Guidelines for Assessing Disaster Preparedness in the Health Sector
# Table of Contents

**Guidelines for Assessing Disaster Preparedness in the Health Sector**

- Acknowledgements ........................................................................................................................................ 1
- 1. Introduction ........................................................................................................................................ 1
- 2. Main assessment areas ........................................................................................................................... 2
  - 2.1 Basic country profile ....................................................................................................................... 2
  - 2.2 General overview of the health sector .......................................................................................... 3
  - 2.3 Health disaster preparedness program .......................................................................................... 4
- 3. Health disaster preparedness program ............................................................................................... 5
  - 3.1 Coordination Activities ................................................................................................................... 5
  - 3.2 Planning and technical programs .................................................................................................... 5
  - 3.3 Training and research ....................................................................................................................... 10
  - 3.4 Resources and logistical support .................................................................................................... 10
  - 3.5 Final report on assessment ............................................................................................................. 11
- Recommended reading .................................................................................................................................. 11
- Annex ......................................................................................................................................................... 12
Guidelines for Assessing Disaster Preparedness in the Health Sector

Pan American Health Organization
Regional Office of the
World Health Organization

This publication is also available in Spanish with the title "Guías para la evaluación de los preparativos para desastres en el sector de la salud."

© Pan American Health Organization, 1995

The Pan American Health Organization welcomes requests for permission to reproduce or translate, in part or in full this publication. Inquiries should be addressed to the Emergency Preparedness and Disaster Relief Coordination Program, Pan American Health Organization, 525 23rd St., N.W., Washington, D.C. 20037, U.S.A.; Fax (202) 775−4578; Internet: disaster@paho.org.

Cover photo: Mass casualty simulations, as in the city-wide drill pictured, strengthen cooperation among institutions and individuals who respond in an emergency. (Photo: J. Vizcarra, PAHO/WHO)

Acknowledgements

These guidelines were written by Dr. José Luis Zeballos, Regional Advisor for the Emergency Preparedness and Disaster Relief Coordination Program of the Pan American Health Organization.

The author would like to thank Dr. Samir Ben Yahmed, World Health Organization, Geneva, and Dr. Claude de Ville de Goyet, Pan American Health Organization, Washington, D.C., for their contributions to and review of this text.

The publication of this document was made possible with the financial support of the Canadian International Development Agency (CIDA) and the Office of U.S. Foreign Disaster Assistance of the United States Agency for International Development (OFDA/USAID).

1. Introduction

Assessing the organization of the health sector and its response capability in disaster situations implies the development of a working methodology which allows the coverage of the entire health sector. Consideration should be given to the health structure's organization and functions, health institutions and technical programs, legislation, intrasectoral and intersectoral coordination, and other key areas relating to disaster response.

This publication intends to provide a practical approach to evaluating the most important aspects of health sector preparedness. The contents are based principally on the accumulated experience of the Emergency Preparedness and Disaster Relief Coordination Program of PAHO in Member Countries of the Region of the Americas.

This protocol provides guidelines to be followed during the assessment process, the scope of activities to be carried out, and technical recommendations for strengthening natural disaster preparedness programs. The process is illustrated in flow charts which are annexed to this document. The main objectives of these guidelines are:

a) To identify the key elements to be considered during the assessment process;
b) To provide a checklist for gathering key information;
c) To identify potential information sources.
2. Main assessment areas

To facilitate the assessment process the following areas are considered:

2.1 Basic country profile oriented to disaster situations
2.2 General overview of the health sector
2.3 Health disaster preparedness program

For each of these areas, the assessment team's approach to information gathering should include:

a) Objectives of the assessment
b) Checklist of basic indicators
c) Key issues to be raised
d) Appropriate sources of information
e) Summary of findings

The assessment of the basic country profile (2.1), and general overview of the health sector (2.2), should be made in general terms. The health disaster preparedness program (2.3) should be assessed in more depth. It is, therefore, more appropriate to separate the components, as presented below.

For the purpose of these guidelines, let us assume that the team members responsible for the assessment are familiar with the health field and with disaster management issues.

2.1 Basic country profile

Objectives:

A country profile enables the team to become familiar with the general characteristics of the country in which the assessment will take place. Information should be made available to team members prior to their country visit.

If a disaster profile is not easily available, especially in less developed countries, basic information must be gathered in order to:

- Identify the most frequent natural, technological, and man–made disasters;
- Determine the vulnerability of the population;
- Determine the existing resources.

Checklist of basic indicators:

- Data collection on major past disasters
- Distribution of population in high–risk areas (mapping for natural and technological disasters)
- Land use and settlements
- Community involvement in disaster preparedness and response

Key questions:

- Which institutions are in charge of collecting information on past disasters? Where are they located? What information is available?
- Are there laws or regulations regarding human settlements in risk areas? Which institutions are involved?
- How effective is community participation in disaster preparedness and response? How are communities organized in the most vulnerable areas?

Sources of information:
Civil Defense or National Emergency Committee, Ministry of Agriculture, meteorological agencies, Ministry of Housing, and others.

**Summary of findings:**

A brief summary should reflect an analysis of the findings and special attention should be paid to the extent of vulnerability and of the potential population at risk.

### 2.2 General overview of the health sector

**Objectives:**

Basic information should be collected in order to become acquainted with organization and structure of the country's health system.

This section deals only with issues. The disaster preparedness program's components, functions, or specific contingency plans are covered in Chapter 3.

The information gathered on key elements of the health sector will allow us:

- To identify the health sector's response capability in disaster situations;
- To make an inventory of the participating institutions in disaster preparedness and relief;
- To determine the health system's coverage of populations in urban and/or rural areas.

**Checklist of basic points:**

- National health policy and legislation for disasters
- Organization of the health sector at the national, regional, and local levels
- Organization and structure of the Ministry of Health in terms of coping with disaster situations,

**Key questions:**

- Is there a national health policy regarding disaster preparedness and relief?
- To what degree are the health authorities committed to promoting disaster preparedness?
- What types of legal provisions exist?
- Have building codes been adopted at the national level for design and construction techniques that will reduce the effects of natural hazards in health care facilities?
- How is the health system organized at the national, regional, and local levels?
- Is there an office or technical unit within the Ministry of Health in charge of promoting, developing, and coordinating disaster preparedness activities?
- Where is it located in the organizational chart? What level of authority has been delegated to this office?
- Does the technical unit located in the Ministry of Health have a budget for the development of activities? What percent does this represent of the total Ministry of Health's budget?
- Are there special provisions for using these funds in an emergency situation?
- Is the officer charge of the unit a full-time or part-time employee?
- How many health institutions participate in disaster preparedness activities?
• How are these institutions distributed at the national, regional, and local levels?

• Do health institutions have designated officers in charge of disaster preparedness activities at each level?

Sources of information:

Information should be collected by direct interview with the health authorities of the Ministry of Health, selected UN agencies, and from executives of main governmental and private institutions and other organizations providing health services nationwide.

Due to time limitations, it may be necessary to prepare a concise questionnaire which should be filled in by authorities.

Following the eruption of Nevado del Ruiz in Colombia, the injured had to be airlifted to health facilities in neighboring cities. (Photo: Vizcarra, PAHO/WHO)

Summary of findings:

The collected information must be analyzed. Particular attention should be paid to the Ministry of Health’s organization and structure, budget, and potential response capacity. A list of health institutions, organizational charts, and available infrastructure can be attached to the evaluation document.

2.3 Health disaster preparedness program

The assessment team should dedicate time and special attention to the evaluation of the health sector’s disaster preparedness program components and activities. It should also note the interdisciplinary activities in the health field and the intersectoral nature of the program.

The main objectives of this aspect of the assessment are:

• To determine the level of complexity of the national program;

• To define the quality of its technical development;

• To determine the response capacity and degree of authority for resources, mobilization, and coordination;

• To define the level of involvement and training of human resources.

Sources of information:
In addition to the information provided by the Ministry of Health's counterparts, other sources must be considered. It is advisable to maintain direct contact with people actually involved in or familiar with a specific area. When assessing hospital disaster preparedness, on-site visits and walk-through activities must be considered.

3. Health disaster preparedness program

For a comprehensive and practical approach, it is advisable to assess the health disaster preparedness program in terms of the following technical components:

3.1 Coordination activities
3.2 Planning and technical programs
3.3 Training activities and research
3.4 Resources and logistical support

3.1 Coordination Activities

Assessment of this component measures the health disaster preparedness program's working relationship and coordination with key authorities and institutions. The assessment should be carried out to define the:

- Level of coordination with technical departments or units within the Ministry of Health;
- Level of coordination with other health sector entities;
- Level of coordination with other sectors.

*Key indicators/questions:*

- Is there effective participation of other technical units in disaster preparedness activities?
- Which institutions are currently participating in disaster preparedness activities together with the health sector?
- Is there a mutual understanding or agreement with other health institutions?
- What is the relationship and level of commitment with Civil Defense, Ministry of Communications, Ministry of Housing, and other key institutions that play an important role in emergency situations?
- Are there provisions, current agreements, or joint activities with the UN agencies, bilateral agencies, or NGOs?

*Sources of information:*

The assessment team should visit the offices of the Civil Defense, UNDP, WHO, UNICEF, FAO, and other selected UN or bilateral agencies as well as selected NGOs.

*Summary of findings:*

The summary of coordination activities should define the degree of involvement and commitment of the agencies participating in the interview.

3.2 Planning and technical programs

The overall assessment of this component will measure the degree of technical development in the following areas:
3.2.1 Disaster plans – operational plans for natural, technological, and manmade disasters
3.2.2 Mass casualty management – prehospital and hospital disaster plans
3.2.3 Epidemiology – surveillance mechanisms for disease control
3.2.4 Sanitation and sanitary engineering
3.2.5 Temporary settlements – organization and function

3.2.1 Disaster plans (operational)

The assessment of disaster plans should verify the existence of contingency plans according to the country’s vulnerability and the extent of their application during emergency situations.

**Key issues:**

- Availability of disaster plans, and degree of familiarity with these plans on the part of the health sector’s human resources
- Availability of a directory of key disaster personnel at national, regional, and local levels
- Availability of critical supplies; inventory at national, regional or local levels
- Degree of complexity of existing plans
- Degree of community familiarization with existing plans
- Mechanism for activation of disaster plans
- Levels of authority and chain of command in the activation process
- Public information strategy
- Mass media information procedures
- Existing mechanisms to respond to health needs

A devastating result of the 1985 Mexico City earthquake was the collapse of two major hospitals and serious damage sustained by others. More than 500 ambulances were mobilized to evacuate and relocate patients to unaffected institutions. (Photo: Vizcarra, PAHO/WHO)

**Sources of information:**

Interviews should be carried out with disaster preparedness offices of the Ministry of Health, Civil Defense and selected health institutions. Existing plans should undergo extensive review. Some of the issues mentioned
above must be separated in accordance with the complexity of the national disaster preparedness program.

**Summary of findings:**

The analysis of operational disaster plans should indicate their practical applicability.

**3.2.2 Mass casualty management**

Assessment should focus on the mechanisms, strategies, or procedures for providing emergency medical care during disaster situations. Mass casualty management can be divided into two components:

3.2.2.1 Prehospital activities
3.2.2.2 Hospital activities

**Key issues/Check list**

**3.2.2.1 Prehospital activities**

- Availability of an established Medical System (EMS), and regulations for its operation
- Is the EMS controlled by state or private institutions?
- Existence of search and rescue teams. Do they also provide medical care? At what level of complexity?
- Does the Ministry of Health control EMS activities during emergency situations?
- Is there any understanding or identified role in coordinating activities between the EMS and the Ministry of Health during disaster situations?
- Basic profile of EMS personnel, academic qualifications, training
- Degree of training for the general population

**3.2.2.2 Hospital activities**

- Hospital network: are hospitals organized in a network for disaster situations?
- Hospital disaster plans: Do hospitals have disaster preparedness plans? How current are they? What are their contingency provisions?
- Hospital organization: How do these plans address the organization of main services? Are they operational?
- Hospital staff: Has the staff received adequate training to face disaster situations? What is the level of motivation and staff participation? Are staff familiar with the hospital disaster plan?
- Do the hospitals perform drills? How often?
- Hospital facilities: Have methods of construction and maintenance been applied to reduce structural and nonstructural vulnerability in hospitals and other health facilities?
- Do the hospitals have basic backup equipment for key services? Are they operational?
- Emergency team: How are personnel organized for emergency response?
- Emergency directory: Is it accessible and updated?
- Emergency communication: Inspect/inventory means of emergency communications.
- Emergency transport: Inspect/inventory means of emergency transport.
• Emergency medical supplies: Inspect/inventory existing supplies.

• Safety measures: Inspect main items (i.e., fire alarms, elevators, emergency exits, evacuation routes).

Sources of information:

Select two or three hospitals, meet with hospital authorities, emergency services, and personnel. Visual inspection is highly advisable. Quick review of the hospital plan is also recommended.

Summary of findings:

Analysis of mass casualty management should be oriented to qualify the prehospital and hospital response capacity in case of a disaster.

3.2.3 Epidemiology

This component should outline the existing surveillance system for disease control in emergency situations and the existing resources to face potential health risks.

Key issues/Checklist

• Indicators of morbidity and mortality on important communicable diseases

• Surveillance system: Existing information and reporting system adapted to emergency situations. Who is in charge?

• Existence of special programs for vector control. What are the main resources?

• Existence of laboratory support: Is there a network? How does it work at the national, regional, and local levels?

• Technological disasters: Is there a surveillance system for health effects caused by chemical or radiological accidents? Who is in charge?

Sources of information:

Ministry of Health, laboratories, departments of epidemiology.

Summary of findings:

The analysis of surveillance mechanisms for disease control should indicate the response capacity for early detection and prompt intervention of the existing system in emergency situations.

3.2.4 Sanitation and sanitary engineering

This component should identify the state of preparedness of the basic sanitation services and their ability to operate under emergency situations.

Checklist:

• Inventory of water supply and environmental sanitation institutions participating in the national program on disaster preparedness.

• Existence of contingency plans for disasters, staff training and their active participation. Who is in charge? What is the level of their authority?

• Vulnerability analysis: List of institutions carrying out vulnerability analyses of the main water supply services.

• Resources and equipment: Existence of emergency teams and backup equipment to be used in emergency situations. How are they activated?
The isolation caused by flooding interrupts basic public health services and can lead to the long−term decline in a population’s well−being. (Photo: Vizcarra, PAHO/WHO)

Sources of information:
Water supply companies, Ministry of Health, on−site inspection of water supply plants.

Summary of findings
These should identify the existing potential risks and response capacity in case of disasters.

3.2.5 Temporary settlements
The assessment of this component determines the organization and operation of facilities serving as temporary shelters and settlements, their location, housing capacity, and the availability of basic health services.

Checklist:

• How are facilities designated to serve as temporary shelters. How are they organized? Under whose authority? When are they activated? Are they known to be structurally safe?

• Are existing basic services, water supply adequate?

• Are excrete control, waste disposal services operational?

• What is estimated number of persons to be housed?

• What areas are identified for temporary settlements? What is the policy for establishing them? What type of shelters? What kind of materials are being used? Are they temporary shelters or settlements?

• What are existing health problems in temporary settlements?

• What is management system of the temporary settlements?

• Are health care programs available?

Sources of information:
Civil Defense, Red Cross, Ministry of Internal Affairs, on−site inspection.
3.3 Training and research

The assessment of this area determines the national program’s capacity to develop training activities, produce and disseminate technical material, participate in research, and promote disaster preparedness teaching in schools of medicine, public health, and other institutions.

Key points/Check list:

• Training in the health sector. Number of training activities per year, category of participants, type of training activities, and resources for their implementation.

• Training in graduate and post-graduate levels. Is the national program actively participating and collaborating with these institutions? Is an increasing demand for cooperation? Define the number of institutions carrying out teaching activities in the field of disaster preparedness.

• Participation of UN agencies, Civil Defense, and NGOs in training activities. Are they actually participating?

• Production of technical material. Does the national program develop technical materials? Who is in charge? What type of materials? What is the distribution?

• Field studies: Is the office of disaster preparedness involved in field studies or operational research?

Sources of information

Information should be gathered from technical offices, office of disaster preparedness of the Ministry of Health, Ministry of Education, review of locally available material.

3.4 Resources and logistical support

The assessment should determine the program's ability regarding:

• Staff
• Budget
• Communications
• Transport
• Essential supplies

Key points:

• Staff: How is the staff of the program distributed at the national, regional and local level? Are they full-time or part-time employees or volunteers? To what health disciplines do they belong (e.g.: physician, sanitation engineer, health educator, etc.)?

• Budget: Is the program being supported by a regular budget? Does this cover salaries and operational activities? What financial provisions exist for emergency situations? Is there flexibility in budget management?

• Communications: List of available means of communication accessible to the disaster preparedness program (phone, fax, telex, electronic mail, ham radio operators network, satellite telecommunications).

• Reliability of existing communications systems: Does the Ministry of Health have an organized and operational communications center? What is the geographical coverage? What type of restrictions affect the use of the communications tools?

• Mobilization: Is the program equipped to mobilize its staff and emergency team on short notice? Who is in charge of providing transportation in case of an emergency?
• Supplies: Identify the existence of essential medical supplies and medicines and availability of inventory system for existing supplies and donations.

**Sources of information:**

Ministry of Health, NGOs, Civil Defense, health authorities and administrative departments, communication companies, ham radio associations.

### 3.5 Final report on assessment

Based on the findings outlined in different areas, the final report should contain an overall analysis of the state of preparedness in the health sector and its potential for emergency response. Based on the strengths and weaknesses identified, recommendations should be made to strengthen the disaster preparedness and emergency response capability of the health sector.

### Recommended reading

Annex

1 General country profile
   a) General description
      b) Basic indicators
         • Geographical
         • Social
         • Cultural
         • Economic
         • Demographic
         • Land use
         • Settlements
         • Disaster profile

2 Health policy on disasters, legal provisions
   • Policy on disasters
   • Degree of commitment
   • Coverage
   • Legal provisions
   • International agreements
   • Resolutions

3 Health sector’s technical and administrative organization for disaster preparedness
   Health sector
      • Overview Organization for emergencies/disasters
         • Structure
         • National/regional/local
         • Dependency
         • Executive capacity
         • Level of authority
         • Resources
         • Budget

3.1 Coordination activities
3.2 Planning and technical programs
3.3 Training/Research
3.4 Resources, logistical support

Health sector disaster preparedness program: The assessment process
Assessment process: Coordination activities

3.1 Coordination

- Level of coordination
- Liaison officers
- Types of joint activities
  - Preparedness
  - Emergency
  - Resource mobilization
  - Policy on international appeal

Intrasectoral

- Government institutions
- Private agencies
- Military

Intersectoral

- Civil Defense
- Foreign Affairs
- Communications
- Housing
- Technical agencies
  - Meteorology
  - Seismology

International

- UN agencies
- Bilateral
- NGOs

Assessment process: Coordination activities
3.2 Planning and technical programs

Disaster contingency plans
- Geological event
- Hydrometeorological event
- Technological event
- Social violence

Technical health programs
- Mass casualty management
  - Epidemiology
  - Surveillance system
    - Drinking water supply, sewage disposal
    - Food hygiene
    - Organization
    - Types of settlements
    - Basic sanitation services

3.2.1 Disaster plans (operational)
- Geological event
- Hydrometeorological event
- Technological event
- Social violence

Emergency plan activation
- Mechanism for activation
  - Authority for information systems
  - Emergency categories (codes)
  - Emergency room
  - Resource mobilization
  - Coordination levels
  - Damage assessment
  - Means to meet health needs
  - Emergency team (function and composition)
  - Activities carried out during public emergency
  - Public information during emergency
  - Mass media

Planning and technical programs: Disaster plans (operational)

PREPAREDNESS
- Disaster inventory, resources inventory
- Risk assessment
- Vulnerability maps
- Coverge (national, regional, local)
- Public awareness, community participation
- Emergency directory
- Emergency supplies

EMERGENCY
- Damage assessment
- Plan implementation
- Emergency response
- Restoration of services

POST-DISASTER
- Adjustment
- Planning
Planning and technical programs: Mass casualty management

- Hospital network
- Hospital disaster plans
- Contingency plans
- Organization for disasters
- Staff training/Awareness
- Level of active participation
- Drills
- Basic services
- Bed capacity
- Accessibility
- Vulnerability analysis
- Technical plans
- Triage and tagging

- Mobilization
- Staff
- Visitor
- Supplies
- Essential medicines
- Equipment
- Backup and basic equipment
- Stockpiles
- Security/traffic
- Rural areas
- Safety measures
- Emergency directory

Planning and technical programs: Epidemiology

- List of potential diseases
- Simplified surveillance system
- Channel of information
- Special programs (i.e. vector control, diarrheal diseases, etc.)
- Laboratory support

Planning and technical programs: Epidemiology

- Who is in charge?
- Available resources?
- Skills?
Planning and technical programs: Sanitation and sanitary engineering

3.2.4 Sanitation and sanitary engineering

- Water supply system
  - Inventory of institutions
  - Resources
  - Vulnerability analysis
  - Contingency plans

- Sewage/waste disposal
  - Contingency plans
  - Vulnerability analysis
  - Resource availability

Planning and technical programs: Temporary settlements

3.2.5 Temporary settlements

- Basic health program
  - Surveillance and control of communicable diseases
  - Medical care
  - Nutrition

- Basic sanitary services
  - Water supply
  - Waste
  - Excreta control

- Inventory
  - Shelters

- Encampments
3.3 Training and research

Health and other sectors
- Graduate and postgraduate curricula
- Health services
- UN agencies
- Civil Defense
- NGOs
- Others

Developing technical material
- Technical manuals and audiovisual material
- Simulation exercises
- Other

Case and field studies
- Protocols
- Inventories

Type of training activities
Duration and frequency
Type of audience
Areas covered
Public participation
Training methods
3.4 Resources and logistical support

- Staffing
  - National level
  - Regional level
  - Local level
  - Full time
  - Part-time
  - Staff categories
  - Decision making process

- Budget
  - Preparedness
  - Emergency
  - Availability
  - Management

- Communications
  - Telephone
  - Fax
  - Telex
  - Electronic mail
  - Satellite
  - Ham radios
  - Availability
  - Reliability
  - Accessibility
  - Restrictions

- Transportation
  - Categories
  - Availability
  - Reliability
  - Restrictions

- Essential supplies
  - Medicines
  - Medical supplies
  - Inventory control system (e.g., SUMA)
  - Categories
  - Availability
  - Restrictions
  - Distribution/Tracking

Resources and logistical support