Introduction

This protocol is one of a series which focuses on rapid health assessment in emergencies. It has been prepared to assist WHO personnel support country-level efforts to rapidly assess the immediate and potential health impact of a broad range of emergencies and disasters. The protocols are also intended to serve as possible guidelines for national health personnel who are both interested in and have specific responsibilities for emergency preparedness and response, including epidemic detection and control.

The following protocols have been developed:

Introduction to Rapid Health Assessment *ERO/EPR/90.1.1*

Rapid Health Assessment in Epidemics: First Steps *ERO/EPR/90.1.2*

Rapid Health Assessment in Meningitis Outbreaks *ERO/EPR/90.1.3*

Rapid Health Assessment in Outbreaks of Viral Haemorrhagic Fever, Including Yellow Fever *ERO/EPR/90.1.4*

Rapid Health Assessment in Outbreaks of Acute Diarrhoeal Disease *ERO/EPR/90.1.5*

Rapid Health Assessment in Sudden Impact Natural Disasters *ERO/EPR/90.1.6*

Rapid Health Assessment in Sudden Population Displacements *ERO/EPR/90.1.7*

Rapid Health Assessment in Suspected Famine Situations *ERO/EPR/90.1.8*

Rapid Health Assessment in Chemical Emergencies *ERO/EPR/90.1.9*

They are organized into three sections:.

Section A: Preparedness Checklist

Provides a simple checklist of key questions for WHO and national health personnel to review when assessing the preparedness capacity of the health sector at a national level.

Section B: Rapid Assessment Protocol

Outlines the major principles and steps in rapid assessment of emergencies and disasters, and includes a strong emphasis on preparedness.

Section C: Information Checklist and Telex Requirements *

Summarizes the key items of information necessary to collect during a rapid assessment of a potential or actual health emergency. It gives an example of a telex or fax to be transmitted to the regional office and WHO headquarters, which includes key information required at these levels to support national emergency response.

* This section omitted in ERO/EPR/90.1.1

Section A
Preparedness Checklist

These general questions can be adapted for specific types of health emergencies. They can also provide a focus for health preparedness activities at regional, district and community levels.

Key Health Preparedness Questions

1. Is there a national health policy regarding emergency preparedness and relief? Is the policy being implemented? .....

2. Is there a person within the MOH in charge of promoting, developing and coordinating emergency preparedness and relief activities? .....

3. What coordination in emergency preparedness activities exists between the health sector, civil defense and key ministries (such as Ministry of the Interior, Agriculture, etc.)? .....

4. What joint activities in emergency preparedness/response are undertaken between the MOH, the U.N. agencies, bilateral organizations and NGO's? .....

5. Are there operational plans for health response to natural, man made or other emergencies? .....

6. Have mass casualty management plans been developed (both prehospital and hospital) at national level as well as for individual hospitals? .....

7. What health/nutrition surveillance measures have been taken for the early detection and response to health emergencies? (High-risk seasons, geographic areas identified; early-warning procedures in place; national reference laboratory established; surveillance system established and working?). .....

8. What preparedness steps have been taken by environmental health services to respond to emergencies and disasters? .....

9. Have facilities/areas been identified/designated as temporary settlements in the event of disasters? What provisions have been made for health care? (include details such as general or special health services, staffing, supplies, water and sanitation etc). .....

10. What training activities are devoted to emergency preparedness/response in the health sector? (at national, regional and district levels; institutions or organizations involved). .....

11. What resources are available to facilitate a rapid health response? (Organized communications centre in the MOH, emergency budget, access to transport or emergency medical supplies). .....

12. Is there some kind of system for updating information on the key human and material resources needed for an emergency health response (e.g., updated inventories of essential drugs, 4 WD vehicles, etc.)? .....

13. What opportunities exist to test the effectiveness of emergency plans through simulation exercises, drills etc? .....

Section B
Rapid Assessment Protocol

This rapid assessment protocol is divided into four parts:

1. Assessment Purpose

An initial health assessment is essential whenever a disaster strikes a community. Although the range of potential emergencies includes acute natural disasters such as earthquakes or floods, man-made disasters such as chemical accidents and slow onset-emergencies such as drought or refugee influxes, in all situations, a rapid health assessment is essential.

The purpose of a rapid assessment is to:

- determine the magnitude of the disaster or emergency.
- estimate its duration.
- measure its present and potential health impact.
- assess local response capacity and immediate needs.

2. The Importance of Preparedness

Many health emergencies are drawn to our attention due to their devastating impact. While it is not possible to plan for all potential disasters, the challenge for ongoing health programmes is how best to make emergency preparedness measures a part of current health activities, in order to both strengthen existing services as well as to provide for emergency response.

In many situations, an emergency health response does not need to wait for the collection of data. Experience has shown that predictable patterns of public health impact nearly always follow specific types of disasters.

This means that for many emergencies and disasters, selected health responses can and should be planned in advance within the structure of an ongoing programme - so they can be implemented automatically.

- One example of this is the higher risk of measles epidemics among displaced populations living in camps. In countries at increased risk of internal or cross-border displacements, preparedness planning should include immunization strategies to prevent such outbreaks within the existing national EPI efforts.
- Another example applies to countries at increased risk of sudden impact natural disasters such as earthquakes. Part of routine hospital management in these areas is the formulation of mass casualty plans and regular scheduling of emergency practice drills.
- In communities with chemical plants, the advance development of standard treatment guidelines for chemical exposures as a clinical priority enables prompt and standard treatment, should a chemical accident occur.

2.1 Organizational Preparedness

The measures listed below are both part of general health emergency preparedness and ongoing technical programmes in the MOH.

a) The following structures for emergency health response should be in place:

- A position in the MOH with overall authority and responsibility for emergency health response
- Policy-making and executive structures at all levels with clear responsibilities for emergency health response (e.g. emergency health committees at community, district, regional and central levels)
- A clear chain of command from central to peripheral levels for emergency health management
- Working links at all levels between the MOH, national relief organizations, WHO, UNICEF, UNHCR, UNDP, WFP, Ngos, bilateral and intergovernmental agencies involved in health/nutrition.

If rapid assessment information is to be useful for guiding emergency health response, it must be clear in advance who will be the decision-making recipients of the findings. Moreover, to avoid the chaos commonly associated with disaster relief operations, it is essential that responsibilities for particular emergency health actions are clearly defined at national, regional and local levels.

b) Contingency plans should be prepared by the MOH for anticipated emergencies and disasters:

In advance, it is important to identify emergencies or disasters likely to occur at national and subnational levels, and their probable health consequences. Simple contingency plans should be prepared and approved within the MOH which outline the administrative and technical responsibilities/procedures necessary for a timely response. These plans and procedures should then be distributed to the relevant agencies involved in emergency response.

Administrative aspects of contingency planning

Compile and update information for improving response

- Establish procedures for reporting early signs of possible emergencies between health authorities, key ministries, national relief agencies and international agencies/NGOs so that a prompt alert is signalled.
- Keep updated, lists and maps of health facilities, with information on bed capacity and specialist services provided.
- Keep an updated inventory of Ngos working in health in-country, areas of expertise, and experience in emergency situations.
- In areas at increased risk of health emergencies or disasters, have detailed maps showing air fields, access roads, health facilities and major water sources.

Clarify areas of responsibility and accountability

- Clarify who is responsible for emergency health action at each administrative level.
- Determine which agency is responsible for; interagency coordination in the event of an emergency, leading the rapid assessment, clearance/storage/transport of relief items, directing technical health response, and other critical activities such as providing travel clearances.

Standardise approaches to international health assistance

- Clarify reporting channels/lines of accountability for international agencies and Ngos.
- Develop standard procedures for requesting external health assistance.
- Establish standard working procedures for the importation and expedited clearance of health relief items/drugs.

Anticipate needs for emergency budget/transport and communications

- Establish procedures for accessing funds/resources in health emergencies.
- Identify emergency options for rapid surface/air transport of personnel and health relief items.
- Set up procedures for rapid collection/transport/analysis of laboratory specimens.
- Establish procedures for emergency communication with peripheral areas.

Technical aspects of contingency planning

Specific plans of action should be developed for the early detection and response to anticipated health emergencies.

A useful beginning point is to review and map existing data on past emergencies and disasters to identify areas of greatest risk, and assess local response capacity:

Ask:

- What is the distribution of facilities/number of beds/specialist services, seasonal access to the area/facilities?
- What level of experience/how many health workers in the area?
- What are the likely effects of specific emergencies on health services in the high-risk areas identified? (e.g. number of admissions and outpatient attendances).
- What is needed for a prompt emergency response? (e.g. hospital staff trained in mass casualty management, experienced epidemiologist, improved radio communication, training of clinicians for better diagnosis).
- Where are the gaps (in technical expertise, material supplies, emergency logistics and communication, managerial skills)?

"When to do a rapid assessment?"

An important task of contingency planning is to identify key signals which send an alert that a rapid health assessment is needed. These are particularly important in slow onset emergencies (such as famine and chemical leakages) and in epidemics where prompt responses at an early stage may prevent a major emergency later.

For example:

- An increase in reported cases of meningococcal meningitis above expected seasonal levels by hospitals in one district ("give alert for a meningitis outbreak")

- Rising prices of staple cereals, combined with migration of people away from their homes in an area which is expected to have a major crop failure this harvest (give " famine alert")

- Increasing hospital admissions with signs of severe irritation of eyes, skin and mucous membranes caused by ammonia in the community near a chemical plant (give alert for a "chemical accident")

These alerts should be responsive to local conditions and expected seasonal variations, and optimally flagged through ongoing activities (such as health and nutrition surveillance).

c) Wherever possible, early warning procedures should be established (particularly relevant for slow onset disasters and epidemics)

Use existing information and experience gained in past emergencies to set priorities:

Ask:

- Where are the high risk areas for past/potential health emergencies? At-risk populations? Based on experience, when are the high-risk seasons?

- What is the likely health impact of a ..... flood, epidemic of meningitis? (number of cases, hospital admissions, deaths)?

- What are the early signs, if any that would signal an "emergency alert"? Can/could they be detected earlier through improved surveillance and reporting?

Identify early warning priorities:

- Intensify surveillance for specific epidemic diseases during high-risk transmission periods/seasons.

- Develop guidelines to help health personnel at all levels recognise and report signs which would indicate the need for an emergency alert.

2.2 Preparedness for Rapid Assessment

A rapid assessment should help decision-makers respond more effectively to an actual or potential emergency. This requires the following preparedness steps so that a rapid assessment can in fact be carried out "rapidly".

a) The actions below should be taken:

- The rapid health assessment should be an integral part of the contingency plans prepared. There should be a clear mechanism for incorporating the assessment findings for decision-making in an emergency.
- Qualified health personnel should be identified in advance for rapid assessment in specific emergencies.
- Data collection forms, specimen containers and other items essential for specific types of field assessments should be assembled at the central level, and subnational levels, wherever possible.
- Reference laboratories and special shipment procedures for the rapid analysis of specimens should be identified.
- A store of current national, subnational and district maps of high-risk areas - showing settlements, water sources, main transport routes and health facilities should be easily available.

b) Identify qualified assessment team members

Wherever possible, it is useful to define the type of expertise necessary for collecting and evaluating rapid assessment information in different emergencies. Preparedness planning provides an opportunity to identify skilled individuals available locally as potential assessors in different types of emergencies and to highlight gaps in technical expertise in advance. Even although a rapid health assessment is usually best undertaken by a team, the composition of the group will vary, depending on the type of emergency.

For instance, it is more important that a nutritionist participate in assessing a refugee influx than in a meningitis outbreak. However, an individual skilled in epidemiology/public health should be a member of both assessment teams.

c) Decide on information priorities

"What information to collect?"

The two most important criteria for deciding on what information to collect in a rapid assessment are:

- its usefulness for timely decision-making
- its public health importance.

> Only information that will affect the actual planning and implementation of an emergency health response should be gathered.

Always ask:

- How feasible is it to collect this information, given available personnel and resources?
- Is it worth the cost?
- How reliably does it reflect the situation of the entire population affected by the disaster/emergency (e.g. how representative is it?).

3. Conducting the Assessment

Wherever possible, the measures listed in 2.2 should be part of routine emergency preparedness. However, they can also serve as a checklist for planning a rapid health assessment after an emergency is reported or rumoured.

The amount of time required for a rapid assessment varies with the type of disaster or emergency, and the accessibility of the affected area. In general:

- rapid-onset disasters such as earthquakes and chemical accidents require the most immediate assessments, in the earliest case, in a matter of hours after the impact.
- epidemics, floods and refugee influxes may be assessed in 2-4 days.
- in the case of suspected famine, where the onset is usually quite slow and an adequate investigation may require sampling the population, the initial assessment may take somewhat longer.

In almost all situations however, the initial assessment should be followed by a more thorough and focused examination. Specifically when the effectiveness of a relief response is being evaluated carefully, it is necessary to collect baseline information through surveys which use probability sampling of the population. In such instances, this second stage of assessment may take 2-4 weeks to complete.

3.1 Forming the Assessment Team

Making Final Preparations

a) Team composition

The rapid assessment should be performed by an integrated team of health personnel (such as epidemiologist, physician, public health nurse, sanitary engineer) under the direction of the state agency responsible for emergency health relief.

For example, a team to rapidly assess the health needs of a refugee population might include an individual from each of the following fields:

- Public health/epidemiology
- Nutrition in emergencies
- Logistics
- Environmental health

Among the criteria for selecting team-members, the following should be considered - in order of priority:

- Familiarity with the region or population affected
- Public health knowledge and experience with the type of disaster being assessed

- Epidemiology and analytic skills (particularly the ability to see trends and patterns)

- Personal qualities, such as endurance, motivation and personal health, as well as local acceptability for team members recruited abroad

One particular attribute to consider when selecting members of a rapid assessment team, is the capacity to make decisions in chaotic and unstructured situations. Due to the uncertain nature of most health emergencies and disasters, this is an important quality and should be given high priority.

b) Putting together a rapid assessment team

(Possible sources for qualified team members, in order of priority)

National and foreign health specialists:

- Designated ministry of health (MOH) officials from the capital, preferably members of a special disaster preparedness unit/committee, or at least staff who have received special training

- Local officials, especially those with public health responsibilities based in the region affected by the disaster

- Specialist personnel e.g. epidemiologists, statisticians, nutritionists, laboratory technicians entomologists from local universities, research institutions, development projects, hospitals

- Technical staff from WHO, PAHO, UNICEF, UNHCR, Ngos; Bilateral agencies with technical expertise in rapid epidemiological assessment.

Personnel from international and non-governmental agencies:

- Field officers from appropriate international organizations such as United Nations Development Programme (UNDP), World Health Organization (WHO), or Pan American Health Organization (PAHO), UNICEF, League of Red Cross and Red Crescent Societies (LRCS), International Committee of the Red Cross (ICRC), United Nations High Commissioner for Refugees (UNHCR) and Office of the United Nations Disaster Relief Coordinator (UNDRO).

- Personnel from non-governmental organizations (Ngos) with local experience.

Logistics specialists:

- Local ministries, the military and international organizations

- Local authorities.

c) Finalising administrative arrangements

These may include:

- any necessary authorizations for travel.
- organizing appropriate transportation and fuel.
- setting up a communications system between the assessment team and national/regional focal points.
- coordination of the technical preparations for the field assessment by the team leader, such as delegating specific responsibilities amongst members, ensuring consistency in assessment approach/use of questionnaires, preparing necessary laboratory supplies.

3.2 Carrying Out the Assessment

a) There are three main assessment methods:

- Visual inspection
- Interviews with key personnel
- Rapid surveys.

b) Usual sequence of events for carrying out a rapid assessment:

Review existing information.

Review baseline health and other information at national/regional levels from government, international, bilateral and non-governmental sources about:

- the population affected by the disaster/emergency.
- the demographic and geographic characteristics of the affected area.
- health services/programmes functioning before the emergency.
- resources already allocated/procured/requested for the relief operation.

Visit the affected area.

After essential administrative and logistic preparations have been completed, visit the affected area.

- If several different areas have been affected, or the disaster is thought to have had widespread impact, several small assessment teams may be needed.
- In those cases in which travel is undertaken by air, useful preliminary observations of the affected area can be made before landing.

Interview key informants and review documents.

Conduct interviews with key personnel in the area, and the affected population, then (if type of disaster and time permit), review appropriate written documents, registers and records (e.g. outpatient or admission records).

Visually assess the area affected by the disaster or emergency.

Investigate rumours and carry out limited surveys.

Time-permitting, follow-up rumours and carry out limited surveys, in order to collect representative information.

Build on existing surveillance to monitor changes in health.

Take steps to build on existing surveillance efforts - or initiate surveillance procedures to track changes in health status of the affected population.

Prepare a report of assessment findings.

Prepare and convey a report of assessment findings to health emergency decision-makers at subnational, national and international levels.

3.3 Common Sources of Error

a) Organizational

- A lead agency is not designated, responsibilities of various organizations are not well defined, and a team leader is not appointed.
- Information is collected which is not needed for planning of the emergency response.
- Key decision-makers and potential donors are either not informed that an assessment is being undertaken, or feel pressured to respond to political demands before the findings are known - resulting in inappropriate assistance.

b) Technical

- Specialists with appropriate skills and experience are not involved in the assessment.
- Programmes which should be implemented immediately based on experience of past disasters are unnecessarily delayed until the assessment is complete.
- Assessment conclusions are based on data which do not represent the true health needs of the affected population (e.g. through non-representative surveys).
- "Information " received from field workers and official interviews is taken at face value, without cross-checking all sources.
- A surveillance system is developed too slowly, thus preventing reliable monitoring and evaluation of the relief programme.

c) Logistical

- Transportation and fuel are insufficient for the assessment.
- Communications between field and regional/national levels are inadequate.

4. Annexes

4.1 Techniques for Surveys During Rapid Assessment

a) Background to sampling

Types of sampling procedures

There are two categories of sampling procedures:

Probability sampling procedures allow us to draw conclusions about the characteristics about the characteristics under study for the entire population **and know the accuracy of our estimates.**

- In this type, statistical theory is used in the design of an empirical investigation.
- This is an unbiased sample, therefore it is possible to make valid conclusions about the population from which the sample was drawn.
- However, it is usually not possible/practical to use accurate probability sampling in rapid assessment surveys. In fact, it is unwise to attempt such surveys during this phase as it diverts too many resources away from appropriate relief measures.

Nonprobability sampling procedures do not allow us to know in any absolute way how accurate our estimates are, since they contain **no element of random selection.**

Three types of nonprobability sampling appropriate to emergency/disaster situations are:

- **judgement or purposive selection**, where the sample is selected based on judgement as well as knowledge of the population and subject of the survey. In this sampling approach, the investigator selects a small sample of "typical" units which (s)he believes represent the population as a whole. This is a biased sample, generally used when there is not enough time to select a probability sample;
- **convenience selection** where sample selection is based on easy access/convenience, such as samples of houses taken along main roads, or children in markets/feeding centres.
- **haphazard selection**, where the sample is selected with little planning. This may occur in chaotic emergency situations where there is little time or background information to plan and carry out a more reliable survey (e.g. rapid assessments of displaced populations of unknown size and distribution when security requirements limit assessment time to one or two hours)

Because the two latter approaches are severely biased, they should only be used when probability or purposive sampling methods are not possible.

Purpose of surveys

We use surveys to estimate the value of a certain characteristic in a population (e.g. the prevalence of malnutrition in **this refugee camp**, or the prevalence of malaria in **this rural community**). We select a relatively small number of individuals from the population and examine them to arrive at a figure for that sample. Which sampling procedure we used becomes important when we wish to extend the **figure for that sample** into **an estimate for the population**

For example, we select 50 children under five years of age from the population under study and assess their nutritional status using middle-upper arm circumference. Twelve are found to be malnourished.

Therefore, the proportion of that sample with malnutrition is:
12/50 x 100 =24%

It is not an estimate when we say that 24% of the sample are malnourished - it is exact. It becomes an estimate when we say that 24% of all under fives in the population are malnourished. **Only probability sampling can enable us to know how accurate our estimates are when we extend them to the population we want to know about.**

General points on surveys in emergencies/disasters

After the initial assessment is complete, baseline population-based surveys should be done over 2-3 weeks for the planning and evaluation of long-term interventions. Several different survey methods can be used, including random sampling, systematic sampling and cluster sampling. For baseline surveys in many situations, the two-stage random cluster sampling method is often used.

b) Surveys during rapid assessment

During the initial assessment of an emergency/disaster, limited surveys using nonprobability sampling of affected populations may provide a rough idea of the extent of damage and immediate health needs necessary for guiding relief decisions. However, the results of these initial surveys when based on nonprobability sampling, cannot be compared with the results of later surveys, no matter what sampling methods the latter use.

While there is no magic formula for collecting precise and reliable information in a short period of time, the following hints might help you

gather information from a small group of people which is more likely to be representative of the whole population affected:

- Avoid as much as possible doing surveys on the most accessible population groups (e.g. those living along the main roads, near markets or the centre of main towns).
- If faced with a number of villages in a region, ask a local official which are the worst and least affected, then visit both to give a rough idea of the range of severity.
- In a village, choose a random starting point for household visits (e.g. find the approximate centre of the village, then choose a random direction by spinning a bottle, then walking in that direction visit the first house which matches a random number picked from a banknote).
- Visit every fifth or tenth house to avoid sampling houses in a certain part of the village.
- Recognize the differences between urban and rural areas: visit some households in an urban area, some in a village, and if appropriate, try to visit "atypical" groups (e.g. nomads, slum dwellers, forest-people).
- Seek out different perceptions of "who's worst affected". Ask a government official, local leader, religious leader, politician, missionary ... to see if perceptions are consistent. If not, try to visit several "highly affected" locations.