, planning, management, information-sharing, delivery of services, surveillance, quality assurance, and health promotion. This function should be carried out by a strategic level of the Ministry of Health (or lead institution in charge of the national health sector), which is responsible for setting up and managing the coordination mechanism either from the health EOC or through the intersectoral EOC, to ensure that the joint action results in adequate coverage and quality of the essential health services provided to the affected population.

Liaison

The liaison officer is responsible for notifying the emergency manager of any situations and problems stemming from partner relations during the emergency and for proposing a course of action.

Information and planning

This function involves collecting, analyzing, and disseminating information related to health hazards, existing needs, service coverage and any gaps, as well as the execution of the response. This information is collected for the purpose of making any adjustments to actions during the response.

Together with the health operations and technical assistance functions, this function deals with the creation, strengthening, and deployment of the rapid response teams responsible for rapid investigation of warnings, the rapid assessment of damages and risks in the field and, if appropriate, the plan's operational response through emergency medical teams (EMTs).

Information

The purpose of this function is to compile, compare, and analyze information on the management of the emergency and contextual data, and disseminate data related to existing risks and needs.

Assessment of risks, damages, and needs

This assessment helps to make decisions on the prevention or mitigation of the emergency's

impact. The needs assessment is a systematic process for determining consequences on health and the emergency's overall impact, as well as the functioning and performance of health services, which helps to guide the prioritization of response actions.

The publication *Damage Assessment and Needs Analysis in Disaster Situations: A Guide for Response Teams (14)* contains guidelines on the information management and flow process, in addition to the key outputs that should be provided to the situation room to define on the context of the emergency.

Early warning and surveillance

This consists of the collection, analysis, and reporting of any information that helps detect, confirm, and investigate events and health hazards based on multi-hazard early warning systems. It supports the dissemination of data related to public health events.

The individual/entity responsible for this subfunction should make sure that the health sector is informed based on early warning systems that monitor events originating outside the health sector; for intrasectoral matters, this function should support the dissemination of epidemiological data related to warnings caused by public health events.

Monitoring and evaluation of the response

This individual/entity is in charge of monitoring the evolution of the emergency and the progress made in the response, through the use of performance standards. This function involves preparing indicators, locating reliable sources of information for each hazard, setting operational goals, compiling and interpreting data, and monitoring response actions.

By determining the level of completion of these actions, the individual/entity responsible for this function is able to make recommendations for adjusting the course or modifying the goals (see Annex 5).

Information and dissemination outputs

In this function, information is compiled from sources such as risk or needs assessments, surveillance and early warning systems, or mechanisms for monitoring the response, in order to prepare reports that enable the respective actors to evaluate public health risks and needs, assess the effectiveness of the response, and adopt corrective measures. This should be the responsibility of communication experts and should not be confused with risk communication.

Planning

This function involves coordinating the development of the response, formulating emergency and recovery plans, and taking steps to reduce the response. It identifies any potential future repercussions of the emergency and periodically provides updated information to the emergency manager on advance planning issues.

Strategic and operational planning

This function involves making plans for specific emergency situations based on the supplied information, health operations, and technical assistance. Planning should be participatory with contributions received from all partners in the sector. It requires setting common strategic priorities, objectives, and joint operational plans, as well as close coordination within each sector and action group. It includes planning the strategic response, joint operations with partners, and early recovery needs.

Project management

This function supports the design, structure, and content of update reports that are sent to partners; it involves monitoring execution and promotes standardized management of the entire project cycle.

Health operations and technical assistance

This function focuses on the coverage and quality of health services during the response to ensure that

they are optimal. It promotes more effective public health interventions and clinical services that are adapted to each specific context.

Prevention and control measures

This subfunction includes making recommendations or developing guidelines for the emergency manager or directly for the ministry of health, on measures to prevent and control public health risks, including epidemiological surveillance improvements, laboratory services at the point of care, transportation of samples, vaccination campaigns, group prophylaxis, management of communicable disease outbreaks, infection prevention and control, vector control, improvements in water and sanitation, food security and nutritional services, as well as the advance distribution of medicines.

Risk communication and community participation

This subfunction evaluates the social and cultural context of the at-risk population to raise awareness about the event and the associated risk and provides official information through the communication platforms deemed most appropriate, using the local language and the most widely accepted media. It prepares selective messages adapted for dissemination, considering universal access and multiculturalism, evaluates their effectiveness, and identifies any obstacles that could impede acceptance of the health recommendations made.

Delivery of health services

This subfunction ensures the delivery of essential health services by establishing a basic package of health services that includes community, primary, and higher levels of care. These are the services that the ministry of health should offer by providing financial resources, supplies, and human resources to health facilities. This function includes service delivery actions that will be carried out by response teams.

Specialized technical knowledge

This subfunction involves ensuring that health operations are based on the best knowledge and

technical guidelines available and are in compliance with best practices and standards, through networks of experts or associates. It integrates the agenda of experts who may provide support in operational issues such as the assessment of risks and initial needs, the setting of priorities, information planning and management, and other areas that involve a certain level of experience or specialization.

Training of health workers

This subfunction refers to training in some of the specific functions described above, particularly information management, risk communication, disease surveillance, prevention and control, as well as various clinical care issues.

Emergency medical teams

This function involves the deployment and coordination of the EMTs that provide clinical care to populations affected by health emergencies and support to local health systems. It is related to information and planning functions, since EMTs may be governmental (civilians, military) or associated with other partners outside the government; their response may be national or international and involves a high degree of coordination to be able to respond, for example, to an escalating outbreak or other emergency (16).

Logistics and operational support

These functions provide an operational platform for effectively executing health operations based on the logistical capacities of the health sector. To ensure the effectiveness and efficiency of logistics and operational support, previous agreements may be considered with partners (regarding their involvement in logistics) or with those responsible for telecommunications, transportation, the media, external suppliers, etc.

Supply chain management

This subfunction deals with the supply chain or procurement of supplies and equipment to support emergency operations. It includes the estimation of needs, the selection and procurement of supplies

and equipment, logistics and transport, customs duties, and the storage and distribution of supplies. The responsible party should have a list of the main national and international suppliers and should supervise the procurement process from initial request through approval, including mechanisms to increase the number of suppliers.

Field support

This subfunction deals with the management and field support strategy for response teams in terms of logistics, such as housing, work sites, work teams, and safe transportation. It should also provide the means for restoring or reactivating available telecommunication assets. With regard to transportation needs, it is responsible for managing the ministry of health's available vehicle fleets and inventory (cars, trucks, motorcycles, etc.) and their mobilization for response purposes.

Health logistics

This subfunction provides specialized and technical knowledge, tools, methods and means required to meet the specific logistical needs of health facilities, such as cold chain management, the network of laboratories, and blood banks. It includes the list of experts to provide consulting services related to specific hazards or risks.

Telecommunications

This subfunction involves the management, provision, and operation of telecommunications equipment for response operators; it includes the telecommunications equipment located in the EOC as well as the equipment available to teams deployed in the field. This is a strategic subfunction.

Finance and administration

These functions involve providing the financial management and administrative support required for the response. They should ensure that the emergency manager's decisions will be reflected in managerial and administrative services that comply with SOPs

and achieve performance indicators. Finance and administration officers are also responsible for managing cash flow, monitoring the costs of materials and human resources, preparing and monitoring the budget, and preparing and updating administrative records and reports.

There should be two types of budgets for managing the emergency: one for the planned response and the other to ensure that no time is lost when submitting requests for extra financing during the response. Procedures or mechanisms for securing and allocating emergency funds, as well as budget control and monitoring and accounting processes, are integrated with this function.

Finance, budget, and financial aid management

This subfunction involves preparing budgets based on the action plans established by leadership and allocating financial resources. Finances are monitored and reports are submitted on expenditures related to the budget. This function also includes overseeing financial execution and issuing reports on its evolution, supports the mobilization of resources for preparing proposals and reports, and facilitates local payments.

Procurement

Together with the logistics and operational support function, this subfunction deals with the procurement of supplies needed for the response, the tracking of stock, coordination with the logistics and human resource subfunctions, and the provision of supplies and materials for the local response team.

Human resources and rapid mobilization

Those responsible for this subfunction are in charge of meeting the response team's human resource needs, as directed by leadership. This includes attracting and contracting personnel, transporting them to the emergency site, providing orientation and preliminary training for the response, as well as administrative support and performance evaluations. This subfunction also includes preparing reports on

human resource needs for purposes of implementing the plan, filling job openings, etc.

Response phase-out process

The objective of the set of functions for reducing the response is to determine the criteria for gradually reducing or curtailing the emergency response. Since this is directly related to the ConOps, the emergency manager is responsible for making the decision, which will be based on information provided by those responsible for information and planning.

Assessment of response phase-out

To begin the response phase-out process, the current level of the emergency should be considered. The criteria for making the decision should be related to the response performance indicators and achievement of the proposed objectives.

Inventory and reassignment of resources

This subfunction includes preparing an inventory of the resources that are active in the emergency. This inventory is part of the logistics function and is created after the one that was prepared when the response was launched. Management is responsible for reassigning these resources, which should be based on a collegial evaluation supported by the information sent by field staff.

Report preparation and delivery

Reports on response phase-out should continue to be submitted at least once every 24 hours to expose other risks or threats that may occur during this phase (17). Creating a template is recommended, considering the relevance of a flexible and practical form that will effectively support the decisions made on reducing the response.

E.Organization of early recovery response

This section describes functions involving immediate recovery actions as the health sector winds down its response. It is the link between the response phase and the transition to early recovery to facilitate the continuity of operations, with an emphasis on essential services (18).

Leadership, governance, and coordination

In this function, the agency responsible for governance during this stage is identified and arrangements for transferring command are made to ensure critical decisions during the recovery and to establish clear communications. It integrates the responsibilities and commitments of the health sector's senior officials throughout the entire course of the response.

Early recovery planning

This function involves making plans to achieve the immediate objectives of the recovery process. Objectives and priorities are set based on the results of the needs assessment.

Retrieval of information

This function is linked to the assessment of damages and losses and the need to make decisions based on priority actions. It should consider potential problems that may arise and newly vulnerable groups, as defined in Annex 1 of the IHRs (5).

It may be useful to work with templates or use existing platforms in the ministries of health that could provide information or contribute to information retrieval and facilitate the adaptation of assistance programs, once the recovery phase has ended.

The elements that should be included in this function are:

- A data retrieval mechanism and collaboration and information-sharing agreements between work groups and other partners, to prevent omissions or a duplication of efforts; and
- A list of recipients and platforms where the information will be concentrated, for subsequent processing and analysis.

Communications

This function works with communications between key agencies to ensure uniform and clear communications with sector partners and the affected population. In this function, key messages are defined and agreed upon with those responsible for the sector's recovery (single source of reliable information). When issuing any information, those responsible for communications must be mindful of gender, disability, and multiculturalism issues.

Continuity of operations

This function addresses immediate health and safety problems in the post-response period, meets needs, and reestablishes basic care services (14). It includes the following:

-
- Ensures the distribution of medicines, equipment and supplies so that health facilities can continue to provide care;
 - Establishes mechanisms on care for staff, as well as coverage and extended hours;
 - Evaluates the need to request mobile healthcare units and ambulances to transport patients and injured individuals to nearby hospitals, with the lowest possible risk;
 - Restores sanitation and safe water systems in hospitals on a priority basis;
 - Identifies vulnerable groups that will receive priority care, whether based on urgency, type of injuries, or morbidity history;
 - Takes advantage of existing inter-agency support networks, preferably agreements in place before the emergency occurred; and
 - Requests the advice or assistance of preidentified experts in health sector recovery, as needed. Multi-lateral agencies may advise on the most appropriate health impact assessments for the specific context.

Finance and administration

This function is related to the function on the same topic in the response phase, but the focus here is the financing required to secure and allocate resources and defray costs for priority activities in the immediate



Photo: Victor Ariscain PAHO/WHO

A member of the Dominican Republic's National Emergencies and Disasters Administration provides post-disaster medical care.

V. Standard operating procedures for executing response functions

recovery phase. The same department or office should be responsible for this function in both phases.



Figure 7. Modular organization structure of standard operating procedures (SOPs) and approval process.

The framework for executing functions during the response process is comprised of certain operating procedures. The purpose of standardizing these procedures is to clearly describe all included actions, regardless of who performs them. They summarize the scope, activities, responsibilities, and outputs needed to perform each function required to manage the emergency. In the context of this methodology, the procedures are organized in a modular fashion, so that each one can be individually removed and undergo a review and improvement process, and then be reinserted without the need to dismantle the entire plan (Figure 7).

Those responsible for planning and preparing or updating the document may add or adapt any procedures deemed necessary, based on experience (lessons learned and best practices), the risk assessment, and capacities.

A minimum number of procedures is recommended for specific emergency management and early recovery functions (Annex 3); the responsibilities related to some of the activities included in these procedures may be shared by more than one hierarchical level. The list of procedures should be recorded in a log (master index), so that they can be viewed as a whole (Annex 4). This document proposes a specific methodology to ensure that the procedures are developed in a systematic, standardized, and concise manner.

Structure used to develop SOPs

All of the procedures should be standardized to facilitate the performance of functions and subfunctions. The different sections of the form used to develop SOPs (Annex 5) are described below to facilitate completion.

In the section “Objective,” state the objectives to be achieved by the procedure. Under “Scope,” specify what the procedure covers, indicating the function or subfunction and level(s) involved.

Under “Responsibility,” specify the functions, areas, or sectors in charge of performing the activities described in the procedure, including personnel responsible for the drafting, approval, review, distribution, and control of copies of the form.

To activate the procedure once it has been received, each responsible party should make arrangements for the immediate training of the personnel that will implement the procedure and quickly specify when it will become effective. Once the staff has been trained, the responsible entity/individual should inform the authority of the possibility of implementing the procedure. After receiving this information, the authority will implement the procedure as of the effective date.

The “Definitions” section is used to clarify any concepts and expressions that may be ambiguous or subject to interpretation.

The main part of the procedure is found in the “Development” section, where the activities required to perform the specific functions are described in chronological order. This includes what to do, how and when do it, and who will do it.

Under “Forms and records,” indicate the templates that will be used to record the data to be collected as the activities included in the procedure are carried out.

Under “References,” cite all references for the applicable documents or standards used; they may be other procedures, specific instructions, or internal standards that are not included in the “Annexes.” Other documents such as existing manuals, guidelines, handbooks, flow charts, or procedures that could be useful when formulating the procedure may be included.

The section “Distribution list” indicates which functions, areas, or sectors of the ministry of health should control copies of the procedure.

Format

The procedures should be drafted as directed by the national health authority (e.g., with regard to page headers and footers, use of official logos, etc.) and must, in all cases, comply with institutional rules and regulations.

Distribution process

All areas, departments, or offices of the national health sector involved in the implementation of the procedure in question must be listed and will receive a copy of it. This dissemination activity is important because it informs the parties responsible for each function of the issues for which they should be prepared.

There are two parts to this activity:

- The party responsible for distributing approved procedures through controlled copies to all parties involved, will also be in charge of removing and destroying obsolete copies of null and void procedures, and filing the original obsolete version of the procedure; and
- The record of all controlled copies distributed, identifying each distributed copy, the name and sig-

nature of the sector official that receives the copy and date received, the date the obsolete copy was removed and destroyed, along with the signature of the person who destroyed it. The original versions of obsolete documents must be stored, with an indication of their status.

Procedure activation process

Once the new procedure is received, the recipient should make arrangements for the immediate training of their respective staff, designate the person responsible for implementing the procedure, and quickly specify the implementation date.

Once the staff has been trained, the responsible entity/individual should inform the authority of the possibility of implementing the procedure. After receiving this information, the authority will implement the procedure as of the effective date.

Based on the risk assessment, a minimum number of procedures for each essential function or subfunction should be considered.

VI. Specific plans to address identified risks

The adaptation of current response plans with a multi-hazard approach involves integrating them into the health sector's multi-hazard response framework. These plans should be based on a strategic health risk assessment, which is used to identify hazards and risks for which the health sector should be prepared. These risks should be addressed on a priority basis using a validated methodology that indicates which risks should be managed first.

As part of the assessment of basic skills under the IHRs, contingency planning is a process used to identify potential crises, which focuses on developing strategies and procedures to address the needs of the population likely to be negatively affected by an emergency or disaster. These plans should be implemented once the assessment of the emergency determines that the risk to public health is high and stems from a specific hazard (19).

A priority is that these specific plans must be easy to implement. It is therefore recommended that they be systematically formulated to ensure their practicality (Annex 6). These documents should also enable those in charge of the response to visualize, foresee, and resolve any problems that could arise in a crisis situation or during a prolonged interruption of the sector's day-to-day operations.

The objective of these plans is to provide a frame of reference for presenting an organized operational response to hazards or events that pose the risk of an emergency. This will result in organized, coordinated procedures that clearly define institutional functions and resources, information processes, and operational measures for specific agents in specific scenarios.



Photo: PAHO/WHO

Early assessment is a fundamental procedure of the specific plans to manage biological hazards.

Annexes

Annex 1. Template to develop an operational model for health emergency response functions

| General template | | | | |
|------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Model's contextual framework | Context of implementation | Country information | <p>Enter data to provide an overview of the country in terms of public health hazards.</p> <ul style="list-style-type: none"> • [Official name of the country] • [Geographic location] (Location, geographic borders, coastlines). • [Climate] (Seasonal variations) • [Principal hydrographic conditions] hurricanes, floods • [Orography] (risk of landslides in mountains or hills; runoffs) • [Geology] (soil conditions, volcanology, etc.) • [Demography] (type of population, vulnerable groups) • [General assessment of health: leading causes of morbidity and mortality] | |
| | | Organization of the national health sector (based on organizational analysis) | <p>Describe how the national health sector is organized and its functions.</p> <ul style="list-style-type: none"> • [Include all public, private and social institutions] • Description and graphics (flow chart, conceptual map) of the organization of the national health system: • Areas, sections, or offices of the ministry of health involved in the response • Coordination mechanisms (intrasectoral and multisectoral) | |
| | Purpose | General objective | Describe the main objective of this document. | <ul style="list-style-type: none"> • [Objective] |
| | | Specific objectives | Describe the specific objectives. | <ul style="list-style-type: none"> • [Objective] |
| Scope | Scope | <p>Indicate the authorities, areas, institutions and organizations in the health sector that should comply with this plan; include sector partners that should be informed of this plan.</p> | <ul style="list-style-type: none"> • Ex: This plan applies to the functions, operations, and resources required to respond to, restore, and resume normal operations of the health sector [scope]. | |
| Regulatory framework | Legal, national, and international reference documents (national tools and international agreements) | <p>Summarize the statement on how the contents of this plan comply with the related organizational policies and standards in your country.</p> <p>Make a list of any additional national and international regulations and/or policies on risk management.</p> | <ul style="list-style-type: none"> • Ex: This plan complies with the health sector's planning policy [specify the ministry or institution] as follows: [list articles, laws, regulations, or standards] to build response capacity. | |

Continue >>

| Response activation process | | | |
|---------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Risk evaluation, response classification and activation | Rapid risk assessment and situation analysis | Identification of the source of information | Primary responsibility for this activity: [Enter name of the responsible area, office, or individual] |
| | | Situation analysis | |
| | | Confirmation of information | |
| | Grading of the emergency | Description of the hazard, event, or emergency based on: magnitude, intensity, frequency | Entity/individual responsible for describing and grading the hazard, event, or emergency [Enter name of the responsible office, department or individual] |
| | | Methodology used to determine the emergency's grade | |
| | Activation of the response | Response activation procedure | Ministry of health official authorized to activate the response [name and position] |

| HEALTH EMERGENCY MANAGEMENT RESPONSE FUNCTIONS | | | |
|------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Leadership and emergency management | | | |
| Leadership | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. [Enter the SOP No. 00/0 (ID) if applicable] |
| | | [Contact information, competence, title, or position] | |
| Health, well-being, and safety of personnel | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. [Enter the SOP No. 00/0 (ID) if applicable] |
| | | [Contact information, competence, title, or position] | |
| Communications | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| External relations | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |

Continue >>

| | | | |
|-----------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Management of the health EOC | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Intersectoral coordination | | | |
| Intersectoral health communications | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Liaison | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Information and planning | | | |
| Assessment of risks, damages, and needs | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Early warning and surveillance | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Monitoring and evaluation of response | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Information and dissemination outputs | Objectives: [State the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Strategic and operational planning | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |

| | | | |
|---------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Project management | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Health operations and technical assistance | | | |
| Prevention and control measures | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Risk communication and community participation | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Provision of health services | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Specialized technical knowledge | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Training of health workers | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Emergency medical teams | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |

Continue >>

| Logistics and operational support | | | |
|------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Supply chain management | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Field support | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Health logistics | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Telecommunications | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Finance and administration | | | |
| Finances, budget, and financial aid management | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable]. |
| Procurement | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Human resources and rapid mobilization | Objectives: [Enter the objective for each person or team responsible for this function] | Primary responsibility [Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. |
| | | [Contact information, competence, title, or position] | [Enter the SOP No. 00/0 (ID) if applicable] |
| Response phase-out process | | | |
| Assessment of response phase-out | Responsible party | • Authority responsible for ordering response phase-out [enter name] | |
| | | • Level of responsibility [enter position or title] | |
| | | • Communication [enter means for communicating the order]. | |
| | Criteria that must be fulfilled | Criterion 1. [Describe the criterion for initiating the response phase-out process; e.g. achievement of objective or indicator, etc.] | |
| Criterion 2. [Achievement/fulfillment of ...] | | | |
| | | ... | |

Continue >>

| | | | |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Inventory and reassignment of resources | Primary responsibility for inventory and reassignment of resources [Name of team, office, or department responsible for this function] | Describe the procedure for returning any equipment or other materials that belong to the organization, based on a confidential information management approach. The materials, equipment, and media (backup copy) should be packed, labeled and sent to the location(s) of origin. | |
| Reports preparation and delivery | Primary responsibility for preparing and submitting reports [name of team, office or department responsible for this function] | Report format | Recipients |

| Organization of early recovery response | | | |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Leadership, governance, and coordination | Primary responsibility Enter name of the area, office, or person responsible for this activity] | Primary responsibility Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary [Enter the SOP No. 00/0 (ID) if applicable] |
| Early recovery planning | Primary responsibility Enter name of the area, office, or person responsible for this activity] | Primary responsibility Enter name of the area, office, or person responsible for this function] | Describe the actions or formulate a procedure if deemed necessary. [Enter the SOP No. 00/0 (ID) if applicable] |
| Information retrieval | Primary responsibility: Enter name of the area, office, or person responsible for this activity] | Objectives: [Enter the objective for each person or team responsible for carrying out this activity] | Describe the actions or formulate a procedure if deemed necessary. |
| Communications | Primary responsibility: Enter name of the area, office, or person responsible for this activity] | Objectives: [Enter the objective for each person or team responsible for carrying out this activity] | Describe the actions or formulate a procedure if deemed necessary. |
| Continuity of operations | Primary responsibility: Enter name of the area, office, or person responsible for this activity] | Objectives: [Enter the objective for each person or team responsible for carrying out this activity] | Describe the actions or formulate a procedure if deemed necessary. |
| Finance and administration | Primary responsibility: Enter name of the area, office, or person responsible for this activity] | Objectives: [Enter the objective for each person or team responsible for carrying out this activity] | Describe the actions or formulate a procedure if deemed necessary. |

| Implementation checklist | | | |
|---------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------|----------------------------|
| Date of last assessment: | [dd/mm/yyyy] | Type of exercise: | Name of responsible party: |
| Date of next assessment: | [dd/mm/yyyy] | [Training and training on the plan or simulation or drill] | [Enter name and signature] |
| Testing objective: | [Describe the objective of simulation exercises or drills to test the plan] | | |

Annex 2. Sample form to evaluate the operational model for health emergency response functions

| PERFORMANCE STANDARDS | FUNCTION(S) | PRIMARY RESPONSIBILITY | TIMELINE | PROCESS INDICATOR | ACHIEVED | |
|-----------------------------------------------------------------------------------------|----------------------------|------------------------|----------|---------------------------------------------|----------|----|
| | | | | | YES | NO |
| Operation of the early warning system | Information and planning | | 8 hours | Time warning issued/time response activated | | |
| Activation of the emergency management team | Information and planning | | 4 hours | | | |
| Startup of mobilization, activation | Health operations | | 24 hours | | | |
| Notice of the first health sector meeting to manage the emergency | Information and planning | | 8 hours | | | |
| Presentation of initial strategy, objectives and action plan | Leadership | | 12 hours | | | |
| Coordination arrangements with health sector partners | Intersectoral coordination | | 48 hours | | | |
| Priority intervention strategy on risk communication and community participation | Health operations | | 12 hours | | | |
| Presentation of the first situation report | Leadership | | 24 hours | | | |
| Development of this response monitoring framework including indicators for each process | Information and planning | | 72 hours | | | |
| Formulation of the special procurement, logistics, and operational support plan | Information and planning | | 24 hours | | | |
| ... | ... | ... | | | | |

Annex 3. Recommended procedures for the execution of emergency management and early recovery functions

| | Strength of recommendation on need for procedure | | | Specific comments |
|--------------------------------------------|--------------------------------------------------|--------|-----|-------------------|
| | High | Medium | Low | |
| Rapid risk assessment | High | | | |
| Grading of emergency | High | | | |
| Response activation | High | | | |
| Concept of operations for response | | | Low | |
| Health EOC management | | Medium | | |
| Leadership and management of emergency | High | | | |
| Intersectoral coordination | High | | | |
| Information and planning | High | | | |
| Health operations and technical assistance | High | | | |
| Logistics and operational support | High | | | |
| Finance and administration | High | | | |
| Response phase-out process | | Medium | | |
| Early recovery actions | | | Low | |

Annex 4. Sample master index of standard operating procedures

| NAME OF PROCEDURE | SOP No. 00/0 | RELATED FUNCTION(S) | Reach | Validity |
|-------------------------------------------------------------------------------|--------------|------------------------------------------------------|-------------------|----------|
| Response activation and deactivation | SOP 01/19 | Activation of the response phase-out of the response | Emergency manager | |
| Health EOC management | SOP 02/19 | | | |
| Intersectoral coordination | | | | |
| Liaison (coordination of operations) | | | | |
| Risk assessment | | | | |
| Health services delivery | | | | |
| Prevention and control measures (infection and vector prevention and control) | | | | |
| Response teams | | | | |
| Supply chain | | | | |
| Telecommunications | | | | |
| Procurement of goods and supplies | | | | |
| Add any procedures deemed necessary to execute response functions | | | | |
| ... | | | | |
| ... | | | | |
| ... | | | | |

Annex 5. Form for developing standard operating procedures

| | | | |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------|
| Procedure Name | Responsible department or office [enter name] | SOP No. 00/0 (ID) | |
| [Insert name] | | Total pages: [3] | |
| OBJECTIVE | Specify the purpose to be achieved by the procedure. [Enter the objective of this procedure] | | |
| SCOPE | [Describe the scope of the procedure, indicating the specific emergency function or subfunction, as well as the sector level(s) involved] | | |
| | [Enter the name of the individual or entity responsible for executing the procedure.] After being informed of the procedure, those involved in its execution should be trained and a minimum period of time should be set for notifying the authority of the ability to implement the procedure. | | |
| DEFINITIONS | [Provide a general definition of the procedure that is being developed] | | |
| DEVELOPMENT | Describe in chronological order the activities required to implement the procedure, including what to do, how and when to do it, and who will do it. | | |
| | Activity | Execution time | Primary responsibility |
| | [Enter activity 1] | [e.g. 8 hours] | [name of responsibly party] |
| | [Enter activity 2] | | |
| | [...] | | |
| FORMS AND RECORDS | Ex: Telecommunications equipment inventory form. [Enter form or link to its location] | | |
| REFERENCES | Always provide a citation if the procedure is based on or taken from another document published by PAHO/WHO or other organization. [Enter citations] | | |
| ANNEXES | Ex: Flow chart needed to develop or understand the procedure. [Enter annexes if applicable] | | |
| DISTRIBUTION LIST | Areas, offices, or sectors of the national health sector involved in the implementation of this procedure, which will receive a copy for information and execution purposes. [Distribution list] | | |
| | | | |
| PREPARED BY: | REVISED BY: | APPROVED BY: | |
| DATE PREPARED: | DATE OF REVISION: | DATE OF APPROVAL: | |
| | | | |
| VERSION: ORIGINAL OR COPY(#) | TERM OF VALIDITY | REVISION # [v.#] | NAME AND SIGNATURE OF APPROVING AUTHORITY |
| SIGNATURE: | | REVISOR'S SIGNATURE: | |

Annex 6. Form to formulate specific plans

| | | |
|-----------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Introduction | Description of hazard | Description of the hazard or emergency caused by a serious event, level of impact, probability of occurrence. |
| | Scope | Scope of implemented functions, operations, and resources of this plan: name of country, region, and potentially affected areas, and applicable legal, national, and international requirements. |
| | Situation analysis | Demography, population's health status, health system structure, recent emergencies or disasters. |
| Hypothesis and possible scenarios | Specific risk scenarios | Description of specific risk scenarios that may occur as a result of the hazard, or most serious consequences. |
| | Early warning systems | Description of early warning systems for this hazard. |
| | Health needs and associated risks | Health needs and risks associated with the hazard. |
| | Planning assumptions | Description of planning assumptions. |
| Identified health risks | Response needs | Planned response Preparedness actions |
| Objectives based on risk | Strategic objective 1: | Define the actions done within the first 24 hours of the onset of the emergency, indicating the activity, target population, indicator, responsible authority, and estimated cost. |
| | Strategic objective 2: | Define the actions done within the first 72 hours of the onset of the emergency. |
| | Strategic objective 3: | Define medium-term goals aimed at early recovery. |

Continue >>

| Functions to execute the response | Response needs | Preparedness actions |
|--------------------------------------------|----------------|------------------------------------------------|
| Leadership and management of the emergency | ... | ... |
| Information and planning | ... | ... |
| Health operations and technical assistance | ... | ... |
| Logistics and operational support | ... | ... |
| Finance and administration | ... | ... |
| Communication management | | Means for exchanging messages and key elements |

Terminology

Concept of operations (ConOps): A section or statement in an agency emergency plan or EOC plan that describes the operation of the entire emergency response system, roles and responsibilities, and how they will work together in a coherent response, including: i) the responsibilities of designated organizations at strategic, operational, and tactical levels; ii) the structure and organization of the overall response; iii) grading of the event to determine the necessary levels of response; iv) the nature of the escalating levels of response; and v) how the components of the response work together (11).

Contingency plan: Plan to deal with particular aspects of a specific threat that is different from other threats (11).

DANA: Damage and needs assessment.

Disaster impact: The total effect, including negative effects (e.g., economic losses) and positive effects (e.g., economic gains) of a hazardous event or disaster. The term includes economic, human and environmental impacts, and may include death, injuries, diseases, and other negative effects on human physical, mental, and social well-being (4).

Disaster: A serious disruption of the functioning of a community or a society on any scale due to hazardous phenomena that interact with conditions of exposure, vulnerability and capacity, causing one or more human, material, economic, and/or environmental losses and impacts. The terms “emergency” and “disaster” are sometimes used interchangeably, for example, in the context of biological and technological hazards or health emergencies that could also be related to hazardous events that do not cause a serious disruption in the functioning of a community or society. **Slow-onset disaster:** Disasters that emerge gradually over time. They could be associated with drought, desertification, sea level rise, or epidemic diseases, among others. **Sudden-onset disaster:** Disasters that are triggered by a hazardous event that emerges quickly or unexpectedly. They may be associated with earthquakes, volcanic eruptions, flash floods, chemical explosions, critical infrastructure failures, or transport accidents (4).

Early warning system: An integrated system of hazard monitoring, forecasting and prediction, disaster risk assessment, communication and preparedness activities that enables individuals, communities, governments, businesses, and others to take timely action to reduce disaster risks in advance of hazardous events (4).

Emergency preparedness: The knowledge, capacities, and organizational systems developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from the impacts of likely, imminent, emerging, or current emergencies (12).

Emergency response plan (ERP): A document describing how an agency or organization will manage its response to emergencies. An ERP describes the objectives, policies, and concept of operations for the response, as well as the structure, authorities, and responsibilities to make the response systematic, coordinated, and effective (12).

Emergency: Event or threat that produces or has the potential to produce a range of consequences and which requires urgent coordinated action (12).

Event: Manifestation of disease or occurrence that creates a potential for disease (6).

Hazard: Process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption, or environmental degradation (4).

Hazardous event: Manifestation of a hazard in a particular place during a particular period of time (4).

Health consequence: Negative or positive effects caused by a hazard. A negative consequence for public health causes poor health or contributes to it.

Health sector: A division or collective aspect of a geographical area, economy or society, formed by a group of organizations (companies or institutions), individuals, and policies that contribute to the improvement of health, whose actions are aimed at disease prevention and control, the delivery of services

to the population, scientific research, training of personnel, and dissemination of information on health. Universities, operational emergency response agencies, some nongovernmental organizations, and providers of public water and basic sanitation services (among others) that operate at the national, regional, and local level or are closely related to health may also be part of the sector (14).

Health sector operations committee: It is a team of high-level officials who meet to make decisions after emergencies and disasters. Its members decide on planning to respond to the current event's effects and damages.

Health system: A group of organizations, individuals, and actions primarily intended to promote, recover, or improve health. This includes actions that have a bearing on health determinants, as well as those aimed at improving the health situation (14).

Multi-hazards: 1) The range of significant multiple threats faced by a country, and 2) the specific contexts in which hazardous events may occur simultaneously, in a cascade, or cumulatively over time, taking into account potential interrelated effects (4).

Public health emergency of international concern (PHEIC): An extraordinary event, which, as provided in the International Health Regulations (IHR), has been determined to: i) constitute a public health risk to other States through the international spread of disease, and ii) potentially require a coordinated international response (6).

Public health operations center: Emergency Operations Center (EOC) specializing in the command, control, and coordination requirements of responding to emergencies involving health consequences and threats to public health (11).

Public health risk: The likelihood of an event that that may adversely affect the health of human populations, with an emphasis on one that may spread internationally or present a serious and direct danger (6).

Risk: The combination of the probability of a hazardous event and its consequences. Risk results from interactions between natural and human-induced hazards, vulnerability, exposure and capacities (12).

Risk assessment: The process of determining those risks to be prioritized for risk management, through a combination of risk identification, risk analysis, and evaluation of the level of risk. Risk assessments include a review of the technical characteristics of hazards, analysis of exposures and vulnerability, and evaluation of the effectiveness of prevailing coping capacities (12). Other similar definitions for risk assessment include: continuous and systematic process of organization of multiple sources of information within a framework of risk management for determining a level of risk that guides decision-making. A risk assessment has two facets: 1) threat identification and characterization; and 2) analysis and evaluation of risks associated with an exposure to those threats, including vulnerabilities and coping capacities (20).

Risk management: Coordinated activities to direct and control risks in order to minimize potential harm. These activities include conducting risk assessments, implementing risk treatment measures, and evaluation, monitoring and review (12).

Vulnerability: The conditions determined by physical, social, economic, and environmental factors or processes that increase the susceptibility of an individual, community, assets, or systems to the impacts of hazards (4).

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Between 1970 and 2018, the Region of the Americas experienced over 4,500 disasters that killed 569,184 people and injured more than three million people. Additionally, emergencies and disasters of any kind can cause multi-million-dollar economic losses and can significantly undermine the performance of health systems.

Today, more than ever, it is necessary for countries to improve their preparedness and response to health emergencies and disasters—a need expressed by the Member States of the Pan American Health Organization.

The main aim of the *Health Sector Multi-Hazard Response Framework (MRF)* is to improve the capacity of countries to manage their response to emergencies and disasters in a more efficient and timely manner. The MRF facilitates an operational model that makes it possible to identify response activities, taking into account all existing hazards and to carry out those activities within a national framework based on the organization of the health sector.

The MRF is designed mainly for health sector authorities and managers responsible for emergency and disaster risk management, guiding them in the process of updating or developing response planning. This ranges from describing the operational model to implementing emergency functions involving various actors, identifying preparedness tools in the health sector, and developing standardized operating procedures, organizational analysis, and specific contingency plans.

Implementation of this framework will provide countries with adequate response planning based on a multi-hazard approach. This will lead to better use of available resources and greater flexibility to deal with any type of event.



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