WHO-WPR
Emergency Response Manual

Guidelines for WHO Representatives and Country Offices in the Western Pacific Region

Provisional Version

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About this Manual

Its purpose

This manual is intended to help WHO staff in the Western Pacific Region to act effectively and efficiently in response to emergency situations which impact on people's health and on health services. Distilled from official documents and recent WHO technical reports and publications, it provides concise aide mémoire, fact sheets and check-lists on:

- How to support the government and the international community in assessing and responding to public health needs in different types of situation
- How the WHO country office should be prepared – ready to respond when needed
- Best public health practices in emergencies, which WHO should advocate for and promote to governments and among other partners
- Actions to be taken to facilitate appropriate WHO action and support to local responses

Shading is used to highlight action points for country offices.

References are provided to complementary material and other documents or to websites where more detail can be found.

Its focus

This manual focuses on:

- response to the types of disasters and emergencies that are common in the WPR, i.e. natural and technological disasters/emergencies, and
- (briefly) preparedness within WHO

WHO also has an important role in promoting preparedness and mitigation (risk reduction) measures within the health and related sectors. Guidelines on these aspects can be found through the WHO Disasters/EHA Website.

Its structure

The manual is structured in 3 parts:

- Part 1, *Policies and procedures* (chapters 1-4) provides basic information on what is expected of WHO and what a WHO country office (CO) is expected to do in response to a disaster or emergency situation. It also indicates, briefly, what a CO should do to be prepared.
  - All staff should be familiar with these 'basics'
  - Section 1.2 summarizes the priority public health activities that WHO should focus on, and seek to assure, during an emergency
- Part 2, *Programme guidelines and technical notes* (chapters 5-7) suggests the kinds of public health interventions that could be needed and provides brief aide mémoire on a number of those interventions.
- Part 3, *Reference notes, tools and samples* (chapters 8 and 9) provides a range of reference materials – notes, check-lists, formats, etc. – complementing the preceding chapters.

How to use it

When assessing the level of preparedness of the country office:

- refer to section 2.1 for guidance on general preparedness measures
- refer to chapter 7 for brief guidance in relation to the specific hazards that you may need to prepare for (those to which the country is prone)

When there is warning of an imminent disaster:

- refer to section 2.2 for guidance on what to do

When a disaster occurs:

- refer to section 3.1 for general guidance on what the country office should do in the first few days
- refer to the rest of chapter 3 for the procedures for planning and reporting on emergency programme activities, and look in Part 2 for more specific programme guidance:
  - chapter 7 for information about the particular type of disaster, the aspects that assessment needs to focus on, and the likely intervention priorities
  - chapter 5 for notes on the various kinds of public health response that may be needed – the priority focus areas defined in 1.2 – and the possible role of WHO
  - chapter 6 for brief reminders of the key aspects of particular types of public health activity/intervention
- refer to chapter 4 for guidance on some key management functions to support programme implementation

A word of caution …

Responding to an emergency requires good judgement based on sound public health knowledge and experience. It also, inevitably, involves making difficult choices.

This manual does not provide answers to all questions or 'recipes' for what to do in all circumstances. It does attempt to provide reminders of aspects that should be considered, and general guidance on specific kinds of activities that *may* be required.

In all cases, the role of WHO will depend on the precise nature of the public health needs and the capacities of the national health authorities and others to respond to those needs.

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CONTENTS

Abbreviations and acronyms

BFO	Budget and Finance Officer (WPRO)
CAP	consolidated appeal process (UN, for a complex emergency)
CERF	UN Central Emergency Revolving Fund
CHAP	common humanitarian action plan
CLO	Country Liaison Officer (WHO)
DAF	Director of Administration and Finance (WPRO)
DO	Designated Official (for UN security, at country level)
DPM	Director of Programme Management (WPRO)
EH	environmental health
EHA	Emergency and Humanitarian Action (WHO/WPRO)
EHC	Emergency Health Coordinator
EHLK	emergency health library kit (WHO)
EMTF	Emergency Management Task Force (WPRO)
EPI	expanded programme of immunization
HCC	health coordination committee
HeLiD	health library for disasters CD-ROM (WHO/PAHO/ICRC/UNHCR/UNICEF)
ICRC	International Committee of the Red Cross
IDP	internally displaced person
IFRC	International Federation of Red Cross and Red Crescent Societies
MoH	Ministry of Health
MSF	Médecins sans Frontières
MOSS	UN Minimum Operational Standards for Security
NEHK98	WHO new emergency health kit (version 1998)
OCHA	UN Office for the Coordination of Humanitarian Affairs
NGO	nongovernmental organization
PAHO	Pan-American Health Organization
PHC	primary health care
RA	regional advisor
RC	Red Cross/Red Crescent Society
RD	Regional Director
RDDP	RD's Development Fund (WPRO)
Sitrep	situation report
SMT	UN security management team (at country level)
SSA	special services agreement
STC	short-term consultant
STP	short-term professional
SUMA	supply management software of PAHO
TOR	terms of reference
UNDAC	UN Disaster Assessment and Coordination Team
UNDMT	UN disaster management team (at country level)
UNDP	UN Development Programme
UNEP	UN Environment Programme
UNFPA	UN Fund for Population Activities
UNHRD	UN Humanitarian Relief Depot (Brindisi, Italy)
UNHCR	UN High Commissioner for Refugees
UNICEF	UN Children's Fund
UNJLC	UN Joint Logistics Centre
UNRC	UN Resident Coordinator
WFP	World Food Programme
WHO	World Health Organization
WPR	Western Pacific Region
WPRO	Western Pacific Regional Office (WHO)
WR	WHO Representative

PART 1

POLICIES AND PROCEDURES

1. WHAT IS EXPECTED OF WHO IN AN EMERGENCY?

1.1 What is WHO's role in emergency response?

1.2 What are the objectives and focus of WHO action in response to an emergency?

1.3 What are the criteria for WHO to act? Who decides?

1.4 What is WHO's role within the UN system?

1.5 Working with UN and other partners

1.6 What resources are available for emergency response?

1.7 What are the principles of humanitarian assistance?

What is an emergency?

For the purposes of WHO's humanitarian emergency activities, an emergency is:

- *any public health situation endangering the life or health of a significant number of people and demanding immediate action. An emergency situation may result from a natural or man-made disaster, or be a complex (conflict) emergency.*

[WHO Manual, XV, 4]

1.1 What is WHO called on to do in emergencies?

WHO is called on, in the WHO constitution, to:

- furnish appropriate technical assistance and, in emergencies, necessary aid upon request or acceptance of Governments [Constitution, 2(d)]

"… it is a constitutional function of WHO to provide health services and facilities to special groups affected by disasters at the request of Member States or of the United Nations" [WHA46.6, preamble]

The specific functions of WHO in relation to emergency response have been defined as follows in World Health Assembly (WHA) resolutions. The texts of the referenced resolutions are on the CD-ROM:

Guidance

- responsibility for technical and normative guidance [WHA48.2, 7.B.1]

Planning and implementation of emergency and humanitarian assistance

- partnership with governments, local authorities, organizations of the United Nations system, particularly with the [Office for the Coordination Humanitarian Affairs, OCHA], and with other humanitarian organizations, in the planning, implementation and monitoring of emergency, rehabilitation and recovery programmes [WHA48.2, 7.B.2]
- flexibility to carry out certain operational activities, when necessary [WHA48.2, 7.B.1]
- respond to early warning signals [WHA48.2, 7.B.4]
- support and guide Member States in the strengthening of capabilities to [prepare for emergencies and to] provide humanitarian assistance in the health sector [WHA46.6, 5(1)]
- respond urgently and effectively to the health needs of victims of disasters, working as appropriate with the various organizations of the United Nations system, nongovernmental organizations and other parties involved in emergency relief operations [WHA44.41, 2(1)]

Resource mobilization

- active role in the mobilization of resources to provide the countries affected with the financial support necessary to meet the immediate and medium-term medical and health needs of the victims of natural and man-made disasters [WHA44.41, 2(3)]

Coordination

- provide effective coordination of health sector activities undertaken in response to emergencies in the field [WHA48.2, 7.B.3]
- responsibility for coordinating the health aspects of disaster preparedness and response within the United Nations system … including consolidated appeals [WHA46.6, 5(4)]

In situations of violence, WHO is also to advocate for the respect and protection of health personnel and infrastructure, the protection of non-combatants, and the setting-up of effective treatment and rehabilitation programmes for the victims of anti-personnel mines, as well as the systematic management of delayed health effects of mental and physical injuries in situations of collective violence. [WHA48.2, 7.C.1&2]

The primary focus, therefore, is the provision of technical information, advice and support, as needed, and facilitating coordination, to:

- ensure that the immediate and potential longer-term impacts of the disaster/emergency on public health are properly understood, and
- help to ensure that the response of the government and others is appropriate and as effective and efficient as possible and takes account of orderly ongoing health development.

WHO may participate in providing essential supplies, equipment, training and services, including related logistic support, when needed to address serious, immediate threats to public health, if such assistance urgently needed but not assured from other sources [adapted from WHO manual XV, 4, 40].

As defined in the WHO Manual [XV, 4, 70], WHO's objectives in preparedness and response are:

- to promote emergency preparedness and response in Member States within the health-for-all strategies for health development
- to provide timely and appropriate response to emergencies, in collaboration with Member States and other organizations, in situations warranting an extraordinary response from outside the affected area
- in case of complex emergencies, to make representation to Member States and/or special groups to spare and protect health personnel and infrastructure, and to facilitate access by all to essential health assistance

The specific role of WHO is outlined in 1.2, and the criteria for WHO response in 1.3.

1.2 What are the Objectives and Focus of WHO action in response to an emergency?

Goals

WHO works with countries in the WPR to:

- reduce immediate and long-term excess (avoidable) mortality, morbidity and disability caused by natural and man-made disasters; and
- link emergency measures and sustainable health development through appropriate coordination mechanisms and emergency response.

One of the core strategies is to enhance the disaster management competence of the focal points in the MoH and national disaster units. The ultimate aim is to promote the best public health practices in emergencies at local and community levels. [1]

Objectives

The objectives of WHO's technical cooperation in response to emergencies in the WPR include:

- the provision of emergency care and rehabilitation services, when needed
- the maintenance – the establishment or restoration where needed – of basic (primary/preventive and curative) health care services and disease control measures on a sustainable basis
- the reduction of environmental health risks
- the continuity – the strengthening where appropriate – of existing WHO programmes in the affected areas

The primary concern is to ensure that:

- the affected population receives appropriate health care, and
- their other vital needs – security, water, food, sanitation, etc. – are satisfied through the intervention of partners from other sectors and agencies.

The ultimate goal of WHO's emergency assistance is summarized by EHA-HQ as follows: "To reduce avoidable loss of life and the burden of disease and disability in emergencies and post-crisis transitions." As a means to achieving this goal, EHA-HQ has developed nine 'core commitments', which are reproduced in the box below.

Priority focus for action

The precise role of WHO and the specific actions to be taken depend on the situation and the capacities of the national government and local authorities to deal with the public health consequences. However, WRs and WHO country offices in the WPR must be ready at all times to: [2]

- ✓ provide technical guidance on all health issues (see 3.2)
- ✓ support the MoH and other responsible authorities in ensuring that the following critical aspects of emergency health response are adequately dealt with in accordance with established international standards:
  - ▫ rapid assessment of the health situation and needs (see 5.1)
  - ▫ surveillance and health information management (see 5.2)
  - ▫ planning and management of emergency medical, health and rehabilitation services (see 5.3)
  - ▫ disease control measures (see 5.4)
  - ▫ environmental health measures (see 5.5)
  - ▫ reception and management of medical supplies (see 5.6)
  - ▫ coordination of international health assistance and assistance to partners in defining their roles in health relief (see 5.7)
- ✓ deliver urgently needed supplies and equipment, when not otherwise available (see 5.6 and 4.4)
- ✓ contribute to UN system action and initiatives (see 1.4)

The WR/CLO should take the initiative to provide the support of the country office and in-country staff in assuring the above functions, when necessary, and mobilize additional WHO assistance if required – see 4.3. At the same time, every effort should be made to maintain ongoing programmes.

The regional office stands ready to support the WR/CLO in all the above aspects, as well as in epidemic response/control, when needed.

In principle, the services of WHO for procurement or recruitment can be made available to national authorities, the UN system and to donor agencies. (In practice this has rarely if ever been done during an emergency.)

[1] Adapted from *The work of WHO in the WPR*, report of the Regional Director, 2001, p 195

[2] The list that follows is based on the role described in 1.1 and objectives in this section. It is synthesized from various sources including *Humanitarian Supply Management and Logistics in the Health Sector*, PAHO & WHO, 2001, p 31

'Core commitments' in emergencies
as developed by EHA-HQ based on a draft endorsed by the 2nd Global WR-CLO meeting, Geneva, March 2001
✓ to identify priority health and nutrition-related issues and ensure that they are addressed in an integrated primary health care approach
✓ to strengthen health and nutrition surveillance systems for early warning of deterioration and immediate life-saving actions
✓ to ensure control of preventable ill health particularly communicable and vaccine-preventable diseases
✓ to ensure that risks related to the environment are recognised and properly managed
✓ to ensure access to basic preventive and curative care, essential drugs and vaccines for the vulnerable
✓ to ensure that Humanitarian Health Assistance is in line with international standards
✓ to advocate and negotiate for secure humanitarian access, neutrality and protection of health workers and services
✓ to ensure that the lessons learnt are identified and used to improve health sector preparedness and disaster reduction
✓ to define an integrated health policy for preparedness, emergency response and post-conflict to link relief efforts with national capacities

1.3 What are the criteria for WHO to respond? Who decides?

General criteria for WHO to respond

The essential criteria (conditions) for WHO to respond are:[3]

- a request is received from the competent national authorities usually the MoH), the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) or other United Nations bodies, or when it is reasonable to expect that such a request will be forthcoming but is delayed owing to the emergency;
- the situation is a genuine emergency, or the situation threatens to become an emergency if appropriate preventive measures are not taken;
- national resources for meeting the situation are insufficient; *and*
- the additional resources from other countries or agencies available or foreseen at the time are also insufficient, or not available in practice, to fulfil the total needs.

A request to the UN/OCHA is regarded as a request to the entire UN system, including WHO.

A formal government declaration of a 'state of emergency' is not necessary for WHO to provide emergency assistance.

WHO *may* intervene even if the resources for meeting the situation in individual countries are sufficient *but* the effects of the emergency across the borders of those countries make WHO intervention to secure a coordinated response desirable.

WHO may take the initiative to *offer* technical cooperation and emergency assistance to the government even though no request has been received.

Who decides whether WHO should respond, or offer assistance?[4]

Whenever WHO assistance could be desirable:

- the WR should immediately offer technical cooperation
- the WR may also offer other forms of emergency assistance within the limits of the resources at his/her disposal (see 1.6)
- the WR should consult with the regional office (DPM through EHA) and, if agreed, offer additional assistance from WPRO and/or assistance in mobilizing additional resources from other sources. This should be done whenever:
  - it is clear that WHO assistance would materially improve either the physical or the organizational resources available to meet the situation, *or*
  - the situation is such that it threatens the public health of the country and of adjoining countries.

The Regional Director will generally address a letter of sympathy to the government (the MoH), including an offer of WHO assistance – at least technical assistance – as soon as information of a disaster reaches the regional office.

In response to a government request:

- the WHO Representative (WR) is responsible to assess the situation and needs in coordination with the MoH and to determine whether and how WHO should respond. This includes deciding whether a token contribution of US$5,000 should be made from the RDDP (see 4.1).

[3] WHO Manual XV, 4, 80-90
[4] WHO manual XV, 4, 80-100

1.4 What is WHO's role within the UN system?

WHO and the global UN System

WHO is the UN specialized agency for health matters. In relation to emergencies WHO is called on, together with other organizations and agencies of the UN system, to:

- mobilize and provide timely technical assistance and material support to disaster-affected countries, according to its own mandate and the resources available; and
- cooperate with the UN Resident Coordinator (UNRC) and the Office for the Coordination of Humanitarian Affairs (OCHA) to ensure appropriate, coordinated UN system assistance in the context of a concerted plan and programme.

For natural disasters and other emergencies that are not specifically the mandate of a particular organization, joint inter-agency needs-assessment missions may be organized in consultation with the government and consolidated appeals be issued in the name of the UN Secretary-General.

The texts of the key General Assembly resolutions – GA46/182 and GA36/225 – are reproduced in the CD-ROM.

WHO collaborates in coordination mechanisms at the international level and is a member of the Inter-Agency Standing Committee (IASC). The IASC brings together the operational UN agencies and representatives of other key organizations to ensure overall coordination of international humanitarian assistance.[5]

WHO and the UNDMT at country level

Coordination at country level is assured by the UN Disaster Management Team (UNDMT), normally chaired by the UNRC. The composition and terms of reference of the Team are presented in 8.4. WHO is a core member of the UNDMT and responsible for coordination in relation to the health sector.

[5] The IASC is chaired by the Emergency Relief Coordinator (ERC) who is also UN Under-Secretary General for Humanitarian Affairs and head of OCHA. The membership includes: FAO, UNDP, UNHCR, UNICEF, WFP, WHO. The following also participate: International Committee of the Red Cross (ICRC), the International Federation of Red Cross and Red Crescent Societies (IFRC), the International Organization for Migration (IOM) and representatives of the main NGO international coordinating bodies.

WHO should play an active role in ensuring that public health is at the forefront of the UNDMT's concerns and that the information, plans and activities of all the other agencies that have an interest in health, or any activities that affect public health, are effectively coordinated:

- The emergency focal point in the country office should attend all UNDMT meetings to present WHO's perspective and report back to the WR and other country office staff (see 2.1)
- The WR/CLO should personally attend all important policy discussions and meetings in the aftermath of a disaster, and then brief other staff

When a disaster or emergency occurs, the WR and WHO country office collaborate with the UNRC and any OCHA staff or UN Disaster Assessment and Coordination (UNDAC) team assigned to assist the UNRC, and in the preparation of consolidated appeals (see below).

Inter-agency assessments and UNDAC

The UNDMT is called on to provide a consolidated, inter-sectoral assessment of needs for international assistance. In some cases this will be done within the UNDMT. In some cases OCHA will rapidly mobilize a UN Disaster Assessment and Coordination (UNDAC) team, comprising specially trained emergency management experts from a number of donor countries and co-opted, similarly trained staff members from individual UN agencies.

UNDAC teams work under the direction of the UNRC and always include a communications expert. They normally arrive within 2-3 days and remain for a few weeks. Their focus is usually on short-term needs and helping to put coordination mechanisms in place. For the standard/generic terms of reference for UNDAC teams, see 8.5.

WHO remains responsible within the UN for health sector assessments but should collaborate with – and take advantage of – the expertise and logistic support the UNDAC team can provide. Work with the UNDAC team members and the UNRC to ensure that any information released concerning the health situation and needs is as accurate as possible and agreed with WHO.

Consolidated appeals

For most disasters, the UNRC sends a short report (Sitrep) every few days to OCHA-Geneva providing information from UNDMT members on the situation and requirements, agreed with the government, for international assistance. These provide the basis for Sitreps disseminated regularly by OCHA informing

potential donors and the international community as a whole of the situation and needs.

The country office should provide information to the UNRC for this purpose and ensure that requirements for health assistance are included (and coordinated among agencies) and that all health information is correct.

For a major emergency, a formal UN Consolidated Appeal is prepared by OCHA and issued in the name of the UN Secretary-General.

In such cases, the country office should:

- collaborate in the preparation of the common humanitarian strategy, ensuring that public health concerns are prominently reflected
- be ready to take responsibility for coordinating the preparation of the health chapter, in collaboration with UNICEF, UNFPA, the International Red Cross and major NGOs working in the health sector
- provide inputs as appropriate into other chapters of relevance to public health.

1.5 Working with UN and other partners

Within the general framework described in 1.4, the country office should work with other UN entities and other organizations as below:

Working with OCHA

In case of a major emergency, the UN Office for the Coordination of Humanitarian Affairs (OCHA) may assign a staff member, consultant or an UNDAC team (see 8.5) to assist the UNRC and the UNDMT in mobilizing and coordinating international humanitarian assistance.[6]

WHO remains responsible for coordinating international health assistance but the country office should collaborate with the OCHA staff/unit to ensure appropriate inter-sectoral coordination.

In some cases, an OCHA field coordination unit may be able to assist in the collection/compilation of public-health related information as well as in logistics, communications with field outposts and press releases.

Working with UNICEF

WHO and UNICEF share a commitment to improving the health situation in emergency-affected countries.

In general, UNICEF focuses on and is able to mobilize resources for: primary health care services; safe motherhood and women's reproductive health; nutritional surveillance and special feeding for malnourished children; the care of unaccompanied children and psychosocial needs of children and women; and community-level water supplies, sanitation and health promotion. UNICEF often provides vaccines, cold chain equipment, other supplies and equipment, therapeutic foods, and funds for local operating costs and the training of health personnel in the field.

In each situation, the WHO and UNICEF representatives should collaborate in assessing the situation and in providing assistance to the MoH, and health-related assistance more generally, capitalizing on their respective strengths, areas of expertise and operational capacities in the country. Joint projects and appeals should be considered for specific activities.

[6] Exceptionally, there is a resident OCHA staff member in Fiji with responsibility for an OCHA-funded disaster mitigation project for South Pacific nations who also supports the UN Resident Coordinators in case of a disaster.

WHO would normally focus on providing technical expertise to complement UNICEF inputs (e.g. for immunization) and assistance to surveillance, disease control and other priority areas beyond UNICEF's mandate.

Working with WFP

WFP assesses the food security situation and any need for international emergency food aid and, when required, mobilizes and delivers food for general distributions and supplementary feeding operations for refugees and other emergency-affected populations, especially in least-developed countries (LDCs). WFP conducts assessments and ongoing monitoring of the food and nutrition situation in collaboration with relevant government entities, FAO, UNICEF, NGOs and bilateral donors, when appropriate, and with UNHCR for refugees.

WHO may advise on and collaborate in assessment and monitoring of the nutritional situation (in liaison with UNICEF), in assuring food safety and hygiene in feeding operations, and in identifying micronutrient deficiencies and advising on ways to address them.

In some situations, WFP may provide assistance to other organizations, including WHO, in logistics and telecommunications on a cost-sharing or reimbursable basis.

Working with UNDP

UNDP focuses on economics, governance, capacity building and long-term development. In relation to disasters, its focus is on disaster prevention, mitigation and preparedness, and post-disaster recovery including the resettlement/reintegration of returnees and people who have to be permanently relocated following a disaster. UNDP can also provide some funds for initial relief and to support the management and coordination of relief operations.

WHO may propose ways in which UNDP funds could be used (directly or in support of WHO project activities) to: improve the public health situation of a disaster-affected population through limited, focused relief provisions; support relief management and coordination systems; assure services for returnees and in resettlement areas; and enhance national preparedness for future events.

Working with UNHCR

UNHCR is responsible for the protection of and international assistance to refugees. UNHCR also provides assistance, when needed, to facilitate voluntary repatriation and the re-installation of returnees. Exceptionally, UNHCR provides protection and assistance to some IDP populations.

WHO may assist UNHCR and the MoH in assessing the health situation of refugees and planning the provision of appropriate health services for them, and in planning to strengthen public health services in areas to which refugees are returning.

For detail of the WHO/UNHCR MOU, see 8.6.

Working with the Red Cross/Red Crescent

The national Red Cross/Red Crescent (RC) society often plays a central role in: a) promoting disaster mitigation and preparedness at community level, and providing first aid and disaster management training for RC volunteers and local officials; and b) providing first aid, relief and support to health services during and after a disaster.

In case of a major disaster/emergency, and in disaster mitigation and preparedness activities, the society may be supported by the International Federation of Red Cross and Red Crescent Societies (IFRC)[7], which may launch an international appeal for resources and provide technical assistance.

WHO should maintain close working relationships with the national RC society, and with IFRC when present, and collaborate in relation to preparedness, assessment and response in the health sector.

Working with NGOs

National and international NGOs provide considerable assistance at times of disaster and also in relation to disaster mitigation and preparedness at community level in the (sometimes limited) geographic areas where they work. Some receive large amounts of funding directly from donors, who sometimes rely on the assessments and operational capacities of NGOs rather than the government/MoH or the UN system. NGOs sometimes meet urgent needs that the health services are unable to meet. Their contribution is essential but should be coordinated with/by the health authorities, with the support of WHO when needed.

WHO should maintain close working relationships with the NGOs that are active in the health sector and collaborate with them in relation to health sector preparedness, assessment and response, while seeking to ensure that there is effective overall coordination of health-related activities (see 5.7).

For summary information on a number of major international NGOs and NGO coordinating bodies (as well as international and inter-governmental organizations), see *Natural Disasters - protecting the public's health*, PAHO 2000, Annex IV [in EHLK and HeLiD].

WHO policy on relations with non-governmental organizations can be found in EB111/22 of 25 Nov. 2002 (http:/www.who.int/gb/EB.WHA/PDF/EB111/eeb11122.pdf)

New guidelines on collaboration with NGOs in programme activities are expected (from WHO-HQ) in 2003.

[7] The IFRC must not be confused with the ICRC (International Committee of the Red Cross) which is a private Swiss organization that acts at times of conflict to uphold the Geneva Conventions and provide assistance to civilians victims of conflict as well as wounded combatants and prisoners of war.

1.6 What resources are available for emergency response?

Resources at country level

Country office capacity: The staff, facilities and transport of the country office can be temporarily redeployed/made available for the emergency, if required.

Country programme funds: In agreement with the government, and with the approval of WPRO (DPM and RD), funds for ongoing or planned programmes may be reprogrammed. When necessary, try to ensure that any resources diverted are replaced.

Resources at regional level

The Regional Director's fund

- *WRs'/CLOs' delegated authority* to immediately release up to US$5,000 available to the government in response to an official request for urgent assistance. This authority can be used only once for any particular emergency situation. The procedure is described in 4.1.
- *RD's discretion*: The RD may approve additional/larger allocations on the basis of proposals from the WR endorsed by EHA and DPM.

Regional/inter-country projects: At the discretion of the regional advisor (RA) concerned, staff may be deployed and/or funds be allocated from a regional/inter-country project (ICP) for emergency activities that are closely related to purposes of the original project (e.g. malaria control). The WR should address proposals to the responsible RA, copied to EHA and DPM.

Proposals to deploy regional staff (or staff from other offices in the region) on mission to support an emergency-affected country, or to allocate regionally-managed funds, are normally discussed and agreed in the WPRO Emergency Management Task Force (EMTF) chaired by DPM.

Resources at headquarters level

The following are available at headquarters level, managed by EHA-HQ. All requests for allocations are made by/through WPRO (EHA and DPM).

WHO emergency revolving fund: The Director-General may approve funds (up to US$100,000) from the WHO (global) emergency revolving fund for staff or supplies for an emergency intervention.

Supplies from the UN Humanitarian Relief Depot (UNHRD): Reserve stocks of the WHO New Emergency Health Kit and some other emergency kits funded by the Government of Italy are held at the UNHRD in Brindisi, Italy. For brief details of the kits held and the procedures for requesting such items, see 4.4. and 9.17.

UN Central Emergency Revolving Fund (CERF): The CERF is a revolving fund managed by OCHA. In case of a major emergency, WHO (like other agencies) may submit requests to OCHA for an advance from the CERF in order to initiate assistance pending receipt of donor contributions. Funds advanced from the CERF have to be repaid within 12 months, so the facility can be used only when WHO is confident of receiving a donor contribution for the same purpose which will be able to be used to repay the CERF.

Specific donor contributions

Much emergency assistance depends on resources being made available by donors for specific activities in a particular situation. Contributions may be in cash or in kind:

- In response to major emergencies, donors respond to appeals issued by WHO and/or OCHA (which issues appeals to international donors for resources to meet assessed needs in all sectors).
- Specific expertise can sometimes be mobilized from donor governments and/or collaborating institutions. In some cases, all associated costs are borne by the donor. More often, WHO has to provide, or arrange, the funds for travel, etc.
- Laboratory diagnostic and testing services can sometimes be secured free of charge within the region by the relevant RA, but WHO or the requesting government normally has to pay the costs of transporting the samples to the laboratory.

For guidance on working with donors, see 4.2.

1.7 What are the principles of humanitarian assistance?

General principles of humanitarian assistance

UN General Assembly resolution GA46/182 lays down the basic principles as follows [references are to the paragraphs of the resolution]:

- International humanitarian/relief assistance:
  - must be provided in accordance with the principles of humanity, neutrality and impartiality[8] [Annex, paragraph 2]
  - must be provided with the consent of the affected country and in principle on the basis of an appeal by the affected country [3]
  - should supplement national efforts to improve the capacities of developing countries to mitigate the effects of natural disasters expeditiously and effectively and to cope efficiently with all emergencies [18]
- Emergency assistance should be provided in ways that will be supportive of recovery and long-term development … emergency measures should be seen as a step towards long-term development [40]
- The rehabilitation phase should be used as an opportunity to restructure and improve facilities and services destroyed by emergencies in order to enable them to withstand the impact of future emergencies [41]

The multi-agency Sphere project has defined a fundamental 'humanitarian principle' as follows: "Prevention and alleviation of suffering, protection of life and health and respect of human dignity."

Code of conduct for the International Red Cross and Red Crescent Movement and NGOs in disaster relief

The principles of conduct specified for disaster relief programmes are:

1. The humanitarian imperative comes first.
2. Aid is given regardless of the race, creed or nationality of the recipients and without adverse distinction of any kind. Aid priorities are calculated on the basis of need alone.
3. Aid will not be used to further a particular political or religious standpoint.
4. We shall endeavour not to act as instruments of government foreign policy.
5. We shall respect culture and custom.
6. We shall attempt to build disaster response on local capacities.
7. Ways shall be found to involve programme beneficiaries in the management of relief aid.
8. Relief aid must strive to reduce future vulnerabilities to disaster as well as meeting basic needs.
9. We hold ourselves accountable to both those we seek to assist and those from whom we accept resources.
10. In our information, publicity and advertising activities, we shall recognize disaster victims as dignified human beings, not objects of pity.

The full text of the Code is reproduced in: *Humanitarian charter and minimum standards in disaster relief*, Sphere Project (in HeLiD).

[8] These fundamental humanitarian principles are to be understood as follows:
– ***Humanity***: preventing and alleviating human suffering; protecting and respecting the life, health and dignity of each individual.
– ***Neutrality***: not taking sides in a conflict; providing aid solely to non-combatants.
– ***Impartiality***: not discriminating on the basis of ethnic origin, gender, nationality, political opinions, race or religion; relief is guided solely by needs.

2. HOW TO BE PREPARED AND RESPOND TO A WARNING

2.1 What a country office must do to be prepared

2.2 What to do in response to a warning

The WR and staff of the WHO country office in general are responsible for:

- helping to ensure that the national and local public health authorities are prepared to respond to foreseeable health emergencies and to the public health consequences of disasters and other foreseeable crises; and
- ensuring that the WHO country office is ready and able to provide appropriate support to the national authorities and other public health organizations in the event of a disaster or other emergency situation.

This chapter concerns the second point only – preparedness of the WHO country office and what the office should do when there is warning of an imminent threat.

For guidelines on national health sector preparedness, see (in HeLiD):

- *Natural disasters - protecting the public's health*, chapter 3, PAHO 2000 – brief, summary guidelines
- *Community emergency preparedness – a manual for managers and policy-makers*, WHO, 1999 – detailed guidelines and a comprehensive multi-sectoral check-list

2.1 What a country office must do to be prepared

To be able to fulfil the role defined in 1.2 when a crisis occurs, the WHO country office must be prepared. This includes:

- ✓ designating an emergency focal point within the country office;
- ✓ being aware of the hazards and risks, and having relevant information;
- ✓ making internal arrangements/plans within the office; and
- ✓ having joint arrangements/plans with the MoH, other public-health related government entities, other UN agencies, NGOs and other institutions in the country whose expertise and/or services can be called on by WHO during an emergency.

Be ready for the unexpected as well as recurrent disasters!

Designate a country office focal point

The WR/CLO should designate an emergency focal point in the office to:

- assist the WR/CLO in ensuring preparedness within the office and in managing action by the office in response to a warning (see 2.2) or the occurrence of a disaster (see 3.1); and
- attend meetings of the UNDMT, representing the WR/CLO, and:
  - present WHO's perspective and report back to the WR and other country office staff on information provided by other agencies, conclusions reached and any decisions taken
  - contribute to the development of inter-agency preparedness and a coordinated – inter-agency and inter-sectoral – response to an emergency, ensuring that appropriate attention is given to public health concerns

Have necessary information

The following information should be readily available for reference at all times. Most of it will already be available within the UNDMT, the MoH, national disaster management authorities and/or NGO partners. The WHO country office should have its own copies and collaborate with the MoH and other UNDMT members and partners to keep the information up-to-date:

- ✓ Data on hazards and previous disasters:
  - hazard profiles – where different types of hazards may impact
  - disaster history – the effects of previous events
  - lessons learned from previous disasters and the subsequent relief and recovery processes in those areas
- ✓ The national disaster management plan
- ✓ The emergency management plans of the MoH including the emergency focal points at national and sub-national levels
- ✓ Basic demographic data – size, breakdown and distribution of the population – particularly in disaster-prone areas
- ✓ Maps showing major communication lines and topography
- ✓ Location of health facilities and the services they provide, with notations of those that may be vulnerable to particular types of disaster
- ✓ Epidemiological profile of the country (particularly for disaster-prone areas)
- ✓ Locations of potential evacuation areas
- ✓ Locations where hazardous chemicals are manufactured or stored and the chemicals involved
- ✓ Locations of stocks of food, medicine, health, water treatment and sanitation supplies in government stores, commercial warehouses, international agencies or major NGOs
- ✓ Key people and organizations who would be responsible for/active in relief – their contact addresses (not just phone numbers)
- ✓ Individuals with special competences and experience who may be mobilized (on secondment from their institutions or as consultants) in case of need – their contact addresses (not just phone numbers)
- ✓ A short roster of regular resource persons ready to translate technical and information materials into local languages

This information should be maintained – kept up to date – by the emergency focal point, and each up-date be copied to WPRO-EHA.

Have equipment and facilities

The following should be available and ready for use at all times:

- Vehicles
- Photocopying capacity
- Back up power supplies to run computer and communications equipment
- Water testing sets

- Technical guidelines and documents – e.g. the Emergency Health Library kit and HeLiD CD-ROM – plus/including the toxic chemical *'red books'* and INTOX CD-ROM

If the WHO office and/or staff residences are in emergency-prone areas, keep reserves of water, food, vehicle and domestic fuel.

Keep back-up copies/e-files of critical information off-site, in a location that is expected to be safe and accessible, in case the WHO office should be inaccessible during an emergency.

In any situation where there are security risks, the UN Minimum Operational Standards for Security (MOSS) must be complied with in relation to communications facilities and security measures – see 4.6,

It can also be useful to have some ready cash.

Advance arrangements with MoH and other partners

Be aware of the emergency/disaster preparedness plans of the government and the MoH, their basic response procedures/protocols, the roles of different authorities (national and local) and teams in disaster response, and the focal points for contact in the event of a disaster. Review these with the MoH and suggest improvements, if needed.

Be aware of, or help the MoH to set up, standing coordination mechanisms and arrangements to activate a health emergency operations centre.

Establish understandings (preferably in writing) concerning the kind of support WHO may be called on to provide in response to particular types of situation.

Establish understandings with the national Red Cross/Red Crescent society and/or key NGOs that would be involved in emergency health response. Work together on emergency preparedness and be ready to collaborate if/when a disaster strikes.

Keep donors informed about the preparedness arrangements of the MoH and WHO, and be aware of the kinds of emergency-related activity the various donors could be interested in supporting.

Country office contingency plans & training

Draw up contingency plans defining what will be done, and who will do it, within the WHO country office in the event of specific foreseeable emergencies. (The WHO plan should complement those of the MoH and national civil protection authorities.)

Collaborate with other members of the UNDMT to develop in inter-agency contingency plans defining the complementary roles and responsibilities of the different agencies in different types of emergency situation. These plans should specify, amongst other things, contact points, communication channels and procedures for joint/ coordinated assessments and appeals.

Ensure that staff are trained and have adequate instructions for the tasks they will be called on to fulfil. Request WPRO support and ask for fellowships if necessary – see the directory of training resources.

~~3.12.2~~ What to do in response to a warning

Immediately on receipt of warning of an imminent threat (e.g. a cyclone/ typhoon or flood):

- ✓ Contact the UN resident co-ordinator, the Government and other principal partner organizations to:
  - confirm the threat
  - obtain additional information
  - coordinate preparatory actions
  - activate any existing contingency plans
- ✓ Contact any WHO staff in the areas concerned to:
  - exchange information
  - arrange for them to take appropriate precautions for their own safety and the protection of WHO communications, vehicles, stocks and other property, to the extent possible
  - agree on arrangements for initial on-the-spot investigations
  - assessments and reporting if/when a disaster does occur
- ✓ Put all WHO staff on stand-by.
- ✓ Check the readiness of telecommunications and information management systems.
- ✓ Assemble:
  - basic information on the threatened areas, and
  - up-to-date information on transport and stocks of WHO supplies
- ✓ Inform WPRO of the threat and the action taken by the country office. Include information on action by the government and others, if available, and whether any action is requested by WPRO or EHA-HQ.

Informing WPRO of an imminent threat	
email to:	EHAfocus@wpro.who.int with copies to DPM and DHS
phone:	EHA: +632 528 9810 (EHA will inform DPM and DHS)
fax:	EHA: +632 521 1036 marked cc DPM and DHS
	EHA (direct): +632 528 9072 marked cc DPM and DHS

3. WHAT TO DO WHEN AN EMERGENCY OCCURS

What is an 'affected population'?

The term 'affected population' is vague and can give rise to serious misunderstandings unless the nature and severity of the effects on the people are specified.

If the intention is to refer to 'the population of the affected area', use that precise expression, which allows for the fact that some of the people in the area may have been affected severely and others very little.

If reference is to people who are deprived to access to safe water or health services, for instance, say so explicitly.

This applies in all reports, communications, discussions and statements in meetings and to the news media.

~~3.23.1~~ What to do when a disaster strikes

- ✓ Ensure the safety of WHO personnel and the ability of the country office to function and provide support to the MoH, if needed.
- ✓ Take the initiative to determine what is going on, what needs to be done, what (if any) assistance is really needed, and what role WHO should play.
- ✓ Participate actively in inter-agency and health-sector coordination.
- ✓ Request an emergency coordination expert and/or specific technical support from WPRO, if needed.

If the WHO office is affected …

While the 'preliminaries' listed below must be completed rapidly, the first priority is to assure the safety of staff and the ability of the country office to function and provide whatever support may be needed to the MoH. If the office itself has been affected, check the safety of the office (if accessible), determine whether any staff need assistance, and check the functionality of office systems. If necessary, establish a temporary office in other available premises.

Preliminaries to be done 'immediately' in all cases

The following are things a country office should do within a few hours after receipt of information concerning a new disaster or emergency situation that could call for WHO assistance:

- ✓ ***Activat*e *any existing WHO or inter-agency contingency plan***; redeploy staff and reorganize the office as conditions require; check the functioning of telecommunications and information management systems. Seek extra help from WPRO or in-country sources, if needed.
- ✓ ***Contact any staff in the areas concerned*** to: ensure their safety; exchange information; arrange for them to undertake an initial rapid assessment; agree arrangements and a schedule for reporting.
- ✓ ***Contact the UN resident co-ordinator***; coordinate arrangements for health assessments within the framework of inter-agency assessment (where relevant) and a concerted response among members of the UN disaster management team (UNDMT).
- ✓ ***If there are security risks*** contact the Designated Official (DO) and WPRO-DAF; agree on security measures to be taken; ensure that security provisions and telecommunications meet the required minimum standards[9] and that all staff are properly briefed/trained. (N.B. These aspects should have been foreseen as part of preparedness but will need to be reviewed in the light of the actual situation.)
- ✓ ***Contact the MoH*** to: confirm WHO's readiness to assist in assessing the situation and in determining any requirements for international health assistance; agree arrangements for coordinated follow up action.
- ✓ ***Contact organizations*** involved in health and nutrition activities in or near the affected areas: exchange information; agree on arrangements for ongoing contacts and collaboration.
- ✓ ***Look up and review basic information*** on the affected areas, the impact of previous disasters and lessons learned from the subsequent relief and recovery processes in those areas. (Information for all disaster-prone areas should have been compiled as part of preparedness.)
- ✓ ***Check cash balances*** in both US$ and local currency accounts, for both the administrative and programme budgets; check whether ***banks*** are functioning normally; request replenishment from WPRO, if necessary.
- ✓ ***Check data on stocks*** of WHO supplies on hand that could be needed.
- ✓ ***Send a preliminary Sitrep*** to WPRO, copied to EHA-HQ – see 3.4 and 9.5.

Decisions and actions in the first few days

Actions to be taken by the WR/ country office, include:

- ✓ Attending UNDMT meetings and any coordination meetings convened by the government
- ✓ Keeping WPRO and EHA-HQ regularly informed of the situation, the progress of operations, any problems, and outstanding needs (see 3.4)
- ✓ Receiving requests from the government for assistance, assessing the situation and needs, and determining whether and how WHO should respond (see 3.3)
- ✓ Determining, in the absence of a government request, whether WHO should offer assistance and making a recommendation to the RD or,

[9] In any situation where there are security risks, the UN Minimum Operational Standards for Security (MOSS) must be complied with in relation to communications facilities and security measures – see 8.5 and details of the MOSS on the CD-ROM.

exceptionally, offering assistance directly within the limits of the resources and authority available (see 1.3)

- ✓ If needed, mobilizing in-country resources to provide technical support to the national and local authorities in assessing the situation, analysing information and planning and coordinating an appropriate response (see 3.2, 5.1)
- ✓ If needed, helping the national and/or local authorities to undertake and/or coordinate the plans and actions of all organizations involved in public-health related emergency and rehabilitation activities (see 5.7)
- ✓ Submitting, when needed, requests/proposals to WPRO for additional technical assistance (see 4.3) and the provision of additional supplies, equipment and operational support (see 4.4)
- ✓ Determining with the MoH whether any supplies, funds or vehicles should be diverted from ongoing programmes to support the emergency health operation
- ✓ Deciding whether to immediately release up to US$5,000 from RDDP funds to the national health authorities for the local procurement of priority health supplies and equipment (see 4.1)
- ✓ Participating actively in UNDMT meetings and initiatives, and providing details of health sector needs to the UN Resident Coordinator and OCHA for inclusion in their Sitreps or consolidated appeals (see 1.4)
- ✓ In case of cross-border implications, exchanging information with the WRs in neighbouring countries, keeping WPRO informed
- ✓ Monitoring the use and ensuring the proper management of WHO resources including human resources
- ✓ Providing briefings for any additional (temporary) staff or consultants recruited or mobilized from other WHO offices
- ✓ Maintaining contact with potential donors and keeping them informed of WHO's evolving assessment and the likely needs health assistance: this will facilitate eventual resource mobilization (see 4.2)
- ✓ Keeping WPRO and EHA-HQ informed through regular Sitreps (see 3.4 and 9.5)

Seek expert guidance from WPRO, WHO headquarters or other institutions, whenever needed.

Determining the need for international assistance

If there is a request for international assistance, or there is likely to be need for such assistance, the WR/CLO must satisfy her/himself of the justification and the appropriateness of the request.

If a UN inter-agency assessment is organized by OCHA or the UNDMT (see 1.4), the country office should take the lead in organizing/coordinating the health sector assessment and contribute to the assessments in other public-health related sectors.

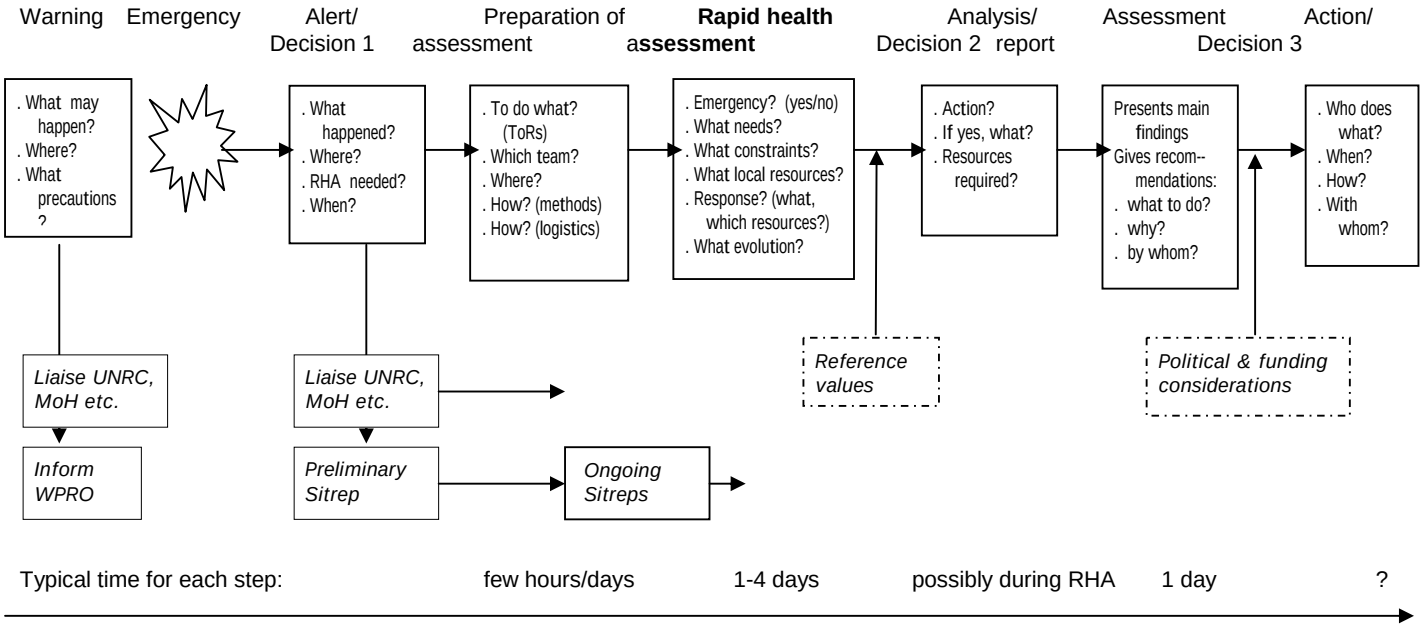
In all cases:

- ✓ Review primary data (field reports) and make your own field visits to verify information, if necessary. Organize visits together with MoH and other agencies, whenever possible
- ✓ Provide health assessment information and statements of requirements for international aid to the UN Resident Coordinator (or OCHA /UNDAC team leader) for inclusion in UN sitreps. Double-check health information submitted by other agencies.

Sequence of actions

The figure below shows the normal sequence of WHO country office actions at the beginning of an emergency.

Sequence of actions from the onset of the emergency to the response



[Adapted from EHA-HQ]

3.2 Providing technical guidance

- ✓ Offer and provide technical advice and guidance to the MoH and other organizations, when required/requested.
- ✓ Monitor the indicators of health status and public health service provision and, when necessary, draw attention to national standards and international best practice and suggest what could be done to improve standards.

WHO's primary responsibility is to provide technical and normative guidance. This has two aspects, as indicated above.

Technical guidance

Take the initiative whenever necessary to:

- ✓ provide the national and local health authorities and other organizations involved in public-health related activities with specific technical information and advice concerning possible public health consequences, appropriate responses and relevant international standards
- ✓ help define terms of reference for and brief assessment teams (see 5.1) and ensure that an appropriate health and nutrition surveillance system is in place (see 5.2)
- ✓ propose appropriate health strategies and help to prepare plans and guidelines for the implementation of appropriate health care and rehabilitation services (see 5.3), environmental health (see 5.5) and/or disease control measures (see 5.4)
- ✓ help organize training for field staff of concerned government and other organizations in assessment, reporting/surveillance, disease control and environmental health measures, and hygiene promotion
- ✓ advise the MoH and donors on the suitability of proposed medical donations; encourage them to politely decline any inappropriate offers (see 5.6)

Information and guidance may be provided based on the knowledge and experience of, and information available to, WHO staff in the country and/or it may be sought (by phone, fax or email) from WPRO, WHO headquarters or other recognized regional or international sources.

For this, temporarily redeploy WHO staff in the country. When needed, request the RD/WPRO or WHO headquarters (EHA) to:

- assign staff on temporary duty from the regional office, from other WHO offices in the region or from HQ or other regions, as appropriate
- mobilize short-term technical assistance from outside the country – experts from governments, institutions or agencies in the region, or consultants – to, and planning and monitoring public health activities

Standards …

Make sure that international NGOs and all organizations that work in partnership with WHO are aware of national health policies and priorities, and international protocols and best practice. Encourage them to respect those policies and protocols and to preserve and strengthen local capacity with a view to developing services (including health information/warning systems and health facilities) that are sustainable in the long term.

The Sphere Project's *Humanitarian Charter and Minimum Standards in Disaster Response*, 2000[10], and the *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in disaster relief* (summarized in 1.7) have gone a long way towards fostering common approaches and standards among most of the major NGOs. However, some NGOs may need to be made aware of these standards and national policies, and their relevance in the prevailing situation. Discourage any organization from actions not consistent with the established standards.

Support to international/foreign organizations

Briefing new arrivals: When required, help the MoH to arrange rapid orientation briefings for new organizations arriving in the country to work in the health sector. This may include:

- the country's epidemiological profile, national health policies and programmes, and pre-emergency health service coverage
- national and international expertise available (e.g. for tropical diseases specific to the country which may be beyond the capacities of some foreign NGOs)
- the structure of the MoH and the list of health focal points on other organizations
- details of arrangements for emergency health coordination

[10] A revised, second edition of the Sphere handbook is expected end-2003.

Looking to the welfare of relief workers Provide any foreign relief teams new to the country with health advice – measures to protect their own health. If any teams, particularly any organizations that work in partnership with WHO, are going to spend time in isolated areas, try to ensure that they have arrangements for emergency medical evacuations.

3.3 Planning a WHO response

- ✓ Based on a careful analysis of available assessment information, define and prioritize the types of support and assistance, if any, required by the government in relation to health services and other critical public health interventions
- ✓ Specify the assistance that can be provided by WHO using existing country programme and (in consultation with WPRO) ICP resources, and determine what can be expected from other donors and agencies
- ✓ For any uncovered priority needs, rapidly prepare specific, well-thought-out project proposals for WHO assistance, in consultation with WPRO

Is WHO assistance needed? If so, what?

Whether any intervention or assistance is required from WHO depends on the precise nature of the emergency public health needs and the capacities of the national health authorities and others to respond to those needs. The government may, or may not, request WHO technical and/or material assistance. In either case, the WR/CLO has to make a judgement:

- If a request is received, whether it is justified in the light of the resources available nationally and from other sources and appropriate in terms of the situation and what is being requested?
- In the absence of a request, whether to propose assistance (see 1.3) and, if so, what type of assistance?

When assistance is needed, the WR/CLO must agree with the MoH/health authorities on the form of WHO assistance that can be most effective – specific technical assistance (see 3.2) and/or other assistance in relation to one or more of the priority focus areas listed in 1.2 and elaborated in chapter 5.

The judgement and discussion with the MoH must be based on:

- ✓ rapid but careful analysis of the available assessment data to identify the priority public health problems and required interventions
- ✓ rapid review of the resources available to the government and expected from other donors and agencies
- ✓ examination of the human and other resources available in the country office and the country programme which can be mobilized
- ✓ consultation with WPRO concerning the possibility of ICP or other regional resources being available to meet specific needs
- ✓ consultation with donor representatives to determine the likelihood of donor funding being made available for WHO-supported interventions

On that basis, the WR/CLO must agree with the MoH on specific objectives for WHO assistance and an appropriate package which may include some or all of the following:

- use of existing WHO in-country resources (human and material)
- mobilization of regional resources (ICP and/or other)
- project proposals to be prepared and submitted to donors for funding

Preparing project proposals

The receipt of special contributions from donors depends on the timely preparation, and submission to donors, of project proposals that are convincing and realistic.

As soon as the need for additional donor funding to support particular activities is recognized, the country office should:

- ✓ consult with WPRO (EHA) *before* preparing specific proposals or discussing details with the government or potential donors*
- ✓ once the principle is agreed, inform the UN Resident Coordinator (UNRC, through OCHA staff, when present), UNDMT, the emergency health coordination committee (HCC) and potential donors that WHO has identified needs in specified areas and that proposals for funding are under preparation
- ✓ prepare proposals using the standard format in 9.7
- ✓ clear draft proposals with the relevant regional advisor(s) before finalizing and formally submitting them to the UNRC or local donor representatives*

* Consultation with WPRO before preparing proposals, and clearing proposals with relevant regional advisors, enables WPRO, in consultation with EHA-HQ, to a) advise on the likelihood of securing funding, and b) ensure that proposals benefit from the latest knowledge, experience and identified best practices (as well as conformity with WHO's technical guidelines).

Each project must meet a defined need, have clear objectives and be able to be implemented within the stated time-frames.

Where possible, use – and demonstrate some use of – available country programme resources before asking for additional 'emergency' resources.

3.4 Reporting: keeping WPRO, HQ and donors informed

There are several kinds of reports to be prepared by country offices:

- ✓ Regular Sitreps
- ✓ Special reports (e.g. of assessments or disease outbreaks)
- ✓ Donor reports (end-of-operation reports according to the donors' requirements)
- ✓ Confidential reports to WHO (on an exceptional/when needed basis)

Systematic reporting is critical.

- Reporting within the country is essential for preparing and adapting response plans and directing resources
- Reporting within WHO – to WPRO and HQ – is essential for several reasons:
  - to enable WPRO and HQ to provide technical and operational advice and support
  - to support resource mobilization efforts at regional and international levels
  - to enable WPRO and HQ to keep donors informed, contribute effectively to inter-agency coordination at the international level and respond to questions from the news media
- Reporting to donors is essential for accountability and to maintain their support

Situation reports (Sitreps) are the principal internal reporting mechanism. Although designed primarily for reporting to WPRO and HQ they may also be shared with donors and partners. Sensitive, confidential information should be reported separately.

Address all reports to WPRO-EHA with copies to DPM and EHA-HQ.

Sending a preliminary Sitrep

Within a few hours of receiving information of a sudden disaster/event, contact WPRO-EHA by email, phone or whatever means are available. If the contact is by email or fax, send a copy to EHA-HQ. Provide whatever information is available concerning (the):

- type, date, time and place of the event/emergency
- magnitude: size and population of the area affected
- reported deaths and injuries
- extent of damage to health facilities and vital services
- expected public health problems and immediate priorities for the health and related sectors
- whether the government has declared a 'state of emergency' and/or appealed for international assistance
- action being taken by national and local authorities and other organizations
- action taken, or planned, by the WHO country office
- additional action that may be requested/required of WHO
- any immediate action requested of WPRO or EHA-HQ
- when the next report will be issued

Sending regular Sitreps

Send Sitreps regularly, probably daily during the initial emergency period, then once or twice a week, or monthly in case of a slow-onset or long-duration crisis. Don't delay because certain information is lacking: send available information and indicate the additional information that is anticipated.

In general, provide only new information. Do not repeat what has been reported in an earlier Sitrep. Focus on:

- How needs are being met
- The nature and level of cooperation among organizations involved in the public health activities
- WHO activities in support of the MoH and in collaboration with UN and other partners, including participation in inter-agency/multi-sectoral assessment missions or consolidated appeal preparation
- Human resources required – type and number of specialized personnel
- Funding required, for personnel, supplies, equipment, operating costs, etc.
- Administrative and security issues/concerns, if any

- Action requested of WPRO and/or HQ

The suggested format in 9.5 may be adapted according to the needs of the situation.

Assessment reports

Send an Assessment Report when the rapid health assessment (RHA) has been completed and at least initial recommendations can be made concerning the international assistance required. Use the format in 9.6. Focus on aspects of particular relevance to the local situation.

Ensure that any funding needs presented are in line with – preferably explicitly included in – and OCHA Sitrep or inter-agency appeal.

Reporting to donors[11]

Good reports ensure donors' backing for the relief effort. Donors also have accountants and taxpayers they must answer to. Accountants need justification and documentation for every cent/penny spent. The more detailed and accurate the accounting to donors, the more likely it is they will continue to provide support.

Don't forget the feel-good factor! Donors are not faceless financiers doling out money from bottomless purses. They like to know that their funds have had a positive effect and that something is accomplished. Report back on the benefit the funds have achieved. If you can, enclose photographs or video footage of inoculation campaigns, functioning clinics or hospitals, etc. Donors welcome acknowledgement as much as anyone and, if they have something to show their people, they will be pleased.

[11] Adapted from *Emergency Field Operations*, 5.5B, EHA/FIELD/99.1

3.5 Evaluating and learning[12]

- ✓ Organize an internal lessons-learned review and/or an internal evaluation at the end of each distinct phase of a WHO-assisted operation
- ✓ Arrange, in consultation/collaboration with WPRO and EHA-HQ, an appropriate evaluation of any activity managed by WHO or which receives substantial WHO assistance
- ✓ Encourage and support the MoH in organizing a sector-wide lessons-learned exercise involving all stakeholders, or a sector-wide evaluation of health response, and ensure that findings are widely disseminated

A national workshop with nationals and international health partners to identify lessons learned from successes and shortcomings, and the publication of the experience, is probably the best means to ensure learning and institutional memory. The workshop organized by PAHO to review the lessons following Hurricane Mitch was particularly effective.

Following a disaster involving a high level of international assistance, EHA/HQ may propose to WPRO and donors a joint independent evaluation of the international health response and, within this framework, of the role and contribution of WHO. Such an evaluation would normally be external and the conclusions widely circulated in line with WHO's commitment to transparency and accountability, and its concern for the quality and development-friendliness of the humanitarian contribution of external actors.

Selecting the appropriate approach and time

- Clearly define the purpose of the exercise and, on that basis, choose the approach to be used
- Organize the exercise at a time when it is feasible to generate information that is accurate, reliable and useful

For internal learning related to WHO's performance, the options may be:

- an internal evaluation/review using a WHO staff member and/or an external evaluator with good knowledge of WHO
- a lessons-learning workshop within the in-country WHO team, facilitated by a staff member not involved in the operation, an external person or independent consultant

For accountability toward WHO's member states and/or donor(s) an external evaluator with good understanding of WHO and the UN system is required, possibly in combination with evaluator(s) proposed by main donor(s)

For learning and accountability of the health sector response, a joint exercise involving several or all actors is essential. The options may be:

- a joint 'ex-post' evaluation, with MoH, local health authorities, other UN agencies, Red Cross, NGOs, donors
- a joint/international lessons-learned workshop with the national health authorities and main humanitarian actors, possibly externally facilitated

For improving an ongoing operation, a 'real-time'/performance evaluation process is required using staff not involved in the operation and/or external evaluators. Ideally, this should be initiated during the early stages of an intervention and provide regular updates on performance.

Possible purposes of evaluation/lessons-learning

Evaluating WHO's own performance

This is a programme management function, analysing WHO's performance based on our own policies and plans. The purpose is:

- to be transparent and accountable to our partners
- to provide feedback for internal management and decision making processes
- to learn and improve the performance of our (current and future) programme activities

Evaluating the overall response by its health outcomes

This will always be done jointly/in close collaboration with all WHO's relevant partners. The purpose is:

- to provide insight into how people's own efforts and national and international assistance affected the general health and nutritional status of the affected population
- to guide continuing health sector programmes and related inter-sectoral coordination

[12] There are not yet any official WHO guidelines on evaluation in emergencies. The guidance provided here is based on draft documents circulating in EHA-HQ, those produced by the inter-agency ALNAP project in which WHO participates, and the lessons-learned exercise organized by PAHO following hurricane Mitch in 1999.

- to inform health system preparedness for future crises

Learning versus accountability

If accountability is the primary objective, plan and manage the evaluation to ensure that:

- the evaluation process is transparent
- the evaluators are clearly impartial and free to state their conclusions
- all stakeholders have an opportunity to comment on the evaluators' conclusions and such comments are given due weight. Seek to resolve differences before the report is finalized, otherwise ensure that the differences are reflected

If lesson-learning is the major objective, ensure:

- that those involved in implementation have the maximum opportunity to learn the lessons emerging
- ownership of the evaluation process by implementers before the evaluation starts, hence their greater involvement during implementation and a greater planned investment in dissemination

[Adapted from *Evaluation Guidelines*, DFID: http://www.dfid.gov]

Defining criteria and key questions

Activities and performance should be compared against international standards for good practice guidance. The WHO/PAHO health library for disasters (HeLiD) including the Sphere handbook can be referred to.

The following are examples of some possible sets of criteria against which the programme/activities can be evaluated and/or lessons be drawn:

- Main criteria: efficiency, effectiveness, impact, relevance/ appropriateness, and sustainability (or connectedness for short-term project impact on long-term processes). Sub-criteria: coverage, coherence, coordination and protection [OECD/DAC evaluation criteria for humanitarian assistance]
- What is going/went well? What could go better/went wrong, and why? What needs to be done now/learned for the future?
- What was planned – what were the targets, the planned outputs and outcomes? What are the actual results? What are the weaknesses and reasons for deviation/positive experiences and unplanned results? What recommendations?

A sector-wide evaluation should look at the effectiveness of overall health/humanitarian response and try to explain changes in certain health outcome/impact indicators like CMR, U5 mortality rates, malnutrition rates, etc.). It should cover broad strategic issues – collaboration, decision-making, linkages, beneficiary satisfaction, cost-effectiveness, etc. – in addition to the technical aspects of health and nutrition service provision.

Drawing up terms of reference (TOR)

Whatever the purpose and approach, well thought out TORs are important. They should be directly relevant to the decisions to be taken by intended users. The time and effort invested in preparing good TOR have big payoffs in terms of resulting quality, relevance, and usefulness.

A framework for developing TOR is provided in the box below. Note the following:

- Do not overload the TOR! Overloading is a frequent problem when many people add their own questions, especially in joint agency evaluations. The need to focus requires a prioritisation of the diverse needs of the various possible users or stakeholders
- Limit questions to the most important issues and ones that can realistically be answered in the prevailing circumstances; prioritize them
- Be cautious about combining lesson-learning and accountability purposes in a single evaluation – the issues and the intended users are different and it may result in ambiguity in emphasis and approach
- TOR may need to be translated for in-country use

TOR are as important for internal teams as they are for external teams, although external teams may require more detail on background context and on intended audiences and uses.

For a sector-wide evaluation, the TOR must be agreed among all partners/ stakeholders. The details of the methodologies and tools to be used may need to be adapted/developed and piloted during an initial design phase.

Terms of Reference (TOR) for an evaluation

Detailed terms of reference generally include:

- The reasons for the evaluation and its objectives (why evaluate).
- A statement of the scope and specific issues to be addressed (what to evaluate – policy, programme, operation, issue).
- Objectives – the extent to which the evaluation is expected to provide accurate measures of impact and contribute to accountability should be carefully considered.
- The questions to be answered (criteria or focus) and tasks to be carried out, including, if possible, what information is to be collected and how.
- The locations to be visited (where); access to information and people.
- Which people are responsible for which tasks (who) – to what extent is the evaluation independent?
- A statement of the expected output & style of the report.
- A timetable (when to evaluate) indicating when various tasks will be completed as well as the due dates and recipients of any periodic reports or outlines. The TOR should specify that an initial report will be submitted in draft and provide time for corrections or changes to the draft once it has been reviewed.
- A budget indicating the costs associated with the evaluation.
- What happens after the evaluation (follow up, ownership).

[Adapted from: *Planning and Organising Useful Evaluations*, UNHCR Inspection and Evaluation Service, January 1998]

Composition of an evaluation team

An evaluation team should contain a mix of relevant skills and experience including the following characteristics:

- Professional expertise relating to the issue being evaluated
- Knowledge of the country/region
- Cross-disciplinary skills (social economic and institutional)
- Gender balance
- Representatives from partners/main stakeholders (this improves the quality and the local credibility of the evaluation findings as well as building local capacity, although representatives can find themselves in difficult positions if the evaluation findings reflect negatively on their organisation or colleagues)
- Quality team leader

All members should be available for the whole time of the evaluation

Managing the process – responsibilities of the evaluation manager

The evaluation manager is part of the evaluation team, albeit with a special role and perspective. S/he must, amongst other things:

- ✓ *Ensure financial and logistical preparation*: careful budgeting and thorough logistics preparations are essential – don't under-estimate the cost, time and resources required, especially the field work component of an evaluation
- ✓ *Devote adequate time to the process*, be systematic (in planning and supervising), sensitive (to the needs of the team and others involved), and solutions-oriented (anticipate and respond promptly to the problems that will inevitably arise)
- ✓ *Ensure that sufficient time is given* to building the appropriate level of interaction and ongoing reporting back between the evaluation team, the evaluation manager, operational personnel and other stakeholders
- ✓ *Ensure follow-up* – that the report/findings and recommendations are promptly disseminated to all concerned and brought to the attention of the managers who need to know and take action.

Possible budget items for an evaluation

- Staff salary and benefits
- Consultants
- Travel
- Costs of surveys and data processing
- Printing and duplication
- Communications
- Support staff
- Printed materials
- Supplies and equipment
- Non-financial or indirect costs

4. HOW TO MANAGE THE WHO RESPONSE

4.1 Criteria and procedures for allocations from the RDDP

4.2 Mobilizing resources

4.3 Managing the office and human resources

4.4 Procuring supplies

4.5 Managing public information/the news media

4.6 Assuring staff security

4.7 Managing stress

Rules and procedures

In general, normal rules and procedures apply, and compliance with them is at least as important during emergencies as in normal operations.

At present, there are no special 'emergency' procedures within the WPR (apart from the US$5,000 authority delegated to WRs/CLOs), but all divisions and services within WPRO do whatever is necessary to expedite action within the framework of normal rules. Country office staff are expected to do the same.

4.1 Criteria and procedures for allocations from the RDDP

- ✓ The WR/CLO has been delegated the authority to immediately release up to US$5,000 in the event of a natural or human-generated disaster which requires an immediate public health response from WHO.
- ✓ The Regional Director may approve larger allocations if a more substantial input from WHO is urgently needed and resources are not available from other sources.

The US$5,000 authority

The WR/CLO has been delegated the authority to immediately release up to US$5,000 to the government from the Regional Director's Development Programme (RDDP) in the event of a natural disaster or human-generated disaster at the country level which has resulted in substantial morbidity and/or mortality or physical destruction which requires an immediate public health response from WHO (see the general criteria in 1.3).

The procedure, defined in Handbook Circular No. 2 , is as follows. Check the intranet for any up-dated instruction:

- The WR/CLO releases up to US$5,000, usually from the imprest account (alternatively, arrangements may be made for release of funds through BFO), and should inform DPM or DAF by FAX or phone as soon as communication to the Regional Office becomes possible.
- The WR/CLO sends a written justification for release of the funds to the Regional Director with a copy to Responsible Officer for Emergencies (EHA) as soon as practicable.
- Simultaneously, the WR/CLO should assign a sticker number and provide copy of the payment voucher and all supporting documents to BFO/BUD for obligation purposes. BFO/BUD will make arrangements for replenishment of the imprest account, if applicable.

Other, larger allocations from the RDDP

In exceptional cases, when a more substantial input from WHO is urgently needed and resources are not available from other sources (from reprogramming, inter-country programmes or donor contributions)—the Regional Director may consider an allocation from RDDP in excess of the US$5000 delegated for release by the WR/CLO. The following procedures apply:

- The WR/CLO should inform the Regional Office by FAX or, if necessary, by phone the amount of additional funds in excess of US$5,000 that are required, details of proposed use of the funds and a justification for the request. Where this request is made by phone, a written request to the Regional Director should follow by FAX as soon as it is practicable.
- Responsible Officer for Emergencies (EHA) to obtain approval for release of the proposed amount from RDDP, by memo to the Regional Director, through concerned Director, DPM, DAF and BFO.
- After Regional Director's approval, BFO should arrange for immediate release of the additional funds (or overall funds, if the initial US$5,000 has not yet been released) to the WR/CLO, if possible within 24 hours of receipt of notification from the WR/CLO. The Responsible Officer for Emergencies (EHA) will assign an activity code, PDO will tag the activity code into the POA and BFO will issue a sticker number.

4.2 *Mobilizing resources*

- ✓ Help the MoH to prepare and disseminate its own appeal to donors
- ✓ Ensure that these resource requirements are reflected, and appropriately prioritized, in the OCHA Sitreps (for a disaster) or the UN consolidated appeal (for a major or complex emergency)
- ✓ Follow-up with potential donors to gain their support for WHO's projects and the requirements the health sector as a whole

Helping the MoH with its appeal

It is the responsibility of WHO – and, therefore, the WR/CLO – to seek to mobilize resources not only for WHO's own projects but also for the health sector as a whole, within the framework of assessed needs and priorities.

WHO should help the MoH, when required, to prepare and regularly up-date the emergency and rehabilitation assistance requirements of the health sector based on sound analysis of assessment data and consequent prioritization of public health needs.

Informing donors of WHO's requirements

Any large-scale assistance depends on the receipt of special contributions from donors. This in turn depends on the timely preparation, and submission to donors, of project proposals that are convincing and realistic.

- ✓ As soon as the need for WHO support to a particular activity has been agreed with WPRO (see 3.3), inform potential donors that WHO has identified needs in specified areas and that proposals for funding are under preparation
- ✓ Once the proposal has been cleared by the relevant regional advisor(s) submit them to local donor representatives and follow up to explain the importance, and the feasibility, of the activities

Some embassies and bilateral aid missions have discretionary funds that can be mobilised for emergency assistance with a minimum of paperwork. They are limited amounts but they can help for initial, short-term action.

For a disaster: inserting requirements in OCHA Sitreps

As soon as cost estimates are established for specific proposed projects/ activities, make them available to the UNRC, or OCHA staff, for inclusion in the OCHA Sitreps

For a major/complex emergency: contributing to the consolidated appeal[13]

Through the Consolidated Appeal, coordinated by OCHA, the UN system presents to the international community an inter-sectoral strategy for emergency humanitarian assistance together with details of the resource requirements for the various activity components. Together with immediate relief it can also include the initial rehabilitation phase.

In many cases, a 'flash appeal' may be issued by OCHA while assessment is continuing and a full consolidated appeal is being prepared.

The country office should:

- ✓ provide inputs to any flash appeal
- ✓ contribute to the formulation of the overall strategy – the common humanitarian action plan (CHAP)
- ✓ develop project proposals for the activities that would be supported directly by WHO, and get them cleared by WPRO, as above
- ✓ coordinate (working closely with UNICEF) the health sector part of the consolidated appeal within the framework of the CHAP and in consultation with the national authorities whose endorsement is normally required

Continuous dialogue, coordination and collaboration with all partners is essential during the process of preparing the appeal. Make sure that there is no duplication or overlapping of projects, and that no major gap is left uncovered. Such collaboration, through the UNDMT, the HCC and direct contacts with individual agencies, must also continue during implementation when the UNDMT and the HCC should monitor the impact of the humanitarian operations and review the strategy.

[13] Adapted from *Emergency field operations*, EHA/FIELD/99.1

Following up with donors locally

Once project proposals have been finalized, and after the launch of the appeal in case of a consolidated appeal, the country office should:

- ✓ follow up with donor representatives to persuade them of the importance, and feasibility, of the proposed projects and of other priority actions in the health sector
- ✓ keep WPRO (EHA and ECP) and EHA-HQ informed of all contacts and any indications of potential donor interest.

HQ can then lobby with the donors' permanent missions in Geneva.

In close coordination with the Regional Office and EHA HQ, develop and maintain contacts with principal donors, keep them informed of progress and make suggestions for long-term rehabilitation projects. Highlight specific areas that require funding.

Some tips on keeping donors informed

- ✓ If you have a digital camera or camcorder you can download footage of the emergency site to your laptop and then transmit, via the satphone or e-mail, to WPRO or WHO/HQ for dissemination to donors and to be used for appeals.
- ✓ The Internet can be used to inform donors and would-be partners of the current state of affairs in the emergency area. It also serves as a market place to obtain essential relief items. In particular ReliefWeb can be used. ReliefWeb (http://reliefweb.int), under the auspices of the OCHA is the global humanitarian information system for the dissemination of information on emergencies. Many different governments, UN agencies and other relevant organisations support it.
- ✓ Donors may well ask you to suggest areas where they can assist. Be prepared for this and have your ideas to hand. They will need a solid project to respond to. Give them one. Reports on what is needed, where and when will be invaluable in this context. Keep an updated list of requirements ready for donor's questions.
- ✓ The donor community makes its decisions either on the basis of humanitarian criteria or, sometimes, political or commercial criteria. You must ensure that the humanitarian considerations are properly understood and acted upon, even if political or other factors play a negative role.

[From *Emergency field operations*, 5.5B, EHA/FIELD/99.1]

For procedures from the acceptance/receipt of contributions, see Standard Financial Procedure SFP8-VFHP.Rev.1 (2002).

4.3 Managing the office and human resources

- ✓ Temporarily redeploy existing staff to deal with the emergency while at the same time assuring the continuity of priority ongoing activities
- ✓ Request temporary staff reinforcement, if needed
- ✓ Define requirements for short-term recruitments, if needed, and/or mobilize personnel on loan
- ✓ Centralize information on the emergency and establish a good filing system at the outset
- ✓ Ensure proper accounting for all resources

(Re)deploying staff; (re)organizing the office

Having staff with the right qualities and experience in the right place at the right time, with clear terms of reference (TOR) and efficient administrative and logistic support, is the key to effective emergency response.

Available staff in the country should be temporarily redeployed with clear temporary TORs. Staff on leave may be recalled.

Staff reinforcement is often necessary, at least for a short period:

- Initially, staff from the regional office and/or from other offices may be mobilized on duty travel by decision of the Regional Director (RD) on recommendation of the EHA advisor and DPM
- Additional personnel may be mobilized on SSA (in-country recruitment) or STP or STC (international recruitment), subject to the availability of funds
- In some cases, a government or another organization may loan or second personnel to WHO

A staff member may be assigned new duties not included in the post description or the generic description on a full-time basis for a temporary period not exceeding 90 days beyond which a new post description and classification review is required. [Manual II.210]

In case of a major emergency it may be worthwhile to set one room aside to centralize all information relating to the emergency and related WHO operations.

The WR/CLO should:

- redeploy available staff and give them clear temporary TOR
- specify any requirement for additional staff, including TOR, expected duration and whether funding has already been identified or needs to be found

Establishing a field presence

In case of a major emergency in an area far from the capital and the country office, it may be necessary to assign one or more staff members temporarily in the affected area, on mission. This may include a suitably experienced member of the administration and finance section of the country office if any operational functions are to be undertaken or transactions conducted. These personnel would normally operate from their hotel, the local health office or the office another UN agency already established in the area (in agreement with that agency).

Only in exceptional circumstances, and with the approval of the Regional Director, would a temporary WHO field/liaison office be established with its own premises, staff and, if necessary, bank account. Specific arrangements would be defined and approved by DAF on a case-by-case basis. Guidance on how to select and rent an office in such circumstances can be found in *Emergency field operations*, EHA/FIELD/99.1 annex 5.

Recruiting temporary staff

The provisions WHO Manual II.11 apply. The following are some key reminders:

- The WR/CLO has delegated authority to recruit local (national GS-level) support staff on short-term contracts for up to 60 days
- The WR/CLO selects and proposes, to DAF-PER and the relevant regional advisor, candidates for in-country recruitment on short SSA contracts
- SSAs need endorsement by the relevant WPRO technical unit and approval by the RD
- Individuals recruited on SSAs are covered by WHO for accident insurance but not health insurance, unless cleared through headquarters
- All international recruitments (on STP or STC) are done by DAF-PER
- Medical clearances/certificates are essential for all recruitments

The country office should:

- ✓ draw up terms of reference with care for all temporary assignments and short-term recruitments
- ✓ check the availability of former WHO staff in the country who had good performance records (They have the advantage of knowing the organization)
- ✓ when proposing individuals for recruitment on SSAs, provide terms of reference and the allotment code to be charged, and obtain government clearance

Key forms can be found in *Emergency field operations*, EHA/FIELD/99.1, annex 1.

Using personnel loaned to WHO

The services of personnel on loan can be very valuable but remember – and make the individual and the donating entity aware – that personnel on loan must be covered by their own insurance or that of their employer.

The WR/CLO should explore possibilities for the country office to benefit from the services of personnel on loan from national institutions, donors or other agencies, secure the approval of DAF, and establish clear TOR and written agreements concerning reporting arrangements and liabilities/responsibilities.

Setting up a good filing system

At the outset, organise a filing system for all the documents that the office produces or receives in relation to the emergency operation. A relatively simple system could be as follows: [14]

- *Programme files* for documents relating to specific WHO activities, by geographical area
- *Fact-sheets files* containing baseline information (one for each geographical area and one for each operational partner)
- *Subject files* for general reference documents, guidelines, etc.
- *A supplies file* with descriptions of different relief kits, price lists, names of suppliers, etc.
- *One file with rosters* of experts, reference centres, CVs and addresses
- *Correspondence in/out* files for memos, letters, etc.
- *A reports file* containing copies of all sitreps and other reports prepared
- *Personnel files* with the biodata of staff
- *Donor files,* list the resources donated to the response, track their usage and location
- *Financial files,* to keep track of expenditures and imprest accounts
- *Asset file* for tracking WHO assets loaned or donated to/from other organisations

When a document or report contains important information on more than one topic (e.g. on a certain area and some NGOs), make copies for each file highlighting the relevant passages.

Keep an inventory of the contents of computer disks.

Ensuring accounting for resources

Keep records of all supplies and equipment issued, equipment loaned, and for funds expended (see box below).

Accounting for funds – some reminders and tips

- ✓ Record all disbursements in the [Imprest Account] CashBook (WHO 412). Update it daily
- ✓ Obtain receipts for all expenditures, no matter how small
- ✓ Use vouchers with every payment. Number and date them
- ✓ Attribute each expenditure to the appropriate sticker number (SN) – record the SN on the voucher and in the cash book
- ✓ Never issue a cash cheque
- ✓ Never sign a blank cheque
- ✓ Never mix funds from different accounts
- ✓ Never accept funds from an outside source (non-WHO) without first clearing it with Chief Accounts
- ✓ Never make loans [from the imprest account]
- ✓ Remember: salary advances are allowed only exceptionally, and cannot exceed 25% of the monthly wage of the employee

[From *Emergency Field Operations*, EHA/FIELD/99.1, section 3.7]

For formats for the cash book, vouchers, etc., see *Emergency Field Operations*, EHA/FIELD/99.1, Annex 5, docs 5.30-5.38

[14] Adapted from *Emergency Field Operations*, EHA/FIELD/99.1, chapter 5.

4.4 Procuring Supplies

- ✓ Carefully prioritize any requirements for supplies and equipment to be delivered by WHO.
- ✓ Where needed items of assured quality are available locally, use the delegated authority or, for larger quantities, inform WPRO-SUP of local prices and delivery conditions.
- ✓ Provide precise specifications and/or details of the intended use for all items required.
- ✓ When requesting WHO Emergency Health Kits, specify the options required.
- ✓ Whenever supplies are imported, monitor all stages of the procurement and shipment process and follow up to ensure that the goods are promptly cleared and forwarded to the locations where they are needed.

Basic procurement procedures

The provisions of WHO Manual VI apply but staff at all levels should accelerate action to expedite the ordering and delivery of urgently needed items. Additional practical guidance (not specific to emergencies) can be found in *Supplies and Equipment - Procurement* .

- The WR/CLO has procurement authority as follows:
  - for local procurement: up to US$2,000 of non-project and up to US$10,000 for project items – see *S&E/Procurement* VII
  - for 'direct' procurement from other countries in the region, up to US$2,000 for non-project or project items – see *S&E/Procurement* VIII
- Local procurements for larger amounts require the approval of WPRO-SUP.
- All other procurements – larger procurements within the region and all procurements outside the region – are undertaken by WPRO-SUP.
- All procurements of project supplies require endorsement by the WR/CLO and technical clearance of the relevant regional advisor (RA)

Procurements, except those within the WR/CLO's delegated authority, are processed through the RA for technical clearance, SUP to checks cost estimates and the adequacy of specifications, and BFO to certify fund availability, before the RA issues a formal request for procurement to SUP.

SUP then issues a Procurement Authorization (PA) to the WR/CLO for local procurement, arranges procurement within the region (using a Local Purchase Order, LPO), or issues a PA to PRS-HQ for international procurement, as appropriate.

When proposing local procurement, the following must be considered and documented: availability of items for immediate delivery from stock, cost, urgency of need, payment in local currency, and after-sales service.

Preparing a procurement request/S&E list

The initial request formulated by the MoH/EHC and the responsible WHO staff member must provide all necessary details including for each item as appropriate:

- ***Full specifications*** – a specific reference to a manufacturer's catalogue with a note "or equivalent", or sufficient explanation of the circumstances and intended use to enable procurement staff to propose appropriate items. Specifications include, as appropriate:
  - required options/accessories
  - electric supply characteristics, or type of fuel
  - capacity and dimensions (e.g. for refrigerators, scales)
  - generic name and dosage (for drugs)
  - grade and purity (for chemical/diagnostic reagents)
  - quantity required
- ***Delivery point*** – port or airport for imports; office/warehouse/institution for local procurements
- ***Required/desired delivery date***
- ***Consignee information*** – complete name, designation, address, telephone, fax and/or telex numbers
- ***Packaging and labelling*** – any special requirements to facilitate reception and distribution

Justification (e.g. non-availability of servicing and maintenance facilities for other brands) must be provided in case a specific brand is requested, especially for complex or costly items.

For specifications for any items that staff of the country office are not familiar with, consult *Emergency Relief Items: compendium of basic specifications* vol.2, *Medical supplies and equipment, selected essential drugs*,

UNDP/IAPSO in the WHO Emergency Library Kit, or at http://www.iapso.org/supplying/AgencyInfo.asp?AgencyID=18.

Ordering standard kits

WPRO kits: Two WPR kits are available: the cholera kit and the outbreak investigation kit. Requests for these ICP-funded kits should be addressed to WPRO-CSR (copy EHA).

Drug and medical supply kits available from HQ: The standard kits provided by WHO globally are shown in 9.16. In general, these kits are ordered through WPRO-SUP in the same manner as other international procurements. Allotment and sticker numbers are provided by the country office (or EHA if funding is from the RDDP). PRS-HQ then procures and arranges direct shipments from the suppliers in northern Europe.

Sometimes, New Emergency Health Kits and Italian trauma and diarrhoea kits can be obtained as donations from the Government of Italy (from the stocks held in UNHRD Brindisi) as a bilateral contribution or as part of a joint WHO-GOI operation. Requests for funded kits should be addressed to EHA.

WHO Emergency Health Library kit: Stocks are held by EHA-HQ and dispatched from Geneva. It constitutes a comprehensive collection of basic health reference texts (published by WHO and others) and is useful when a WHO or field health office is being established for a major operation that is expected to be of fairly long duration. Most of the WHO-published documents that are available electronically are included on the Health Library for Disasters (HeLiD) CD-ROM.

UNFPA reproductive health kits: These kits are not normally provided by WHO. When needed, UNFPA usually supplies, and funds, them. The WR/CLO should discuss any requirement with the UNFPA representative.

Assuring prompt reception/clearance and forwarding

Unfortunately, supplies delivered for emergency operations sometimes get stuck in ports, airports and other warehouses because documents are not presented or formalities not completed, or because they get overlooked – forgotten – by officials who are overloaded.

It is the responsibility of the country office to monitor the procurement and delivery process and to ensure that::

- for local procurements: goods are delivered in time and in good condition to the designated consignee
- for imports: orders are correctly placed and shipments properly received, cleared and forwarded – this includes liaising with WPRO-SUP and following up locally when the Pre-Advice of shipment is received to ensure that the consignee is ready to receive, and then promptly clears and takes delivery of, the consignment

4.5 Managing public information / the news media[15]

- ✓ Maintain good relations with the news media
- ✓ Assign a staff member as focal point of media relations
- ✓ Ask the regional office for advice and support whenever needed

The news media are important partners in an emergency:

- The international media have a considerable influence on donor response: focus on the prominent media groups that have worldwide coverage and are well respected (CNN, BBC etc.).
- The national media can broadcast health and advisory messages in the local language. They can help to defuse rumours.

The media, and individual journalists, can also provide information; they may have been in areas not visited by anyone from WHO and have talked with people you have not been able to meet. They may have vital information. Encourage them to keep you informed of what they see. Respond when possible. At all times foster goodwill and cooperation with the news media. Give them constant updates, informal interviews etc. They will respond with informed reporting. Encourage them to share your vision for long-term effective assistance.

Preparing for an interview

- ✓ Anticipate the questions they will ask and think of the message you want to convey. Work out exactly what you are going to say. Stick to it.
- ✓ Never assume the media understands the terminology you are employing. Remember that their audience is the average man in the street. The more understandable you are, the more time they will give you.
- ✓ Simplify and summarise your basic points, repeat them with emphasis during the interview.
- ✓ Take command of the interview. If you have something important to say, say it. Do not be side-tracked into answering other questions which you feel are not relevant.
- ✓ Prepare handouts, emphasizing the main points of your statements.

[15] Adapted from *Emergency field operations*, EHA/FIELD/99.1

The media may request an accompanied tour of the emergency area. If so, plan in advance where to go and prepare handouts for them.

Points to remember

All declarations to the media should be by/with the WR. Any other staff talking with journalists must be careful what they say: it might be construed as official WHO policy.

- ✓ Stick to facts, and put them in context
- ✓ There is no such thing as 'off-the-record'. Everything you say and do can be reported. Be careful what you say in the presence of journalists, even after a formal interview is finished and at social gatherings
- ✓ Never make disparaging or critical remarks about local authorities or international partners
- ✓ Do not mention weaknesses – they might be all that is reported
- ✓ If you are unsure about WHO's position on a particular issue, say so. Don't guess, you cannot be expected to know everything
- ✓ Report back to WPRO and WHO/HQ after any encounter with the media

Hints on issuing a press release

- ✓ Your key point should be in the first paragraph
- ✓ The text needs to be brief (maximum one A4 page)
- ✓ The title and the opening line are the most important part: they need to grab attention and encourage people to read on
- ✓ Avoid referencing academic work or text, refer to people or researchers
- ✓ Use a language that is appropriate for the audience
- ✓ If you are working with a particular newspaper or radio/television station, you may need to do some research about their editorial style

Translate materials into local languages. Have regular resource persons/ journalists available to do this.

4.6 Assuring staff security

- ✓ All WHO staff must be incorporated in the UN security plan for the country
- ✓ Security arrangements including communications facilities in all WHO offices and operations must conform to UN Minimum Operating Standards for Security (MOSS)
- ✓ Individual staff members must take sensible precautions and respect the decisions and instructions of the Designated Official (DO, usually the UN Resident Coordinator) and the UN Security Coordinator (UNSECOORD)

Management responsibilities

The WR/CLO should:

- participate in meetings of the UN Security Management Team (SMT) and any crisis management group formed in response to a particular crisis, and seek ways by which humanitarian operations can be sustained
- ensure that all WHO staff are aware of security plans, the wardens for the areas where they reside, and any guidelines issued by the SMT
- implement appropriate security measures for the WHO office and vehicles in line with MOSS and local SMT decisions
- plan and manage operations in such a way that the implementation of the humanitarian assistance operation is affected as little as possible by insecurity or by any UN security restrictions

For further details, see:

- *UN Security Handbook* (on CD-ROM)
- *Emergency field operations*, EHA/FIELD/99.1 annex 3, which includes guidelines on office security, vehicle security, medical evacuation procedures and action in case of the death of a staff member.

Individual responsibilities

Wherever there is insecurity, including widespread criminality, individual staff members should:

- be aware of – preferably have their personal copies of – the UN handbooks *Security in the field* and *Security guidelines for women*, and
- follow instructions of the DO and WR/CLO, and take sensible precautions as summarized in the box below.

Personal security – basic precautions

- ✓ Always be alert and aware of your surroundings. Look out for the unusual and be suspicious. Follow your instincts.
- ✓ Avoid routines. Use different routes to and from the office, etc. Vary times of departure to the extent possible.
- ✓ Be discrete and keep a low profile. Select your friends with care. Avoid ostentatious behaviour. Respect local cultural norms.
- ✓ Stay away from situations that might present or attract threats (e.g. political rallies).
- ✓ Be certain that you can explain everything that you have on your person. Don't carry any items that may call into question your motives or status within the mission.
- ✓ In hotels: avoid ground floor rooms that are accessible from the outside, and rooms at the end of long corridors; check that doors and windows are secure; check that the telephone works.
- ⊘ Don't be provoked by hostile comments. Don't say or do anything that might provoke resentment.
- ⊘ Don't carry large amounts of money. Don't display jewellery or keys.
- ⊘ Don't touch suspicious objects or packages: report them to local security personnel.

UN security phases and their meanings

Phase	Internationally recruited staff	Locally recruited staff
1	Precautionary • Exercise caution • All travel into the area requires advance clearance by the DO	• Alerted in same manner as international staff • Same DO travel clearance is required
2	Restricted movement • Staff and families remain at	• Staff do not report for work

	home • No travel into or within the country unless authorized by DO	unless otherwise instructed
3	Relocation • Staff and families are temporarily concentrated or relocated to specified sites/ locations *and/or* • Eligible dependants are relocated outside the country	According to the local UN security plan and the decision of the DO/CD, staff may: • leave the duty station on special leave with pay, *or* • be relocated to a safe area within the county with up to 30-days DSA, *and* • receive up to 3 months salary advance and, if needed, a grant to cover transport costs for themselves and eligible dependants
4	Programme suspension • All staff who are not directly concerned with emergency or humanitarian relief operations or security matters are relocated outside the country	
5	Evacuation (SG approval) • All remaining staff leave	

Arrangements for national staff

National staff members are helped to ensure their own security and may be relocated within the country. They can be evacuated from the country only under the most exceptional circumstances when decided by the UN Secretary-General.

Minimum Operating Security Standards (MOSS)

The MOSS prescribe the training, security arrangements, vehicles and telecommunications equipment that each UN agency and the country team as a whole must have for each security phase, effective January 2003.

Even where there are no security concerns, in a country in 'No Phase':

- all UN staff are required to complete the basic Security Awareness CD-ROM self-training
- there must be a contingency plan for the implementation and procurement of assets and resources necessary to move to Phase 1
- there must be an independent and reliable source of electric power to ensure that communications equipment is operative, security lighting is available at all times and essential business functions can be conducted even after the loss of normal power supplies

In high-risk duty stations – Phase 3 and above – all staff must be certified as having received basic security training and must have the means of accessing a 24-hour security telecommunications centre whilst in the operational area.

Full details of the MOSS for all security phases, as issued by the UN Security Coordinator, are on the CD-ROM.

4.7 Managing stress[16]

- ✓ Manage your own stress
- ✓ Support colleagues who are stressed of have experienced a traumatic incident

A certain level of stress can be positive and motivating and can lead to increased performance. Excessive cumulative stress results in poor performance, sickness and eventually 'burnout' (physical and mental exhaustion).

Violent and unexpected incidents can cause trauma. They overwhelm a person's normal coping skills. The effects may be immediate or delayed and may require treatment.

Different individuals react differently and have different capacities to cope with stress.

Signs and symptoms

Some common signs and symptoms are listed in the box below:

Common signs and symptoms of excessive stress	
Physical	**Behavioural**
Excessive sweating Dizzy spells Increased heart rate Elevated blood pressure Rapid breathing	Changed behaviour patterns Changed eating patterns (e.g. compulsive eating) Decreased personal hygiene Withdrawal from others Prolonged silences
Cognitive (mental)	**Emotional**
Confusion in thinking Difficulty in making decisions Lowered concentration Memory problems	Anxiety, fear, grief Anger, irritability Depression, hopelessness Feeling overwhelmed

[16] Reproduced from *WFP Emergency Field Operations Pocketbook*, WFP 2002

Interpersonal skills and belief systems are also affected

Some signs of 'burnout'

- chronic fatigue, headaches
- sleep problems, nightmares
- increased anxiety, nervousness, verbal outbursts, accidents
- muscular tension: aching back, neck, shoulders
- increased smoking or use of alcohol or medication such as tranquillizers
- digestive problems (nausea, vomiting or diarrhoea)
- loss of interest in sex
- quarrels with family and/or friends
- inability to concentrate, apathy
- feelings of depression, hopelessness, helplessness

Burnout requires a change of environment, and sometimes therapy.

How to prevent and cope with stress

- ✓ ***Get a good briefing*** before going into a new situation.
- ✓ ***Watch yourself***: recognize signs of stress and learn which situations/events stress you most; consciously try to minimize your exposure to these stress triggers.
- ✓ ***Be positive***, and proactive: look for solutions rather than dwelling on problems.
- ✓ ***Eat a well-balanced diet*** and eat regularly.
- ✓ ***Exercise regularly***: daily if possible.
- ✓ ***Manage your time well***: set realistic goals, define priorities and take regular breaks; plan your free time constructively and productively.
- ✓ ***Get the sleep you need***: you will feel more alert, perform better, be less irritable and find it easier to handle stress.
- ✓ ***Calm yourself, be patient, be flexible***: at regular intervals and whenever you feel stress increasing, stop a moment, stretch and take long, slow, deep breaths.
- ✓ ***Relax and meditate***: with your eyes closed, visualize yourself in an ideal location for relaxation (on a beach, in your favourite room or field); slow

down and deepen your breathing as you visually experience the relaxing scene for ten minutes.

- ✓ ***Share your thoughts, concerns and emotions***: find an individual (or individuals) with whom you can talk intimately.
- ⊘ ***Avoid negative thoughts***: when you find yourself being negative and critical, make a conscious choice to be understanding and see what can be learned from each experience.
- ⊘ ***Avoid excessive use of alcohol, nicotine and caffeine***: alcohol in moderation is all right, but not when it is used as an escape; avoid all forms of tobacco, if possible.

Laughter and a good sense of humour are powerful stress-reducing agents. Yoga and massage therapy are also beneficial.

Supporting someone who has had a traumatic experience

Defusing and debriefing meetings led by a trained counsellor will be important for the affected person's health and well-being. Friends and colleagues can also help someone who has had a traumatic experience by:

- ✓ welcoming them back and treating them as normal
- ✓ reassuring them that they are safe, and normal
- ✓ being patient; giving them the opportunity to resume normal activities if/when they wish, but allowing them time to settle themselves in private
- ✓ helping them with routine tasks and official procedures
- ✓ helping them to contact their family and closest friends
- ✓ listening carefully and sympathetically whenever they want to talk about the event and their emotions; gently encouraging them to express their feelings
- ✓ not taking their anger or other feelings personally
- ✓ respecting the confidentiality of whatever they tell you
- ✓ making sure that other colleagues understand the effects of traumatic stress and the possibility of delayed reactions
- ✓ calling for professional help when needed

PART 2

PROGRAMME GUIDELINES & TECHNICAL NOTES

5. KEY PUBLIC HEALTH ACTIVITIES – AND POSSIBLE ROLE OF WHO – IN AN EMERGENCY

5.1 Assessment and analysis of health needs and resources

5.2 Surveillance: managing health and nutrition information

5.3 Emergency health and rehabilitation services

5.4 Disease control

5.5 Environmental health and disease control measures

5.6 Delivery, receipt and management of medical supplies

5.7 Coordination of international health assistance

5.1 Assessment and Analysis

- ✓ Advise and assist the MoH, as required, in coordinating the health sector assessment and in designing a standard assessment reporting format (if none exists). If needs are urgent and the health authorities are overwhelmed, take the initiative to help organize the initial assessment. This may include mobilizing the human and logistic resources required to conduct the assessment
- ✓ Advise and assist the MoH, as required, in analysing findings and determining priorities for public health action
- ✓ Within the UNDMT, take the lead in coordinating health sector information and contribute to the assessments in other public-health related sectors
- ✓ Help to define the specific requirements, if any, for international assistance in the health sector

Assessment, including the analysis of assessment data, is very important as it provides the basis for:

- decision-making by the MoH and other relevant authorities on priority actions to be taken to provide medical care and protect public health
- decision-making by WHO, other agencies and international donors on what assistance, if any, they should provide

Assessment is difficult in many emergencies – especially during the early stages – when information pours in from some areas but is of uncertain reliability while little is known about other areas that may be temporarily inaccessible.

Assisting in assessing the situation and needs

The assessment process must be adapted to the situation in order to inform the decisions that have to be taken. In many cases, especially in response to a sudden crisis (a sudden-onset disaster), a phased assessment process is required with an initial rapid assessment being followed by more detailed follow-up assessments.

A rapid initial assessment must enable decisions to be made on what, if any, action should be taken by the relevant authorities to:

- organize/provide needed emergency medical care
- assure shelter, water, food and other basic necessities for the survival of the affected people[17]
- advise the population and concerned agencies on measures to reduce health risks
- intensify or institute appropriate environmental health and disease control measures
- intensify or institute surveillance to monitor the evolving health (and, where necessary, nutritional) status of the population, and the performance of the health care system
- coordinate the efforts of different entities in providing health and related services
- organize detailed follow-up assessments of particular aspects in specific localities

N.B. For many disasters, the types of action required can be anticipated on the basis of past experience. In these cases, the mobilization and dispatch of resources for some or all of the above-listed actions should be initiated in parallel with the rapid assessment. (Initial appeals for assistance may also be made for items that will surely be needed and are in short supply.) Provisions (and appeals) should then be refined as specific assessment data become available.

The basic questions to be answered are presented in the box below. A more detailed check-list for an initial assessment is provided in 9.4. Indications of the aspects that the assessment should focus on in particular types of disaster/emergency are provided in chapter 7. In all cases it is important to not only identify health risks but also people's perceptions of risks.

Guidance on assessment is case of specific disease outbreaks are provided in *Rapid health assessment protocols for emergencies*, chapters 2 to 5, WHO 1999 [in HeLiD].

A check-list for the process of organizing a rapid initial assessment – including information to be gathered and things to be done before rushing to the affected area – is provided in 9.3.

Summary details only need to be reported to WPRO/WHO: see 9.6.

[17] Provision of assistance in these areas would normally be by ministries other than health, supported by agencies other than WHO, but the Ministry of Health and WHO should seek to ensure that adequate provision is made and they should advocate for additional action and resources if needed.

Basic questions to be answered by an assessment

- ✓ What have been the impacts on:
  - public health?
  - health-related services?
- ✓ What further effects can be anticipated?
- ✓ What are:
  - the principal causes of illness and death at present?
  - the principal threats to public health in the next few weeks and months?
- ✓ What are the priorities for action to preserve lives and protect health:
  - action by the health sector?
  - action by related sectors?
- ✓ What resources are available to provide medical and public health services to the affected population? Are they enough?
- ✓ What (if any) assistance do local medical and public health authorities need from:
  - the national level?
  - WHO and the international community?
- ✓ How can the response be best organized and assistance delivered? What constraints have to be overcome?

Detailed follow-on assessments may need to be undertaken in particular localities, depending on the findings of the initial assessment, in relation to some or all of the following:

- damage to health facilities – detailed surveys by competent technicians and engineers to prepare specific plans and cost estimates for repair/ reconstruction
- the human and other resources/capacity available to assure needed health services in the immediate future and the long-term requirements to re-establish the primary health care system
- the impact on people's ability to access health services
- damage to water supply and sanitation structures and systems
- the impact on vectors and vector control programmes
- the psychological impact on the population and on relief workers
- the causes of death, injury and disease and their distribution among different population groups to inform planning for future, long-term prevention and preparedness measures

When required, WHO should help to ensure that:

- ✓ existing secondary data are appropriately used
- ✓ the health-related assessment efforts of different government entities (the MoH, civil defense, disaster management authority, etc.) and assistance agencies are coordinated – carried out jointly, whenever possible
- ✓ assessment teams have clear terms of reference, briefings, standard criteria, definitions and reporting formats, and necessary means of transport and communication
- ✓ appropriate specialists are mobilized for the assessment (e.g. in case of a chemical incident) and that necessary laboratory facilities are available for testing, when needed (this may include laboratories in other WPR countries to which samples can be sent)
- ✓ separate arrangements are made to provide emergency medical care, whenever possible, so that assessors can concentrate on assessment
- ✓ the assessment examines not only current needs but also the underlying causes of problems, risks and potential additional needs, available capacities and additional capacities needed, if any
- ✓ data/information are gathered from a wide range of sources, and the sources are recorded
- ✓ arrangements are in place to receive and rapidly collate and analyse incoming reports from health facilities, assessment teams, relief teams and other sources

When necessary, help to prepare/print assessment formats and guidelines, assemble and orient assessment teams, mobilize national and/or international specialists.

Provide feedback and share the information you have, and encourage others to do the same. Ensure that health workers in the affected area as well as all other interested parties receive copies of aggregate reports and analyses, and specific feedback on their own information when appropriate. Information that does not circulate is not being well used – it is useless.

Analysing assessment information

All reports and information must be carefully evaluated for consistency, plausibility, and possible personal biases, to judge whether the picture

provided is likely to be accurate. They should be compared with what would be normal for the time of year. Information gaps, changes and trends must be identified and conclusions be drawn. The analysis must then be communicated to decision-makers and be widely shared with the information sources and all other interested parties.

When required, WHO should help to analyse data, identify any gaps or need for verification, and ensure that recommendations for action are based on sound epidemiological analysis taking account of pre-existing conditions.

Analysing Information

Discuss information and seek consensus with health officials and others concerned on what is known, what is unknown, and the implications.

- ✓ *Work with best estimates and watch for trends*. Precise data may not be readily available but action should not be blocked on that account.
- ✓ *Disaggregate data*, whenever possible, according to the smallest geographic or administrative division, and between distinct population groups within a division.
- ✓ *Check consistency*. Compare/contrast information, particularly statistics, from a variety of sources. Double-check anything that is 'out-of-line' or seems doubtful.
- ✓ *Check plausibility*. Compare/contrast population figures reported from different sources and compare them with available baseline data, notably the latest census. Discuss any unlikely figures with the sources concerned and other interested parties.
- ✓ *Consider whether – and for which area – the data provide a reasonably accurate picture*. Review the origin and method of collection of each set of data. Thus determine the population groups, if any, to which the reported conditions (and any variations) apply.
- ✓ *'Map' the information*. Use maps to help identify patterns in the distribution of problems, and gaps in coverage. Distinguish and compare data from different areas.
- ✓ *Look for gaps*. If information is lacking from a particular area or sector, find out why and try to ensure that the gap is filled. An area or sector that does not report is an area/sector that has a problem.
- ✓ Beware of personal biases of those reporting.

Possible sources of error

- Deaths and injuries may be under-reported due to poor record-keeping or because health facilities may be inaccessible to many of the injured.
- Injuries may be over-reported due to double-counting (at first-aid centres, health centres, then hospitals).
- Morbidity figures/estimates from health care providers may not be accurate or representative (because they concern only those people reached by the health services).
- Data from health sources in the worst-affected areas may exaggerate the acuteness of need for the area as a whole (while those from less-affected areas may under-estimate the need).
- The needs of isolated areas (with disrupted communications) may be under-estimated and easily forgotten.

[Adapted from *Rapid health assessment protocols*, WHO 1999, p 50]

For further guidance, see:

- *Rapid health assessment protocols for emergencies*, WHO 1999, chapter 1
- *Emergency Field Operations*, EHA/FIELD/99.1, WHO-EHA, 1999, section 2.4
- *Communicable disease control in emergencies*, WHO [2003 expected], chapter 1
- *Rapid health assessment of refugee or displaced populations*, 2nd edition, Epicentre/MSF, 1999

5.2 Surveillance; managing health (and nutrition) Information

- ✓ Assure appropriate surveillance of priority aspects of public health and service delivery in order to identify priorities for public health action and detect – provide early warning of – any disease outbreaks
- ✓ Assure a good information management system to support the planning and management of emergency health interventions and advocacy for appropriate public health measures and resources

Following the initial assessment, information on health conditions and factors affecting health must be gathered and analysed on a regular basis. This includes data similar to that collected in normal epidemiological/disease surveillance but also other quantitative and qualitative information relevant to public health.

Surveillance must *always* be linked to an outbreak investigation and response system.

Objectives of the information/surveillance system

The objectives of the public health information/surveillance system (HIS) are to:

- provide regular information to:
  - identify evolving public health priorities
  - inform day-to-day planning and management decisions on public health action and resource allocations
  - support resource mobilization
- detect – provide early warning of – any outbreak of disease of epidemic potential to enable appropriate control measures to be taken
- monitor the implementation and outcomes of specific health interventions

A subsidiary objective is to provide information to improve preparedness for future disasters and emergencies.[18]

[18] Precise information on the incidence of disease may be of interest for research and future planning purposes but is not necessary for the management of the emergency and should be sought only when more immediate information needs are met.

HIS organization and management

Responsibilities must be clearly defined within a structure adapted to the situation. In general:

- a (central) surveillance team should be established at the level at which the overall emergency relief operation is being managed
- where the emergency-affected areas are large and/or dispersed, local (e.g. district level) surveillance teams should also be formed
- a surveillance focal point should be designated in each health facility

The central team would normally convened by the Emergency Health Coordinator (EHC) and include national epidemiological personnel and representatives of other health agencies and the authorities responsible for water and environmental sanitation. It would be responsible for putting an appropriate reporting system in place, monitoring the reception of reports, analysing data and preparing summary epidemiological reports and recommendations, and assuring outbreak investigations and response.

The local level teams would normally be convened by the local health coordinators and include clinical workers, community health workers, a water and sanitation specialist and a representative of the local authority.

What data? From where?

Data are required regularly on the following in all emergency/post-disaster operations:

- mortality (rates and causes)
- morbidity (disease incidence)
- environmental health conditions (basic/vital needs)
- service provision (programme activities)

Data are also needed on the following in certain situations:

- trauma: data on the number of injured by major injury-types – required when dealing with mass casualties
- demography: population figures and trends – required whenever there are significant population movements/displacement including temporary evacuations
- nutrition: malnutrition rates and deficiency disorders – required whenever food security is undermined, especially during droughts/crop failures and social and economic crises

The usual sources of these data are show in the table at the end of this section. Where they already exist, and in slow-onset or long-duration crises, sentinel sites may be used.

In addition, news media reports and unconfirmed public rumours should be noted and investigated. They may be important early warning signs. If they are unfounded, that needs to be demonstrated and action taken to defuse the rumours.

Reporting and surveillance priorities

Mortality, morbidity and trauma reporting from health facilities and emergency teams:

- should build on existing system(s) but reporting formats and frequencies be ***adapted*** to the needs of the situation and reports be received from emergency teams as well as existing health facilities
- should normally be ***syndrome-based***, following a sudden disaster (and in any situation where diagnostic skills and facilities are limited), and limited to a small number of priority conditions
- may be daily during the acute phase, then weekly

Ideally, surveillance priorities – and corresponding report formats – will have been defined for particular types of disaster or emergency situation as part of preparedness. If not, the EHC, following rapid consultations with the national epidemiological service and members of the emergency Health Coordination Committee (HCC), should determine the syndromes/diseases and other information to be included.

Standard case definitions must be used – normally those already established by the MoH and/or based on relevant WHO guidelines and health workers have corresponding guidelines and training.

Further details are provided in 6.1 and a sample reporting form in 9.8. (A separate format should be used for the immediate notification of syndromes/diseases of epidemic potential – see 5.4.)

For other data:

- Data on ***demography*** and ***nutrition***, when needed, will be gathered from the responsible authorities or agencies (either directly by the local surveillance team, see below, or by local health facilities).
- Basic data on ***health service provision*** will be reported by health facilities and emergency teams. Additional data (on access and quality) will be gathered directly by (local) surveillance teams and/or collaborating agencies.

Analysis, epidemiological reports and feed back

Each health service level (facility, district, province, etc.) should rapidly analyse the data received and, when needed, initiate action within the framework of pre-set standard procedures – but reporting up the chain should not be delayed.

The central surveillance team should prepare summary epidemiological reports of overall findings and recommendations for action and:

- present them to the national authorities and the HCC
- disseminate them quickly to local authorities, all organizations involved in public health activities, and donors, through newsletters and/or a Website
- provide feedback to the reporting units

As and when necessary, WHO should:

- ✓ Assure – help the MoH to strengthen or establish – an appropriate surveillance system
- ✓ Advocate for a single, unified health information system, standard data collection and reporting tools, and standardized case definitions to be used by all partners in the health sector
- ✓ Promote the preparation and dissemination of associated guidelines and the training of field personnel, as needed. Include criteria or thresholds at which field units should take specified actions
- ✓ Ensure that analysed information is rapidly fed back to reporting units and disseminated to all other interested parties

Information management

Good information management is the key to successful emergency response. It is also necessary to support requests for resources. (In addition, organising the inevitable mass of disparate information into a logical picture can help to reduce emergency managers' stress.) Essentials are:

- a good filing system where information is easily stored and retrieved, and clear procedures for the registration, distribution and filing of incoming information
- notes-for-the-record of meetings
- a diary of key events, decisions and the reasons for them

- an inventory of the contents of computer disks

An Operations Room can be invaluable to ensure that information flows and is used effectively – to manage the receipt and organization of information, to display it in an accessible manner and to manage dissemination.

The *HealthMap* database and geographic information system can be used to produce maps at village, district, country or sub-regional levels and show disease distribution or populations at risk of disease, see http://www.who.int/m/topics/health_map/en/index.html

A Website can be a convenient way of making information available to a large number of users in different locations. Information can be posted on ReliefWeb (http://reliefweb.int) can be used, or a local site be used or created.

WHO should help the MoH/EHC to establish an appropriate information system, operations room and/or Web sites, when needed.

Suggestions for an operations room are provided in 9.12.

Suggestions for a filing system within the WHO office are provided in 4.3.

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For further guidance, see:

- *Communicable Disease Control in emergencies*, WHO [2003 expected], chapter 3
- *Natural Disasters – protecting the public's health*, PAHO 2000, chapter 7
- *Epidemiological surveillance after natural disaster*, PAHO 1982
- *Emergency Field Operations*, EHA/FIELD/99.1, WHO-EHA 1999, section 5.1
- *WHO recommended surveillance standards*, WHO, 1999
- *Guidelines for prioritization of disease surveillance*,

Categories and sources of data	
Categories	**Sources**
Required regularly in all emergency/ post-disaster operations	
Mortality (crude and under-5 rates and causes)	Regular reports from hospitals, clinics, home visitors, community workers, religious leaders, grave watchers, (consolidated locally by health staff and/or local authorities)
Morbidity (incidence of disease and trauma)	Regular reports from health facilities, medical relief teams, community health workers (and/or sentinel sites) Immediate notification by health facilities/workers (for diseases of epidemic potential) Ad hoc surveys if regular reports are unreliable or their coverage is incomplete
Environmental health conditions & food (basic needs)	Reports from government departments and other agencies involved in water, sanitation, shelter and food distribution activities Observations from local health workers Ad hoc surveys of people's access to shelter, food, water, sanitation and hygiene facilities
Health service provision (immunization and other programme activities)	Regular reports from health facilities, outreach teams, EPI programme, other special programmes Ad hoc surveys of the quality/effectiveness/coverage of services, and of people's access to and use of services
Required (during the initial acute phase) whenever there are mass casualties	
Trauma cases	Reports from emergency medical teams and hospitals
Required whenever there are significant population movements/displacement including temporary evacuations	
Demography (population movements and trends)	Census data, local government, religious leaders *In temporary settlements*: registration records, site managers (government or agencies), religious leaders, rapid enumeration methods/surveys
Required whenever the food security of some groups is undermined, especially in droughts, social and economic crises	
Nutrition	Nutritional status surveys (by health and/or food distribution agencies)

5.3 Emergency, health and rehabilitation services

- ✓ Advise and assist the MoH and other organizations, if required, in providing emergency services, maintaining/re-establishing normal health care services, and in planning and organizing services for displaced people, nutritional rehabilitation where needed, and physical rehabilitation for disabled people.
- ✓ Assist the MoH and other authorities in obtaining necessary technical information and advice in case of a chemical incident or radiation accident.
- ✓ Advise and assist UNHCR and the MoH, as needed, in assuring services for refugees.

Search and rescue; emergency medical care

In most countries, search and rescue (SAR) and emergency medical care following a sudden disaster are taken care of by civil protection authorities together with the local health authority, Red Cross, national military forces and civil society organizations, supported by volunteers.

In the rare cases when external SAR assistance is required – and the even rarer cases when it can arrive in time to have a significant life-saving effect – it will be mobilized through the UN Resident Coordinator and OCHA-Geneva, or be arranged bilaterally.

Foreign mobile/field hospitals may have several limitations and are rarely useful – see box at the end of this section.

In case of a chemical incident, assist in obtaining necessary information from WHO-INTOX and/or the OECD/UNEP directory – see 7.9.

In case of a radiation accident, liaise with WHO's REMPAN and the relevant national authorities – see 7.10.

Health services for the resident population

The health facilities and programmes that operated in the area prior to the emergency must be maintained – restored when necessary – to assure basic health services for people who remain in their homes in the affected area. They may need to adapt their outreach services in particular to meet the particular needs of the current situation. Trained local volunteers and community health workers make important contributions.

Where necessary, these structures may be temporarily reinforced by additional personnel from other parts of the country and/or teams from agencies that are committed to supporting rehabilitation and the transition to ongoing development. The creation of parallel services should be avoided.

During the rehabilitation period, opportunities may be taken to consolidate or institute major changes in health care delivery as decision-makers may be receptive to new ideas and staff have been exposed to new ways of working. In some countries, clinical laboratory services, epidemiological surveillance, oral rehydration for diarrhoea patients, expanded immunization and maternal and child health programmes have been strengthened as an indirect result of floods.[19]

WHO should act to maintain its ongoing programmes in the affected area and, as needed, assist the MoH in planning activities to sustain/rehabilitate/ reinforce primary health care services and advise external agencies on how best to contribute to re-establishing and enhancing services that will be sustainable in the long term.

Services for displaced people

The international community, including WHO, often has an important role in assuring services for people displaced as a result of a disaster or conflict, especially in a less-developed country. This includes both internally displaced persons (IDPs) and refugees (people who have fled across an international frontier). In some cases the government may establish a special office/commission to assure assistance to such groups.

Where IDPs or refugees settle among the local population, the existing health services must be reinforced to cope with the increased population, and appropriate registration and accounting systems be put in place rapidly.

Where IDPs or refugees settle, or are placed, in locations ('camps') separate from the local population, services must be provided at those locations either as outreach from existing facilities or, if a camp is large, as a separate operation.

For IDPs, WHO should assist the MoH, as needed, in planning and organizing services for the IDPs in close collaboration with UNICEF and

[19] PAHO 2000, Natural Disasters – protecting the public's health, chapter 14

NGOs, and support the UN Resident Coordinator in encouraging the government to observe the UN *Guiding Principles for Internal Displacement*.

For refugees (and certain IDPs determined to be 'of concern' to UNHCR), WHO should advise and assist UNHCR and the MoH in planning services.

For further guidance, see

- 6.15 – *Services for displaced populations*
- 8.6 – WHO/UNHCR memorandum of understanding
- *UN Guiding Principles for internal displacement* and IASC Field Practice.

Nutritional relief and rehabilitation

Following a major sudden disaster, some people may have no access to food and/or be unable to prepare food for a few days at least. The civil protection authorities, the Red Cross and/or NGOs will normally provide food relief (including cooked meals or other ready-to-eat food) in such situations. WFP may assist when present.

In a slow-onset crisis and following a disaster that has severely undermined people's means of livelihood and/or local food production, some form of assistance may be needed for several months. Such needs may be met through welfare and/or public works programmes organized by the government, the Red Cross and/or NGOs. WFP may support dry ration distributions or food-for-work.

In such situations, particularly in areas where nutritional status was already poor, it will be important to monitor nutritional status and households' access to food, and to initiate remedial action (e.g. through supplementary feeding) if nutritional status is at risk. In extreme cases, nutritional rehabilitation through intensive, supervised therapeutic feeding (TF) may be required.

WHO should provide technical advice, especially in the context of coordination meetings, and seek to ensure that in-country nutritional expertise is well used and that TF activities are integrated with PHC, as much as possible.

For guidance on nutritional relief and rehabilitation, see:

- *The management of nutrition in major emergencies*, WHO 2000
- *Guiding principles for feeding infants and young children in emergencies*, WHO
- *Management of severe malnutrition*, WHO 1999

Post-hospital care and rehabilitation of the injured

Following some disasters there may be a need for considerable numbers of prosthetics, especially crutches and wheelchairs, for at least temporary use, and other supplies for post-hospital care and rehabilitation of injured people. Meeting these needs may be a major challenge for local health and social services, the Red Cross and NGOs. Specialized NGOs such as Handicap International (and ICRC in case of collective violence) are well-equipped to assess needs and prepare projects when there are large numbers of injured people.

If many people are injured, a small proportion will require long-term care at home, institutional care or specialized rehabilitation for months or years. This may include individuals who are paralysed, patients with severe brain damage, amputees and patients with chronic sepsis. Such care may be difficult to assure in many countries, and external funding may be difficult to find for long-term rehabilitation programmes. Some funding *may* sometimes be found to help initiate community-based programmes.

There may also be a need to review national legislation to ensure that the human rights of disabled people are protected, facilitating their reintegration into society.

WHO may, when needed:

- ✓ advocate for resources to provide prosthetics and other supplies for long term care, and
- ✓ help the MoH and other relevant Ministries to utilize appropriate surveillance or survey methodologies in order to document and monitor the numbers of patients requiring long-term care, explore options for providing at least a minimum level of service and prepare cost estimates that can be submitted to the government (national decision-makers) and interested international donors/ agencies.

For detailed guidelines, see:

- *Home-based long-term care*, WHO technical report series 898, Geneva 2000
- *Promoting independence following a spinal cord injury: a manual for mid-level rehabilitation workers*, World Conference for Physical Therapy, World Federation of Occupational Therapists, and WHO 1996 (WHO/RHB/96.4)
- *Life after injury: a rehabilitation manual for the injured and their helpers*, L Hobbs, S McDonough, A O'Callaghan, This book can be obtained through Liz Hobbs (lizhobbs@ozemail.net.au) or Third

World Network, Malaysia (http://www.twnsideorg,sg; email: twnet@po.jaring.my)

Psychosocial and mental health services

Following disasters, many people (including especially children and elderly people) need time and some social support to overcome their intense emotional reactions and regain a normal level of psychosocial functioning. A small percentage may need psychological interventions and treatment. Such support and treatment must be carefully managed and timed.

WHO should provide advice and guidance, when needed, on the planning and management of such support and treatment, and the training of primary health care and other community workers.

For guidance, see 6.15.

Offers and Requests for External Medical Teams

Clearly differentiate between the *immediate* life-saving needs for search, rescue and emergency medical care on the one hand, and the type of health assistance required for longer-term rehabilitation on the other. Each requires a distinct policy and strategic approach.

Ascertain whether the outside medical team can become operational during the first 24 hours, in time to save lives. A lack of medical attention to disaster victims is often caused by logistical problems (access to the site, transportation, weather, etc.) rather than by a lack of medical volunteers. In this case, external medical teams will only compound the problem.

When a lack of health human resources *is* the problem (rather than logistical or operational constraints), target requests for assistance to neighbouring countries or other states in the sub-region.

Accept only medical volunteers and teams that meet the following criteria:

- sponsored by a well-known agency that can vouch for their qualifications
- familiar with the language, culture and level of technology appropriate to the situation
- self-supported and able to work without sophisticated support
- willing and able to remain for a reasonable period of time

Inform the mass media, diplomatic missions, consulates and other agencies of these criteria and policies, and clarify issues of registration, liability, coverage, and supervision *before* requesting or accepting medical or health teams.

Extract reproduced from PAHO,

< http://www.paho.org/english/PED/te_meds.htm >

Considerations relating to donated field hospitals

1. The time needed to establish a fully operational mobile hospital may be several days, while most casualties resulting from the immediate impact require treatment in the first 24 hours.

2. The cost of such a hospital, especially when airlifted, can be prohibitive and is often deducted from the total aid package given by the governmental or private relief source providing it.

3. Such hospitals are often quite advanced technologically, which raises the expectations of the people they serve in a way that will be difficult if not impossible for local authorities to meet during the recovery period.

Finally, it must be recognized that such hospitals are of great public relations value to the donor agency, which may inappropriately urge their use.

[Extract reproduced from PAHO 2000, *Natural Disasters – protecting the public's health*, chapter 6]

5.4 Disease control

✓ Help to ensure that suspected disease outbreaks (including food poisoning) are rapidly investigated and that appropriate preventive/ control measures and treatment regimes are implemented.

General principles

The keys to disease control are:

- preventive measures including immunization, personal, food, water and environmental hygiene are implemented effectively
- an effective surveillance system through which any case of a disease of epidemic potential is rapidly reported to decision-makers, and changes in rates mortality and morbidity for the principal endemic diseases are detected by regular reporting and analysis (see 5.2)
- access to reliable laboratory services to establish the cause of any disease manifestations so that correct control measures can be taken, and adequate guidelines and supervision to ensure that laboratory services are not overloaded by excessive testing (see 6.5)
- rapid investigation of any suspected disease outbreak using standard protocols to identify the source of the outbreak[20]
- simultaneous action, in case of a confirmed outbreak, to:
  - reduce the number of cases through preventive measures, and
  - reduce mortality due to the disease through early case detection and effective treatment
- prompt and regular dissemination of information to the population to avoid misinformation and defuse false rumours, and to enable people to understand the risks and take appropriate action to protect themselves
- coordination, as action is often required by various government departments (not limited to MoH), and other agencies (including UNICEF, the Red Cross and NGOs) may be willing to provide assistance – and may take initiatives – in relation to the control of particular diseases

[20] For sample protocols, see *Communicable disease control in emergencies*, WHO 2003 [expected]; *Rapid health assessment protocols for emergencies*, WHO 1999, chapters 2-5; and *Refugee health: an approach to emergency situations*, MSF, 1997, MacMillan

The major contributing factors and preventive measures for the most common diseases are summarized in 6.2. Hygiene promotion and assuring adequate quantities of safe water, sanitation facilities and appropriate shelter, living space, clothing and blankets are important common elements.

WHO should:

- ✓ provide advice and guidance, when needed, to ensure that preventive measures are taken and that appropriate measures are taken promptly in response to an outbreak, and WHO formally notified when required
- ✓ support the MoH and other government emergency coordination bodies in ensuring that the efforts of the various agencies are coordinated, and
- ✓ take the lead within the UNDMT in ensuring such coordination among international agencies, taking account of the in-country capacity of each agency and the wishes of the government
- ✓ liaise with WPRO-CSR and the WRs in neighbouring countries whenever and outbreak has crossed, or is likely to cross, an international frontier

Where needed, WHO may:

- ✓ help to ensure the proper planning of outbreak investigations and analysis, including mobilizing technical assistance
- ✓ provide emergency medical and laboratory supplies
- ✓ arrange to send specimens for analysis at collaborating centres in the region (when analysis cannot be done in the country or confirmation is required)

When needed, the above activities can often be supported from the ICP. In some cases, additional 'emergency' funds may need to be mobilized.

General preventive measures are summarized in 6.2. Specific measures for cholera, measles and some other common diseases of epidemic potential are outlined in 6.3 and 6.4. Guidance on outbreaks of food poisoning is in 6.14.

An ***outbreak investigation kit*** is being developed by WPRO-CSR including personal protective equipment, basic laboratory equipment and reagents, blood sampling supplies, specimen collection equipment, specimen storage and shipping supplies, and office stationery. Separate, modules are envisaged for communications and camping equipment. The full contents lists will be available on the WPRO-CSR website. Requests for these kits, which cost close to US$4,000 and will be held in Manila, should be addressed to WPRO-CSR, copied to EHA and SUP.

For details regarding the packaging and shipment of samples for testing, see:

- *Guidelines for the safe transport of infectious substances and diagnostic specimens*, WHO/EMC/97.3 http://www.who.int/emc/pdfs/emc97_3.pdf
- http://www.who.int/csr/resources/publications/surveillance/WHO_CDS_CSR_EDC_2000_4/en

5.5 Environmental health measures[21]

- ✓ Help to ensure that people – especially any people in temporary settlements and other identified high-risk areas – have basic shelter, water, sanitation facilities and other essential environmental health services, and maintain adequate standards of hygiene.
- ✓ Help to ensure inter-sectoral and inter-agency coordination in relation to environmental health measures.

Environmental health involves a wide range of activities many of which (notably shelter, water supplies and sanitation) are usually the responsibility of government entities other than the MoH. Similarly, a large number of agencies (including UNICEF) may be engaged in development activities in the sector and/or be ready to provide emergency assistance. Coordination is crucial!

When needed, WHO should:

- ✓ establish and maintain working relationships with entities responsible at national level for shelter, water supplies and sanitation to be able, jointly with the MoH, to discuss technical standards and, when needed, provide technical advice and expertise
- ✓ support the MoH and other government emergency coordination bodies in ensuring that the environmental health efforts of the various agencies are coordinated
- ✓ take the lead within the UNDMT in ensuring such coordination among international agencies, taking account of the in-country capacity of each agency and the wishes of the government

Environmental health (EH) service priorities

Environmental health priorities in the acute emergency phase include:

- providing facilities for people to excrete safely and hygienically
- protecting water supplies from contamination
- providing a minimum amount of water for drinking, cooking and personal and domestic hygiene, and water for health facilities, feeding centres, sewerage systems, etc.
- ensuring that people have enough water containers to collect and store water cleanly
- ensuring that people have sufficient cooking utensils, equipment and fuel to cook and store food safely
- ensuring that people have the knowledge and understanding they need to avoid disease
- ensuring that people have soap for hand washing
- containing or removing sources of chemical or radiological contamination, or evacuating people, to ensure they are no longer exposed to these hazards

Key elements are a) providing early and regular information to people concerning any likely contamination or water, measures they should take to reduce health risks and the measures being taken by the health and other authorities, and b) ensuring that people have the means to maintain personal hygiene.

Next priorities include:

- organizing the drainage of wastewater and the collection and safe disposal of solid wastes, including medical wastes at health facilities
- reinforcing (or establishing) food protection and vector control measures

Immediate or short-term activities should be directed to restoring pre-disaster services through emergency repairs – improvisation where necessary – followed by gradual, incremental improvement. Measures to upgrade systems and reduce vulnerability to future disasters will be included in the rehabilitation phase, if resources are available.

Geographic priorities for EH action

Attention should be given to localities in order of priority as follows:

1. Urban areas and their peripheries with high population densities and severe disruption of services, and temporary settlements/camps for evacuated and displaced people
2. Areas with high population densities and moderate disruption, or those with moderate densities and severe disruption
3. Low-density urban areas and rural areas

[21] This section is based largely on *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003.

Assessing the EH situation, needs and resources

Preliminary information required to plan the assessment includes: population movements; areas partially and/or totally evacuated; locations of temporary settlements, hospitals and other health facilities and relief worker settlements. These should be shown on a map.

Rapid surveys should determine:

- the extent of damage to public water supply, sanitation and waste disposal systems (and to food production, storage and distribution networks)
- the likelihood of faecal contamination of water sources and what needs to be done to protect the sources and prevent contamination during distribution
- the immediate unmet needs of people for water, basic sanitation, shelter and food, and the capacities of different groups to help themselves
- the adequacy of hygiene – personal, food and water hygiene – at household level, feeding centres, health facilities, etc.
- the functioning operational capacity for delivering basic EH services and the resources available (human resources and readily available equipment, materials and supplies for EH action)

Priority should be given to identifying areas where water supplies have been disrupted or contaminated and no safe alternative sources are available.

The sanitary survey should be combined with bacteriological testing and include catchment mapping that identifies sources and pathways of pollution. Standard reporting formats are essential: for an example, see *Guidelines for drinking water quality*, 2nd ed. Vol. 3, *Surveillance and control of community water supplies*, WHO 1997.

When required, WHO should assist in organizing/coordinating sanitary surveys, collating and analysing the findings, and defining priorities.

Organizing for EH action

The following have often proved to be useful:

- Self-contained mobile EH teams, coordinated by a field supervisor, responsible for: assessing environmental health needs; liaising with local health workers; identifying needs for priority water supplies, sanitation, vector control and surveillance in specific operational areas.
- Separate teams – human and material resources – assigned to provide a) basic water supply to the affected population, and b) water supplies for hospitals, nutrition centres, etc.
- Community-level public health committees, including women and local/camp authorities, to help organize health promotion activities and to mobilize residents to cooperate with EH teams in protecting water supplies and organizing/supporting sanitation and other public health actions

Teams of 5 to 7 people with complementary skills and levels of experience are often the most effective. To the extent possible, each team should have its own transportation, communications and supplies for subsistence and professional activities. They should be in frequent radio or telephone contact with their supervisor for reporting, receiving information and requesting support.

A monitoring system is required to ensure that the water supply activities are carried out as planned and provide timely indications of problems and unmet needs. Periodic reviews of the situation and the response should ensure that the response remains relevant to the needs and resources of the affected communities.

Information should be widely disseminated about available EH services and which authorities should be notified of specific problems.

Mobilizing and managing EH human resources

Good management is needed to ensure that locally available EH human resources are used effectively.

If too few public sector environmental health workers are available, they may be supplemented by private sector workers including: industry-based and consulting civil and sanitary engineers; private laboratory personnel; dairy workers; industrial cleaning staff; railway and airline sanitation workers; commercial pest-control operators; teaching staff at universities and institutes with expertise in environmental health and sanitary engineering.

The local population must be encouraged, and be provided with necessary guidance, to assist in providing needed resources and services.

When required, WHO should help to mobilize expertise from in-country and external sources to plan and manage environmental health interventions.

If essential EH supplies or equipment are lacking, and are not being provided by other agencies or donors, WHO should seek to mobilize the necessary

assistance. This may be done either by proposing a WHO project and seeking funding or by encouraging other donors or agencies to provide the required assistance directly.

International assistance may include:

- expertise and assistance with planning and implementing activities
- components for emergency repairs to damaged water-supply and sewerage systems
- tanks, pumps, piping components and tools for emergency water supplies for large concentrations of people
- resources (funding for vehicles, fuel and spare parts) to support the emergency delivery of water by road tanker
- laboratory and water-testing equipment

If international experts or teams are mobilized, they should integrate and work with local specialists. The government should establish guidelines on the employment of international assistance teams, e.g.:

- knowledge of the country or experience in the technical area concerned– ability to meet internationally recognized standards for qualifications and proficiency
- self-sufficiency in personal needs and equipment
- commitment to remain in country for a certain length of time, or until certain activities have been completed
- ability to react sufficiently quickly and with sufficient staff and other resources
- capacity and commitment to enable members of the local population to participate in their operations

It is important to avoid situations in which teams arrive with high-technology equipment, remain for only short periods of time, and then withdraw without stabilizing the situation in the longer term.

Common environmental health effects of natural disasters

Adapted from *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003

Most common effects on environmental health	
Water supply and wastewater disposal	Damage to civil engineering structures Broken mains Damage to water sources Power outages Contamination (biological or chemical) Transportation failures Personnel shortages System overload (due to population shifts) Equipment, parts, and supply shortages
Solid waste handling	Damage to civil engineering structures Transportation failures Equipment shortages Personnel shortages Water, soil, and air pollution
Food handling	Spoilage of refrigerated foods Damage to food preparation facilities Transportation failures Power outages Flooding of facilities Contamination/degradation of relief supplies
Vector control	Proliferation of vector breeding sites Increase in human/vector contacts Disruption of vector-borne disease control programmes
Home sanitation	Destruction or damage to structures Contamination of water and food Disruption of power, heating fuel, water supply or waste disposal services Overcrowding

For further detail, see *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003

5.6 Delivering and managing supplies[22]

- ✓ Help, as needed, to ensure that international donations of medical and health supplies are appropriate – in line with international guidelines – and that they are efficiently received and managed
- ✓ Use funds available to WHO, and mobilize additional funds when needed, to procure and deliver urgently needed supplies and equipment that are not being provided by other agencies or donors. Coordinate closely with UNICEF and UNFPA

There may be an urgent need for specific medical supplies to treat casualties and patients, some equipment and supplies for laboratories and blood banks, some vaccines and cold-chain items, and disability aids, but the arrival of large quantities of unsolicited donations creates unwanted logistic and management problems.

The need is to ensure that locally available resources are managed efficiently, and that donations meet identified needs and are delivered in a manner that facilitates their classification and use.

Internationally-agreed guidelines for drug donations are provided in *Guidelines for drug donation*s, WHO 1999 (in HeLiD). For a synthesis of some of the key elements, see: 6.18.

Needs and realities

Immediately following a disaster, the most critical health supplies are those needed for:

- treating casualties (items such as x-ray film and developing chemicals, casting plaster, and dressings) and
- preventing the spread of communicable diseases (including disinfectants, a few essential drugs, measles vaccine, etc.)

Following the initial emergency phase, needed supplies include sanitary engineering equipment, construction materials and those for basic health care including continuing treatment for chronic conditions.

Localized shortages in the emergency zone during an initial period may arise from disruptions in normal supply channels and difficulties in locating, accessing, sorting, classifying, inventorying, transporting and distributing supplies in a disaster zone, rather than from an absolute shortage in the country.

In case of a sudden disaster, the first international humanitarian assistance shipments may arrive at the country's airports, seaports or land border crossings within 24 to 72 hours of the event, but unloading, sorting, storage and distribution will take much longer. The majority of these supplies usually arrive in the affected area *after* the most urgent health needs have already been met with local means. The bulk of international donations, therefore, should be planned to replenish national stocks and sustain services during the post-disaster phase.

The Government, however, should restrict its requests – and WHO restrict its recommendations – to items in the approved list of essential drugs and to quantities that are commensurate with the numbers of people affected by the disaster.

Informing and advising donors

The government should establish a clear national policy regarding donations and arrangements for the receipt of emergency supplies. Within that framework, the MoH should issue an early statement informing the international community and potential local donors concerning:

- the focal point – the emergency health coordinator (EHC) or another designated official – whom donors should consult before purchasing, collecting or shipping donations of health or medical supplies
- the value of – preference for – cash donations that enable a) resources to be directed to meeting the most urgent needs as they evolve, and b) appropriate supplies to be purchased locally, in neighbouring countries or from reliable international sources, as appropriate
- the types and quantities of supplies and equipment that are needed, and
- items that are *not* needed as donations

Statements of what is and is not needed should be up-dated regularly.

WHO should:

- ✓ assist the MoH, as needed, in preparing and disseminating such information/guidelines
- ✓ actively encourage potential donors to contribute within the framework of those guidelines (and to accept to provide supplies to replenish national stocks drawn down during the early days of the emergency)

[22] This section is largely adapted from *Natural Disasters – protecting the public's health*, PAHO 2000, chapter 12 *Managing humanitarian relief supplies*.

✓ provide advice to international agencies and donors concerning quality requirements, packaging and delivery arrangements, etc.

Requesting and delivering drugs

Requests, and deliveries, of drugs should be restricted to essential drugs (see: *Use of Essential Drugs: (Tenth Model List). Seventh Report of the WHO Expert Committee*, Technical Report Series No. 882, WHO Geneva: 1997)

Standard kits of drugs and essential supplies can be useful especially during the early stages of emergency response – see box below. Details of the kits available through WHO are provided in 9.16:

- The ***WHO New Emergency Health Kit*** (NEHK98) , which is also provided by UNICEF and a number of NGOs and is available in several options, is designed to cover the primary health care needs of 10,000 people for an initial 3 months in most situations (but especially for displaced people) – see 9.17
- The Italian trauma kits and the MSF burns kit can be useful following mass casualty incidents
- The WPRO cholera kit (or the Italian diarrhoea and cholera kits) can be useful in response to an outbreak of acute diarrhoea, including cholera

All drugs in these kits have shelf-lives of at least 18 months or 75% of their maximum shelf-lives.

A comprehensive reproductive health kit is available through UNFPA – see http://www.unfpa.org/… for details.

Delivering kits, or bulk items

The delivery of supplies in ***pre-packed kits*** facilitates handling and distribution. The use of kits simplifies logistics and enables incoming supplies to be rapidly distributed.

Kits can therefore be useful at the onset of an emergency and in situations where there is limited capacity to sort and inventory incoming stocks, and to assemble and dispatch supplies in response to orders from individual facilities.

The contents lists may also be taken as a basis for establishing lists of essential needs (if the MoH does not already have its own list of basic medical supplies to be made available immediately after a disaster).

When drugs are provided in ***bulk***, donors should be encouraged to provide large quantities of a few items.

In principle, drugs close to or past their stated ***expiration dates*** should not be accepted. However, such drugs will often be offered or sent, and the MoH must be prepared to deal with such offers and arrivals. Expiration dates are very conservatively set for some drugs and, with suitable storage, the drugs remain safe and potent for much longer. When such drugs are of particular value, health authorities should decide whether reference laboratory testing and re-certification should be arranged. There may be a negative public reaction nationally or internationally if this course is pursued.

Donations of ***blood*** from abroad are rarely needed. Equipment to collect blood, or a suitable supply of blood substitutes, may be more appropriate (if needed at all), see 6.16.

As and when needed, WHO should:

- ✓ help the MoH/EHC to review requirements and available stocks, to arrange the rapid transfer of needed supplies from other parts of the country where they are in stock and, when needed, prepare appropriate requests for international assistance in line with the general guideline in the box below
- ✓ help to coordinate the procurement and delivery of supplies by different donors and agencies, particularly with UNICEF and UNFPA

When urgently needed items are not being provided by other donors or agencies, WHO may use (or release to the government) available resources, or seek to mobilize resources from donors, to provide those items: see 4.2.

Requesting International Supply Assistance

To maximize the benefit of scarce international assistance to the disaster-affected country, the following guidelines should be followed:

- ✓ A single government official should be designated for channelling emergency international appeals.
- ✓ Potential donors should be asked to provide large amounts of a few items, or kits.
- ✓ The request should clearly indicate the order of priority, amounts and formulation (e.g., tablets or syrup). Vague requests for «anti-diarrhoeal drugs,» «antibiotics,» or «vaccines» must be avoided. The amounts requested should be compatible with the size of the affected population and the anticipated occurrence of trauma and disease.
- ✓ Requests should be limited to drugs of proven therapeutic value and

reasonable cost. Emergency situations do not justify requests for expensive and sophisticated drugs (especially antibiotics) and equipment that the country could not afford before the disaster.

- ✓ Perishable products and vaccines should not be requested unless refrigeration facilities are available and special handling arrangements can be made at the airport.
- ✓ Donors should consult with the MoH, or WHO, before shipping supplies on the request list, otherwise (when the same list is sent to several donors) some items may be shipped by a number of suppliers and others not at all.

Some donor countries and agencies are reluctant to replace local medical stocks that have been used for emergency purposes and instead want to supply emergency needs directly. This problem is lessened if donors are informed that the depletion of local stocks because of the emergency will restrict rehabilitation of normal medical services. Donors should also realize that their consignments of supplies often cannot be received and distributed in time to be used in treating casualties.

Note that WHO's procurement rules do not recommend local procurement of drugs, and certainly not locally-assembled drug kits, due to problems of quality control. When establishing specifications for other supplies for which the country office has little experience, refer to *Emergency Relief Items: compendium of basic specifications*, vol. 2, *Medical Supplies and equipment, selected essential drugs*, UNDP/IAPSO

Basic principles of supply management

- ✓ Effective use is made of in-country stocks (held by the MoH, other government entities, the private sector, the Red Cross and NGOs).
- ✓ Requests for external assistance are limited to resources not available in the affected area.
- ✓ The time required for shipment and distribution is considered when requesting supplies.
- ✓ Donors respond to identified needs and do not send unsolicited donations.
- ✓ There is coordination among the MoH/health sector, civil protection agencies, customs agencies, Red Cross societies and other NGOs capable of mobilizing national and international assistance to facilitate the orderly delivery of needed supplies.
- ✓ There is careful coordination – preferably an integrated management system – for all elements of the supply/logistics chain: acquisition (from in-country stocks, by local purchase, imports, donations or loans); transport to the area; storage and inventory management; distribution to users
- ✓ Priorities are assigned for each shipment to the affected area to meet the most urgent needs and make efficient use of transport capacity.
- ✓ Supplies sent into the affected area are packaged and labelled to facilitate sorting, storage and use, and to minimize the time health personnel have to spend in such tasks.
- ✓ There is transparency and accountability: information circulates among agencies, records are kept and reports issued to the government and donors.
- ✓ National capacity is strengthened to ensure the above so that supplies are effectively managed from the moment donors offer assistance and through their arrival and distribution in the affected area.

The supply management system

The existing health/medical supply management system should be used if it is up to the task.

If existing systems are not adapted to the management of large numbers of donations and the rapid inclusion of additional items and users, the SUMA system may be used (see box below).

The keys to good supply management are:

- rapid, systematic and accurate entry into the inventory of details of receipts and dispatches at all locations
- good communications, and
- the production of regular reports

WHO should:

- ✓ ensure that an efficient supply management system is in place and, when needed, propose SUMA and help to install and operate that system
- ✓ work with the MoH, other concerned government entities, the UNRC and other agencies to ensure that appropriate priority is given to medical and public health supplies in plans for the use of available transport capacity

SUMA
SUMA, created by PAHO, has been adopted by WHO as a standard for the

general management of emergency supplies. The SUMA software and guidelines for its use are on the web.

The main tasks of a supply management system (such as SUMA) include:

- Sorting and identifying/classifying humanitarian assistance supplies
- Rapidly identifying and establishing priorities for the distribution of supplies urgently needed by the disaster-affected population
- Maintaining inventory and distribution control in warehouses
- Entering all incoming supplies in a database (national authorities use reports generated from the database for decision-making)
- Registering consignments that are delivered to consignees
- Keeping disaster managers informed about items available for distribution
- Keeping national authorities and donors informed about items received

SUMA can be used for all kinds of relief items

For guidance on the disposal of expired or unwanted items, see Guidelines for the safe disposal of unwanted pharmaceuticals in and after emergencies, WHO 1999 (in HeLiD)

For further details including guidance on storage, transport and other practical aspects, see: Humanitarian Supply Management and Logistics in the Health Sector, PAHO/WHO 2001 (in HeLiD).

Joint UN logistics

In case of a major emergency, the UN Joint Logistics Centre (UNJLC) may establish a unit, integrated in the local UN coordination structure, to coordinate the planning and use of logistics capabilities of humanitarian agencies. The establishment of such a unit may be requested by any agency, but would normally be proposed by the UNRC/UNDMT, and an inter-agency decision be made through headquarters-level consultation among IASC members.

For details on the UNJLC, see http://www.unjlc.org.

5.7 Coordination of Health Assistance[23]

- ✓ Support the MoH in coordinating action within the health sector, especially international assistance and the activities of international agencies and NGOs
- ✓ Work with and through the UNDMT, and with the UN resident coordinator, to a) ensure coordination among all members of the UNDMT involved in health-related activities and b) facilitate coordination of all public-health related actions including those which are the responsibility of ministries other than the ministry of health

Coordination is vital, but often difficult, in emergencies when needs are extensive and resources and time are limited. It is even more important, and more challenging, when many actors are engaged in health-related activities including some who may not be familiar with the country, its structures and public health policies.

'Coordination' is not an end in itself and a coordination meeting does not necessarily result in meaningful coordination. The aim is to ensure that the efforts and activities of different parties complement each other to meet priority needs as effectively and efficiently as possible. This means:

- promoting common understandings of the situation, needs and priorities, and teamwork (partnerships) in addressing them
- avoiding misunderstandings, gaps, duplication of effort and, above all, competition

Structures for health sector coordination

In most situations:

- an Emergency Health Coordinator (EHC) should be designated by the MoH, if not already done as part of preparedness planning
- an emergency Health Coordination Committee (HCC) meeting is essential. It should be chaired by the MoH and bring together concerned government departments, UN agencies and NGOs. Interested donors may also attend. Meetings should be frequent at the start of a crisis when changes are fast and many

23 This section concerns the overall coordination of activities in the health sector. WHO's own relationships with other agencies, which can contribute to overall coordination, are discussed in 1.5.

WHO should support the designated EHC and, when required/requested, provide secretariat services for the HCC. Exceptionally, WHO may co-chair and convene coordination meetings.

In a major emergency, there may be need for:

- a health sector operations room – an 'emergency health information and coordination centre'
- sub-committees on key topics, e.g.: surveillance and epidemic control; medical and health care services; water and sanitation; nutrition; health supplies and logistics, and
- health coordination committees/meetings at district level

As and when needed, WHO should:

- ✓ ensure that arrangements for coordination are put in place at the outset, and that meetings are regular, well managed and constructive
- ✓ support the health sector operations room and sub-committees, when needed

The following samples/examples may be useful:

- typical terms of reference for an EHC, see 9.10
- typical resources for an operations room, see 9.11

In case of a major refugee emergency, UNHCR may assign a refugee health coordinator. In such cases, UNHCR consults WHO (through EHA-HQ) to identify suitable candidates, see 8.6.

Promoting health sector coordination

When needed, WHO should facilitate effective coordination in some or all of the following ways:

- ✓ establishing and maintaining good relationships with all concerned parties/partners and understanding their mandates, interests and capacities – this includes UNFPA, UNICEF, the Red Cross/Red Crescent and major NGOs
- ✓ ensuring that information about the health situation and health-related activities circulates among all concerned parties/partners – taking the initiative, when necessary, to support the MoH in designing formats and collating and disseminating information regularly, preferably in advance of HCC meetings
- ✓ ensuring that the EHC has up-to-date information on the organizations that are active in particular localities and the specific services or health-

related activities they assure, and helping to ensure that all priority needs and areas are covered

- ✓ helping the MoH/EHC, if required, to coordinate the screening and assignment of foreign health/medical teams and NGOs taking account of the needs of different areas and the capacities of the teams/organizations concerned
- ✓ providing HCC meetings with authoritative technical analysis of the available information and the conclusions to be drawn
- ✓ identifying information that needs to be verified and gaps that need to be filled
- ✓ helping to generate consensus on priorities, objectives and strategies, and on responsibilities for follow-up action and the provision of services in different areas
- ✓ helping to keep discussion during meetings focused on the facts (especially surveillance data) and important issues (such as deficiencies in service provision)
- ✓ being precise in your own statements and encouraging others to do the same
- ✓ ensuring that concise summary minutes of meetings are promptly prepared and circulated to all participants, invitees who did not attend and other interested parties
- ✓ ensuring that district personnel and field teams receive feed-back on discussion/decisions at coordination meetings as well as on their reports/data

In all cases, support the MoH in taking the lead; emphasize WHO's role of facilitation and guidance; have partners appreciate your capacities and respect your limitations; help to create a climate in which partners want to contribute information and listen to others; acknowledge people's efforts; give positive feedback; be tactful and constructive in any criticisms but do not compromise on technical correctness.

Remember that your ability to facilitate coordination and influence the actions of other people and organizations depends on inter-personal relations and respect. Be careful in what you say and how you act at all times, including at social events.

The following may be useful:

- draft 'Principles of Engagement', to be agreed and signed between the MoH and organizations working in the health sector, see 9.12
- sample health sector coordination formats, see 9.13
- team building – hints for an emergency health coordinator, see 9.14
- how to chair/facilitate a meeting, see 9.15

Promoting inter-sectoral coordination for public health

In most situations the UN Disaster Management Team (DMT), chaired by the UN Resident Coordinator,[24] will meet regularly during an emergency to assure concerted action by UN agencies and facilitate coordination of all international assistance.

WHO should take the lead – offer leadership – within the UNDMT on all aspects of public health and work with the UN Resident Coordinator and other members of the UNDMT to help ensure coordination among all entities of government and other organizations that are not part of the HCC but whose activities are important for public health. (See 1.4)

Typically, the entities concerned include those with responsibility for food, water supplies, sewerage systems, refuse disposal, housing/shelter, etc.

The WR/CLO should promote and facilitate direct contacts among them and the MoH.

For further guidance, see:

- *Natural Disasters – protecting the public's health*, PAHO 2000, chapter 5
- *Emergency field operations*, EHA/FIELD/99.1, WHO-EHA, 1999, sections 4.3, 5.2
- *Communicable disease control in emergencies*, WHO [2003 expected], chapter 5 *Coordination*

[24] In a major humanitarian crisis, the UN Emergency Relief Coordinator/ Under-Secretary General for Humanitarian Affairs may designate a Humanitarian Coordinator, usually but not always the UNRC.

PART 3

REFERENCE MATERIALS, TOOLS & SAMPLES

6. TECHNICAL NOTES

Surveillance and disease control

6.1 Surveillance during an emergency

6.2 Preventive measures for common diseases

6.3 Cholera control

6.4 Measles and other diseases of epidemic potential

6.5 Laboratory facilities and testing

Environmental health

6.6 Hygiene practices that protect health

6.7 Water supplies

6.8 Water testing and treatment

6.9 Sanitation, refuse management and rodent control

6.10 Management of dead bodies (cadavers)

Food and nutrition

6.11 Nutritional assessment

6.12 Nutritional requirements and interventions

6.13 Breast-feeding and breast-milk substitutes

6.14 Food safety and food poisoning

Special needs

6.15 Psychosocial/mental health aspects

Health service management

6.15 Services for displaced populations

6.16 Mass casualty management

6.18 Blood supplies

6.18 Drug donations

6.1 Surveillance during an emergency[25]

Surveillance is 'the on-going systematic collection, analysis and interpretation of (health) data in order to plan, implement and evaluate public health interventions.'[26]

Basic principles - design issues

The design of the surveillance system should be based on answers to the following basic questions:

- What is the population under surveillance: displaced population, local population?
- What data should be collected?
- Who will provide the data?
- What is the period of time during which data will be collected?
- How will the data be transferred (data flow)?
- Who will analyse the data and how often?
- How will reports be disseminated and how often?

Arrangements for analysis must be defined before data-collection tools and methods are decided upon.

The design must also take account of the following basic principles:

- ✓ *Standardisation* – data from different sources can be compared, compiled and analysed
- ✓ *Continuity* – changes over time can be tracked
- ✓ *Simplicity,* to facilitate data collection and reporting from a range of sources with the least effort and cost

Any new reporting/data collection formats should be:

- designed to facilitate data entry (e.g. by EpiInfo), and include only information items that will actually be used
- field tested to ensure that the data yield the information required (meet the objectives defined for the system)

[25] Adapted from Emergency Field Operations, EHA/FIELD/99.1, WHO 1999, Natural Disasters – protecting the public's health, PAHO 200, chapter 7, and *Communicable Disease Control in emergencies*, WHO [2003 expected]
[26] From *Communicable disease control in emergencies*, WHO [2003 expected]

Reporting must be ***regular*** and sufficiently ***frequent*** to enable timely action to be taken and resources to be directed according to evolving priority needs. It may be daily during the initial acute phase, then weekly.

A sample format is provided in 9.8. For other formats for a morbidity reporting, a mortality report, an outbreak alert report and case investigation report, see:

- *Communicable Disease Control in Emergencies*, WHO [2003 expected]
- *Communicable Disease Tool Kit for the Iraq crisis*: http://www.who.int/infectious-disease-news/IDdocs/whocds200317/index.htm

Setting disease surveillance priorities

Following a mass-casualty event:

- the focus should be on trauma during the first few days to enable patients to be distributed among available emergency facilities and plans to be drawn up for longer-term care and rehabilitation

In other emergencies:

- a limited number of priority syndromes/diseases should be chosen reflecting the main health risks in the prevailing situation
- chronic and degenerative diseases, and mental health syndromes, should normally be included only once the emergency phase is over

Priority syndromes/disease conditions should be chosen on the basis of the following questions:

- Does the condition result in a high disease impact (morbidity, disability, mortality)?
- Does it have a significant epidemic potential (e.g. cholera, encephalitis, measles)?
- Is it a specific target of a national, regional or international control programme?
- Will the information to be collected lead to significant and cost-effective public health action and/or help to measure the effectiveness of services

Based on experience from many emergency situations, the following are major syndromes/diseases that should always be considered as priorities and be monitored systematically in the acute phase of an emergency:

- bloody diarrhoea

- acute watery diarrhoea
- suspected cholera
- lower respiratory tract infection
- measles
- acute neurological syndrome

Other diseases that are endemic or that represent an epidemic threat in the area, e.g. malaria, may have to be included.

Where there is nutritional stress, severe malnutrition should be reported. If there is no separate nutritional surveillance system but growth monitoring and other nutritional data (on wasting and/or birth weights) are collected at health facilities, these data should be reported on a monthly basis in a separate section of the surveillance form.

In the post-emergency phase, additional diseases that should be reported include:

- tuberculosis
- HIV/AIDS
- neonatal tetanus
- sexually transmitted infections.

Standard case definitions must be established for each syndrome/ disease listed and be agreed with all involved

What must be done to make the system work

- ✓ Forms are distributed widely and in sufficient quantities. (Remember, when the forms run out, data-collection will stop!)
- ✓ Arrangements for data transmission and analysis are clearly defined and feasible. (Who will process the information? Where? How?) Methods and the timetable for collecting data from the field are agreed in the HCC. Ensure that they are adhered to.
- ✓ Field workers know how to collect and report the data: training is provided if necessary to improve the quality of the data and also create capacities for local analysis
- ✓ Health personnel, at all levels, have (are provided with) guidelines that enable them to recognise and report the indicators in a standardized manner.
- ✓ Reporting units provide 'zero reports' – report '0' when no case has been seen; they do not leave blanks or not complete a scheduled report.
- ✓ The receipt of in-coming information is tracked on a tally sheet: Is everybody reporting on time? Which data are missing? Follow up on defaulters.
- ✓ The epidemiologist closest to the local reporting unit investigates suspected disease outbreaks detected by the surveillance system as soon as possible.
- ✓ Until epidemiological assistance arrives, the local health unit is responsible for investigations and control measures.

Analysing and interpreting data

- ✓ All data are carefully scrutinized: What is new/significant ? What has changed? What trends? (Differentiate between crisis and normal seasonal variations)
- ✓ Data from different sources are triangulated – compared with each other. Do they tell the same story?
- ✓ What are the possible causes/explanations of changes?
- ✓ Is there any evidence that measures taken are having an effect? (Look at fatality rates in epidemics, trends in vaccine-preventable diseases, trends in malnutrition rates, etc.).

At the very minimum, Crude Death Rates must be calculated on a regular basis – at least monthly, but weekly or even daily during a major crisis, e.g. a cholera epidemic.

If the surveillance system is effective, it will invariably result in an increase in the number of reported common and uncommon diseases and syndromes. This does not necessarily reflect increased disease but result from an increase in the number of reporting units, improved public awareness, and greater concern and coverage by the mass media.

Disseminating findings

Summary reports of the technical findings and analyses are:

- presented to the national authorities and the emergency Health Coordination Committee (HCC)
- fed back to the reporting units

- disseminated quickly to local authorities, all organizations involved in public health activities, and donors, through newsletters and/or a website (the EHA website may be used)

Feedback will sustain data-collection and the performance of field workers. Health information is important for the activities of the other sectors and is essential for the mobilisation of resources.

Monitoring the surveillance system

✓ After an initial period, the system is reviewed: Is the system useful? Is the information generated by the system being used for decision-making? If not, adjustments are made.

N.B. Information, during the first phase of the emergency, will be sketchy. As time progresses, precision in gathering data and presenting information should improve.

Alert thresholds	
Acute watery diarrhoea	5 cases in the 5 years and over age group
Bloody diarrhoea	5 cases
Measles	1 case
Meningitis - suspected	5 cases or 1.5 times the baseline
Acute haemorrhagic fever syndrome	1 case
Acute jaundice syndrome	5 cases or 1.5 times the baseline
Malaria	5 cases or 1.5 times the baseline
Acute flaccid paralysis (suspected poliomyelitis)	1 case
Neonatal tetanus	1 case
Fever of unknown origin	1.5 times the baseline
Other communicable diseases	1.5 times the baseline
Unknown disease occurring as a cluster	report any cluster
Severe malnutrition	2 cases
CMR	> 1 per 10,000/day
U5MR	> 2 per 10,000/day
Baseline = average weekly number of cases of the disease calculated over the last 3 weeks	

Remember …

- An area that does not report has a problem and deserves priority attention.
- Information that does not circulate is useless.
- A Daily Crude Mortality Rate exceeding 1/10,000 population indicates an emergency.
- A Daily Under-5 Mortality Rate exceeding 2/10,000 U-5 children indicates an emergency.
- A malnutrition rate of 15% or more indicates a crisis; 10-14% is severe

For more detail, see

- *Communicable Disease Control in Emergencies*, chapter 3, WHO [2003 expected]
- *Recommended Surveillance Standards*, WHO 1999 [in HeLiD]

6.2 Preventive measures for common diseases

The following table is reproduced with minor editing from *Handbook for emergencies*, UNHCR 1999, chapter 14, table 2. Although originally prepared for refugee populations, it is valid for all displaced populations and many aspects apply for all emergency-affected populations. The original notes on malaria have been refined to also include dengue fever.

Disease	Major contributing factors	Preventive measures
Diarrhoeal diseases	Overcrowding Contamination of water and food Lack of hygiene	• adequate living space • hygiene/public health education • distribution of soap • good personal and food hygiene • safe water supply and sanitation
Measles	Overcrowding Low vaccination coverage	• minimum living space standards • immunization of children with distribution of vitamin A Immunization from 6 months up to 12-15 years (rather than the more usual 5 years) is recommended because of the increased risks from living conditions
Acute respiratory infections	Poor housing Lack of blankets and clothing Smoke in living area	• minimum living space standards • proper shelter, adequate clothing, sufficient blankets
Malaria Dengue	Stagnant water which becomes a breeding area for mosquitoes For displaced people, a new environment with a strain to which they are not immune	• inhibiting mosquito breeding by draining stagnant water, covering stored water, using larvicides, etc. • killing larvae and adult mosquitoes by spraying. N.B. the success of vector control is dependent on particular mosquito habits and local experts must be consulted • provision of insecticide-impregnated bed nets • for malaria: drug prophylaxis (e.g. pregnant women according to national protocols)
Meningo-coccal meningitis	Overcrowding in areas where disease is endemic (often has local seasonal pattern)	• minimum living space standards • immunization only after expert advice when surveys suggest necessity
Tubercu-losis	Overcrowding Malnutrition High HIV prevalence	• minimum living space standards (but where it is endemic it will remain a problem) • immunization
Typhoid	Overcrowding Poor personal hygiene Contaminated water supply Inadequate sanitation	• minimum living space standards • safe water, proper sanitation • good personal, food and public hygiene and public health education WHO does not recommend vaccination as it offers only low, short-term individual protection and little or no protection against the spread of the disease
Worms especially hookworms	Overcrowding Poor sanitation	• minimum living space standards • proper sanitation, good personal hygiene • wearing shoes
Scabies[6]	Overcrowding Poor personal hygiene	• minimum living space standards • enough water and soap for washing
Xerophthal-mia (vitamin A deficiency)	Inadequate diet Following acute prolonged infections, measles and diarrhoea	• adequate dietary intake of vitamin A. If not available, provide vitamin A fortified food. If this is not possible, vitamin A supplements • immunization against measles • systematic prophylaxis for children, every 4-6 months
Anaemia	Malaria Hookworm	• prevention/treatment of contributory disease • correction of diet including food fortification

	Poor absorption or insufficient intake of iron and folate	
Tetanus	Injuries to unimmunized individuals Poor obstetrical practice causes neo-natal tetanus	• good first aid • immunization of pregnant women and subsequent general immunization within EPI • training of midwives and clean ligatures, scissors, razors, etc.
Hepatitis	Lack of hygiene Contamination of food and water	• safe water supply • effective sanitation • safe blood transfusions
STDs/HIV	Loss of social organization Poor transfusion practices Lack of information	• test syphilis during pregnancy • test all blood before transfusion • ensure adherence to universal precautions • health education • availability of condoms • treat partners

[6] *Scabies: skin disease caused by burrowing mites*

6.3 Cholera control

Under international health regulations, the national health authority should report the first suspected case of cholera to WPRO and WHO-HQ (EPIDNATIONS fax # 041 22 791 0746), and then report regularly – at least weekly – on confirmed cases.

A case of cholera should be suspected when:

- in an area where the diseases is not known to be present and a patient aged 5 years or more develops severe dehydration or dies from acute watery diarrhoea
- in an area where there is a cholera epidemic and a patient aged 5 years or more develops acute watery diarrhoea, with or without vomiting

A cholera outbreak should be suspected if;

- a patient older than 5 years develops severe dehydration or dies from acute watery diarrhoea, or
- there is a sudden increase in the daily number of patients with acute watery diarrhoea, especially patients who pass the 'rice water' stools typical of cholera

A case of cholera is confirmed when:

- Vibrio cholera 01 is isolated from any patient with diarrhoea

One confirmed case of cholera should prompt all watery diarrhoea cases to be treated as suspected cholera.

In anticipation of the normal cholera season …

- Surveillance should be strengthened, particularly along the routes of possible disease introduction and in cholera-receptive areas (characterized by overcrowding and unhygienic environments)
- Modest buffer stocks of ORS, IV fluids, antibiotics and laboratory supplies, health education materials and supplies for water treatment and sanitation measures should be put in place in the areas at risk
- Health workers in high-risk areas should be reminded/retrained in the management of acute diarrhoeas including cholera

During an outbreak …

Prevention focuses on assuring safe water, adequate sanitation (excreta disposal), personal hygiene and, especially, food hygiene:

- ✓ Hygiene education and social mobilization for these control measures is critical: the population must be made aware of the risk of an outbreak, the need for early referral of patients with diarrhoea, and the preventive measures they can take.
- ✓ Maintain a high free residual chlorine level (preferably 0.4–0.5 mg/l) in water supplies. Treat wells in the affected area; cover them if possible. Appoint someone to treat each collected bucket of water with sodium hypochlorite or calcium hypochlorite. Ideally this should done at every well when the water is collected. Close access to any found to be contaminated until it is made safe.
- ✓ Ensure that faeces are disposed of so as not to contaminate water or food; encourage hand washing with soap or ashes; and encourage hygienic preparation and storage of food. Patients' bedding and clothing should be disinfected (by drying in the sun and/or boiling fro 5 minutes).
- ✓ Where pit latrines are used in an area affected by cholera, the pit should be coated each day with a layer of lime. Liquid waste (stools and vomit) from cholera patients should be sterilized (e.g., with cresol) or buried. Semi-solid waste should be incinerated.

Treatment: designate/establish centres where patients suspected of suffering from cholera can be isolated and treated:

- ✓ Patients should be treated as near their homes as possible to reduce risks of spreading the disease
- ✓ If existing health facilities are far away, or if there are too many cases to be handled by existing facilities, temporary emergency treatment facilities may be set up in huts, tents or public buildings within the affected communities
- ✓ Apart from patients, people visiting the facility should be limited to those giving care.
- ✓ Treatment consists of correcting dehydration, usually with oral rehydration salts (ORS) and antibiotic therapy. Intravenous rehydration (using Ringer's lactate) may be required initially for up to 20% of cases: oral rehydration is normally sufficient for more than 80% of cases.
- ✓ Gatherings of people should be restricted (e.g. fairs, funerals and religious festivals)

- Mass chemoprophylaxis and *cordon sanitaire* are ineffective in preventing or controlling outbreaks
- Currently, cholera vaccination in the acute phase of an emergency is not recommended[27]: priority should be given to water, sanitation and hygiene measures

Cholera kits, designed to provide treatment for patients, are held in stock in Suva, Fiji, and Manila. Requests for kits should be addressed to WPRO-CSR, copied to EHA and SUP. (N.B. These kits have been developed specifically for WPR and are ICP-funded. They are different from the 'Italian' Diarrhoea kits stocked in UNHRD Brindisi which maybe requested through EHA – see 5.6).

An attack rate of 0.2% (i.e. 200 cases in a population of 100,000) is typical and can be used to make initial an estimate of the likely number of cases that will require treatment.

Selective chemoprophylaxis for very close contacts with cholera patients *may* be useful and justified if the secondary attack rate in affected families exceeds 20% (which is not often the case) and if drug administration (a single dose of doxycycline) can be closely supervised. Too liberal a use of drugs for prophylaxis is not useful and can promote the development of antibiotic resistance.

For detailed guidelines, see

- *Guidelines for cholera control*, WHO 1993
- *Communicable Disease Control in emergencies*, WHO [2003 expected], section 5.3

[27] The new oral cholera vaccines *may* prove useful in the stable phase of an emergency, especially when given pre-emptively. However, before making recommendations on the use of these vaccines, more information is required related particularly to operational issues such as costs, logistics and delivery. [*Communicable Disease Control in emergencies*, draft, WHO [2003 expected], 2.6.7]

6.4 Measles and other diseases of epidemic potential

Measles

Measles outbreaks are a common hazard in emergencies, often with high case fatality rates. Therefore, attention must be given to maintaining EPI activities by localized strengthening of the national programme, and strengthening surveillance. Where risks are high, a mass measles immunization campaign is recommended to prevent an outbreak occurring.

Measles immunization

There is a high risk of measles in emergency situations where people are displaced, normal services are disrupted, people are living in crowding crowded or unsanitary conditions, and/or where there is widespread malnutrition. In such conditions:

- a measles immunization campaign should begin as soon as the necessary human resources, vaccine, cold chain equipment and other supplies are available, regardless of whether a single case of measles has been reported or not
- measles immunization should not be delayed until other vaccines become available or until cases of measles have been reported (if cases are reported the campaign should begin within 72 hours of the first report)
- the optimal age group to vaccinate for measles is 6 months through 14 years of age if possible, with a minimum acceptable age range of 6 months through 4 years of age – the target age group for immunization must be chosen based on vaccine availability, funding, human resources and local measles epidemiology
- children aged between 6 and 9 months should be revaccinated as soon as they reach 9 months of age
- among displaced/refugee populations in camps, children may be immunized at the time of initial registration and screening
- measles vaccination should be accompanied by vitamin A distribution to decrease mortality and prevent complications.

Immunization is also a priority in refugee populations from countries with high immunization rates, as studies have shown that large outbreaks of measles can occur even if vaccine coverage exceeds 80%.

The decision on whether to undertake a rapid campaign should be taken at a high level in the MoH and arrangements be made to ensure that the immunizations are recorded to enable reintegration into the reconstructed PHC framework after the emergency with a minimum of overlap and gaps.

Treatment of measles

Treatment should include:

- standard syndromic treatment of the clinical presentation – pneumonia, diarrhoea, eye lesions, etc.
- measles immunization if not done already, and
- standard vitamin A treatment dose schedule

In addition, the nutritional status of the child must be monitored carefully after an acute episode of measles, ensuring that s/he eats and drinks enough, even when sick.

For detailed guidelines, see

- *Communicable disease control in emergencies,* WHO [2003 expected], sections 2.6 *Immunization* and 5.13 *Measles*
- *The management of nutrition in major emergencies*, WHO 2000, chapter 6

Malaria

… is an important risk in some parts of the WPR. Epidemics, if they occur at all, start about 6 weeks after the disaster. People displaced into a malarial zone are at greatest risk. Protection should be provided through impregnated bednets, sheets, blankets and/or, when plastic sheeting is provided for shelter, impregnated plastic sheeting (a new product). Drugs must be selected according to local mosquito strains.

For guidelines, see

- *Malaria epidemics: detection and control, forecasting and prevention*, WHO/MAL/98.1084, WHO 1998
- *Communicable disease control in emergencies*, WHO [2003 expected], sections 5.12 *Malaria* and 2.4.2 *Control strategies against arthropod vectors*
- http://www.who.int/inf-fs/en/fact094.htm WHO Fact Sheet No 94
- The Roll Back Malaria site: http://www.rbm.who.int

Dengue fever

… is an important risk in some parts of the WPR. Preventive measures must be selected according to local strains and mosquito habits. WPRO has stockpiles of insecticides in Suva (for the Pacific islands) and Cambodia (for the Mekong countries). Requests for supplies should be addressed to WPRO-MVP with copies to EHA and SUP.

For guidelines, see

- *Guidelines for Dengue surveillance and mosquito control*, WHO 1995
- *Communicable disease control in emergencies*, WHO [2003 expected], section 5.5 *Dengue*

Japanese encephalitis

… is a risk in some areas, especially for displaced populations. Action should be taken to control mosquitoes and avoid contact with pigs. Children under 15 years should be vaccinated following national protocols.

TB, STDs and HIV/AIDS

Attention must be given to maintaining ongoing treatment and control programmes.

When people have been displaced, the general prerequisites for the establishment of a TB control programme are: 1) the emergency phase is over; 2) security in and stability of the camp or site is envisioned for at least 6 months; 3) basic needs of water, adequate food and sanitation are available; and 4) essential clinical services and drugs are available.[28]

For detailed guidelines, see:

- *Communicable disease control in emergencies*, WHO [2003 expected] – sections 5.19 *Tuberculosis*, 5.17 *Sexually-transmitted infections*, 5.9 *HIV/AIDS*
- *Guidelines for tuberculosis control in refugee and displaced populations*, WHO/UNHCR 1996
- *Guidelines for HIV interventions in emergency settings*, UNHCR/WHO/UNAIDS 1996

[28] Reproduced from *New Emergency Health Kit 98*, WHO 1998

Zoonoses[29]

The displacement of domesticated and wild animals increases the risk of transmission of zoonoses. Veterinary and animal health services may be needed to evaluate such health risks. Epidemiologic identification/ characterization of zoonoses is critical in evaluating the risks of occurrence of these diseases in areas affected by natural disasters. It is also essential to establish surveillance mechanisms to prevent human cases or outbreaks.

Dogs, cats and other domestic animals frequently are taken by their owners to or near temporary shelters. Some of these animals are reservoirs of infections such as leptospirosis, rickettsioses, and bubonic plague, which can be transmitted through their excrement and urine or through ectoparasites, contaminating water and food.

Wild animals are reservoirs of infections that can be fatal to man. In searching for food and safety in the aftermath of a natural disaster, wild animals will come closer to affected communities, increasing the chance of transmission of illnesses such as hemorrhagic fever syndrome from the Hantavirus, hemmorhagic arboviruses, equine encephalitis, rabies, and infections still unknown in humans.

[29] This sub-section is reproduced from *Natural disasters - protecting the public's health*, PAHO 2000, chapter 7

6.5 Laboratory facilities and testing

Laboratory services are needed to identify major health problems of a population and to diagnose a disease in individual patients. Priority must always be given to rapid diagnosis of infectious diseases.

What laboratory services are required

The initial assessment of the situation should include:

- review of available local and referral laboratory facilities
  - their equipment, stocks of supplies and possibilities to produce or buy supplies locally
  - the qualifications and professional capability of their staff
  - the adequacy of recording systems
- transport possibilities (buses, ferries, flights, agencies, etc.)
- determination of the specific needs for laboratory analytical procedures
- identification and evaluation of the options for assuring services

This should be done by an experienced laboratory technician, wherever possible. A typical laboratory network structure is shown in the box below.

Typical laboratory network structure	
Field laboratory (fixed, mobile or portable)	haematology; urinanalysis; sputum and stool examination; specimen collection and dispatch
District/regional hospital laboratory	bacterial tests; parasitic confirmatory tests; culture and sensitivity tests, simple serological tests
National laboratory or university	bacterial and parasitic typing tests; serology; virus culture
International reference laboratories	virus culture and confirmatory tests; dangerous pathogens; PCR

During an emergency, laboratory diagnostic support should be provided in the field or at the local level, as much as possible. Where the population is dispersed, special attention must be given to arrangements for sample/specimen collection and transportation to a central field laboratory.

Options for a field laboratory are:

- an existing facility, with supplementary support if needed
- a temporary stationary laboratory in an existing structure, tent or improvised shelter
- a mobile laboratory (in a truck, railcar, boat)
- a portable laboratory (lightweight sets of selected equipment and supplies relevant to the situation e.g. specimen collection, microscopic haematology, blood and urine chemistry tests, microscopic microbiology (if available fluorescence microscopy), relevant rapid serodiagnostic tests)
- sending all samples to referral laboratories

In case of unknown infectious agents, isolation and identification *must* be done by a competent laboratory with an appropriate biosafety level.

Equipment

Basic equipment for a field laboratory includes: microscope (preferably binocular), centrifuge, colorimeter, haemoglobinometer, incubator, refrigerator, water purification system

Reliable power will probably be needed for lighting, refrigerator, microscope, centrifuge, colorimeters, incubator. Independent supply options are combustion-powered generator or solar/photovoltaic system with rechargeable batteries[30].

For testing water supplies for faecal coliforms, a membrane filter is normally used but costs can be reduced by using an inexpensive field incubator and plastic suction devices for sampling the water.

Laboratory safety

Laboratory personnel work in a high-risk environment when examining infectious materials. Safety is therefore a priority concern:

- the skills and careful practice (including personal hygiene) of the laboratory technicians are the most important determinants
- the vaccination of laboratory personnel against hepatitis A and B, TB, tetanus, typhoid fever, yellow fever and Japanese encephalitis should be up-to-date

[30] Remember that lead batteries must be empty of electrolytes for transportation by air (and the same precaution should also be taken during other forms of transportation).

- the equipment and supplies necessary for the safe handling and disposal of specimens must be available -- an incinerator, autoclave and disinfectants are essential.

There is no disinfectant available that protects against all kinds of infective agent. An appropriate disinfectant should be selected that protects against relevant micro-organisms.

Collection storage and transport of specimens

Requirements are:

- suitable containers with labels and transport medium when necessary[31]
- storage facilities with appropriate temperature control
- safety precautions
- rapid, reliable transport

For ***air transportation***, packaging must be according to IATA standard 602 for infectious materials, 605 for diagnostic specimens, with biohazard labels and all necessary details. The shipper must complete, in English, and sign two copies of the 'Shipper's declaration for dangerous goods': this cannot be done by the forwarding agent who is permitted only to enter the airway bill number and the airports of departure and destination (and to prepare the other documentation).

The consignee should be notified in advance -- 48 hours before arrival, if possible -- of the shipping details and recommended storage temperature. Avoid arrival during a weekend, if possible!

High risk specimens requiring special care when handling and packaging	
Specimen	**Disease suspected (selected)**
Blood	AIDS, hepatitis, plague, viral haemorrhagic fever
Faeces	Typhoid or paratyphoid fever, cholera
Sputum	Tuberculosis, plague, anthrax
Ulcer or pustule	Anthrax, treponematosis
fluid	
Urine	Viral haemorrhagic fevers

[31] Biocontainers are already in the field for the polio eradication programme in countries where there are polio labs, but clean/sterile screw-cap tubes and jars, or zip-lock plastic bags can be used except for high risk specimens.

For further details, see:

- *Health Laboratory Facilities in Emergency and Disaster Situations*, WHO-EMRO 1994 * [In EHLK and HeLiD]
- *The role of laboratories and blood banks in disaster situations*, PAHO 2001
- *Basic laboratory procedures in clinical laboratory*, WHO 1991 [in HeLiD]
- *Basic laboratory procedures in bacteriology*, WHO-RO 19 [in EHLK]
- *Basic malaria microscopy*, WHO 1991, learner's guide and tutor's guide, [in ELHK & HeLiD]
- *Practical laboratory manual*, AMREF [in EHLK]
- *Laboratory Biosafety Manual*, WHO/CDS/CSR/LYO/2003.4, WHO 2003
- *Safety in Laboratory Services*, WHO …

* This publication specifies laboratory procedures and provides guidelines of calculating energy requirements. It also provides, in chapter 7, supply lists for 22 modules which can be combined to produce a laboratory kit tailored to particular needs. The modules are: basic; energy; water-testing; microscope; TB; bacteriology; urinanalysis; faecal parasite; blood parasite; haematology; centrifuge; portable incubator; refrigerator; specimen transport (except stools); water purification; electrolyte analyser; cleaning, disinfection, sterilization and specimen disposal; bacteriology-Gram stain; stool specimen transport; serodiagnostic test; fluorescent microscopy; blood transfusion.

6.6 Hygiene practices that protect health

The following, reproduced from *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, annex 6, may be used as an aid to assessing hygiene practices and risks, and as a means of focusing hygiene messages on a few practices that influence health in a particular situation.

People's ability to achieve these protective actions depends on the availability of material resources such as adequate clean water, soap, toilets, etc., and personal resources such as time and energy.

Water safety	✓ Water for drinking is collected from the cleanest possible source.
At the source	✓ If necessary, a distinction is made between water for drinking and water for other uses, such as bathing, laundry, watering animals.
	✓ Water sources are protected from faecal contamination by fencing (to keep animals away), and by siting latrines or defecation fields at least 10–30 metres away, depending on ground conditions.
Collection and storage	✓ Water is collected and stored in clean, covered containers.
	✓ Water is taken from the storage container with a clean, long-handled dipper.
	✓ Efforts are made not to waste water.
Use of water	✓ If there is a risk that water is not safe, it is filtered and/or boiled.
	✓ Water for making food or drinks for young children is boiled.
	✓ To sterilize water, it is boiled vigorously for at least one minute.
	✓ If it is unrealistic to boil water, and if there is only a small danger of contamination, water is treated by exposing it to bright sunlight for at least one day.
Excreta disposal	✓ Defecation is avoided near water sources and water-treatment plants, uphill of camps and water sources, in fields destined for crops, along public roads, near communal buildings such as clinics, near food-storage facilities.
Use of designated places for defecation	✓ Defecation is done in latrines, trenches, defecation fields, etc.
	✓ People avoid going barefoot to defecate.
	✓ Children do not visit a defecation area alone.
	✓ New arrivals at emergency settlements are aware of the arrangements for defecation and the importance of complying with them.
Children's sanitation	✓ Uncontrolled defecation by children is stopped. (The faeces of young children are more harmful than those of adults).
	✓ The stools of young children or babies are wrapped in leaves or paper and buried or put in a latrine.
	✓ Young children are helped to defecate into an easily-cleaned container that can be emptied into a toilet and washed out.
	✓ Children are cleaned promptly after defecation and have their hands washed. People who clean children wash their own hands thoroughly afterwards.
Waste disposal	✓ Refuse is not scattered about. (This encourages insect breeding and attracts rats which can be a nuisance and transmit disease).
Solid waste	✓ In the immediate post-disaster period, if organized refuse collection has not been set up, household solid waste is buried by families.
	✓ Once collection arrangements have been made, refuse is placed in the bins provided.
	✓ Filled bins are not left in food-preparation areas.
	✓ Bins are kept securely covered to prevent scavenging by children or animals.
	✓ Manure from livestock is collected and disposed of as safely.
Liquid waste	✓ Standing pools of polluted wastewater (from washing, food preparation, wasted tap water) are not allowed to form. (They encourage mosquito breeding, which is a health hazard).
	✓ Children are prevented from playing in or near hazardous pools of water.
	✓ Arrangements for disposing of liquid waste, such as using soakage pits, are understood and followed.
Vector control	✓ Household refuse is removed regularly to avoid build-up of

Personal protection against disease vectors	houseflies and rat infestations. ✓ Foodstuffs are kept in rodent-proof stores or containers. ✓ Cooked foods, which may have been contaminated by houseflies, are properly reheated to a boil. ✓ Clothes are laundered frequently and insecticidal shampoos are used to prevent lice. ✓ In areas where mosquitoes are a problem, bednets or bedroom screens are used, if available. ✓
Personal hygiene Water for washing Hand-washing	✓ If possible, plenty of water is used for washing. ✓ Clothing is laundered regularly. ✓ The most readily-available water is used for personal and domestic hygiene. ✓ All family members wash their hands regularly: after defecating; after cleaning a child who has defecated and disposing of the stool; before preparing food; before eating; before feeding a child. ✓ Adults or older children wash the hands of young children.
Shelter At the disaster site In longer-term emergency settlements	✓ Where people are trying to house themselves in the ruins of their previous homes, they take steps to avoid risks from the lack of structural integrity of their buildings. ✓ If their homes are definitely unsafe, people move. ✓ People take part in residents' committees to voice their views about the setting up and running of a camp. ✓ Residents participate in cleaning the settlement. ✓ Children do not enter dangerous areas of the settlement and, if necessary, volunteers guard unsafe areas.
Food safety Dealing with contami-nated food	✓ Food that has been contaminated as a result of a disaster is disposed of or, if there is a food shortage, cleaned thoroughly (possibly by submerging in an antiseptic solution) and cooked for an extended period. ✓ Contaminated fruit is always peeled. ✓ Perishable food that has spoiled is salvaged by cutting out bad bits, prolonged washing and prolonged cooking (but milk, eggs, meat and fish that have not been stored properly are discarded).
Food handling and preparation	✓ Surroundings are kept clean; waste is disposed of properly; and food is stored in closed containers to avoid contamination by insects and vermin. ✓ Food is prepared in a clean place, using clean pots and utensils. ✓ Uncooked food is washed in clean water before it is eaten. ✓ Cooked food is eaten while still hot, and previously prepared food is thoroughly reheated. ✓ Kept foods are covered.
Feeding babies	✓ Children up to 6 months of age are breastfed. ✓ Weaning foods are clean and nutritious. ✓ Drinks are given with a cup and spoon rather than a bottle. ✓ People wash their hands before preparing weaning food and feeding a baby.

6.7 Water supplies

The first priority is to provide an adequate quantity of water, even if its quality is poor, and to protect water sources from contamination.

Approximate requirements

Personal needs for the general population	15-20 litres/person/day (of which, 3-5 litres potable water for drinking and cooking)[32]
Clinics, field hospitals, first aid stations	40-60 litres/person/day
Hospital ward	50 litres/person/day
Surgery/maternity	100 litres/person/day
Dressing/consultation	5 litres/dressing
Feeding centres	30 litres/person/day
Other requirements	
– for operating water-borne sewerage systems	20-40 litres per day per person
– in mosques	5 litres per visitor
– for livestock	30 litres per day per cow or camel
	15 litres per day per goat or other small animal

After an ***urban disaster*** there may be a massive increase in water demand for fire fighting, hospitals and other medical facilities treating casualties, maintaining water-borne sewerage systems and flushing out contaminated water supply systems. A gap between demand and supply capacity may occur when supplies of water stored in the treatment and supply system are exhausted.

Where water is scarce, rationing should be introduced – and carefully monitored – to ensure an equitable distribution and that the weak and vulnerable survive.

[32] UNHCR suggests an absolute minimum of 7 litres per person per day during a short emergency period

Urban public water supply systems

Assessment: All public water supplies should be surveyed, beginning with the distribution system and advancing to the water source, to determine physical integrity of system components, the remaining capacities, and bacteriological and chemical quality of the water supplied. [See *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, section 7.3.1]

If there is justified concern that a water source is contaminated with toxic substances from a spill or heavy metals from volcanic activity, an alternative water source should be sought while samples are analysed.

Damage to chlorine gas storage facilities may pose an extreme danger and require the evacuation of the surrounding area while trained staff and specialist equipment are mobilized to deal with the situation.

Repairs and testing: Flood water should be pumped out and equipment cleaned and disinfected. Damaged mains and feeders should be repaired, or by-passed, as quickly as possible. (Good records, maps of the system as well as a good stock of spare parts and tools are essential.) New sections of pipe should be disinfected.

It is advisable to increase residual chlorine levels to 0.7 mg/l in an emergency situation. Following floods and damage to sewerage systems, it is wise to raise water pressure in the distribution system and increase the free residual chlorine level to as high as 1 mg/l until flood waters recede and risk of contamination is reduced.

Routine testing of residual chlorine should start immediately with simple residual chlorine test kits and should continue well into the rehabilitation phase. In the absence of test kits, check that water has a distinct chlorine smell.

Human and material resources may be organized separately to provide water supplies to a) the affected population, and b) hospitals, nutrition centres, etc.

Every effort should be made to restore normal chlorination, and to protect individual wells and storage reservoirs (e.g. by sealing cracks in well casings and reservoir roofs, providing adequate drainage around wells, and covering reservoirs).

Rural water supplies

Local health and community workers using standardized procedures and reporting formats may gather information on: the current availability of supplies from all sources, the causes of supply problems and alternative sources and their status; and the causes or indicators of contamination.

Alternative Water Sources

Private water supply sources belonging to dairies, breweries, food and beverage plants, tourist resorts, and other industrial and agricultural developments, should be used where available.

For new/additional sources, the general order of preference is: 1) deep groundwater; 2) shallow groundwater and spring water; 3) rainwater; 4) surface water.

Sources located near and/or downstream from sewage outfalls, chemical plants, abandoned or operational solid waste disposal sites, abandoned or operating mines, and any other hazardous sites should be avoided unless and until an environmental health specialist familiar with the local conditions recommends otherwise.

Protecting water sources
✓ Fence to keep animals away
✓ Drainage ditches uphill of open wells to prevent runoff flowing in
✓ Latrines at least 30 m away, and downhill
✓ Children not allowed to play in or around the source
✓ Segregate water uses (drinking, bathing, livestock watering).
✓ Store water in large covered tanks or containers for a day or two, if possible, allowing sediment to settle out. Quality will also improve and subsequent disinfection be more effective.
✓ Use chlorine to protect water from contamination in the course of distribution and use, such that a free chlorine residual of 0.4–0.5 mg/l is achieved immediately after treatment (or 0.2–0.5 mg/l at the point of distribution).

Trucking water

When needed temporarily as a last resort, water tankers may be obtained locally from commercial water delivery companies, dairies, breweries, bottling plants, etc. All trucks should be inspected to determine fitness, and cleaned and disinfected before transporting water. As a rule, gasoline, chemical, and sewage trucks should not be used.

Where necessary, tankers may be improvised by securing rigid water tanks or, less satisfactorily, flexible rubber/plastic tanks onto the back of flatbed trucks.

Water delivered by tankers should be either disinfected (by adding the correct amount of chlorine as they are being filled) or drawn from safe sources. The level of chlorine in the water at delivery should be monitored by independent staff, as well as by the drivers.

Water tanks

Closed water bladders are preferred. Open tanks should be fitted with a tap (if possible) or a siphon, rather allowing people to take water by 'dipping' and possibly contaminating the tank. The tank should then be covered (e.g., with plastic sheeting).

Household means to collect and store water

In rural areas and in urban areas where normal systems have been disrupted, people may need plastic jerry cans or buckets to collect water and containers with narrow necks or lids to store it at household level.[33]

Protecting water at household level
✓ Containers are regularly cleaned, and kept covered
✓ Animals are kept away
✓ Water is extracted using a dipper kept specially for the purpose
✓ No one (particularly children) puts their hands in the containers or drinks directly from them

For further details, see:

[33] The Sphere minimum standards suggest two water-collecting vessels of 10-20 litres capacity plus water storage vessels of 20 litres capacity per household.

- *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 7
- *Water manual for refugee situations*, UNHCR 1992
- *The Sphere Handbook*, Minimum standards in water supply and sanitation, section 2 Water supply, Sphere Project 2000

6.8 Water testing and treatment[34]

Water testing

Portable testing kits allow the determination in the field of water pH (acidity/alkalinity), free residual chlorine, faecal coliform bacteria count, turbidity and filterability. Field kits for bacteriological testing using membrane-filtration are easy to use. The alternative multiple-tube method may be more reliable for samples containing sewage, sewage sludge, or mud and soil particles.

If large numbers of water samples need testing and no functioning ***laboratory*** is available in the area (e.g. at a water-treatment works or environmental health office), a temporary laboratory may need to be set up. Workers should be trained in the correct procedures for collecting, labelling, packing and transporting samples, and for supplying supporting information from the sanitary survey to help interpret laboratory results. Sufficient sample bottles and caps must be assured.

For details of water sampling and testing, see: *Guidelines for drinking-water quality*, 2nd ed. *Vol.3, Surveillance and control of community water supplies,* WHO 198997

For guidance on establishing a temporary laboratory, see 6.5.

Quality standards

Criteria	*WHO guidelines*
Faecal coliforms	< 10 per 100 ml
Odour/taste	not detectable
Turbidity	< 5 NTU (nephelometric turbidity units)
Total dissolved solids	< 500 parts per million
PH	6-5 to 8.5

[34] This draft section is based largely on *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003

If a sanitary survey suggests the likelihood of faecal contamination, then even a very low level of contamination measured by bacteriological analysis may be considered to be a risk, especially during an outbreak of a disease like cholera that may be waterborne.

Water treatment

Surface water that is highly turbid and heavily contaminated usually needs some form of ***pre-treatment*** – by storage and plain sedimentation, coagulation and flocculation (e.g. using aluminium sulphate), or roughing filtration – to prepare it for chemical disinfection or, in some cases, slow sand filtration.

Aeration (cascading over gravel) may be needed to remove excess iron or manganese that gives an unpleasant taste and a brownish discoloration to food and clothes.

Drinking-water should be ***disinfected*** in all cases where population size and concentration, lack of sanitary facilities, or health information suggest a significant risk of water-borne disease:

- Bleaching powder (or stock solution) deteriorates quickly when stored in warm and damp conditions. Calcium hypochlorite and sodium hypochlorite are more stable but they should still be stored in dry, sealed corrosion-resistant containers in a cool, well-ventilated place, and be handled with care by trained staff wearing protective clothing.
- Minimum target concentrations for chlorine at the point of delivery are 0.2 mg/l in normal circumstances and 0.5 mg/l in high-risk circumstances.
- Designated individuals should be responsible for monitoring daily the free residual chlorine level in all distributed and stored supplies, including water in household containers. They can be recruited from the affected population and trained.

Where untreated water is collected by households, workers may be placed with a stock of chlorine solution at the collection sites and add one teaspoon of a commercial hypochlorite solution to each bucket of water (more chlorine solution for highly turbid water). When mixed thoroughly and allowed to stand for about 30 minutes prior to consumption, this provides a high level of disinfection.

Disinfecting contaminated wells and tanks

A free residual chlorine level of 1–5 mg/l in a well or tank for 24 hours is sufficient to kill most pathogens once the well or tank has been cleaned of

debris and protected. The well or tank should be pumped out or flushed after disinfection until the free residual chlorine concentration is below 0.5 mg/l.

If there is an ongoing risk of contamination that could pose a significant public-health risk, or a risk that the water will become contaminated after collection, a system of continuous disinfection of the well may be set up.

Water purification equipment

If already available locally, mobile water purification equipment may be used. However, such plants require skilled operators, auxiliary power, and maintenance and repair facilities, and they only produce limited amounts of drinking water. Think twice before requesting aid organizations to provide mobile equipment – they are expensive, bulky, occupy valuable transport space, and often fail.

Mass distribution of disinfectants

Distributing water purifying tablets or stock solution for home water disinfection should only be considered if:

- the people have experience in their use or can receive immediate instruction in their proper use (through a vigorous education campaign) and can be relied on to follow those instructions;
- appropriate water storage containers are available (or distributed) to all households;
- public health or community health workers assist in ensuring the appropriate and continued use of the disinfectants; and
- a distribution network is in place to ensure a proper and continuous supply as needed throughout the emergency phase and in the early rehabilitation phase.

In general, individuals in small and controlled groups may be given such disinfectants to purify small amounts of drinking water for one or two weeks.

Making water safe by boiling

To make water safe for drinking and other uses, bring water to a vigorous, rolling boil and keep it boiling for 1 minute.

This will kill, or inactivate, Vibrio cholerae O1 and most other organisms that cause diarrhoea.

Making water safe by chlorination

The following guidelines should be translated into messages that take appropriate account of locally available products and measuring devices, and of whether the instructions are for home or institutional use.

To make a stock solution of chlorine – 1% concentration by weight of available chlorine – add to1 litre of water one of the following compounds in the quantity shown below to:

Product *(percent concentration by weight of available chlorine)*	**Amount**
Calcium hypochlorite (*70%*)	15 g
Or	
Bleaching powder or chlorinated lime (*30%*)	33 g
Or	
Sodium hypochlorite (*5%*)	250 ml
Or	
Sodium hypochlorite (*10%*)	110 ml

If products with these concentrations of chlorine are not available in the local market, adjust the amount used according to the available concentrations.

Store the stock solution in a cool place in a closed container that does not admit light. The stock solution loses effectiveness with time and must be used no later than one month after it has been made.

To use the stock solution to make safe water, add water to the stock solution to ensure proper mixing:

Quantity of water	added to	*Quantity of stock solution*
1 litre		0.6 ml or 3 drops
10 litres		6ml
100 litres		60ml

Allow the chlorinated water to stand for at least 30 minutes before using it. The residual chlorine level after 30 minutes should be between 0.2 and 0.5 mg/litre.

If the water is turbid (not clear, with a lot of suspended solid matter), filter it before chlorination, or boil it vigorously (as indicated above) instead of treating it by chlorination

Recommended dilution and use of Aquatabs®

		Type of water and source			
		Clear piped water	Protected tube wells, ring wells, clear rain-water	Unprotected wells and cloudy water – filter before purifying	Water known to have faecal contamination – filter before purifying
Tablet size	**Chlorine per tab (mg)**	**Volume of water treated per tablet (litres)**			
8.5 mg	5	5	2.5	1	0.5
17 mg	10	10	5	2	1
67 mg	39.41	39.41	19.7	7.88	3.94
340 mg	200	200	100	40	20
500 mg	294	294	147	58.8	29.4
Free available chlorine content after treatment (residual)		1 mg/l	2 mg/l	5 mg/l	10 mg/l

For further detail, see: *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, section 7.4, *Emergency water-supply techniques*.

6.9 Hygiene and environmental sanitation

Basic Sanitation

Emergency latrines should be made available to displaced people, relief workers and residents in areas where toilet facilities have been destroyed or cannot be flushed without an adequate water supply:

- Latrines must: be suitable for use by children; be easy to reach at night; cleaned at least daily; sited at least 30 m and downhill from water sources
- Lime should be used in communal trench latrines to reduce the development of methane gas and odours.

If no sanitation facilities are available, people should bury their excreta.

If as a temporary measure a defecation field has to be used, the area should be carefully chosen and clearly demarcated. People should avoid going barefoot to defecate and prevent children from going into the area alone.

Personal hygiene

Especially in densely populated areas and where there are water shortages, the following measures are recommended:

- ✓ Ensure/provide basic hand washing facilities (in shelters, temporary settlements and camps);
- ✓ Ensure/provide washing, cleaning, and bathing facilities;
- ✓ Make adequate amounts of water available;
- ✓ Provide soap: regular hand-washing with soap is very important for reducing disease in emergencies;[35]
- ✓ Avoid overcrowding in sleeping quarters;
- ✓ Organize public education campaigns on personal hygiene, basic sanitation, and waste management.

[35] Sphere Project Minimum Standards recommend at least 250 g of soap per person per month, for personal and domestic hygiene.

Waste Management

Sanitary disposal of refuse and other waste is the most effective way to control vector-borne diseases:

- ✓ Garbage collection should be re-established as soon as possible. Burying or burning organic solid waste is recommended. Open dumping should be avoided.
- ✓ Carcasses awaiting burial should be sprinkled with kerosene to protect them from predatory animals. Burning large carcasses is difficult unless special incinerators are built, which require huge amounts of fuel.
- ✓ The general public should be advised on sanitary waste handling where no services can be provided (such as burning or burying refuse in yards).
- ✓ If established disposal sites are inaccessible or unusable, new sites must be selected with care – they are likely to become permanent.
- ✓ Potentially hazardous waste (e.g., damaged high voltage transformers containing PCBs) must be safely stored in a place where it can be retrieved later for proper identification, recovery, treatment, and/or disposal.

Clearing roads and removal of debris from buildings, utilities, trees, plants and dead animals is very important for the rehabilitation efforts. Heavy equipment is needed.

Ensure disposal of wastewater from temporary settlements, field hospitals, feeding centres, washing facilities, etc. The most common means is through a soak away, seepage pit, or absorption trench.

Vector Control

Control programmes for vector-borne diseases should be intensified in the emergency and rehabilitation period, especially in flooded areas, with special attention to leptospirosis and rat bite fever (rats), dengue fever and malaria (mosquitoes), typhus (lice, fleas), and plague (fleas) in areas where such diseases are known to be endemic.

The following are essential emergency vector control measures:

- ✓ Resume collection and sanitary disposal of refuse as soon as possible;
- ✓ Conduct public education campaigns to eliminate vector breeding sites in and near the home and on measures to prevent infection, including personal hygiene;

- ✓ Survey camps and densely populated areas to identify potential mosquito, rodent, and other vector breeding sites;
- ✓ Eliminate vector breeding sites permanently by draining and/or filling in pools, ponds, and swamps; overturning or removing receptacles; covering water reservoirs; and carrying out sanitary disposal of refuse;
- ✓ Resume indoor spraying if used earlier as a routine control method in flooded areas;
- ✓ In areas where typhus is known to exist, apply residual insecticide powder to louse-infested persons, their clothing, and bedding in camps and temporary settlements (use DDT or Lindane, or alternatively, Malathion or Carbaryl, depending on local resistant strains);
- ✓ Store food in enclosed and protected areas.

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For further details, see:

- *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 8
- *The Sphere Handbook*, part 1 Minimum standards in water supply and sanitation, sections 3-6, Sphere Project 2000

6.10 Management of dead bodies (cadavers)

Following a disaster

Following a disaster, the health hazards associated with cadavers are minimal, especially if death resulted from trauma. However, for social and psychological reasons, dead bodies should be removed as soon as feasible. Any bodies (or dead animals) lying in water sources should be removed as soon as possible to avoid the transmission of gastrointestinal illnesses.

The normal local method of burial or cremation should be used whenever possible. Burial is simplest and the best method if it is ritually acceptable and physically possible. Cremation is not justified on health grounds.

What should be done:

- ✓ Inform the public that the risk of epidemics of disease (such as cholera, typhoid, etc.) from cadavers that have died as a result of the effects of a disaster is minimal.
- ✓ Organize the identification and tagging of cadavers, and the issuing of death certificates as soon as possible.
- ✓ Deliver the bodies to family members as quickly as possible, respecting their wishes and social customs.

Before burial or cremation, bodies must be identified and the identification recorded. In many countries, certification of death or an autopsy must precede the disposal of the body unless legislation incorporates a waiver in disaster situations.

What to avoid:

- ⦸ Mass cremation should be avoided: it is unnecessary, difficult and requires large amounts of fuel.
- ⦸ The burial of unidentified bodies in collective graves should be avoided, if possible.

Remember:

- The priority is to treat survivors and re-establish the health care system as soon as possible!
- The risk posed by bodies buried by a landslide or mudslide is non-existent.
- There is no need for disinfecting bodies. However, lime bleach can be used to diminish the smell which has psychological effects on health workers and survivors.

For further detail, see:

- *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 14 *Mortuary service and handling of the dead*
- *Identifying cadavers following disasters: Why?* in 'Disasters: preparedness and mitigation in the Americas', Issue # 80, PAHO April 2000

During certain epidemics

Strict hygiene must be observed by those handling both patients and dead bodies on case of cholera or viral haemorrhagic fever.

6.11 Nutritional assessment

Measuring malnutrition

Weight-for-height

Weight-for-height is an indicator of acute malnutrition and is the preferred method in emergencies for surveys to assess population nutritional status and for screening (selecting) children for special, selective feeding.

- Measured weight and height (or length for children <2 years or <85 cm) are compared with reference values in standard tables.
- The comparison is expressed as a percentage of the reference value or in terms of a standard deviation (SD) score (referred to in some publications as the Z-score).[36] SD-scores are more precise than the percentage of median but the calculation requires appropriate computer software. Percent of median is more widely used in the field.
- ***Requirements****:* reliable scales, height/length boards and trained staff. EPI-INFO is available for processing the data.

Mid-Upper-Arm Circumference (MUAC)

MUAC is a less reliable alternative for rapid surveys and screening children 6 months to 5 years of age, if weighing and height measurements are not possible:

- The MUAC measurement alone is sometimes used but it is preferable to also measure height and use MUAC-for-height reference values to transform the measurements into nutritional indices. This can be done without reference to tables by using a MUAC-calibrated stick – a 'QUAC' stick.[37]
- ***Requirements***: MUAC 'insertion' tapes to measure arm circumference and, for MUAC-for-height, a MUAC-calibrated stick (a 'QUAC' stick) for children >2 years, and a MUAC-calibrated length board for children under 2 years.[38]

[36] The SD-score (or Z-score) is defined as:
[(observed value) – (median reference value)] / (SD of reference population)

[37] ICRC uses this method widely for nutritional status surveys and screening. It is the only organization to do so in recent years.

[38] Specially-made insertion tapes, as supplied by UNICEF, ICRC and a number of NGOs, are required to ensure an acceptable degree of accuracy in MUAC measurements. MUAC-for-height tables, and guidelines for the preparation of WHO-modified QUAC sticks, are provided in: *The management of nutrition in major emergencies*, annex 3, WHO, 2000

Body Mass Index

This index is used for adults (>18 years):

- BMI = (weight in kg)/(height in m)²
- ***Requirements****:* scales and a height board.

Classification of malnutrition

(cut-off points for indicators of acute malnutrition)

	Mild malnutrition	Moderate malnutrition	Severe malnutrition
Oedema	No	No	Yes
Weight-for-height	80 to 89% (–1 to –2 SD)	70 to 79% (< –2 to –3 SD)	< 70% (< –3 SD)
MUAC	12.5 to 13.5 cm	12.0 to 12.5 cm	< 12.0 cm
MUAC-for-height		< –2 SD	< –3 SD
Body mass index	17 to < 18.5	16 to < 17	< 16

Nutritional status surveys

These surveys are often conducted by NGOs, sometimes by health workers:

- Two-stage cluster sampling is normally used: 30 clusters are selected then 30 children within each cluster
- It is vital that surveys are conducted using proper sampling techniques, with accurate scales and measuring instruments, by staff who have been trained in weighing and measuring – and that all organizations use the same methods and standards

WHO may help to ensure such quality control and the scrutiny of reports received to ensure that the data and conclusions are valid.

Data from clinics and feeding centres will not be representative of the population as a whole, but changes in rates of malnutrition observed at such centres may be indicative of an increasing problem and the need for a nutrition survey.

Interpreting survey results

The presence of malnutrition does not necessarily mean that more food aid is needed. Consider – with health workers and social scientists – what might be contributing to observed malnutrition, for example:

- *Food availability*: Is there an absolute lack of food in the area?
- *Food access*: Are some groups unable to access the food available?
- *Food utilization*: Is food being shared inequitably within households? Is food being lost during storage at household level? Is there excessive loss of nutrients during food preparation?
- *Care practices*: Are infant feeding practices poor? Is child care inadequate?
- *Health-related factors*: Is there high prevalence of measles and/or diarrhoeal diseases? Is health care inadequate?

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For further detail, see

The management of nutrition in major emergencies, WHO 2000, chapter 3 *Assessment and surveillance of nutritional status*

Food and nutrition needs in emergencies, UNHCR/WFP/UNICEF/WHO 2002

Food and nutrition handbook, WFP 2000, chapter 5 *Measuring malnutrition and nutrition surveys*

6.12 Nutritional requirements and interventions

Energy requirements

For initial planning purposes, 2,100 kcal/person/day is taken as the average daily energy requirement for a 'typical' population in a warm climate undertaking light physical activity. (The average requirements of different groups within a population are shown in the table below.)

When data are available, the planning figure should be adjusted according to:

- ***Temperature***: Add 100 kcal for every 5°C that the mean daily temperature falls below 20°C (i.e. +100 kcal at 15°C, +200 kcal at 10°C, +300 kcal at 5°C, +400 kcal at 0°C).
- ***Physical activity level***: Add 140 kcal for moderate activity, 350 kcal for heavy activity (e.g. during construction or land preparation works).
- ***Age/sex distribution***: When adult males make up more than 50% of the population, requirements are increased; when the population is exclusively women and children, requirements are reduced.

Other nutrient requirements

Protein*:* 10 to 12% of the energy in the diet should be in the form of protein (i.e. 52 to 63 g of protein).

Fat/oil*:* At least 17% of the energy in the diet should be in the form of fat (i.e. 40 g of fat).

Micronutrients*:* a range of micronutrients vitamins and minerals are required for survival and good health.

Demographic Breakdown and Energy Requirements

(for a typical developing country population)

Age group	**Male**		**Female**		**Male + female**	
Years	*% of total population*	*kcal/ person/ day*	*% of total population*	*kcal/ person/ day*	*% of total population*	*kcal/ person/ day*
0	1.31	850	1.27	780	2.59	820
1	1.26	1,250	1.20	1,190	2.46	1,220
2	1.25	1,430	1.20	1,330	2.45	1,380
3	1.25	1,560	1.19	1,440	2.44	1,500
4	1.24	1,690	1.18	1,540	2.43	1,620
0-4	6.32	1,320	6.05	1,250	12.37	1,290
5-9	6.00	1,980	5.69	1,730	11.69	1,860
10-14	5.39	2,370	5.13	2,040	10.53	2,210
15-19	4.89	2,700	4.64	2,120	9.54	2,420
20-59	24.80	2,460	23.82	1,990	48.63	2,230
60 +	3.42	2,010	3.82	1,780	7.24	1,890
Pregnant	-	-	2.40	285extra	2.40	285extra
Nursing	-	-	2.60	500extra	2.60	500extra
Whole population	50.84	2250	49.15	1910		2080

Types of food distribution/feeding programme

General food distributions aim to provide households with food to make up the difference between their nutritional needs and what they are able to provide for themselves without adopting damaging coping strategies:

- They are organized (generally by WFP, the Red Cross and/or NGOs) when a whole population or a large part of it is cut off from its normal sources of food; faces an imminent acute food crisis; *or* needs help while re-establishing livelihoods immediately after a crisis
- They are often needed in the early stages of an emergency but should be reduced and phased out as people re-establish their self-reliance

Supplementary feeding programmes (SFPs) **are** implemented to combat or prevent malnutrition by providing additional food to malnourished or nutritionally vulnerable individuals:

- Beneficiaries are selected and registered on the basis of specific criteria relating to nutritional status or vulnerability
- SFPs are normally managed by NGOs (either directly or in collaboration with health or other local services); the health staff and facilities are sometimes involved

- For populations of concern to UNHCR (refugees, returnees and some IDPs), UNHCR mobilizes, signs agreements with and coordinates the implementing partners of SFP operations
- WFP and UNICEF sometimes support SFP operations

Therapeutic feeding programmes (TFPs) aim to reduce mortality by providing treatment for severely malnourished individuals:

- Intensive nutritional treatment is accompanied by intensive health care. The availability of trained health staff is a prerequisite for any TFP
- Beneficiaries are registered and admitted on the basis of anthropometric screening or referral from a health clinic
- Special TFP centres are established when the numbers of severely malnourished cases cannot adequately be treated by existing health care facilities and staff
- In some cases, individuals who have no major complications (such as pneumonia or septicaemia) may be treated at home under the close supervision of specially trained community health workers
- Treatment should be provided in line with the guidelines in *Management of severe malnutrition - a manual for physicians and other senior health workers*, WHO 1999
- Different treatment regimens are needed for: a) severely malnourished children; and b) adolescents and adults suffering from severe wasting or famine oedema. Separate facilities for these groups may be required.

The need for ***supplementary*** and ***therapeutic feeding*** programmes is determined by the prevalence of acute malnutrition and other factors that are shown in the table below (which has been agreed among WHO, WFP, UNHCR and UNICEF).

Decision framework for the implementation of selective feeding programmes	
Situation	**Assessment and recommended response**
Malnutrition rate > 15% *or* 10-14% with aggravating factors	***Serious situation*** 'Blanket' SFP (for all children, expectant and nursing mothers, adults showing signs of malnutrition) TFP for the severely malnourished
Malnutrition rate 10-14% *or* 5-9% with aggravating factors	***Alert/risky situation*** 'Targeted' SFP for mildly to moderately malnourished children under 5 years, selected other children and adults TFP for the severely malnourished
Malnutrition rate < 10% with no aggravating factors	***Acceptable situation*** No need for population-level interventions Attention to malnourished individuals through regular community services
Malnutrition rate: the percentage of the child population (6 months to 5 years of age) who are below 80% (or below -2 Z scores) weight-for- height **Aggravating factors** are: general food ration below mean energy requirements crude mortality rate > 1 per 10,000 per day epidemic of measles or whooping cough high prevalence of respiratory or diarrhoeal disease	
If food availability at the household level is < 2,100 kcal/person/day, the situation is ***unsatisfactory*** and action should be taken to improve general rations or other general food assistance measures.	

For further detail, see

- *The management of nutrition in major emergencies*, WHO 2000, chapters 4 and 5
- *Food and nutrition needs in emergencies*, UNHCR/WFP/UNICEF/WHO 2002
- *Food and nutrition handbook*, WFP 2000
- *Emergency field operations pocketbook*, WFP 2002

6.13 Breast-feeding and breast milk substitutes [39]

Protecting and promoting breast-feeding

Full and exclusive breast-feeding of infants until 4-6 months of age is a critical element of optimal feeding, and breast-feeding should continue, with adequate complementary feeding, through to age 2 years if possible. In an emergency situation, high priority should be given to:

- ✓ protecting and promoting breast-feeding
- ✓ ensuring provision to, and consumption by, the infant and the lactating mother, of adequate energy and nutrient supplies
- ✓ promoting the physical, mental and social well-being of care-givers
- ✓ ensuring that breast milk substitutes are used only where they are critically needed and that safety precautions are observed
- ✓ identifying and eliminating the underlying causes of sub-optimal feeding practices

Breast-feeding should be encouraged among mothers who are HIV-negative or of unknown HIV status, during the emergency phase. In the post-emergency phase, the possibility of reducing transmission through breast-feeding with voluntary testing, drugs and alternative feeding practices for HIV-positive mothers should be considered.

If a mother is sick or malnourished, give her extra food and support so that she can continue breast-feeding her baby.

If a mother has stopped or reduced breast-feeding, help her to relactate or reestablish exclusive breast-feeding.

If an infant's biological mother is not available, arrange for another mother to breast-feed the baby.

[39] Adapted from *The management of nutrition in major emergencies*, WHO 2000, and *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 9

Use of breast milk substitutes

If no other woman is available to provide breast-milk for an infant less than 6 months of age, provide a suitable substitute, e.g. infant formula or animal milk, while taking the necessary precautions, such as:

- ✓ the infant formula to be used must be in generic packaging, and must not display the brand name
- ✓ clear instructions must be given on how to prepare the formula hygienically
- ✓ the formula must be freshly prepared for each feed: no left-overs must be kept
- ✓ parents and guardians must be advised to feed infants by cup and to avoid the use of feeding bottles, teats and pacifiers

For infants 6 months and older, infant formula is not needed. The use of breast milk substitutes in a minority of cases should in no way interfere with protecting and promoting breast-feeding.

The quantity, distribution and use of breast milk substitutes at emergency sites should be strictly controlled. The government, donors and agencies must be informed of the need to avoid inappropriate use of infant formula. Well-meant but ill-advised donations of 'baby foods' should be refused.

For populations that lack a breast-feeding tradition, wider distribution of breast milk substitutes may be required initially but should be phased out within 6 months by vigorous promotion of breast-feeding among all women who give birth.

In all cases, the use of infant-feeding bottles and artificial teats should be actively discouraged.

For further details, see: *The management of nutrition in major emergencies*, WHO 2000, Annex 6 *Guiding principles for feeding infants and young children in emergencies*

6.14 Food safety and food poisoning

An outbreak of food poisoning is typically indicated by a cluster of cases of diarrhoea and abdominal pains. Outbreaks should be notified to WPRO-CSR and the WHO country office should work with the MoH to ensure:

- the proper planning and implementation of epidemiological investigations and analyses to identify the source, and
- that factual information is provided to the public and measures are taken to avoid misinformation.

Possible causes of food poisoning

An outbreak of food poisoning, or a food safety emergency, may occur as a result of contamination by pathogens, chemicals or radioactive materials. The contamination may be inadvertent (accidental) or intentional (deliberate sabotage or a terrorist act).

A typical food chain includes some or all of the following: agricultural production and harvesting; storage and transport of raw commodities; processing and manufacture; storage and transport of processed and manufactured foods; wholesale and retail distribution; food service sector.

- Inadvertent (accidental) contamination may occur at any point of the chain:
  - inadequate washing and cooking of food before consumption is a prime cause of inadvertent contamination
  - natural and technological disasters and conflicts may also interrupt normal safety measures or introduce contaminants into the food chain
  - high humidity conditions (e.g. due to floods, cyclones/typhoons) increase the likelihood of mould growth on stored vegetables, fruits and cereals, and the deterioration of cans
- The interfaces between components of the chain – where food changes hands – are particularly vulnerable to intentional contamination. Condiments in open containers (and salad bars) in restaurants and institutional settings are vulnerable to deliberate contamination

During response to a disaster or humanitarian crisis, there may also be improvised, large-scale preparation of cooked food and/or the distribution of imported or locally-purchased food items. In this context:

- contamination has sometimes occurred during 'mass feeding' operations
- occasionally, food commodities have been distributed that were not fit for human consumption

Preventive food control measures during an emergency

Good food storage and hygiene practices are essential, and deliberate measures must be taken to protect stored food against contamination. As a general principle, if there is any doubt as to the safety of any food it should not be used for human consumption.

Following a disaster in which food stocks may have been contaminated:

- ✓ Information and advice must be provided to the population:
  - remind people of the rules of safe food handling whenever the contamination of water or raw foodstuffs could give rise to epidemics of microbial food-borne diseases, e.g. after floods or cyclones/typhoons, floods and earthquakes
  - advise people to avoid the types of food that are likely to be contaminated following an explosion in a chemical plant situated near home garden plots, or a nuclear accident that contaminates pastures or crops with radionuclides
- ✓ Food industries, slaughterhouses, markets and catering establishments should be inspected and steps taken to ensure that foods that have been adversely affected are not marketed
- ✓ Foods that have not been affected should be protected against exposure to other sources of contamination and not kept under conditions in which bacterial growth may occur. In warehouses that have been flooded, whatever intact foods remain should be moved to a dry place, away from the walls and off the floor
- ✓ Any food stocks found to be unfit for human consumption must be disposed of – used for animal feed, industrial purposes or destroyed – under the supervision of the public health authorities in a manner that ensures that the items will not be used for human consumption; the disposal should be documented
- ✓ When salvaged foods are fit for consumption and sold, they should be labelled accordingly and consumers should be clearly informed of measures they need to take to render them safe

All foods used in mass feeding or food distribution programmes must be fit for human consumption (as well as being nutritionally and culturally appropriate):

- ✓ The quality of all items should be controlled before importation or local purchase and any unfit items be rejected
- ✓ Stocks should be regularly inspected and any suspect stocks should be separated from other stocks and samples be sent to a public health laboratory for analysis; in the meantime they should not be used

In feeding centres, food hygiene must be assured: [40]

- ✓ All kitchen supervisors, cooks and ancillary personnel should be trained in personal hygiene and the principles of safe food preparation; the personal hygiene of personnel involved in food preparation should be monitored
- ✓ Supervisors should be able to analyse potential hazards and emphasize appropriate food safety measures
- ✓ Employees and volunteers preparing food should not be suffering from an illness with any of the following symptoms: jaundice, diarrhoea, vomiting, fever, sore throat (with fever), visibly infected skin lesions (boils, cuts, etc.), or discharge from the ears, eyes or nose
- ✓ Cleaners should be employed to keep the kitchen and surrounding areas clean; they should be properly trained and their work supervised and there must be adequate facilities for waste disposal
- ✓ Water and soap must be provided for personal cleanliness, and detergent for cleaning utensils which should be washed in boiled or treated water
- ✓ Foods should be stored in containers that will prevent contamination by rodents or insects; refrigeration may have to be improvised

Safe and hygienic warehouse management must be assured:

- ✓ Storage structures should have good roofs and ventilation. Products should be kept at least 40 cm from walls and 10cm from the floor. Bags must not lie directly on the floor – pallets, boards, heavy branches, bricks, or clean, dry plastic bags or sheets should be placed underneath them. Bags should be piled two-by-two cross-wise to permit ventilation. Wet bags should be allowed to dry in the sun before storing them. Damaged bags should be rebagged and stored apart from undamaged ones. A reserve of good-quality empty bags should be kept for this purpose.
- ✓ Spilled food should be swept up and disposed of promptly to discourage rats. Spills of cooking oil in the warehouse should be immediately cleaned up to prevent workers slipping and injuring themselves. Similarly, containers should not be piled too high and piles should be stable so that workers are not injured by falling items.
- ✓ Fuel, pesticides, chlorine and other chemical stocks should never be stored in the same place as food.

[40] Adapted from *The management of nutrition in major emergencies*, chapter 4, WHO 2000, and *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 9

Response to an outbreak of food poisoning

Detection: Indications of a food poisoning incident that should trigger an investigation include:

- reports from health workers
- reports from pharmacists of an unusual demand for anti-diarrhoeal agents, anti-emetics or other non-prescription medication
- an upsurge in inexplicable customers' complaints to a food industry
- coroner's report of unusual death
- unusual absenteeism from schools and the workplace, especially in large industries

Detection may also be through an existing communicable disease surveillance system if the cluster is large enough (and there is no separate food-borne disease surveillance system).

Investigation of and response to a suspected food safety emergency involves:

- rapid diagnosis of causative agents by appropriate diagnostic laboratory testing
- epidemiological investigation to identify the causative agent, the vehicle and the manner of contamination including: collection, transport and processing of samples; collation of information about sources of contamination and coordination with law enforcement, food safety regulatory authorities, industry, emergency medical response agencies, and (when imported food may be involved) quarantine and customs agencies (swift communication among all these entities is essential)
- timely treatment of exposed people
- removal (recall) of the contaminated food from circulation (This may be coordinated by a food safety agency in collaboration with the food industry)

- timely provision of information to the public on food-related risks and the actions they should take to minimize those risks; the information must be conveyed in a manner that is culturally appropriate and does not increase anxiety

The effectiveness of response depends to a great extent on preparedness including a) the capacities for investigation and verification, and b) linkages among relevant government and other agencies that contribute to managing the public health consequences.

If adequate laboratory services are not available in the country, contact WPRO-CSR to arrange analysis at a reference laboratory in the Region.

Golden rules for safe food preparation [41]

1. Cook raw foods thoroughly. Uncooked fruits or vegetables should not be eaten, unless peeled. If milk has not been pasteurised, it should be boiled before use.

2. Eat cooked food immediately.

3. Prepare food for only one meal. If foods have to be prepared in advance, or if there are leftovers, they should be stored cold (below 5°C), or hot (above 60°C). Thorough reheating of foods is essential if refrigerators have ceased to operate for some hours due to power cuts.

4. Avoid contact between raw foods and cooked foods – including indirect contact through unwashed cutting surfaces or utensils, or in a freezer when the power has been off for some time and the juice of raw meat or poultry may drip onto other foods.

5. Choose foods processed for safety. Foods that have been processed (e.g. canned food and packed dried food) and that have not been affected by the disaster may be safer than fresh foods. Dry rations may be easier to keep safe, as they do not need cold-storage, but they do need to be kept dry.

6. Wash hands repeatedly. Hands should be washed thoroughly before preparing, serving or eating food and after every interruption, especially after use of the toilet or latrine, changing a baby or touching animals. After preparing raw foods, especially those of animal origin, hands should be washed again before handling cooked or ready-to-eat foods.

[41] Reproduced from *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, adapted from *Environmental health management in emergencies*, WHO-EMRO 1991

7. Keep all food preparation premises meticulously clean. This includes surfaces used for food preparation. Sullage and solid kitchen waste should be disposed of properly. Food should be stored in closed containers to protect it from insects, rodents and other animals. Fly and rat traps should be used if necessary.

8. Use safe water. Safe water is just as important for food preparation as for drinking. If the supply of safe/potable water has been disrupted, the water intended for drinking or food preparation should be boiled.

9. Be cautious with foods purchased outside. Food bought from street food-vendors should be thoroughly cooked in the presence of the customer. Apart from fruits and vegetables that can be peeled, raw or undercooked foods should be avoided. Only water that has been boiled, or disinfected with chlorine or iodine, should be drunk. Beverages such as hot tea or coffee, wine, beer, carbonated water or soft drinks, packaged fruit juices and bottled water are usually safe to drink, if not damaged by the disaster. Ice should be avoided, unless it is made from safe water.

10. Breast-feed infants and young children.

For further details, see:

- *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 9
- *Guidelines for the establishment of epidemiological surveillance systems for food-borne diseases (FBD) and the investigation of outbreaks of food poisonings*, PAHO
- *Terrorist Threat to Food: guidance for establishing or strengthening prevention and response systems*, WHO 2003 [http://who.int/fsf]

6.15 Psychosocial/mental health aspects

All forms of catastrophe tax people's abilities to cope, understand and respond. Although many persons are resilient, catastrophe may have a major impact on health and psychosocial functioning.

Responses are highly individual in nature and often quite intense. Responses may include sadness, fear, anger and hyper-vigilance. Some people may develop problems with nightmares, concentration, substance use and medically unexplained somatic complaints.

For most people these responses subside within a few weeks or months, but for some the responses may persist leading to considerable disability. Support from family, friends and community institutions is critical. When reactions are serious and prolonged, professional help can be valuable.

What can be done?

During the initial acute emergency phase:

- The focus should be on social interventions that aim to remove additional stress factors (to the extent possible), restore normal social interactions and activities and provide emotional support – see below.
- Urgent psychiatric complaints (e.g., dangerousness to self or others) should be managed within the primary health care system. Ensure that sufficient, essential psychotropics are available. Avoid setting up separate, parallel psychosocial trauma services outside the existing health system
- If the acute phase is protracted, start training and supervising PHC workers and community workers for psychological interventions during the reconsolidation phase.

Most acute mental health problems related to extreme stress during the emergency are best managed without medication, using the principles of 'psychological first aid' – listen, convey compassion, assess needs, ensure basic physical needs are met, do not force talking, provide or mobilise company from preferably family or significant others, encourage but do not force social support, protect from further harm.

During the reconsolidation phase (once basic needs are met):

- Continue relevant social interventions, support pre-existing positive ways of coping, and educate the public on the difference between normal psychological stress and psychopathology.
- Educate humanitarian workers and community leaders (including teachers) in core psychological care skills, to raise awareness and to refer individuals to PHC when necessary.
- Train and supervise PHC workers in basic mental health knowledge and skills. The recommended core curriculum is *Mental health for refugees*, WHO/UNHCR 1996.
- Train and supervise community workers to assist PHC workers with heavy caseloads; collaborate with traditional healers, if feasible; facilitate the creation of community-based self-help support groups.

Within the first 4 weeks of exposure to traumatic stressors, it is not advised to organize forms of single-session psychological debriefing that push persons to share their personal experiences beyond what they would naturally share.

Early social interventions

Measures should be taken to ensure that, to the extent possible:

- ✓ people have access to an ongoing reliable flow of credible information on:
  - ▫ the nature and scale of the emergency
  - ▫ efforts to establish physical safety for the population
  - ▫ relief efforts, including what each government department and aid organization is doing and where they are located
- ✓ normal cultural and religious events are maintained (including grieving rituals by relevant spiritual and religious practitioners); people are able to conduct ceremonious funerals
- ✓ death certificates are available to avoid unnecessary financial and legal consequences for relatives
- ✓ children have access to formal or informal schooling and to normal recreational activities
- ✓ adults and adolescents have access to participate in concrete, purposeful, common interest activities, such as emergency relief and recovery activities
- ✓ isolated persons, such as orphans, widows, widowers, or those without their families, have access to activities that aim for their inclusion in social networks
- ✓ when necessary, a family tracing service is established
- ✓ uncomplicated, reassuring, empathic information on normal stress reactions is available to the community at large

- ✓ ***where people are displaced***, shelter is organized to keep members of families and communities together, there is provision for recreational and cultural space, and the people are consulted regarding the location of religious places, schools, water points and sanitation facilities

For further details, see *Mental Health in Emergencies: mental and social aspects of health of populations exposed to extreme stressors*, WHO/MSD/MER/03.01, WHO 2003 (http://www.who.int/disasters/tg.cfm?doctypeID=21)

6.16 Services for displaced populations [42]

Assuring shelter and basic facilities

Health risks will generally be exacerbated, rather than controlled, by concentrating people at centres. Dispersal is generally a more effective strategy. Patterns of settlement should match available water supplies and logistics capacity, and maintain an acceptable balance between settlement size and accessibility.

People may seek, or be provided, shelter in schools, community centres, offices, sports facilities, even railway carriages.

Buildings used should:

- ✓ be safe – not structurally damaged nor sited near potential secondary hazards
- ✓ have adequate, functioning water supply, toilets/facilities for excreta disposal, kitchens/facilities for food preparation and, if necessary, heating
- ✓ not contain any hazardous materials nor be subject to pollution from fuel used for cooking or heating
- ✓ be cleaned and maintained intensively
- ✓ provide for each person a minimum of 3.5 m^2 of floor area or 10 m^3 of air space, etc. (see table below)

When existing buildings are not available:

- tents may be used or people be assisted to erect makeshift shelters using plastic sheets, tarpaulins and/or local materials
- sites for temporary settlements should be safe and well-drained, be accessible (for vehicles to reach and for residents to go out to markets), and have access to a dependable water supply and facilities for solid waste disposal
- site layouts should be carefully planned so that small clusters of families are grouped around community services, communities are kept together and existing social structures and maintained, as much as possible, and take responsibility for tasks such as latrine maintenance and disease surveillance

[42] Adapted from *Natural Disasters - protecting the public's health*, PAHO 2000; *Environmental health in emergencies and disasters*, B Wisner & J Adams, WHO 2003, chapter 6, and *Handbook for emergencies*, 2nd edition, UNHCR 1999

In all cases, arrangements for security must be assured, also blankets and kerosene lamps, when needed. If people will remain in the temporary settlements for an extended period, social services must be organized including measures to prevent domestic violence.

Assuring health services for displaced people

If the camp is well organized and has adequate sanitation, water, and food supply standards, health conditions will be similar to those in the general population, and:

- unless there is clear medical justification, providing a higher standard of care to camp residents than to the general population should be avoided
- health services can be provided by assigning volunteers or government health workers to the camp or enlarging the capacity of the nearest fixed health facility
- the focus of the health services should be mainly on prevention of specific communicable diseases and the establishment of a health information system.

If a large number of refugees or internally displaced people is expected to remain in a temporary settlement for a long period, especially in an area not well-served by existing health facilities, special arrangements will have to be made.

The following tables, reproduced (with minor editing) from *Handbook for emergencies*, 2nd edition, UNHCR 1999, suggest the ideal structure for the provision of health services in a large refugee camp, the staffing levels required and the environmental health standards that should be aimed for. They may be adapted to local needs in other situations.

For detail of WHO role and policy in relation to internally displaced persons, see *Internally displaced persons, health and WHO*, paper presented to the Humanitarian Affairs Segment of ECOSOC, New York, July 2000

For further programme guidance, see:

- *Guidelines for tuberculosis control in refugee and displaced populations*, WHO/UNHCR 1996
- *Guidelines for HIV interventions in emergency settings*, UNHCR/UNAIDS/WHO 1996
- *Reproductive health during conflict and displacement*, WHO/RHR/00.13,WHO 2000

Possible organization of health services in a major refugee emergency				
	Unit/Location	**Level**	**Health staff**	**Outline of major responsibilities**
	· Health Coordinating Committee with all partners (may be decentralised) · Refugee Health Unit (with MoH if possible or as part of UNHCR programme team)	Capital/national level	· UNHCR Health Coordinator or Health professionals, Nutritionist, Pharmacist, Health Administrator	· Planning and monitoring programmes · Preparation and dissemination of guidelines on standard procedures · Overall coordination and supervision · Procurement and supply of drugs and equipment
3rd level	Regional/district Hospital	Regional or district level	· If necessary: say, 1 doctor, 2 nurses to help existing staff (plus material support if required, especially food and drugs) · Cost per patient or per treatment could also be negotiated with the hospital	· Complicated obstetric cases and surgical emergencies on referral from settlement · Reference laboratory
2nd level	Health Centre (with limited beds for overnight stay, as guidance: 1 bed per 2,000 to 5,000 refugees)	Each refugee settlement of about 30,000	· As guidance: 2 doctors, 6-8 nurses, 1 midwife · About 10 health workers (1 health worker per 50 - 70 consultations per day)	· Supervision of settlement health services including training health workers and any selective feeding programmes · Treatment of patients not handled at 1st level · Security, distribution and use of drugs · Basic laboratory · Referral to third level
1st level	Health Post or clinic	Section level approximately 5,000 refugees	· As guidance, 1 nurse (from above) and 2-3 refugee or national health workers per section	· Section level services, both preventative and basic curative care · Supervision of outreach services
	The community	Outreach services*	· Refugee Community Health Workers	· Identification of public and individual health and nutritional problems · Referring sick patients to health post · Home visiting · Basic surveillance of mortality and birth
* Outreach may be organized by section, e.g. 1 community health worker per 1,000 and 1 traditional birth attendant per 3,000 refugees				

Approximate Staffing Levels for Refugee Health and Sanitation Services for a Population of 10-20,000	
Community Health Worker	10-20
Traditional Birth Attendant	6-10
Public Health Nurse	1
Clinic Nurses Midwives	3-4
Doctors/Medical Assistants	1-3
Pharmacy Attendant	1
Laboratory Technician	1
Dressers/Assistants	10
Sanitarians	2-4
Sanitation Assistants	20

Typical Services and Infrastructure Requirements for Refugee Camps		
1 latrine	per	1 family (6-10 persons)
1 water tap	per	1 community (80-100 persons)
1 health centre	per	1 camp (of 20,000 persons)
1 hospital	per	up to 200,000 persons
1 school	per	1 sector (5,000 persons)
4 commodity distribution sites	per	1 camp module (20,000 persons)
1 market	per	1 camp module (20,000 persons)
2 refuse drums	per	1 community (80-100 persons)

Site Planning Figures for Emergencies	
Land	30 - 45 m^2 per person
Sheltered space (tents, or other structures)	3.5 m^2 per person
Fire break space	A clear area between shelters 50 m wide should be provided for every 300 m of built-up area. A minimum of 1-1.5 m should be provided between guy-ropes of neighbouring tents on all sides
Roads and walkways	20-25% of entire site
Open space and public facilities	15-20% of entire site
Environmental sanitation	1 latrine seat per 20 people or ideally 1 per family sited not farther than 50 m from user accommodations and not nearer than 6 m. 1 × 100 litre refuse bin per 50 people 1 wheelbarrow per 500 people 1 communal refuse pit (2 m × 5 m × 2 m) per 500 people
Water	15 - 20 litres per person per day of clean water
Tap stands	1 per 200 persons sited not farther than 100 m from user accommodations
Warehouse space	For food grains in bags, stacked 6 m high allow 1.2 m^2 of floor space per tonne
Food	2,100 kcal/person/day This will require approximately 36 metric tonnes/10,000 people/ week of food assuming the following daily ration: 350-400 g/person/day of staple cereal 20-40 g/person/day of an energy rich food (oil/fat) 50 g/person/day of a protein rich food (legumes)

6.17 Mass casualty management [43]

Medical treatment for large numbers of casualties may be needed in the immediate aftermath of earthquakes, major transport or industrial accidents, and some cyclones/typhoons.

- The greatest need for first aid and emergency care occurs in the first few hours. Many lives have been lost because local resources, including transport, have not been mobilized quickly.
- Help from the international community is unlikely to make a difference in saving lives during the period of greatest need, because of the response time required.

Usually, the management of mass casualties is divided into three main areas: prehospital emergency care; hospital reception and treatment; and redistribution of patients to other hospitals when necessary.

Prehospital Emergency Care

Search, rescue, and first aid

Most immediate help will come from uninjured survivors providing whatever assistance they can. The quality and availability of immediate first aid services depends on the prior training of community volunteers and the preparedness of the emergency services.

Field care

Mobile health teams should be deployed to deal with as many people as possible on site and manage the referral of patients to fixed facilities.

At fixed facilities, arrangements must be made to deal with people who present themselves as well as those who are brought/sent in by emergency teams:

- ✓ Beds and treatment capacity must be made available by selectively discharging routine inpatients and rescheduling non-priority admissions
- ✓ Staff leave must be cancelled
- ✓ Treatment of minor wounds must be delegated to health technicians
- ✓ Provisions should be made for food and sleeping quarters for health personnel
- ✓ A centre should be established to respond to inquiries from patients' relatives and friends. It should be staffed round-the-clock, using non-health personnel as necessary – the Red Cross may be well-equipped to direct this function

Priority must be given to victim identification, which is becoming an increasingly specialized issue. Adequate mortuary space and services also must be provided.

Triage

When the quantity and severity of injuries overwhelms available operative capacity, a triage system must be applied, adapted to locally available skills – the injured are rapidly classified according to the severity of their injuries and the likelihood of their survival with prompt medical intervention. Higher priority is granted to victims whose immediate or long-term prognosis can be dramatically affected by simple intensive care. Moribund patients who require a great deal of attention (with questionable benefit) have the lowest priority.

Triage should also be carried out at the disaster site in order to determine transportation priority and admission to the hospital or treatment center where the patient's needs and priority for medical care will be reassessed. Persons with minor or moderate injuries should be treated near their own homes whenever possible. The seriously injured should be transported to hospitals with specialized treatment facilities.

Tagging

All patients must be identified with tags stating their name, age, sex, place of origin, triage category, diagnosis, and initial treatment.

Hospital Reception and Treatment

At the hospital, a clear command structure is necessary and triage should be the responsibility of a highly experienced clinician – it may mean life or death for the patient, and will determine the priorities and activities of the entire staff.

[43] This section is adapted from *Natural disasters - protecting the public's health*, PAHO 2000, chapter 6

Therapeutic procedures should be economical in terms of both human and material resources. First line medical treatment should be simplified and aim to save lives and prevent major secondary complications or problems:

- Standardized procedures (established in advance), such as extensive debridement, delayed primary wound closure, or the use of splints instead of circular casts, can produce a marked decrease in mortality and long-term impairment.
- Individuals with limited training can, in many instances, carry out simple procedures quickly and effectively. Certain more sophisticated techniques requiring highly trained individuals and complex equipment and many supplies (e.g., treatment of severe bums) are not a wise investment of resources in mass casualty management.

Redistribution of Patients Between Hospitals

Specialized medical services, such as neurosurgery, may be provided at hospitals outside the affected area. However, such medical evacuations should be carefully controlled and limited to patients in need of specialized care not available in the disaster area. Policies regarding evacuation should be standardized among all agencies providing relief in the disaster area, and hospitals that will receive patients.

Staffed, self-sufficient, mobile emergency hospitals available from government, military, Red Cross or private sources within the country, or from a neighbouring country with the same language and culture, may be considered in extreme cases – but see the potential problems listed in 5.3.

Natural disasters - protecting the public's health, PAHO 2000, provides (in Figure 6.1) a chart that can be useful in matching resources and needs. Hospitals are listed according to their geographic location, starting with those closest to the impact area.

For further details, see *Natural Disasters - protecting the public's health*, PAHO 2000, chapter 6

6.18 Blood supplies during emergencies

Basic principles

Blood transfusion must always be used appropriately and be the therapy of last resort:

- The first choice for volume therapy in emergencies must always be plasma substitutes and, if necessary, blood from existing transfusion services.
- Where sufficient blood is not available from existing transfusion services, a 'walking donor' system may be used.
- International donors should provide plasma and blood collection and transfusion supplies, when needed, rather than blood.

When many people have been injured and there is a need for blood, the ***initial assessment*** should examine the:

- adequacy of blood stocks and the possibility of obtaining extra blood supplies from other centres
- availability of plasma substitutes, or volume expanders (e.g. crystalloid or colloid solutions)
- stocks of in-date grouping anti-sera
- availability and routine use of HIV and HBV testing kits
- cold chain and transport facilities available for blood transport
- adequacy of communications

'Walking donor' system

This involves the selection, grouping and screening of voluntary potential donors. It requires:

- ✓ access to testing facilities for initial grouping, screening for relevant transmissible agents (e.g. HIV, HBsAg, syphilis) and regular monitoring of donors
- ✓ basic equipment and consumables for collecting and transfusing blood
- ✓ basic laboratory services on site for simple grouping and compatibility testing (ABO and Rh groups) and rapid, simple testing for HIV, HBsAg, syphilis where relevant
- ✓ an adequate on-site record system

National standards should be applied, and cross-matching be done by saline room temperature immediate spin method and anti-human globulin test, if possible. As far as possible:

- exclude younger sexually active males and females, and women of childbearing age
- include/prefer older children, men over 50, women past menopause

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For further details, see:

- *Health Laboratory Facilities in Emergency and Disaster Situations*, WHO-EMRO 1994, chapter 10 (in EHLK and HeLiD)*
- *Safe blood and blood products,* WHO, 4 modules + trainers guide (in EHLK)
- *Blood safety and clinical technology*, WHO-SEARO

For guidelines on blood salvage, see *Autologous transfusion in developing countries*

* This publication includes, in chapter 7, a suggested list of supplies for blood transfusions (module 22).

6.19 Drug donations

The following, reproduced (with minor editing) from PAHO[44], is a summary of the policy agreed among WHO, UNICEF and a number of other organizations.

For the full document, which also includes recommendations for donors, see: *Guidelines for Drug Donations*, WHO 1999, in HeLiD.

Core principles for drug donations:

- ✓ All donations should benefit the recipient
- ✓ Respect the wishes and authority of the recipient
- ✓ There should not be a double standard in quality
- ✓ Effective communication between the donor and the recipient.

Guidelines for drug donations:

- ✓ All drug donations should be based on an expressed need and be relevant to the disease pattern in the recipient country.
- ✓ All drugs should be approved for use in the recipient country.
- ✓ The presentation, strength and formulation of donated drug should, as much as possible, be similar to those commonly used in the recipient country.
- ✓ All donated drugs should be obtained from a reliable source and comply with quality standards in both donor and recipient countries.
- ✓ No drug should be donated that have been issued to patients and then returned to a pharmacy or elsewhere.
- ✓ After arrival in the recipient country all donated drugs should have a remaining shelf-life of at least one year.
- ✓ All drugs should be labelled in a language that is easily understood by health professionals in the recipient country.
- ✓ Donated drugs should be presented in larger quantity units and hospital packs.
- ✓ All drug donations should be packed in accordance with international shipping regulations (named by INN, dosage form, quantity, batch number, expiry date, volume, weight and any special storage conditions).
- ✓ Recipients should be informed of all drug donations that are being considered, prepared or actually underway.
- ✓ In the recipient country the declared value of a drug donation should be based upon the wholesale price of its generic equivalent in the recipient country (except for patented drug for which there is no generic equivalent).
- ✓ Cost of international and local transport, warehousing, port clearance and appropriate storage and handling should be paid by the donor agency, unless specifically agreed otherwise with the recipient in advance.

Recommendations for the recipient country:

In emergency situations, it is common to have many organizations involved in receiving and distributing international donations (mainly NGOs). It is wise to have an official unit to coordinate them or at least to have access to information on what drugs are being received and the areas/institutions to which they are being sent.

- ✓ Provide international donors with a list of needed drugs and inform them whenever the list is updated.
- ✓ Include in the list of needed drugs all necessary devices for administering them, such as syringes and needles.
- ✓ In making the list of needed drugs, make a specific provision for controlled medicines, following WHO guidelines (WHO/PSA/96.16).
- ✓ Although it is hoped that most donors will follow the drug donations guidelines, some drugs that are unnecessary, expired or near the expiration date are likely to arrive. Have a special team to deal with those cases.

[44] <http://www.paho.org/english/PDE/te_ddon.htm>

7. WHAT ARE THE LIKELY PUBLIC HEALTH EFFECTS, ASSESSMENT AND INTERVENTION PRIORITIES

This chapter briefly describes, for principal types of disaster that are common in the WPR, the typical effects on health and health services, the things assessment should focus on, the kinds of public health interventions that may be required (subject to the findings of the assessment), and the kinds of assistance a WHO country office might provide, or envisage, in the event of a disaster.[45]

There are also brief notes on what should be done (by the relevant authorities) during the 'warning period', if any: this is the period between a) the first sign that a disaster could be imminent and b) the occurrence of the disaster. (In some cases there are very brief notes on the kind of general preparedness measures that could be appropriate.)

Countries in the WPR are exposed to wide range of hazards and experience many disasters every year, both natural and technological. The more important of these are described in this chapter. Some statistics concerning disasters in the WPR in recent years are presented in 8.2.

Although fortunately rare in the WPR in recent years, the disruption of livelihoods and essential services by civil conflict and ethnic tensions are not unknown, and ministries of health and WHO must also be ready to respond to the public health consequences of such (exceptional) situations of violence.

[45] The draft texts that follow are based on the WHO Technical Hazard Sheets available on the EHA Website but focus on response (excluding material relating to mitigation), are restructured as indicated above, and include refinements and supplementary material from other sources.

Short-term effects of major sudden natural disasters

[Reproduced from *Humanitarian Supply Management and Logistics in the Health Sector*, PAHO & WHO, 2001]

Effect	Earthquakes	Windstorms (without flooding)	Tsunamis and sudden floods	Slow-onset floods	Landslides	Volcanoes and mudslides
Deaths [a]	Many	Few	Many	Few	Many	Many
Severe injuries requiring extensive treatment	Many	Moderate	Few	Few	Few	Few
Increased risk of communicable diseases	This is a potential hazard after any significant natural disaster (The potential increases in close correlation with overcrowding and the degradation of the sanitation situation)					
Damage to health facilities	Severe (structure and equipment)	Severe	Severe but localized	Severe (equipment only)	Severe but localized	Severe (structure and equipment)
Damage to water systems	Severe	Light	Severe	Minor	Severe but localized	Severe
Food shortage	Infrequent (generally caused by economic and logistic factors)		Common	Common	Infrequent	Infrequent
Major population movements	Infrequent (tend to occur in urban areas that have suffered heavy damage)		Common (generally limited)			

[a] Potential lethal impact in absence of preventive measures.

7.1 Earthquakes

Characteristics

Impact is greatest close to the epicentre, but varies depending on the type of soil (its susceptibility to liquefaction). Injuries arise primarily from falling objects and collapsing buildings.

Secondary hazards add to damage and casualties. They include:

- aftershocks: many people, including many whose homes have not been destroyed, will be living in the open for several days/weeks for fear of aftershocks;
- fire, landslides and (in coastal areas) tsunamis.

Typical impacts on health

Direct impacts:

- High mortality (instantaneous or rapid death) from severe crush injuries, external or internal haemorrhage, and asphyxia due to dust inhalation or chest compression, etc.
- Many people with minor cuts and bruises, some with simple fractures, a minority with serious multiple fractures or internal injuries and crush syndrome requiring surgery and other intensive treatment; some with burns and electroshocks.
- Respiratory diseases due to exposure to dust (and possibly asbestos fibres from rubble)

Indirect impacts:

- Disruption of water supplies and sewerage systems in urban areas, with possible cross-contamination – increases in endemic water-related diseases
- Exposure to the environment – hypothermia in a cold climate.
- Disruption of transport (blocking of roads, destruction of bridges, etc.) – people unable to reach health service even for routine health/medical care
- Impoverishment of people rendered destitute, leading to reduced ability to pay for health care and other services.

Delayed deaths (within a few days) may occur due to dehydration, hypothermia, hyperthermia, crush syndrome, wound infections or post-operative sepsis.

Myocardial infarction, chronic diseases (e.g. diabetes or hypertension) and mental health problems (including depression) may increase.

Distribution of earthquake casualties

Casualty rates are highest:

- where population density is high (dense concentrations of buildings and high occupancy rates);
- in dry stone and un-reinforced masonry (brick) buildings, and concrete buildings not built to resist shaking;
- among young children and elderly people (who are less able to protect themselves than other people).

Casualty rates and the location of casualties depend on time of day:

- at night, most people are at home and casualties are concentrated in residential buildings;
- during the day, many are at school, work or in the fields.

The ratio of dead to injured generally decreases as distance from the epicentre increases.

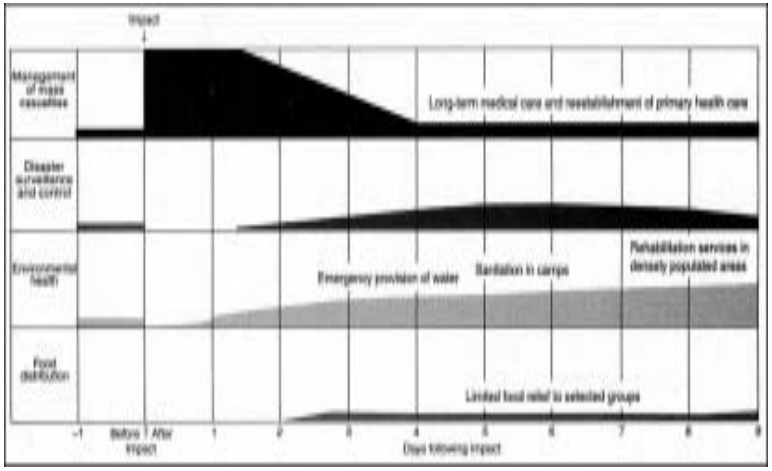
Typical demands on health services

- Enormous demands for treatment of minor injuries not requiring operative intervention – can be outpatient care.
- Important but much lower demands for hospital care for severe injuries including head, spine, chest and internal injuries.
- Emergency care demand is especially high in the first 24 hours, falling off rapidly after 3-5 days. Possibly two waves: 1) casualties from the immediate area around a facility; 2) casualties from more distant areas. Continuing surgical needs for a few weeks.
- Provision of basic health care for homeless/displaced people for several weeks/months, and mental health services for an extended period.

N.B. Very few people are rescued alive more than 48 hours after an earthquake. Rescue teams and field hospitals arriving after this are too late to have a significant life-saving impact.

Changing needs and priorities following earthquakes

[From Natural disasters: protecting the public's health, PAHO, 2000]



Typical impacts on health services

- Damage to health facilities, equipment, supplies and transport (depending on type of construction).
- Disruption of water and electricity supplies, and telecommunications.
- Disruption deliveries of supplies and fuel to health facilities (by surface transport).
- Death and injury to some health workers.

What needs to be done during the warning period

No warning is possible, at present.

In terms of ***preparedness***:

- people (including health staff) living in earthquake-prone areas should know (be informed) how to behave during an earthquake to reduce risks of death and injury;
- buildings – especially hospitals and health centres – should be constructed (or retro-fitted) to earthquake-proof designs and standards;
- health (and other) services should have up-to-date contingency plans and conduct practice drills regularly.

What the assessment should focus on

Identifying the areas most affected and the severity of the problem:

- ✓ numbers of injured requiring treatment in different localities
- ✓ numbers of dead in different localities (for planning disposal of bodies and psychological support to survivors)
- ✓ impact on health services – premises, equipment, staff, water and electricity supplies, means of transport and communication
- ✓ extent of damage to water supply and sewerage systems, and how people are managing
- ✓ numbers of people in different localities without shelter, water, sanitation facilities and other vital needs

Determining priorities for public health action:

- ✓ demand for casualty treatment (including from secondary hazards)
- ✓ risks for survivors due to lack of shelter, blankets, heating, water, means to prepare food, etc.
- ✓ risks of endemic disease due to disruption of water and sanitation, or proliferation of disease vectors
- ✓ (Later): requirements for rehabilitation of people seriously injured
- ✓ (Later): need for psychological support for traumatized people

Determining response capacity (technical and managerial) available locally to:

- ✓ treat injuries on site and at referral centres, including transport to those centres
- ✓ continue providing basic health care, and care for people with chronic diseases

Interventions likely to be needed

Specific health interventions

- casualty treatment

- psycho-social support
- (later) rehabilitation of people seriously injured
- repair/reconstruction of damaged health facilities
- replacement of damaged equipment and stocks

Other critical interventions affecting public health

- search and rescue; recovery of bodies
- emergency shelter, water and sanitation
- food (ready-to-eat) for a few days
- repair/reconstruction of damaged water and sanitation systems

N.B. Every effort must be made to help people to continue living in their own homes, and to avoid migration/displacement into relief camps. (Displacement into camps increases communicable disease risks and mental health problems, and makes recovery more difficult.)

What is not (or only rarely) needed

⦸ *Blood and blood derivatives*: Even if there are many injured victims, requirements for blood can usually be covered by local blood donors. Donations from elsewhere require time-consuming and labour-intensive quality and safety controls, such as refrigeration or screening for detection of HIV.

⦸ *Medical or paramedical personnel or teams*: They almost invariably arrive too late to be effective. Local and neighbouring health services are best placed to provide emergency medical care.

⦸ *Field hospitals, modular medical units*: This type of equipment is justified only when it meets medium-term needs, and should not be accepted unless it is donated.

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

✓ organizing and assuring the quality of the health sector assessment, nutritional surveys and epidemiological surveillance

✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors

✓ designing and organizing relevant health and nutrition education activities

✓ controlling water quality and designing and implementing measures to reduce risks associated with contamination

✓ helping to ensure sanitation and hygiene in damaged towns and at evacuation sites

✓ advocating for the provision of shelter, clothing, blankets and food for homeless people, if necessary

✓ mobilizing technical expertise and resources for structural assessments of damaged health facilities

Personal protection measures[46]

What to do beforehand

✓ Ensure that premises are built in accordance with urban planning regulations in seismic risk areas.

✓ Ensure that all electrical and gas appliances, together with all pipes connected to them, are firmly fixed.

✓ Avoid storing heavy objects and materials in high positions.

✓ Hold office and family evacuation drills and ensure that everyone knows what to do in case of an earthquake.

✓ Prepare a office and family emergency kits.

During an earthquake

✓ Keep calm, do not panic.

✓ People who are indoors should stay there but move to the central part of the building.

✓ Keep away from the stairs, which might collapse suddenly.

✓ People who are outside should stay there, keeping away from buildings to avoid collapsing walls and away from electric cables.

✓ Anyone in a vehicle should park it, keeping away from bridges and buildings.

After an earthquake

✓ Obey the authorities' instructions.

✓ Do not go back into damaged buildings since tremors may start again at any moment.

✓ Give first aid to the injured and alert the emergency services in case of fire, burst pipes, etc.

[46] Adapted from *Community Emergency Preparedness*, WHO 1999, Annex 4

- ✓ Do not go simply to look at the stricken areas: this will hamper rescue work.
- ✓ Keep emergency packages and a radio near at hand.
- ✓ Make sure that water is safe to drink and food stored at home is fit to eat (in case of electricity cuts affecting refrigerators and freezers).

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For further details, see:

- *Rapid health assessment protocols for emergencies*, WHO, 1999, chapter 6
- *Earthquakes and People's Health: Vulnerability Reduction, Preparedness, and Rehabilitation*. Proceedings of a WHO Symposium, Kobe, Japan 1997. Geneva, WHO, 1997.
- *Natural Disasters: Protecting the Public's Health*. PAHO Scientific Publication 575, PAHO 2000, chapter 1
- *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997, chapter 8

7.2 Landslides

Characteristics

Landslides usually result from heavy storms, long-duration rainfall, earthquakes or volcanic eruptions. The areas prone to landslides are generally known from experience (historic data). The likelihood of landslides is increased by intense deforestation, soil erosion and the construction of roads, settlements, pipelines and other structures in hilly/mountain areas. Impact is generally confined to a narrow belt where the slide passes.

Typical impacts on health

Direct impacts

- High mortality from suffocation and severe trauma in a localized area.
- Generally few injuries requiring treatment.
- Mental health problems including depression

Indirect impact

- Destruction of water springs and distribution systems
- Exposure to the environment if a whole settlement is affected – hypothermia in a cold climate.

Short- and long-term mental health problems, including depression, are possible.

Typical demands on health services

- Treatment of some injuries.
- In case of a major slide affecting a large settlement: provision of basic health care for homeless people for several weeks/months, and mental health services for an extended period.

N.B. Very few people are rescued alive more than 48 hours after being buried by a landslide. Rescue teams arriving after this are too late to have a significant life-saving impact.

Typical impacts on health services

- Damage to any health facility, its equipment, supplies and transport, directly in the path of the landslide.
- Possible disruption of water and electricity supplies, and telecommunications, to nearby health facilities.
- Possible disruption of surface transport and deliveries of supplies and fuel to other health facilities temporarily cut off by the landslide.

What needs to be done during the warning period

- ... As for earthquakes…

What the assessment should focus on

- ... As for earthquakes...

Interventions likely to be needed

Specific health interventions

- Limited casualty treatment
- Treatment for mental health problems including depression

Other critical interventions affecting public health

- Search and rescue; recovery of bodies
- Emergency shelter
- Rehabilitation of damaged water sources and distribution systems

What is not (or only rarely) needed

⦸ Drugs, blood and blood derivatives

⦸ Medical or paramedical personnel or teams

Possible role of WHO

Probably very little. Exceptionally, as for earthquakes.

For further details, see:

- *Rapid health assessment protocols for emergencies*, WHO, 1999,

chapter 6

- *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997

7.3 Volcanic Eruptions

Characteristics

A volcanic eruption may involve some or all of: explosions, pyroclastic flows (travelling at high speed), hot ash releases, lava flows and gas emissions.

Gas emissions (from a crater, or through fissures or by ground soil diffusion on the slopes of a volcano) may occur independently of an eruption.

Secondary hazards associated with eruptions may include: hot mudflows ('lahars'); fires started by lava or hot ash; floods caused by melting ice or by snow or rain during or shortly after an eruption.

Typical impacts on health

Direct impacts

Risks depend on the type of event:

- Volcanic mass, falling rocks and flying glass cause mediated trauma, crush type injuries and lacerations.
- Hot ash, gases, rock and magma cause skin and lung burns, asphyxiation and conjunctivitis or corneal abrasion.
- Ash-fall, particularly in fine particles, aggravates bronchial asthma and other chronic respiratory conditions (in children as well as in adults).
- Gases and fumes can cause acute respiratory distress.
- Ash and acid rain provoke eye and skin irritation.
- Hot mudflows ('lahars') bury people with little chance of being rescued alive.

Lava flows have minimal direct health impacts. The lava path is predictable and the progression is slow, giving people time to evacuate.

Gas emissions between eruptions, including from long-dormant volcanoes, may include asphyxiants (notably carbon dioxide, CO_2), respiratory irritants (notably sulphur dioxide, SO_2) or poisonous gas (notably hydrogen sulphide, H_2S). Deaths are uncommon but have occurred, among people and livestock, on the slopes of some volcanoes.[47]

[47] Deaths probably occur only when there are significant emissions of CO_2 or H_2S, without any irritant SO_2, during still weather. There are no known examples in WPR of massive CO_2 reservoirs such as Lake Nyos in Cameroon, which has caused thousands of deaths. It has been suggested that any lake with a depth of 200 m or greater in a volcanic field should be regarded as a potential hazard (see P J Baxter, *Volcanoes*, in The Public Health Consequences of Disasters, E K Noji, Ed., OUP, 1997).

Indirect Impact

- Injuries to and asphyxiation of people in buildings that collapse under the weight of ash –especially wide-span buildings and particularly if the ash is wet.
- Possible gastrointestinal problems due to ingestion of food or water contaminated by ash.
- Accidents resulting from poor visibility and slippery roads (due to ash).
- Possible increase in malaria/water-borne diseases if lava flows and rock falls create unusual flooding and pooling of water.
- Impoverishment of people who loose homes and livelihoods (property, livestock and/or agricultural land) leading to reduced ability to pay for health care (and other) services.

Typical demands on health services

- Treatment of some injuries and burns.
- Treatment of respiratory problems (asthma, bronchitis, possibly silicosis later) and eye irritations and corneal abrasions, depending on the extent and characteristics of gas emissions and ash in the atmosphere. Rain at the time may reduce these potential problems.
- In some cases, provision of basic health care for homeless and displaced people for several weeks/months.

Typical impacts on health services

- Damage to any health facility, its equipment, supplies and transport in the path of a larva flow or falling rocks, or buried under ash.
- Disruption of water supplies (by damage to pipelines and clogging of filters), electricity supplies (by destruction or short-circuiting of installations), and telecommunications (by destruction of antennas and interference).
- Disruption of all forms of transport, hence deliveries of supplies and fuel to health facilities in the area.

What needs to be done during the warning period

When it is determined that an eruption is imminent:

- people living close to the volcano should evacuate themselves (or be evacuated);
- before evacuating, health staff should seek to protect valuable equipment and supplies (if time permits);
- staff in neighbouring areas should be put on standby to provide assistance, if needed.

In terms of ***preparedness***:

- communities and local authorities close to active volcanoes should have evacuation plans and contingency plans to assist and provide services to evacuees.
- health (and other) services should have up-to-date contingency plans and conduct practice drills regularly.

What the assessment should focus on

Identifying areas and population groups most affected/at risk, and the severity of the problem:

- ✓ the areas and any health facilities affected by or in the path of lava or mud flows
- ✓ the present and forecast wind directions and the areas affected or likely to be affected by ashfall and fires
- ✓ the numbers of people evacuated, where they are and the health services available to them at those locations
- ✓ the level and toxicity of any gas emissions and the areas affected or likely to be affected
- ✓ response capacity (technical and managerial) available locally
- ✓ physical and logistics resources for programme implementation

Interventions likely to be needed

Specific health interventions

- Limited casualty treatment
- Information to the general population concerning the risk of building collapse, the dangers associated with breathing ash and the importance of using simple masks or protection when outside even for only a short period.
- Testing of ash, and ash-contaminated water, for chemical toxicity
- Provision of basic and mental health services to displaced populations (especially if eruption is of long duration).

Other critical interventions affecting public health

- Evacuation of people from the (ash-fall) area until the ash has settled and no more eruptions are expected.
- Provision of masks (or, better, respirators) that retain small particles of ash for those who need to work in an ash-contaminated environment and for vulnerable groups (children, old people, those who have respiratory problems e.g. asthma).
- Search and rescue; recovery of bodies.
- Emergency shelter.
- Restricting vehicle movements to essential traffic only.
- Maintaining food security conditions over the long term (lava, ash and acid rain damage crops, soils and livestock).

Possible role of WHO

Advising the national and local health authorities and, if needed, helping in:

- ✓ organizing and assuring the quality of the health sector assessment;
- ✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors;
- ✓ testing/monitoring air and water quality, and designing and implementing measures to reduce risks associated with contamination;
- ✓ providing/reinforcing health care services at evacuation sites and, later, in resettlement areas;
- ✓ helping to ensure water supplies, sanitation and hygiene at evacuation sites and, later, in resettlement areas;
- ✓ advocating for the provision of shelter, clothing, blankets and food for evacuees, if necessary.

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For further details, see:

- *Volcanic Eruptions*, http://www.paho.org/english/ped/te_volc.htm
- *Rapid health assessment protocols for emergencies*, WHO, 1999,

chapter 6

- *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997

7.4 Cyclones/Typhoons

Characteristics

Cyclones/typhoons (also called hurricanes or severe tropical storms) move inland from the sea. A wide area is struck by high winds and heavy rains but the greatest damage to life and property is from associated secondary events such as storm surges (tidal waves), flooding and landslides.

Settlements located in low-lying coastal areas are generally the worst affected, but flooding and landslides further inland can also be devastating.

The impact (especially on people) is aggravated when:

- building design or construction is poor
- warnings do not reach people in time or are not believed
- evacuation procedures are not in place or not complied with
- there are insufficient safe sites/cyclone-proof buildings for people to evacuate to

Typical impacts on health

Direct impacts

- Drowning
- Injuries and trauma due to flying debris and building collapse
- Asphyxiation due to entrapment in collapsed buildings
- Electrocution due to downed power lines

N.B. Except when accompanied by floods or sea surges, cyclones cause relatively few deaths and injuries.

Indirect impact

- Destruction of water storage and distribution installations
- Contamination of water supplies if chemical factories or storage facilities are impacted
- Impoverization and increased food insecurity due to destruction of crops, trees, livestock, houses and household assets
- Outbreaks of communicable diseases are rarely observed. Nonetheless, the risk for water- and vector-borne disease can be exacerbated if changes in the physical environment increase human exposure to existing disease vectors
- Short- and long-term mental health effects are likely

Typical demands on health services

- Treatment of injuries and trauma

Typical impacts on health services

- Extensive damage to health facilities not built to cyclone-resistant standards
- Interruption of electricity supplies and water supplies (due to damage to power lines and other infrastructure)
- Damage to vehicles and disruption of all means of transport and communication (due to damaged roads, bridges, aerials, etc.)

What needs to be done during the warning period

- Dissemination of warnings to people, local authorities and health facility managers with specific advice concerning the action they should take (which should, hopefully, have already been defined and disseminated as part of preparedness in all cyclone-prone areas).
- Activation (or rapid development) of emergency contingency plans to communicate with and deliver supplies and other necessary support to health facilities in the areas concerned.

What the assessment should focus on

- ✓ Casualties requiring treatment
- ✓ Availability and quality of water for drinking
- ✓ Numbers and locations of any people evacuated/displaced, and their access to (adequacy of):
  - ▫ shelter, drinking water, sanitation facilities and other vital needs
  - ▫ basic health care
- ✓ Vectors present and whether they are likely to proliferate
- ✓ Whether any health facilities have been damaged, flooded or cut off

Interventions likely to be needed (to be confirmed

by assessment)

Specific health interventions

- information to people concerning dangers of contaminated water and how to assure safe drinking water
- distribution of water treatment tablets to people, with clear instructions for (and if possible supervision of) their use – see 6.7
- provision of water treatment chemicals to health facilities and disinfectants to any facilities flooded
- vector control measures (against vectors likely to proliferate) – see 6.8
- heightened disease surveillance – see 5.2 and 6.1
- raising awareness of the risks associated with cleanup activities
- Other critical interventions affecting public health
- search and rescue
- evacuating people (when necessary), establishing and managing temporary shelter sites (e.g. in schools) until flood waters recede
- short-term food assistance (when needed) and assistance to restore food security
- restoration of electric power and water supplies
- rehabilitation of sewerage infrastructure
- repair/restoration of transport routes and communications systems

N.B. Every effort must be made to help people to continue living in their own homes, and to avoid migration/displacement into relief camps. (Displacement into camps increases communicable disease risks and mental health problems, and makes recovery more difficult.)

What is not (or only rarely) needed

- ⦸ mass immunization (very rarely justified or appropriate except for measles if people remain in relief camps) – see 6.4
- ⦸ drugs and medical supplies other than for endemic diseases
- ⦸ special feeding programmes (unless there were already serious levels of malnutrition).

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

- ✓ organizing and assuring the quality of the health sector assessment, and epidemiological surveillance
- ✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors
- ✓ designing and organizing relevant health promotion – health and hygiene education – activities
- ✓ controlling water quality and designing and implementing measures to reduce risks associated with contamination

Personal protection measures[48]

What to do beforehand

- ✓ Choose a shelter in advance, before the emergency occurs – a cellar, a basement, or an alcove may be perfectly suitable
- ✓ Minimize the effects of the storm – fell dead trees, prune tree branches, regularly check the state of roofs, the state of the ground, and the drainage around premises
- ✓ Take measures against flooding
- ✓ Prepare office/family emergency kits

During a storm

- ✓ Listen to the information and advice provided by the authorities
- ✓ Do not go out in a car or a boat once the storm has been announced
- ✓ Evacuate premises if the authorities request this, taking the emergency package
- ✓ If possible, tie down any object liable to be blown away by the wind; if there is time, nail planks to the doors and shutters, open the windows and doors slightly on the side opposite to the direction from which the wind is coming so as to reduce wind pressure on the house
- ✓ If caught outside in a storm, take refuge as quickly as possible in a shelter; if there is no shelter, lie down flat in a ditch
- ✓ In a thunderstorm keep away from doors, windows, and electrical conductors, unplug electrical appliances and television aerials. Do not use any electrical appliances or the telephone
- ✓ Anyone who is outside should:

[48] Adapted from *Community Emergency Preparedness*, WHO 1999, Annex 4

- look for shelter in a building (never under a tree)
- if out in a boat, get back to the shore
- keep away from fences and electric cables
- kneel down rather than remain standing

After a storm

After the storm has subsided:

- ✓ follow the instructions given by the authorities
- ✓ stay indoors and do not go to the stricken areas
- ✓ give the alert as quickly as possible
- ✓ give first aid to the injured
- ✓ make sure the water is safe to drink and check the contents of refrigerators and freezers
- ✓ check the exterior of dwellings and call for assistance if there is a risk of falling objects (tiles, guttering, etc.).

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For further details, see:

- *Rapid health assessment protocols for emergencies*, WHO, 1999, chapter 6
- *Natural Disasters: Protecting the Public's Health*, PAHO Scientific Publication 575, 2000, chapter 1
- *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997
- *Assessing needs in the health sector after floods and hurricanes*, PAHO technical paper # 11, 1987

7.5 Flash Floods, Tidal Waves, Tsunamis

Characteristics

Narrow valleys may be hit by flash floods as a result of exceptionally heavy rains upstream in the catchment area, or dam bursts, including the breaking of natural dams formed when debris from landslides blocks a valley river bed. Coastal areas may be hit by tidal waves/storm surges (associated with cyclones/typhoons) or tsunamis (due to under-sea earthquakes).

These events result in extensive destruction of crops and infrastructure in the areas hit by the wall of water. There may be heavy loss of life when people receive insufficient warning to evacuate.

The time available for warnings is short (a few minutes to a few hours) for flash floods, but may be a day or two for some tidal waves and tsunamis.

Typical impacts on health

Direct impacts

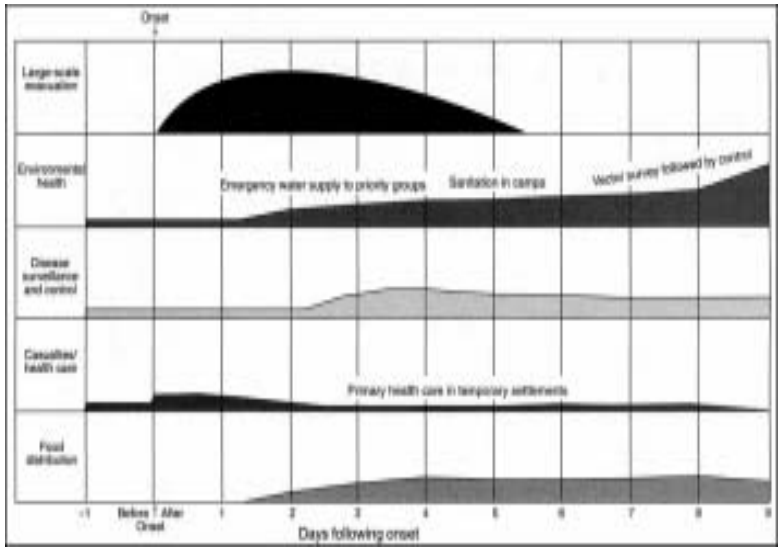
- Drowning
- Some injuries, especially during hasty evacuations and cleanup activities (particularly small lacerations and punctures due to nails and broken glass in debris)
- Electrical shocks from downed power lines

Indirect impact

- Contamination of water supplies by flood water and by overflowing latrines and septic tanks, leading to increased levels of diarrhoea.
- Wells near rivers can be contaminated and filled with sand
- Potential for increased transmission of endemic water- and vector-borne diseases after a flood (due to the emergence of new breeding sites and the disruption of vector control activities), and among people displaced (due to overcrowding in shelters).
- Contamination of the environment by toxic chemicals is possible, if industries or waste-disposal sites are flooded
- Long-term impoverization of (and increased food insecurity among) people who have lost crops, other means of livelihood or essential property – hence risks of reduced nutritional status and reduced ability to access and pay for health care

Changing needs and priorities following flash floods

[From Natural disasters: protecting the public's health, PAHO, 2000]



Typical impacts on health services

- Damage to health facilities, their equipment, supplies and vehicles
- Disruption of water, electricity supplies and communications
- Disruption of deliveries of supplies and fuel to health facilities

What needs to be done during the warning period

- Dissemination of warnings to people, local authorities and health facility managers to seek shelter in cyclone-proof buildings and/or on high ground (inland, or behind protective tree plantations, in case of tidal waves and tsunamis)

- Activation of emergency contingency plans (or rapid development of plans) to communicate with and deliver supplies and other necessary support to health facilities in the areas concerned after the impact

What the assessment should focus on

- ✓ Availability and quality of water for drinking
- ✓ Numbers and locations of any people evacuated/displaced, and their access to (adequacy of):
  - ▫ shelter, drinking water, sanitation facilities and other vital needs
  - ▫ basic health care
- ✓ Vectors present and whether they are likely to proliferate
- ✓ Whether any health facilities have been damaged and what it will take to make them operational again once the waters recede
- ✓ Response capacity (technical and managerial) available locally
- ✓ Physical and logistics resources for programme implementation

Interventions likely to be needed

Specific health interventions

- information to people concerning dangers of contaminated water and how to assure safe drinking water
- distribution of water treatment tablets to people, with clear instructions for (and if possible supervision of) their use – see 6.7
- provision of water treatment chemicals to health facilities and disinfectants to any facilities flooded
- vector control measures (against vectors likely to proliferate)
- heightened disease surveillance – see 5.2 and 6.1
- raising awareness of the risks associated with cleanup activities

Other critical interventions affecting public health

- search and rescue
- evacuating people (when necessary), establishing and managing temporary shelter sites (e.g. in schools) until flood waters recede
- short-term food assistance (when necessary), and assistance to restore food security

What is not (or only rarely) needed

- ⦸ mass immunization (very rarely justified or appropriate)
- ⦸ temporary shelter, clothing and blankets (would be appropriate only in exceptional circumstances; temporary accommodation in public buildings and with other families is often possible and more appropriate)
- ⦸ drugs and medical supplies other than for endemic diseases
- ⦸ special feeding programmes (unless there were already serious levels of malnutrition)

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

- ✓ organizing and assuring the quality of the health sector assessment, and epidemiological surveillance
- ✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors
- ✓ designing and organizing relevant health education activities
- ✓ controlling water quality and designing and implementing measures to reduce risks associated with contamination

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For further details, see:

- ▫ *Rapid health assessment protocols for emergencies*, WHO, 1999, chapter 6
- ▫ *Natural Disasters: Protecting the Public's Health*, PAHO Scientific Publication 575, 2000
- ▫ *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997
- ▫ *Assessing needs in the health sector after floods and hurricanes*, PAHO technical paper #11, 1987

7.6 Seasonal/'Slow' Floods

Characteristics

Seasonal river floods rise slowly. The severity of impact on people, crops and physical structures depends on:

- the depth, velocity and rate of rise of water, the duration and the frequency of occurrence (which in turn depend on the drainage and absorption capacity of the land)
- the season (for crops)
- the location of settlements and the resistance of buildings and infrastructure and their foundations
- whether people evacuate/take precautions in time

The time available for warnings and precautionary measures is relatively long – usually several days.

Typical impacts on health

Direct impacts

- Electrical shocks from downed power lines
- Possibly some increase in snake-bites

Indirect impact

- Contamination of water supplies by flood water and overflowing latrines and septic tanks, leading to increased levels of diarrhoea
- Potential for increased transmission of endemic water- and vector-borne diseases after a flood (due to the emergence of new breeding sites and the disruption of vector control activities), and among people displaced (due to overcrowding in shelters), but outbreaks are rare
- Contamination of the environment by toxic chemicals is theoretically possible, if industries or waste-disposal sites are flooded
- Long-term impoverization of (and increased food insecurity among) people who have lost crops, other means of livelihood or essential property – hence risks of reduced nutritional status and reduced ability to access and pay for health care

Typical impacts on health services

- Inability of flooded health facilities to function; possible damage to (loss of) equipment, supplies and vehicles
- Disruption of water and electricity supplies to flooded health facilities
- Disruption of surface transport, hence deliveries of supplies and fuel to other health facilities temporarily cut off by floods (unless sufficient boats are available)

What needs to be done during the warning period

- Dissemination of warnings to people, local authorities and health facility managers with specific advice concerning the action they should take (which should, hopefully, have already been defined and disseminated as part of preparedness in all flood-prone areas)
- Activation (or rapid development) of emergency contingency plans to communicate with and deliver supplies and other necessary support to health facilities in the areas concerned

What the assessment should focus on

- ✓ Availability and quality of water for drinking – risks associated with the flooding of wells and latrines
- ✓ Numbers and locations of any people evacuated/displaced, and their access to (adequacy of):
  - ▫ shelter, drinking water, sanitation facilities and other vital needs
  - ▫ basic health care
- ✓ Vectors present and whether they are likely to proliferate
- ✓ Whether any health facilities have been flooded and what it will take to make them operational again once the waters recede
- ✓ Response capacity (technical and managerial) available locally
- ✓ Physical and logistics resources for programme implementation

Interventions likely to be needed

Specific health interventions

- information to people concerning dangers of contaminated water and how to assure safe drinking water

- distribution of water treatment tablets to people, with clear instructions for (and if possible supervision of) their use – see 6.7
- provision of water treatment chemicals to health facilities and disinfectants to any facilities flooded
- vector control measures (against vectors likely to proliferate) – see 6.8
- heightened disease surveillance – see 5.2 and 6.1
- raising awareness of the risks associated with cleanup activities

Other critical interventions affecting public health

- search and rescue
- evacuating people (when necessary), establishing and managing temporary shelter sites (e.g. in schools) until flood waters recede
- short-term food assistance (when necessary), and assistance to restore food security

What is not (or only rarely) needed

⦸ mass immunization (very rarely justified or appropriate).

⦸ temporary shelter, clothing and blankets (would be appropriate only in exceptional circumstances; temporary accommodation in public buildings and with other families is often possible and more appropriate).

⦸ drugs and medical supplies other than for endemic diseases

⦸ special feeding programmes (unless there were already serious levels of malnutrition).

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

✓ organizing and assuring the quality of the health sector assessment, and epidemiological surveillance

✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors

✓ designing and organizing relevant health promotion – health and hygiene education – activities

✓ controlling water quality and designing and implementing measures to reduce risks associated with contamination

Personal protection measures[49]

During a flood

✓ Turn off the electricity to reduce the risk of electrocution

✓ Protect people and property:
  - as soon as the flood begins, take any vulnerable people (children, the old, the sick, and the disabled) to an upper floor
  - whenever possible, move personal belongings upstairs or go to raised shelters provided for use in floods

✓ Beware of water contamination – if the taste, colour or smell of the water is suspicious, it is vital to use some means of purification

✓ Evacuate danger zones as ordered by the local authorities – it is essential to comply strictly with the evacuation advice given. Authorities will recommend that families take with them the emergency supplies they have prepared

After a flood

When a flood is over, it is important that people do not return home until told to do so by the local authorities, who will have ensured that buildings have not been undermined by water. From then on it is essential to:

✓ wait until the water is declared safe before drinking any that is untreated

✓ clean and disinfect any room that has been flooded

✓ sterilize or wash with boiling water all dishes and kitchen utensils

✓ get rid of any food that has been in or near the water, including canned foods and any food kept in refrigerators and freezers

✓ get rid of all consumables (drinks, medicines, cosmetics, etc.) that have been in or near the water

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For further details, see:

- *Rapid health assessment protocols for emergencies*, WHO, 1999, chapter 6
- *Public Health Consequences of Disasters*, Noji E., Oxford University Press, 1997
- *Assessing needs in the health sector after floods and hurricanes*, PAHO technical paper # 11, 1987

[49] Adapted from *Community Emergency Preparedness*, WHO 1999, Annex 4

7.7 Drought/Economic (Slow-Onset) Crises

Characteristics

Drought, irregular rainfall[50], economic crisis, plant and livestock diseases progressively erode people's livelihoods and have long-term impacts on the economy (national and local) and, indirectly, on people's health. They may result in displacements of population. The impact may be compounded by (and may compound) social, political or ethnic tensions. Public resources for all services are likely to be reduced.

Dought/irregular rainfall

Effects on people are greatest where:

- there is little irrigation
- demographic pressure on the environment is high and land already degraded
- many people are chronically food insecure
- economic systems depend on agriculture
- traditional drought-resistant crops are no longer planted

The people most affected by drought are those (in both rural and urban areas) whose livelihoods depend on activities related to agriculture or livestock.

Plant and livestock diseases have broadly similar effects: losses of income for the farmers/herders and increased prices for the foods concerned leading to increased food insecurity (and impoverishment) of the farmers/herders and poor people who depend on the market for their food.

Pollution of groundwater (including encroachment of salt water in coastal belts) also has similar, but more long-term, effects as crop yields are reduced.

Economic crisis

Economic crisis leads to unemployment and reduced incomes – hence food insecurity among household who depend on income from employment, casual labour or petty trading as well as reduced public resources for services.

The people most affected by economic crises are those who pay rent, buy (rather than produce) their food, and have to pay for water, cooking fuel, etc. – i.e. the poor in both rural and urban areas.

Typical impacts on health

Indirect impact:

- Reduced food intake and lack of varied diet leading to: protein-energy malnutrition and micronutrient deficiency diseases especially Vitamin A deficiency (hence increased the risk of death from measles) and anaemia (hence increased the risk of child and maternal mortality). Outbreaks of scurvy, beriberi or pellagra can also occur
- Impoverishment of the affected people leading to reduced ability to pay for health care (and other) services
- ***For drought, and especially for people displaced***: increased vulnerability to diarrhoea, trachoma, scabies and endemic diseases (such as cholera, typhoid, acute respiratory infections and measles) due to reduced water supply and hygiene, and crowding in camps for displaced people

Effects on health are greatest where water supplies, sanitation systems and the health status of the population are poor at the best of times.

Typical demands on health services

- Treatment/nutritional rehabilitation of severely malnourished individuals
- Identification of any significant micronutrient deficiencies and action to combat them
- Response to increases in endemic diseases
- Provision of basic health care for displaced people (for several months)

Typical impacts on health services

- Generally no direct impact in the short term
- *During prolonged drought*: possible shortage of water in health facilities (and shortage of power if power generation is restricted)
- *During prolonged economic crisis*: possible reduction in operating budgets due to shortfalls in national and local government revenues

[50] Inadequate rainfall at crucial periods during the planting and growing seasons can result in major reductions in crop yields even if there is not a long-term drought.

What needs to be done during the warning period

- Monitor indicators of nutritional stress:
  - levels of acute malnutrition observed in surveys and/or clinics (see 6.11): are they abnormally high or increasing?
  - incidence of micronutrient deficiency diseases: are they increasing?
  - mortality and morbidity rates: are they increasing? If so, which diseases in particular?
- Monitor indicators of increasing food insecurity (hence nutritional risk):
  - signs of crop failure: inadequate rain at crucial moments; reduced availability/use of agricultural inputs and services; poor development of plants; pest infestations
  - increased incidence of livestock disease and mortality
  - reduced purchasing power: increases in market prices for food and other necessities; reduction in real wage rates
  - adoption of 'crisis' strategies by households: unusual/excessive sales of assets (animals, household items, etc.); use of less-preferred 'famine' foods; skipping meals; reduced school attendance
  - abnormal migrations of individuals in search of work, or of whole families
- Monitor social indicators: increasing inter-communal conflict or discrimination against specific population groups; interference with normal trading patterns.
- Maintain vaccination and other outreach services, and reinforce relevant health and nutrition education activities.
- Prepare contingency plans with other services and agencies for additional measures to be implemented if the situation worsens.

What the assessment should focus on

Identifying areas and population groups most affected/at risk, and the severity of the problem:

- ✓ the quantity of water to which people have access for domestic use
- ✓ the quality of water used for drinking
- ✓ prevalence of diseases associated with water shortages (diarrhoeas, trachoma, scabies)
- ✓ clinically observed malnutrition: kwashiorkor (oedema); signs of vitamin A deficiency, beriberi, pellagra, anaemia (if sufficient expertise is available including laboratory facilities for confirmation)
- ✓ nutritional status: anthropometric surveys of wasting in children (weight-for-height, or MUAC/MUAC-for-height) or adults (BMI), see 6.11
- ✓ birth weights (absolute values and whether lower than normal)
- ✓ child mortality and morbidity rates (reported from clinics and medical teams)
- ✓ evidence (reliable reports) of destitution, out-migration, etc.

Determining priorities for public health action:

- ✓ rates of malnutrition – whether there is need for health/nutrition education and/or special therapeutic and/or supplementary feeding (see 6.11)
- ✓ measles vaccination rates among children and whether there is need for a special vaccination programme; how to sustain ongoing EPI operations (see 6.4)
- ✓ availability of water for domestic use
- ✓ quality of water available
- ✓ availability and quality of water at health facilities
- ✓ sanitary state of the environment
- ✓ *for any displaced people in camps*, see also 7.11.

Determining response capacity (technical and managerial) available locally to:

- ✓ extend health outreach services to all affected/vulnerable communities
- ✓ organize appropriate health/nutrition education and social mobilization
- ✓ organize therapeutic feeding/nutritional rehabilitation – may include health staff and facilities, Red Cross/Crescent and/or NGOs, possibly with support from IFRC, UNICEF or international NGOs
- ✓ organize general or selective food distributions (if needed) – may include national/local authorities, community structures, Red Cross/Crescent and/or NGOs, possibly with support from WFP, UNICEF, IFRC or international NGOs

[N.B. capacity is primarily a function of past experience, numbers of trained personnel, and effective management and supervision systems.]

Assessing physical and logistics resources for programme implementation:

- ✓ cold chain, vaccines and other items needed for immunizations
- ✓ primary health care supplies and transport for outreach programmes
- ✓ food commodities available (immediately or in the near future) locally or from WFP or other donors and agencies
- ✓ utensils and other items needed for feeding programmes

Interventions likely to be needed

Specific health interventions

- supplementary feeding to correct moderate malnutrition and prevent deterioration of nutritional status among those most at-risk
- therapeutic (intensive) feeding, under medical supervision, to treat severely malnourished individuals (see 6.12)
- ensuring measles immunization of children, especially among IDPs (see 6.4)
- vitamin A supplementation for children and (in conjunction with immunization and/or supplementary feeding)
- health and nutrition education relevant to the prevailing situation
- close monitoring of the nutritional situation and of the implementation and effectiveness of feeding programmes (see 6.12)
- (if displacement cannot be avoided) provision of health services for displaced people

Other critical interventions affecting public health

- employment programmes, food-for-work and, as a last resort, general food distributions
- water conservation measures and the development of additional sources (where available and feasible)
- crop and livestock conservation measures

N.B. Every effort must be made to help people to continue living in their own homes, and to avoid migration/displacement into relief camps. Displacement into camps increases communicable disease risks and mental health problems, and makes recovery more difficult.

What is not (or only rarely) needed

- ⦸ Medical teams, unless there is widespread severe malnutrition and/or massive population displacement into relief camps.

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

- ✓ organizing and assuring the quality of the health sector assessment, nutritional surveys and epidemiological surveillance
- ✓ analysing and interpreting nutritional and epidemiological data (including checking the validity of data)
- ✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors
- ✓ organizing training for national health staff, and concerned NGO staff, in nutritional surveys and the care of severely malnourished patients
- ✓ designing and organizing relevant health and nutrition education activities
- ✓ controlling water quality and designing and implementing measures to reduce risks associated with contamination

N.B. Actions in relation to nutritional surveys and feeding programmes would be in close coordination with WFP and UNICEF, where present. Actions in relation to immunization, health education and water supplies would be in close coordination with UNICEF.

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For further details, see:

- ▫ *Rapid health assessment protocols for emergencies*, chapter 8, WHO, 1999
- ▫ *Public Health Consequences of Disasters*, , Noji E., Oxford University Press, 1997, chapter 15

7.8 Vegetation fires

Characteristics

Some wildfires (uncontrolled fires) are of natural origin but many are caused by human negligence, often associated with slash and burn activities that, in times of drought, can escape. Fires may burn for a long time when vegetation is very dry, there are strong winds and no rain. Very large areas may be affected, sometimes for long periods.

A large number of pollutants are emitted into the atmosphere including oxides of nitrogen, sulphur dioxide and carbon monoxide which can be dangerous for people close to the fire, but smoke particles constitute the greatest danger and can be dispersed and affect people over large distances.

Typical impacts on health

The effects of smoke depend on the toxicity of pollutants, the magnitude of exposure, housing characteristics and whether people are able to reduce their exposure.

Direct impacts

Acute impacts:

- Burns and deaths among fire fighters, other emergency response workers and people close to, or trapped/encircled by, the fire
- Exacerbation of asthmatic and respiratory disease, especially among young children, pregnant women, elderly people and individuals having pre-existing respiratory problems and/or decreased lung function (including tobacco smokers)
- Increases in respiratory and cardiovascular deaths
- Decreased lung function

Chronic health impacts:

- Increased risk of carcinogenesis
- Increased incidence of asthmatic and respiratory disease
- Decreased life expectancy due to chronic lung disease

Indirect impacts

- Transportation (traffic, marine and aircraft) accidents due to reduced visibility.
- Injuries/fatalities during evacuation.
- Increased morbidity associated with reduced hygiene (lack of water) and displacement (congested accommodation).
- Psychological effects: fear and anxiety

Typical demands on health services

- Increases in hospital admissions (including emergency admissions) and outpatients visits for burns, respiratory and asthmatic problems
- Hospital care for cardiopulmonary cases
- Working with the Ministry of Information and others to inform the public (via the media, notably radio) on measures to be taken, and providing answers to frequently asked questions

The MoH should also work with the Ministry of the Environment or other entities to ensure air quality monitoring. Subsequently, the MoH may analyse those data and disease surveillance reports with the aim to assess the impact on health.

Typical impacts on health (and other) services

- Possible shortages of water and electricity
- Disruption of all forms of transport hence delivery of supplies and fuel

What needs to be done during the warning period

- Action to protect and/or evacuate any health facilities in areas to which the fire could spread
- Warning the population, and informing them of potential health effects

The practical possibilities of reducing the exposure of populations to fine particles in smoke is often limited. (Surgical and make-shift masks do not prevent the inhalation of fine particles in smoke, only professional respirators, common in occupational health, are effective.) It is therefore important to detect conditions conducive to fire and for the relevant authorities to take action to prevent outbreaks.

What the assessment should focus on

- ✓ the concentrations of particulate matter in the atmosphere
- ✓ likely exposure scenarios for affected populations (indoors and outdoors) and consequent health risks
- ✓ the situation of health facilities in the affected area

Interventions likely to be needed

Specific health interventions

- Consider providing appropriate respirators for children and infants and other particularly vulnerable individuals
- Informing the population on the public health impacts and providing advice on what to do

Other critical interventions affecting public health

- Fire fighting, detection and containment
- Evacuation of highly susceptible people (especially asthmatics, young children and elderly people) to buildings where they will be less exposed to pollutants.
- Keeping the population informed of any changes to public services.

Evacuation of whole populations to other geographical locations in response to smoke haze is not recommended (and often not possible).

Possible role of WHO

- ✓ Promoting air pollution monitoring including quality assurance and control
- ✓ Supporting the MoH to anticipate likely health impacts and formulate advice to the population, by despatching an expert where possible and appropriate

Possible public health measures

Measures people may be encouraged to take to reduce exposure to pollutants include:

- Remaining indoors, although this is only effective if air exchange with outside is limited (Ideally, susceptible individuals should seek/be placed in locations [rooms, commercial buildings, etc.] with air-conditioning to which effective filters have been installed, or rooms with air cleaners.)
- Reducing physical activity, especially outdoors, and avoiding work with a risk of falling from heights
- Restricting cigarette smoking
- Using masks, even though improvised masks and most commercially-available masks provide very little protection against fine smoke particles

Ideally, when pollution levels are high, respirators designed for particle removal should be used by: a) people who have to undertake outdoor activity, and b) on the recommendation of their doctors, by individuals with cardiopulmonary illness.

Authorities should issue specific recommendations concerning the types of filters, air cleaners and respirators that are appropriate (e.g. USA standard N95 or European P1 for respirators).

Possible administrative measures

- Closing schools and businesses would probably be justified only if visibility is so low that the risk of traffic accidents is high.
- Restrictions on certain industrial emissions and traffic circulation may be warranted.

Application of appropriate short-term air quality guidelines

There are no international standards that can be recommended. National and local authorities may establish their own standards (levels) based on the exposure-response/health impacts information in *Guidelines for Air Quality*, WHO/SDE/OEH/00.02, WHO 2000.

For details concerning the health effects of smoke from biomass fires and guidelines on public health protection, see *Health guidelines for vegetation fire events – guidelines document*, UNEP, WHO, WMO, IEE-Singapore, 1999, especially chapter 3.

7.9 Industrial/Chemical Disasters

Characteristics

Industrial and transportation accidents involving toxic chemicals, and pollution incidents associated with mining activities, occur in many countries.

Sudden, acute incidents may occur as a result of a fire, explosion or other accident in the handling of chemicals at an industrial or storage site, the impact of a natural disaster or terrorist attack on such sites, or during the transportation of hazardous chemicals.

Silent releases may occur from industrial or storage sites due to undetected leaks, or from waste sites. Outbreaks of illness may be the first sign of such releases.

Exposure may be limited to people within the site, or extend to the public outside via air or water pollution or, more slowly, through the contamination of soil and food.

Problems are compounded when prehospital emergency medical and paramedical services are lacking and occupational health is undeveloped as a medical speciality.

Typical impacts on health

Direct impacts

- Deaths and serious injuries from explosions, building collapses and transport accidents
- Burns
- Deaths and illness/internal damage from exposure to toxic chemicals:
  - during the release: from direct dermal exposure and inhalation
  - later: from dermal exposure through contact with contaminated objects and ingestion of contaminated food or water

Some effects, e.g. eye or skin irritation, bronchoconstriction or central nervous system depression, can occur within a few minutes or hours of exposure. Others may be delayed, e.g. chronic lung damage, respiratory difficulties and cancers.

Accidents involving volatile hydrocarbon compounds, herbicides, ammonia or chlorine have particularly serious public health effects.

Low socio-economic status populations living near hazardous sites (including storage sites) are particularly at risk. People with diabetes or asthma, and smokers, may be particularly susceptible.

Indirect impact

- Psychological and psychosocial effects: fear and anxiety, increase in disease and non-specific medical symptoms
- Social disruption if people are displaced; economic costs

Typical demands on health services

In case of an explosion or transport accident:

- treatment of casualties

In case of an incident involving toxic chemicals:

- assessment of public health risks, decision on 'best outcome' approach to managing the situation, implementation of measures to protect people and their environment (by public health services)
- treatment and monitoring of exposed people (by medical services)

Typical impacts on health services

- None (unless a health facility or staff and directly affected)

What needs to be done during the warning period

- In case of a fire or malfunction in a chemical processing plant of storage depot which gives risk to an explosion or the release of toxic materials into the atmosphere or water courses, warning can be given by technical staff and people be advised to evacuate or shelter indoors

In terms of ***preparedness***, there should be an inventory of hazard sites and associated health risk assessments, and multi-disciplinary preparedness plans be drawn up and regularly tested for the sites and the surrounding populated areas. Health staff and emergency services in areas where dangerous materials are produced or stored, or through which such materials are transported, should be aware of the risks, have 24-hour access to information and expert advice, and be trained and have necessary equipment to deal with an accident.

What the assessment should focus on

✓ Number of casualties requiring treatment for injuries or burns

When there is a (suspected) chemical emergency

✓ The source and type of contaminants, the magnitude of the release, the likely dispersion pattern, the specific public health risks and the populations at risk

✓ The exposure of individuals – people at the site, first responders, surrounding population (through environmental and personal/ biological monitoring based on sampling, questionnaires and surrogate markers)

✓ Health effects – initially acute effects then longer-term effects (data on functional, physical, morbidity and mortality outcomes)

✓ The capacity of local services to respond appropriately – qualified personnel, protective equipment, specific antidotes, diagnostic capacity, decontamination facilities, etc.

For detailed guidelines on assessment, see *Rapid health assessment protocols for emergencies*, chapter 9, WHO, 1999

Interventions/Response likely to be needed

Specific health/medical interventions

- Registration, diagnostic testing, treatment and monitoring of exposed individuals, with advice from the nearest poisons centre (in case of chemical poisoning)

Other critical public health interventions

- Analysis of options to manage the situation and selection of the 'best public health outcome option' taking account of weather forecasts and environmental modelling predictions of the likely dispersion of chemical pollutants in the are and/or water courses
- Definition of 'hot', 'warm' and 'cold' zones around the scene of the accident; excluding all persons without protective clothing from the hot and warm zones
- Information to the public on risks and precautions: e.g. sheltering from air pollution (staying indoors and closing all windows), restrictions if water, soil or food supplies are contaminated
- Evacuation, if necessary, and provision of essential services at the evacuation sites (if health risks are acute)
- Prevention or containment of fire-fighting water run-off (using drainage ditches or holding tanks)
- Monitoring the source of contamination and likely contaminated media well beyond the moment at which the release is thought to have been controlled
- Remediation measures to make the environment safe and clean

A range of specialist information and services are required including chemical and medical toxicology (including laboratories), environmental and medical epidemiology, and environmental and biological monitoring.

Where to obtain information

WHO-INTOX (http://www.intox.org/firstpage.htm) provides a list of Poison Centres. Or contact WHO-INTOX at <ipcsintox@who.int>

http://www.who.int/pcs/inchem.htm provides quick and easy access to a wide range of documents on chemicals, chemical risks and chemical risk management

The OECD/UNEP International Directory of Emergency Response Centres of Chemical Incidents (http://www.oecd.org) provides a means for obtaining:

- information needed in preparing for, or responding to, chemical incidents
- advice in establishing emergency response centres or programmes; and
- technical assistance in dealing with a response to a particular incident.

[INTOX and ICHEM databases are also available in hard copy and on CD-ROM.]

Possible role of WHO

Advising the national and local health authorities and, when needed, helping in:

✓ securing information concerning the toxicity of the chemicals involved and corresponding treatment regimens

✓ organizing epidemiological surveillance

✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors;

For further details, see:

- *Public health and chemical incidents*, IPCS 1999 [http://www.uwic.ac.uk/ ; 'clearing house publications'; 'guidance for policy makers' … and expected in HeLiD 2003]

- *Rapid health assessment protocols for emergencies*, chapter 9, WHO, 1999
- *Health aspects of chemical accidents*, Environmental Health monograph No. 81, UNEP/IPCS/OECD Paris 1994
- *Assessing the health consequences of major chemical incidents – epidemiological approaches*, WHO regional publications, European Series, No. 79, Copenhagen 1997
- WHO *Guidance on the Public Health Response to Biological and Chemical weapons*, WHO 2001 (http://www.who.int/emc/book_2nd_edition.htm)
- *Industrial disasters*, S R Lillibridge, in *The public health consequences of disasters*, chapter 17, E K Noji, ed. OUP, 1997
- WHO-EHA technical hazard sheet *Chemical Incidents*

7.10 Radiation Emergencies

Characteristics

A radiation emergency may arise from: a nuclear accident in a nuclear reactor or, most frequently, a radiological accident in a hospital, a research institution or industrial plant using radioactive materials, the loss or improper disposal of radioactive sources, or during the transportation of radioactive materials. Terrorist activity using highly radioactive materials packed around traditional explosives (the so called "dirty bomb") cannot be ruled out.

In the short term, people may be exposed to external irradiation and/or the internal radiation through inhalation. Later, exposure may be through the ingestion of contaminated food.

Typical impacts on health

Direct impacts

- Acute ('deterministic') effects in case of exposure to very high doses of radiation: skin burns, radiation sickness (nausea, vomiting and diarrhoea), lung impairment or death
- Visual impairment may appear several months after the exposure to ionizing radiation, and eye cataracts some years later
- Late ('stochastic') effects: cancers and genetic (inheritable) defects

Indirect impact

- Psychological and psychosocial effects: fear and anxiety, increase in disease and non-specific medical symptoms
- Social disruption if people are displaced

Typical demands on health services

- Triage, treatment and follow-up of overexposed persons

Typical impacts on health services

- None (unless a health facility or staff are directly affected)

What needs to be done during the warning period

- In case of a malfunction in a nuclear reactor and/or risk of discharge of radioactive material into the atmosphere, warning can be given by technical staff and countermeasures should then be promptly taken according the speed and direction of the wind moving the radioactive plume. Measures may include sheltering, iodine prophylaxis or evacuating people.

In terms of ***preparedness***, health staff and emergency services in areas where radioactive materials are used or stored, or through which such materials are transported, should know what to do and have up-to-date emergency procedures and contingency plans, and necessary equipment, for dealing with an accident.

Specialized medical institutions capable of dealing with radiation victims (having expertise in treating burns and haematological disorders) should be designated by the national authorities. There should be regular training and drills (exercises) of medical personnel.

What the assessment should focus on

- ✓ Determining the level of radiation (dose rate and contamination density). Predictions of radiation doses, environmental and health consequences can then be made by competent national institutions or requested from competent international bodies.
- ✓ Identification of the extent and type (radionuclide composition) of the radioactive dispersion
- ✓ Estimating (through triage) the number of casualties requiring hospital treatment for combined injuries, radiation burns, haematological insufficiency, or simply out-patient follow-up.

Interventions likely to be needed

Specific health interventions

- First medical care for radiation victims based on principles of emergency medicine (physical and biological investigations by the emergency medical team): life-saving and urgent medical care of combined injuries
- Iodine prophylaxis using single large age-appropriate doses of stable iodine – from 12.5 mg for infants to 100 mg to adults – for the whole population at risk if the inhalation of radioactive iodine could result in high

thyroid radiation doses (e.g. in an accident at a nuclear reactor or radioiodine production/distribution facility)

WHO now recommends iodine prophylaxis if the avertable thyroid dose is estimated as 10 mGy for children and 100 mGy for adults.[51]

Other critical public health interventions during the emergency phase following a major accident

- Information to the public on the nature and extent of any accident or emergency, the likely effects on health and the precautions (if any) that people should take – e.g. by 'sheltering' (staying indoors with doors and windows closed, and ventilation systems shut down) and listening to the radio for further instructions
- Evacuation of people from the immediate area, if necessary, and provision of essential services at the evacuation sites; (When needed, entire communities should be evacuated in an orderly manner; although children and pregnant women face a greater risk, it is not appropriate – from psychosocial perspective – to prioritise them)
- Personal protective measures (equipment and clothing) for rescue teams

Public health measures during the recovery phase

- Information to the public on any continuing precautions
- Restriction of agricultural production on severely contaminated land (e.g. in the 30 km area around the Chernobyl Nuclear Power Plant); control of locally produced food (especially vegetables, fruit and milk) consumption, and water supplies
- Decontamination (by the competent authorities)

Where to obtain information and help

WHO's REMPAN – Radiation Emergency Medical Preparedness and Assistance Network – has 16 collaborating centres around the world – including Australia, China and Japan in WPR. These centres can provide information, advice and medical assistance.

The 24-hour warning/contact point in WHO-HQ (SDE) is:

Fax # 0041 22 791 1397

Fax in working hours: # 0041 22 791 4123

E-mail: Repacholim@who.int and Turaii@who.int

REMPAN contact/collaborating centres in Australia

Dr Stephen Solomon
Australian Radiation Protection and Nuclear Safety Agency
Lower Plenty Road, Yallambie, Victoria, 3085
Fax: 613 9432 9043 Tel: 613 9433 2211

E-mail: Stephen.Sol@arl.gov.au

REMPAN contact/collaborating centres in China

Dr He Fuchu, Director; Dr Yang G.S. and Dr Hao J.
Institute of Radiation Medicine
27, Tai Ping Road, Beijing 100850, China
Fax: (86-10) 821-4653 Tel:(86-10) 821-3044/821/4653

E-mails: yanggs@nic.bmi.ac.cn ; haoj@nic.bmi.ac.cn ; linzw@nic.bmi.ac.cn

REMPAN contact/collaborating centres in Japan

Dr Senjun Taira
Radiation Effects Research Foundation
5-2 Hijiyama Park, Minarni-ku
Hiroshima 732-0815, Japan
Fax: 81-82-263-7279 Tel: 81-82-261-3131

E-mail: taira@rerf.or.jp

Possible role of WHO

✓ Advising the national and local health authorities and, as needed, helping in securing information and advice on medical management of radiation accident victims and public health measures in radiation/nuclear emergencies through REMPAN; WPRO & WHO/HQ.

WHO-HQ cooperates with WPRO in organizing and conducting regional training courses for MDs and medical emergency responders in "Radiation Emergency Medical Preparedness and Response" (an IAEA-WHO training material is being published on CD-ROMs for 5-day courses).

For further details, see:

- http://webitpreview.who.int/entity/ionizing_radiation/en/
- http://webitpreview.who.int/entity/ionizing_radiation/a_e/en/

[51] *Guidelines for Iodine Prophylaxis following Nuclear Accidents*, WHO/FADL, Copenhagen 1989, and *Guidelines for Iodine Prophylaxis following Nuclear Accidents Update,* WHO 1999
[http://www.who.int/environmental_information/Information_resources/documents/Iodine/guide.pdf]

- http://webitpreview.who.int/entity/ionizing_radiation/a_e/rempan/en/
- *Radiation Emergency Response: Internal Guidance*, WHO SDE/PHE/RAD/02.06, Restricted, WHO 2002
- *Before, during and after radiation emergencies*, guidance for local authorities, WHO ROE, 1997
- *Guidelines for iodine prophylaxis following nuclear accidents*, Copenhagen, FADL Publishers 1989 (Environmental Health Series No. 35)
- *Manual on Public Health action in radiation emergencies*, WHO European Centre for Environment and Health, Rome, 1995
- *Nuclear Power: accidental releases – practical guidance for public health action*, WHO ROE 1987 (WHO Regional Publications, European series No. 21)

7.11 Population Displacements

Characteristics

People may become displaced when: their homes and/or livelihoods are destroyed by a sudden disaster, civil strife or war; their means of livelihood are undermined by drought or economic crisis; or they are subjected to unbearable discrimination or persecution.

When they flee across an internationally-recognized frontier they become ***refugees*** entitled to international protection and the assistance of the host government supported, when needed, by the UNHCR. WHO's relations with UNHCR are governed by an MOU signed in 1996, see 8.6.

Those who remain within the boundaries of their own country are termed ***internally displaced persons*** (IDPs). The national government remains responsible for their protection and for providing humanitarian assistance, when needed. The international community provides support, when necessary. WHO advises and assists the MoH, and collaborates with the UN Resident Coordinator and the UNDMT (see 1.4), as in any other emergency situation. [52]

Refugees and IDPs may congregate, or be gathered by local authorities, in camps in rural areas, on the periphery of urban areas or in large public (or private) buildings, or find shelter dispersed among the local population.

Typical impacts on health

- Separation from previous health services, and interruption of treatment for chronic health conditions
- Increase in diseases associated with crowding and poor sanitation
- Exposure to diseases to which they have no natural immunity, if displacement is to a different ecological zone
- Short- and long-term mental health problems (including depression) are common

[52] Exceptionally, UNHCR may also be involved, and sometimes take lead responsibility, when IDPs are displaced for reasons that would make them of concern to UNHCR if they were outside their country, or when requested by the UN Secretary-General.

People who have travelled far or were not in good health before leaving their homes may arrive malnourished and severely debilitated.

Typical demands on health services

- Provision of basic and referral services for the displaced people while maintaining services for the normal, host population
- Treatment of injuries suffered prior to or during the displacement

Typical impacts on health services

- Increased demand due to the population increase and increased disease burden
- The demand may be great in areas where existing health services were already weak

What needs to be done during the warning period

If there is advance warning of the movement/arrival of the population:

- assemble information on the characteristics and likely numbers of people, and the health profiles of the communities from which they come
- select suitable locations where the people can be received and provided with shelter, water and other vital necessities
- mobilize health personnel and supplies to reinforce existing facilities and staff in the area and/or establish additional temporary facilities to serve the planned settlement sites

What the assessment should focus on

The locations and magnitude of the problem:

- ✓ the locations and the numbers of displaced people at each location, and the number arriving each day[53]
- ✓ the characteristics, demographic breakdown, health and nutritional status of a) the population and b) new arrivals

[53] For surveillance of population movements, small teams of observers at key transport nodes—bridges, passes and major junctions—can help to provide detailed information on movement patterns, e.g. the numbers and demographic profile of people moving on foot, the numbers and types of vehicles, their occupants and average loading, the types of possessions carried, and the stated destinations.

- ✓ whether people are in camps/temporary settlements or dispersed
- ✓ if displaced people are dispersed, how they are/can be identified
- ✓ shelter, water supplies and sanitation arrangements
- ✓ food availability and facilities for food preparation at household or community level
- ✓ hygiene facilities and practices
- ✓ general environmental conditions; disease vectors present
- ✓ access to the site(s) for delivery of supplies and services

Determining priorities for public health action:

- ✓ present mortality rates and morbidity patterns (and malnutrition rates if obviously abnormal)
- ✓ injuries and acute illnesses requiring immediate treatment
- ✓ risks of diseases associated with crowding and inadequate shelter, water and sanitation
- ✓ risks from inadequate personal, food and water hygiene
- ✓ need for psychological support for traumatized people

Determining how health services should be assured:

- ✓ health facilities at or near each location and their capacity to meet the increased demand
- ✓ pros and cons of reinforcing existing staff and facilities, or mobilizing additional teams to provide services where large numbers of displaced people are located

Determining response capacity (technical and managerial) available locally to:

- ✓ organize appropriate hygiene/health and nutrition education and social mobilization
- ✓ organize general food distribution (if needed) – national/local authorities, community structures, Red Cross/Crescent, NGOs, WFP
- ✓ organize selective supplementary feeding programmes (if needed) – national/local authorities, community structures, Red Cross/Crescent, NGOs, WFP, UNICEF

[N.B. capacity is primarily a function of past experience, numbers of trained personnel, and effective management and supervision systems.]

Assessing physical and logistics resources for programme implementation:

- ✓ food commodities available (immediately or in the near future) locally or from WFP or other donors and agencies
- ✓ utensils and other items needed for feeding programmes
- ✓ cold chain, vaccines and other items needed for immunizations
- ✓ road and other transport routes to the locations of the displaced people
- ✓ telecommunications between local, district/province and central levels

Interventions likely to be needed (to be confirmed by assessment)

Specific health interventions

- provision of primary health care and referral services for the displaced people
- hygiene promotion (see 6.6)
- immunization against measles for all children, then assuring full EPI (see 6.4)

Other critical interventions affecting public health

- shelter, water and sanitation (may require enlargement of existing and/or construction of new water supply and sanitation installations, see 6.8)
- food (possibly ready-to-eat items for new arrivals for the first few days)
- security arrangements, if necessary, in and around temporary settlements

Possible role of WHO

Advising the national and local health authorities and, as needed, helping in:

- ✓ organizing and assuring the quality of the health sector assessment, nutritional surveys and epidemiological surveillance
- ✓ analysing and interpreting nutritional and epidemiological data (including checking the validity of reported data)
- ✓ coordinating the public-health related activities of different national entities, NGOs and international agencies and donors
- ✓ supervising (supplementary and) therapeutic feeding programmes and activities (when needed)

- ✓ designing and organizing relevant hygiene/health and nutrition education activities

N.B. Actions in relation to nutritional surveys and feeding programmes would be in close coordination with WFP and UNICEF, where present. Actions in relation to immunization, health education and water supplies would also be in close coordination with UNICEF.

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For further details, see:

- *Rapid health assessment protocols for emergencies*, WHO 1999, chapter 7
- *Refugee Health: an approach to emergency situations*, MSF 1999, MacMillan
- *Handbook for emergencies, second edition*, UNHCR 2000, chapter 14
- *Guiding principles for internal displacement*, UN
- *Internally displaced persons, health and WHO*, paper presented at the humanitarian affairs segment of ECOSOC, July 2000

8. REFERENCE MATERIALS

8.1 Terms of reference of the WPRO Emergency Management Task Force

8.2 Disasters and health emergencies in the WP region (statistics)

8.3 Myths and realities of natural disasters

8.4 UN Disaster Management Team (UNDMT) – composition and functions

8.5 UNDAC system and teams

8.6 WHO/UNHCR memorandum of understanding

8.1 Terms of reference for the WPRO Emergency Management Task Force

The following TOR were discussed during the first meeting of the EMTF, 16 August 2001

A stand-by Emergency Management Task Force (EMTF) is established at the WPRO to provide prompt, coordinated technical and administrative support to the WR, his/her emergency focal point in countries and other UN agencies in case of a major emergency in the Member States of the Region.

The response of EMTF is activated by the RD or, in his absence, the OIC following the occurrence of a major emergency situation requiring a WPRO-integrated and inter-programmatic response, both from the regional technical programmes and the administration.

During the emergency, the EMTF will meet on a regular basis (daily or less frequently according to the situation). The DPM or, in his absence, the A/DPM will chair the EMTF. EHA will assume the Secretariat and technical coordination. Ad hoc members may be designated by the Chair to ensure the proper technical response in the respective areas depending on the situation of each emergency.

The EMTF will have the following functions for emergency response:

Before the emergency:

- In coordination with WR and his/her emergency focal point in countries, monitor mass casualty events that may cause an emergency in the Member State of the Region

During the emergency:

- Coordinate and supervise the integrated response from WPRO with special emphasis in the assessment of health needs
- Collect, compile and interpret the information on the impact on health and health services, health conditions and needs and health risks of the affected areas in the Member State
- Facilitate the immediate dissemination of the above information with health recommendations to the international community and general public through WPRO
- Facilitate and coordinate the temporary mobilization of additional human resources (staff or consultant) to strengthen the WR Offices in the affected Member State(s)
- Facilitate and coordinate the mobilization of emergency equipment and supplies
- Channel all communications between WPRO and the WR Offices in the affected Member State when the magnitude of the situation deserves so
- Inform the mass media and the public on the needs of affected Member State and the response of WPRO
- Identify the priorities for extra-budgetary funding and donations
- Liaise with other UN and regional agencies/organizations (OCHA, WFP, UNICEF, IFRC, etc.)

Upon completion of the response to emergency:

- Extract and compile the lessons learned from the emergency for WPRO and share them with WR Offices and other WHO Regional Offices
- Provide technical advises for rehabilitation projects in the affected Member State

8.2 Disasters in the WP region

Number of natural disasters in WPRO by country and type of hazard, 1980-99

WPRO Member States	All	Earth-quake	Volcanic eruption	Land-slide	Cyclone / typhoon / tropical storm	Other storms	Flood	Drought	others
1) Eastern Asia									
Mongolia	9					3	2		4
China	286	40		23	56	44	85	14	24
Republic of Korea	36			2	15	3	14		2
Japan	93	28	7	10	28	6	12		2
2) South-eastern Asia									
Viet Nam	66	1		2	32	6	19	4	2
Lao PDR	15				1	2	6	6	
Cambodia	9						5	1	3
Malaysia	14			3		1	8	1	1
Singapore	0								
Philippines	192	11	6	16	100	12	37	5	5
Brunei Darussalam	0								
3) Micronesia									
Palau	0								
Federated States of Micronesia	2				1			1	
Nauru	0								
Marshall Islands	0								
Kiribati	1							1	
4) Melanesia									
Papua New Guinea	33	13	5	3	2		5	3	2
Solomon Islands	16	10			4			2	
Vanuatu	28	15		1	11	1			
Fiji	26	6			15	1	2	2	
5) Polynesia									
Tuvalu	4				3	1			
Samoa	5				3	1			1
Tonga	17	9			7	1			
Tokelau	2				1	1			
Niue	1				1				
Cook Islands	4				4				
6) Other Oceania									
Australia	140	3		4	17	52	33	7	24
New Zealand	72	10	1		5	1	54		1
7) Other									
Areas	137	7		5	58	9	38	2	18
Total	1 208	153	19	69	364	145	320	49	89

Disasters with over 500 casualties in the WPR from 1980 to 2000

Year	Country	Hazard	Killed	Injured	Homeless	Affected	Economic loss (x1,000 US$)
1980	China, P Rep	Flood	6 200	27 000	0	40 000	160 000
1981	China, P Rep	Flood	1 311	28 140		1 500 000	1 100 000
	China, P Rep	Flood	764	5 000	200 000	1 200 000	1 200 000
1983	China, P Rep	Train accident	600	2 000			
	Viet Nam	Typhoon	578	324	265 000	580 000	
1984	Philippines	Typhoon	1 079	191	765 965	1 495 738	96 600
	Philippines	Typhoon	1 399	2 565	547 076	1 237 224	216 700
1985	Viet Nam	Typhoon	798	257	225 000	225 000	
	Japan	Airplane crash	520				
1987	Philippines	Typhoon	882	927	0	1 818 185	56 000
	Philippines	Ship wreck	4 386				
1988	China, P Rep	Earthquake	939	3 364	267 000	1 000 000	269 000
	China, P Rep	Flood	577	200	0	22 000 000	1 063 564
	China, P Rep	Drought	1 400	0		49 000 000	942 887
1989	Viet Nam	Typhoon	751	106	336 000	0	21 000
	China, P Rep	Flood	2 000	10 000		100 000 000	2 789 000
	China, P Rep	Typhoon	550	2 696		7 000 000	485 000
1990	Philippines	Typhoon	748	1 574	1 110 020	5 048 275	388 500
	Philippines	Earthquake	2 412	3 513	134 791	1 594 040	369 600
1991	Philippines	Typhoon	754	1 278	1 048 024	5 498 290	435 000
	Philippines	Typhoon	5 956	3 050	45 750	598 454	100 000
	China, P Rep	Flood	1 729	32 227	4 200 000	206 000 000	7 500 000
	Philippines	Volcano	640	195	0	1 035 870	211 000
	China, P Rep	Drought	2 000			5 000 000	
1993	China, P Rep	Flood	1 000				6 061 000
1994	China, P Rep	Flood	1 001	14 400	5 600 000	73 360 000	5 460 000
	Cambodia	Flood	506	0	0	29 000	
	China, P Rep	Typhoon	1 174	1 800		11 000 000	1 150 000
1995	Japan	Earthquake	5 502	36 896	300 000	1 500 000	131 500 000
	Philippines	Typhoon	932	3 243	280 000	33 164 418	244 000
	China, P Rep	Flood	1 437	70 249	0	114 400 000	4 450 000
1996	Viet Nam	Typhoon	585	591	0	386 500	362 000
	China, P Rep	Flood	2 775	234 000	4 400 000	150 000 000	12 600 000
	China, P Rep	Flood	1 200				6 314 500
1997	Viet Nam	Typhoon	3 682	857	383 045	697 225	200 000
1998	Papua New Guinea	Tsunami	2 182	668		9 199	
	China, P Rep	Flood	3 656	123 000	15 850 000	223 000 000	20 000 000
1999	Viet Nam	Flood	622	412	90 000	3 414 000	237 000
	China, P Rep	Flood	725	24 000	1 000 000	100 000 000	8 100 000

8.3 Myths and realities of natural disasters[54]

Myth: Foreign medical volunteers with any kind of medical background are needed.

- ✓ ***Reality:*** The local population almost always covers immediate life-saving needs. Only medical personnel with skills that are not available in the affected country may be needed.

Myth: Any kind of international assistance is needed, and it's needed now!

- ✓ ***Reality:*** A hasty response that is not based on an impartial evaluation only contributes to the chaos. It is better to wait until genuine needs have been assessed.

Myth: Epidemics and plagues are inevitable after every disaster.

- ✓ ***Reality:*** Epidemics do not spontaneously occur after a disaster and dead bodies will not lead to catastrophic outbreaks of exotic diseases. The key to preventing disease is to improve sanitary conditions and educate the public.

Myth: Disasters bring out the worst in human behaviour.

- ✓ ***Reality:*** Although isolated cases of antisocial behaviour exist, the majority of people respond spontaneously and generously.

Myth: The affected population is too shocked and helpless to take responsibility for their own survival.

- ✓ ***Reality:*** On the contrary, many find new strength during an emergency, as evidenced by the thousands of volunteers who spontaneously united to sift through the rubble in search of victims after the 1985 Mexico City earthquake.

Myth: Disasters are random killers.

- ✓ ***Reality:*** Disasters strike hardest at the most vulnerable group, the poor – especially women, children and the elderly.

Myth: Locating disaster victims in temporary settlements is the best alternative.

- ✓ ***Reality:*** It should be the last alternative. Many agencies use funds normally spent for tents to purchase building materials, tools, and other construction-related support in the affected country.

Myth: Things are back to normal within a few weeks.

- ✓ ***Reality:*** The effects of a disaster last a long time. Disaster-affected countries deplete much of their financial and material resources in the immediate post-impact phase. Successful relief programs gear their operations to the fact that international interest wanes as needs and shortages become more pressing.

[54] Reproduced from PAHO

8.4 UN disaster management team (UNDMT) – composition and terms of reference

In countries prone to disasters and emergencies the UN Resident Coordinator heads a UN disaster management team (UNDMT) consisting of agencies concerned with response to humanitarian emergencies.

Composition of the UNDMT

The composition of the UNDMT varies with the organizations present in the country and the types of disasters to which the country is prone but the core is made up of the country representatives or most senior resident staff member of: FAO, UNDP, UNHCR, UNICEF, WFP and WHO.

The managers/technical advisers of any disaster mitigation projects and any delegate or team leader of OCHA are automatically included along with the chief delegate of the International Federation of Red Cross and Red Crescent Societies (IFRC), if present.

Representatives of key government bodies, donors, NGOs, the national Red Cross/Crescent society, and IOM and ICRC if present, are invited to attend.

Terms of reference of the UNDMT

On an ongoing basis, in anticipation of disaster risks and potential emergencies, the Team combines to:

- compile, evaluate and keep up to date information about disaster risks and preparedness arrangements in the country, the resources likely to be available for use in an emergency and the kinds of international assistance likely to be required in particular situations
- draw up and regularly review an action/preparedness plan for the UN system at country level so that all members know in an emergency what to do, when and how in order to complement each other and provide concerted UN assistance to the government and affected populations which is timely, coherent and effective
- ensure that appropriate elements of the plan are reflected in the UN Security Plan so that appropriate measures can be invoked under different security phases to protect UN staff and property and also ensure the operationality of the UNDMT
- review the implications of known and potential hazards for the development process in the country and:
  - coordinate the assistance of the various UN organizations/agencies in relation to risk reduction measures and national disaster preparedness arrangements
  - identify opportunities for collaboration in joint and/or parallel projects in various sectors that can directly or indirectly contribute to risk reduction and preparedness, particularly at the local level
  - act as a focal point for cooperation between the UN system and other disaster-related coordination mechanisms at country level and the national ISDR committee (where one exists)
- integrate risk/vulnerability analysis into the Common Country Assessment (CCA)

In the event of an emergency or disaster that does not fall within the mandate and overall competence of given UN organizations, the UNDMT collaborates with the UN Resident Coordinator and OCHA in helping to:

- arrange assistance to the government mobilizing and coordinating international assistance and in assessing the situation and the practical possibilities for meeting the priority needs
- establish a consolidated UN assessment of requirements for international assistance, incorporating the conclusions of any expert assessment missions organized by the headquarters of the competent agencies
- develop and integrated plan and consolidated appeal for the provision of concerted assistance by the UN system, taking account of the resources expected to be mobilized from national and other sources
- coordinate the communication of the UN assessment, plan and appeal to OCHA, the headquarters of other agencies and local representatives of potential donors and operational organizations
- coordinate the delivery of assistance by UN agencies and their resource mobilization efforts at country level, including approaches to the local representatives of potential donors
- arrange the provision of consistent and coherent operational support and technical assistance to the government, where required, possibly including the establishment and operation of an Emergency Information and Coordination Support Unit or through assistance to an OCHA-mobilized UN Disaster Assessment and Coordination Team (UNDAC)

8.5 UNDAC system and teams

United Nations Disaster Assessment and Coordination Team (UNDAC)
Generic Terms of Reference (1.11.02)

The United Nations Disaster Assessment and Coordination (UNDAC) system is a part of OCHA, and is deployed pursuant to a request from an affected Government, the ERC, or the Resident/Humanitarian Coordinator (RC/HC). It:

- supports the Resident Coordinator /Humanitarian Coordinator (RC/HC) and the UNCT by providing technical services, principally in the field of on-site coordination and information dissemination
- aims to facilitate close links between country-level, regional and international response efforts
- assists in meeting international needs for early and qualified information on the situation and, when necessary, in the coordination of international relief at the site of the emergency

UNDAC teams work in close consultation and coordination with the UN Country Team (UNCT)/Disaster Management Team (DMT) and the IASC.

The following are generic terms of reference for the mission of an UNDAC Team, which establish the overall framework for UNDAC deployments. The ERC may, within this framework, modify the TORs of an UNDAC mission, consulting with the RC/HC and UNCT in the field, depending on the requirements of a given emergency situation.

When on mission, the UNDAC team:

- Assists and works under the authority of the RC/HC, who in turn reports to the ERC when responding to disasters and emergencies.
- Supports and facilitates the work of the affected Government and the UNCT/DMT in country, in the initial response phase of an emergency.
- Reports to the RC/HC and informs him/her and the UNCT/DMT of developments in the emergency situation.
- The UNDAC team may provide and disseminate initial information on the material and human dimensions of an emergency with the aim of giving host Governments and the international community a broad understanding of the nature and magnitude of an emergency. The UNDAC team will not issue appeals. Any UN appeal will be managed by the RC/HC and the UNCT.
- While substantive multi-sectoral assessments will normally be made by the host Government, UN agencies or qualified members of the IASC, within the framework of RC-UNCT coordination, UNDAC aims to support the host Government and UNCT/DMT in facilitating the coordination of initial assessments of both the emergency situation and the international relief requirements stemming from it, with a particular view to ensuring:
  - the consistency of any preliminary information regarding the nature and scale of the emergency, the preliminary needs assessed and the relief interventions required; and,
  - the coordination of the infrastructure and logistics, including in relation to a possible deployment of UNJLCs.
- During earthquakes and other emergencies involving collapsed structures where international urban search and rescue teams are deployed, UNDAC may, when requested by the affected Government, ERC, RC/HC or INSARAG, establish a specialized On-Site Operations Coordination Centre (OSOCC) with the local emergency management authorities to enable them to meet the technical needs of coordination of the international urban search and rescue teams.
- When requested by the affected Government, ERC or RC/HC, UNDAC may establish an OSOCC for the effective integration and use of international relief assets in support of the appropriate national emergency management authority.
- When requested by the affected Government, ERC, RC/HC and UNCT to operate in complex emergencies, UNDAC normally deploys and functions with the context of OCHA's surge capacity and operates in close consultation and coordination with the UN operational agencies.
- The UNDAC team maintains links with and regularly reports on the progress of its mission to the ERC, UNCT/DMT and IASC partners throughout the duration of its mission.

As part of a joint effort to enhance system-wide coordination, OCHA will provide regular reports on UNDAC missions and field deployments to the UNDAC Advisory Board and the IASC-WG as required.

8.6 WHO/ UNHCR memorandum of understanding (MOU) [55]

The MOU has the following general objectives:

2.1 To reduce the mortality, morbidity and disability among the beneficiaries.

2.2 To promote the adequate, timely and cost-effective provision of health services for the beneficiaries.

2.3 To ensure effective coordination of health and nutrition policies at the international level as they affect the beneficiaries, with a view to achieving and reinforcing globally accepted standards.

2.4 To facilitate the sustainable reintegration of beneficiaries in their national communities.

2.5 To promote the development of institutional capacities to anticipate and address the health needs of beneficiaries both at the level of national health services, through their extension and reinforcement as necessary, and at the international level, including in particular with non-governmental organizations (NGOs).

Responsibilities in relation to beneficiaries

Refugees

3.1 UNHCR is responsible for the international protection and welfare of refugees, which may include the provision of assistance, including health care, in cooperation with host Governments and in line with their international obligations. The implementation of UNHCR assistance projects is normally entrusted to implementing partners, which are often non-governmental organizations. In large-scale emergencies or major operations, UNHCR will appoint health and nutrition coordinators, responsible for the implementation of its programmes and for coordination with host Governments, WHO and others concerned.

3.2 WHO will provide technical support and normative guidance to host Governments, UNHCR and other relevant organizations and assist the host Government in the extension of national health services to refugees where this is possible.

[55] The following are the operative sections of the MOU.

Returnees

3.3 UNHCR and WHO will consult each other to ensure complementarity of activities for returnees.

3.4 WHO will seek to ensure that national health plans take into account the returnees' needs and give appropriate priority to the areas to which return is taking place. WHO will extend its country health programme activities as required to take account of the needs of returnees, with the aim of successful reintegration into the national health system.

3.5 UNHCR seeks to ensure that voluntary repatriation takes place under conditions of safety and with dignity the duration and scope of UNHCR's activities in favour of the reintegration of returnees are limited and vary according to the needs for each operation and may be the subject of an operation-operation-specific agreement with the countries concerned. These activities are generally within the framework of wider recovery plans for countries emerging from conflict.

3.6 UNHCR will coordinate any UNHCR-supported assistance in the health sector in returnee areas with the Government, WHO and others concerned in order to ensure that UNHCR activities are compatible with medium-and long-term national health plans, and are sustainable. In large-scale reintegration operations UNHCR may appoint a health coordinator for its programmes.

Internally displaced persons (IDPs)

3.7. The interventions of WHO and UNHCR in favour of IDPs are usually part of a broader United Nations coordinated plan of action. In UNHCR's case, these interventions are selective, as explained in 1.3 above, and UNHCR's involvement in health care will depend on the specific situation.

3.8. WHO will assist Governments and other authorities to coordinate and fulfil their obligations for the health care of IDPs. Within the context of the country programme, WHO will also focus on capacity-building of the Government and technical support to national programmes for the provision of essential health and related services.

Affected local host populations

3.9. WHO, through its country programme activities with national authorities, will support their actions to ensure that the health needs and well-being of the local host population are addressed.

3.10. The involvement of UNHCR with affected local populations is selective and normally focuses on those living within the areas where beneficiaries are located.

3.11. WHO and UNHCR will seek to mobilize support for national health services so that such services to the local population do not suffer unnecessarily from the presence of refugees, returnees or IDPs. Where beneficiary numbers are significant relative to locals in the same area, and where the health care available to locals would benefit thereby, UNHCR will seek to extend health services for beneficiaries to the local population, in agreement with the national authorities and WHO.

Main areas of cooperation

Areas of collaboration between WHO and UNHCR include, but are not limited to, the following:

4.1 Coordinated contingency planning, normally undertaken in full cooperation with the national authorities and others concerned. With this framework, UNHCR will invite WHO to participate in planning for possible refugee influxes or reintegration programmes.

4.2 Enhancement of the effectiveness of a collaborative response, including by keeping each other informed (as relevant) of potential or new population movements, and of potential or new health risks for beneficiaries.

4.3 Development of joint methodologies for assessing, monitoring and evaluating the health situation of beneficiaries and exchanging information of action required and intended.

4.4 Development of guidelines and best practices for the benefit of operations in favour of the beneficiaries on both technical/medical and managerial/programme issues.

4.5 Development of training materials and training activities for governmental and non-governmental organizations for the purpose of building institutional and operational capacity.

4.6. Development of applied research on technical and operational subjects, as requested by UNHCR, with a view to improving international knowledge on specific issues relevant to the health care of beneficiaries.

Specific responsibilities of UNHCR and WHO

5.1 UNHCR will:

- 5.1.1 Consult and seek technical guidance from WHO on matters related to health care for beneficiaries.
- 5.1.2 Provide WHO with clear terms of reference of specifications for all assistance requested.
- 5.1.3 Seek WHO's support at the regional and country level when negotiating with the Government on the provision of health care services to the beneficiaries.
- 5.1.4 Coordinate with WHO in efforts to integrate beneficiary health care activities within the national health services.
- 5.1.5 Consult with WHO in order to identify suitable candidates for the consultancies/posts of UNHCR health and nutrition personnel.
- 5.1.6 To the extent possible and practical, provide logistical and other support to WHO staff working with UNHCR in the field within the framework of this MOU.

5.2 WHO will:

- 5.2.1 Expand, where possible, its ongoing support and assistance to Governments, including for the affected host population.
- 5.2.2 At the request of UNHCR, provide technical support, and short-term assistance, sectoral coordination, in areas including, but not limited to, the following:
  - Defining health priorities in emergency response.
  - Health and nutrition assessment.
  - Prevention and control of communicable diseases.
  - Reproductive health.
  - Mental health and psychosocial welfare.
  - Health systems development and monitoring.
  - Training of national and NGO staff.
  - Epidemiological surveillance.
- 5.2.3 Contribute to further development and adaptation of training materials, guidelines and joint technical publications on health care for beneficiaries, in close collaboration with UNHCR, NGOs, academic institutions and others.

Implementation of the MOU

6.1 UNHCR designates its Director, Division of Operational Support (DOS) and WHO, its Director, Division of Emergency and Humanitarian Action (EHA), as responsible for the implementation of this Memorandum UNHCR requests for WHO assistance, for example with the provision of staff support, shall be made through EHA. Communication regarding technical information

and advice may take place directly with the responsible WHO unit, keeping EHA informed as appropriate.

6.2 At the field level, the WHO Representative or Regional Office (as appropriate) and the UNHCR Representative (through the UNHCR health coordinator where applicable) shall cooperate closely and, whenever feasible and appropriate, prepare a field-level Letter of Understanding translating the general provisions of this MOU into action required by the particular circumstances and needs of the beneficiaries.

6.3 Where WHO assigns staff to assist UNHCR in the field, their administration will remain the responsibility of WHO unless other wise agreed. Such staff will have as a general responsibility to assure best possible practices in their field. They will report to a designated UNHCR officer in the field in respect of activities relating to UNHCR's overall responsibilities for the management and coordination of assistance to the beneficiaries. As with UNHCR's own technical field staff, they will have a functional responsibility to the health unit at UNHCR headquarters with respect to relevant UNHCR operational policies and guidelines. Whether technical support and backup is provided by UNHCR or WHO will be agreed on a case by case basis.

6.4 Each organization is responsible for mobilizing the resources necessary to discharge the responsibilities set out herein. For certain special operations, a decision may be taken to issue a joint appeal. Both organizations will participate in DHA [now OCHA]-coordinated consolidated inter-agency appeal processes.

9. TOOLS AND SAMPLES

Check-lists

9.1 Personal readiness check-list

9.2 Check-list for planning a field visit

9.3 Check-list for preparing an assessment mission

9.4 Check-list for an initial assessment

Formats

9.5 Format for a situation report (Sitrep)

9.6 Format for an assessment report

9.7 Format for a project proposal/document

9.8 Format for a post-disaster disease surveillance report

9.9 Format for a demography report

Sample coordination materials

9.10 Terms of reference for an Emergency Health Coordinator

9.11 Resources for an operations room

9.12 Draft principles of engagement (for NGOs in the health sector)

9.13 Sample coordination formats

9.14 Team building – hints for an emergency health coordinator

9.15 Chairing/facilitating a meeting

Supplies

9.16 Emergency kits used by WHO (with logistic specifications)

9.17 New emergency health kit 98 (NEHK98)

Contacts & references

9.18 Useful contacts and Web-sites

9.19 Conversion tables

9.1 Personal readiness check-list

The following check-list is intended for WHO staff. It is adapted from WFP *Emergency Field Operations Pocketboo*k, 2002. Adapt it to the local situation, especially climate.

Mission readiness check-lists for consultants being recruited from other countries for emergency assignments are presented in WHO *Emergency Field Operations*, EHA/FIELD/99.1, Annex 1.1.

Documents

- ✓ UN laissez passer/national passport with a valid visa/residence permit
- ✓ vaccination card (all vaccinations up-to-date)
- ✓ WHO/UN identity card
- ✓ valid (international, if appropriate) driving licence
- ✓ photocopies of all the above
- ✓ extra passport photos

Professional items

- ✓ personal credit card and cheques, if available
- ✓ cash and/or traveller's cheques
- ✓ business cards
- ✓ note books, pens, highlighters, 'post-it' notes
- ✓ frequently-used reference materials
- ✓ pocket calculator
- ✓ maps
- ✓ electrical adapters
- ✓ spare computer diskettes
- ✓ camera with films (at own risk)
- ✓ pocket-size binoculars (at own risk)
- ✓ GPS (if available; at own risk if a personal item)
- ✓ Laptop computer with internet/email connections (if available)

Personal items

- ✓ several changes of clothes suitable to the climate (including track-suit type night attire)
- ✓ sturdy footwear
- ✓ personal health/first aid kit (including own prescription medicines and malaria tablets, if appropriate)
- ✓ toilet articles (soap, toothpaste, etc.)
- ✓ padlocks (for luggage and room doors)
- ✓ flashlight with spare batteries
- ✓ alarm clock (or watch)
- ✓ short-wave radio with spare batteries
- ✓ pocket knife ('Swiss Army' or 'Leatherman' type)[56]
- ✓ ear plugs (for noisy flights)
- ✓ detergent for washing clothes
- ✓ nylon cord for washing line
- ✓ candles and matches
- ✓ insect repellent
- ✓ sunscreen cream
- ✓ sun glasses
- ✓ hat and/or umbrella (for sun and rain)
- ✓ spare spectacles/prescription lenses, if used
- ✓ water bottle
- ✓ water purification tablets (or filter)
- ✓ mosquito net, if required
- ✓ ……..

[56] Remember, however, that knives cannot be carried on aircraft in hand baggage.

9.2 Planning a field visit – check-list [57]

Preparing for a field visit

Participants

The team should:

- include individuals with complementary mix of skills;
- be formed jointly with representatives of the MoH, other relevant government entities and/or other organizations, whenever possible.

Information and instructions to be obtained before leaving

- ✓ available baseline data on the area
- ✓ available information on the current situation (arising from investigations and enquiries already made)
- ✓ list of the government officials and other organizations to be contacted; (have they been informed of your mission?)
- ✓ information on the vehicles or other means of transport that have been arranged or are expected to be available in the field
- ✓ guidelines on personal security (if there is insecurity)
- ✓ precautions to safeguard your own health
- ✓ guidelines for contacts with journalists
- ✓ the extent/limits of your authority to commit WHO or disburse funds
- ✓ knowledge/lists of other organizations or individuals to whom requests that are not appropriate for WHO should be referred.

Leave behind details of your proposed itinerary and possible contact points.

Things to take

- ✓ any permits or letters of introduction necessary – or at least desirable – to travelling to and within the area; (in some high risk situations it may be necessary to have an official escort)
- ✓ other personal needs: be as independent as possible in food and personal necessities (see 8.x)
- ✓ telecommunications equipment, if needed (see 8.x)
- ✓ laptop, portable printer and printing paper
- ✓ forms, felt-tip pens, stapler, adhesive tape
- ✓ if travelling by road: water (for drinking and the radiator), fuel, oil and basic spare parts
- ✓ if travelling in remote and/or insecure areas: survival items

Things to do on arrival

On arrival, or as quickly as possible thereafter:

- ✓ establish communications with the WHO country office and report back regularly
- ✓ contact local officials, medical officers, health workers, community leaders and representatives of local and other outside organizations that are already present
- ✓ visit health facilities, water and sanitation installations, family dwellings, any temporary settlements, any existing public health assistance operations, social service institutions, medical and other relief stores, logistics facilities

Sample headings for a field trip report

- Date and itinerary
- Participants
- Purpose/terms of reference
- Persons contacted
- Summary findings/observations (noting differences between different communities/localities)
  - public health conditions and services/operations
  - nutritional status
  - other basic needs and their impact on health
  - special problems of children and women
  - community and local authority structures and capacity
  - special information concerning particular locations and institutions
- Summary conclusions: follow-up actions required

[57] Check-lists adapted from WFP *Emergency Field Operations Pocketbook*, 2002

N.B. Copy important information from documents found in the field. Don't take the originals away with you!

9.3 Planning an assessment – check-list

Preparing an assessment mission

The following are crucial for a field assessment mission/survey to gather information rapidly and efficiently:

- ✓ Clear terms of reference that specify priorities for information gathering (based on existing information, past experience and priorities for decision-making)
- ✓ Reliable arrangements for transport, including vehicle fuel
- ✓ Permits to travel to and within the area(s), if required
- ✓ Reliable means of communication (phones and/or radios) to maintain contact with district, provincial and/or national headquarters
- ✓ Baseline (pre-disaster) information on the affected area(s) and populations
- ✓ Maps showing the locations of communities, health facilities, water sources and water and sewerage/sanitation installations
- ✓ Information on the impact of previous disasters in the same area(s), the response to those disasters and the lessons learned
- ✓ Names and addresses of important health service, local administration, NGO, UN agency and other contacts in:
  - ▫ the area(s) affected, and
  - ▫ neighbouring areas from where support may be provided

See also the personal readiness check-list in 9.1

Assessment teams should also be aware of arrangements for assessment in related sectors and any specific information they could usefully gather to support those assessments when visiting remote areas.

Key principles of assessment

- ✓ ***Focus based on existing knowledge***: While each emergency situation is unique and requires on-the-spot assessment, the general effects of most types of disaster are known from past experience. The initial assessment should be focused accordingly.
- ✓ ***Prioritized information gathering and analysis***: The assessment must be organized to inform decisions on action to meet emergency medical and public health needs, then to address medium and long-term issues. (The collection of data to support future preparedness planning is an important but subsidiary concern.)
- ✓ ***Capacities, causes and risks as well as 'needs'***: The assessment should gather basic factual information on the present health situation and the ability of the community and local services to cope. It should also seek to identify the underlying causes of problems (ask Why?) and look ahead (ask What if?).
- ✓ ***Coordinated efforts***: Many people and entities are involved in activities, and/or have information, relevant to public health.
- ✓ ***Existing procedures***: Assessment should be conducted within the framework of the national disaster/emergency response plan (when there is an up-to-date plan), using previously trained personnel and existing forms and procedures (when they exist).
- ✓ ***Interpretation based on local knowledge***: In most cases, information should be gathered and analysed by people who are familiar with the area, its epidemiology, the public health effects of previous disasters, and the effectiveness of previous emergency and post-disaster assistance operations.
- ✓ ***Specific expertise, when needed***: In case of chemical pollution, a radiological accident or an unusual disease outbreak, relevant technical information and expertise must be immediately mobilized (nationally, through bilateral or regional mechanisms and/or through WHO and collaborating centres).
- ✓ ***Separate arrangements for medical assistance***: Assessment (and surveillance) personnel should concentrate on assessing the overall problem and refrain from giving medical care. Backup medical assistance should be provided separately.

Where to seek information

Information should be obtained and compared from a wide variety of sources. Qualitative as well as quantitative information should be sought and recorded. Sources must always be recorded.

- ✓ ***Review existing data*** – profiles of the area and epidemiological data. Thus anticipate the impact and needs, specify what the assessment should focus on, and avoid spending time collecting information that is already available.

- ✓ ***Review health facilities' records and reports*.** Get reports from health administration offices, public and private hospitals and clinics, therapeutic feeding centres, etc. Review records during visits to such facilities.
- ✓ ***Get reports from other relevant agencies*.** Get reports from technical agencies and NGOs working in the health, water and sanitation sectors and from military and civil defense/protection units working in the area. Encourage the use of standard reporting forms.
- ✓ ***Get reports from local administrations, communities and humanitarian workers*.** Note, however, that information from community leaders, administrators and local authorities is likely to be unspecific and incomplete, and is often exaggerated.
- ✓ ***Observe conditions***: During visits to communities, especially temporary settlements, look out for clinical signs of illness or malnutrition. Compare (triangulate) the information from reports and key informants with your own observations and discuss any divergences with local health workers.
- ✓ ***Review media reports*. R**eports from national and international news media may be among the first sources of information, However, technical relevance, accuracy and completeness usually do not match their speed and coverage. Use their information to orient professional assessments but don't rely on it for planning purposes.

Aerial observation – low-altitude over-flights, especially by helicopter – provide indications of the geographic extent of damage and of visible damage to premises, access routes and lines of communication, but such observations (and especially satellite imagery) are of little use in identifying urgent health problems and needs.

9.4 Check-list for an initial assessment

The following are aspects that an initial assessment should seek to determine and report on as quickly as possible (within 1-3 days, depending on the extent and accessibility of the area affected).

The details of what is required vary depending on the type of situation: see chapter 4.

Summary details only need to be reported to WPRO/WHO: see 9.7

The general situation/context

- ✓ the nature and cause(s) of the emergency
- ✓ the area(s) affected
- ✓ means of access to the affected area(s) for personnel and supplies
- ✓ any secondary hazards that threaten
- ✓ the size and characteristics of the affected population
- ✓ any population movements (evacuation or displacement)
- ✓ the likely evolution of the situation

Sources: phone reports, aerial observations, existing census data, area profiles and past experience.

Baseline health conditions in the area (pre-crisis)

- ✓ endemic diseases (types, distribution, seasonal characteristics)
- ✓ pre-crisis mortality, morbidity and nutritional status
- ✓ vaccination coverage
- ✓ the coverage and effectiveness of government and other facility-based health services, outreach services (including cold chain) and surveillance activities prior to the crisis/disaster
- ✓ the coverage and effectiveness of environmental health and disease control activities prior to the crisis/disaster

Sources: existing ('secondary') data available at national level.

Direct impact on health

Immediate impacts (especially for sudden-onset events)

- ✓ number and type of casualties requiring surgical/hospital interventions
- ✓ number of people requiring on-site treatment for minor injuries
- ✓ number of sick people requiring immediate medical treatment by major diagnostic categories
- ✓ specific respiratory and other health problems aggravated by or arising from exposure of the population and/or rescue workers to dust, smoke, ash or toxic chemicals (pollution)

Present situation (especially for slow-onset crises)

- ✓ crude and under-5 mortality rates compared with seasonal norms
- ✓ prevalence of endemic diseases compared with seasonal norms
- ✓ rates of acute malnutrition compared with seasonal norms

  [All rates should be disaggregated by area and/or distinct population subgroup, if possible. Specify the indicators and formulae used and the sources of data. Ensure that appropriate denominators are used.]

Sources: hospitals, health centres, community health workers, medical/ rescue teams, pharmacies, evacuation centres, local officials and leaders, Red Cross/Crescent, NGOs, community organizations.

Cross-check data whenever possible: see 5.1.

Potential indirect impacts on health

Describe the present situation and what may be expected:

- ✓ injuries likely from secondary hazards and during rescue, evacuation or clean-up operations
- ✓ exposure of the population and/or rescue workers to cold or other environmental factors
  - ▫ health problems that could be aggravated by or arise from this exposure
- ✓ disruption of water supplies, sanitation systems or normal disease control measures
  - ▫ endemic diseases that may increase in the general population as a result of the disruption, reduced personal hygiene and the disease vectors present

- ✓ sanitary and general environmental health conditions in evacuation centres or camps for displaced people
  - endemic diseases that could propagate in these locations as a result of these conditions and the disease vectors present
- ✓ health problems likely to be introduced from outside the area (by displaced people, migrants, relief workers) or be experienced by displaced people coming from a different environment

Sources: environmental health personnel, water/sanitation departments, medical/rescue teams, social workers, local officials and leaders, Red Cross/Crescent, NGOs, existing epidemiological data, technical sources (for chemical pollution).

Impact on health services

- ✓ the extent of damage (if any) to premises, equipment and stocks
- ✓ the functioning of electricity and water supplies
- ✓ the impact on staff – deaths, injuries, displacement
- ✓ the damage/disruption (if any) to supply lines and means of transport and communication

Sources: health facility staff/managers, local officials, Red Cross/Crescent, NGOs.

Present action and capacity of health services: resources available

- ✓ the present level of functioning (number of interventions, etc.) of the normal health facilities: number of casualties appearing each day for treatment, other patients, admissions, vacant beds, deaths, ambulatory patients broken down by broad age range and diagnostic categories
- ✓ the present level of functioning (number of interventions, etc.) of outreach services (including cold chain) and surveillance activities
- ✓ the present level of functioning of environmental health and disease control activities
- ✓ the number, type, resources and activities of additional medical/ health personnel/teams already arrived in the area; their locations and expected length of stay
- ✓ gaps (if any) in coverage by key personnel
- ✓ availability of key medicines, blood, vaccines, laboratory and other supplies (e.g. casting plaster, x-ray film) and equipment; essential supplies in short supply
- ✓ specific operating problems (e.g. water, power problems)

Sources: health facility staff/managers, local officials, Red Cross/Crescent, NGOs.

Other vital needs of the population

In relation to the following: the impact, the present situation, the action being taken (specify by whom) and any critical unmet needs:

- ✓ water supplies and quality
- ✓ sanitation (excreta disposal) and personal hygiene
- ✓ food, cooking fuel and utensils
- ✓ shelter, clothing, blankets, heating (where needed)
- ✓ recording of deaths and disposal of dead bodies
- ✓ recording and tracing missing persons

Sources: health personnel; medical/relief teams; local officials and leaders, religious leaders, Red Cross/Crescent, NGOs, UNICEF, WFP, UNHCR (for refugees).

Operational systems, capacities and constraints

Systems and capacities

- ✓ extent to which the national emergency plan, procedures, guidelines and expertise are being applied (when they exist)
- ✓ overall management of the health sector response (including the direction of resources according to priority needs)
- ✓ management of health sector (human and material) resources at field level
- ✓ health information reporting, data analysis and the use of information

Coordination

- ✓ operational coordination (at field and higher levels) among all actors in the health, water, sanitation and nutrition sectors
- ✓ strategic coordination at national level among the government (MoH), UN country team, donors, bilateral donors and regional partners

- ✓ cooperation with neighbouring countries

Constraints

- ✓ logistics (transport and storage capacity)
- ✓ telecommunications
- ✓ political/social
- ✓ security

Preliminary conclusions

Judgements based on the information on impact, capacity, pre-disaster conditions and past experience:

Priority concerns

- ✓ geographic areas and population groups of priority concern
- ✓ present and projected demand for local emergency medical care
- ✓ need for evacuation of injured or ill persons to specialist facilities
- ✓ present and projected demand for in- and out-patient care; whether mortality and morbidity are usually high for the time of year and/or expected to increase in the coming weeks

Recommendations for immediate action

- ✓ priority actions to reduce avoidable mortality and morbidity
  - ▫ what must be done in the next 1-3 weeks
  - ▫ what must be done in the next 1-3 months
- ✓ health-related risks to be monitored
- ✓ additional inputs (human, material, financial) needed for the above
- ✓ any enhancement of management systems needed for the above

9.5 Format for a Situation Report (Sitrep)[58]

Sitreps from the country office are intended to keep WPRO and HQ informed of the situation, the activities of the country office and others, and any requirements for (additional) assistance from WHO or other international donors.

The following is a general guide. Adapt the subheadings depending on the needs of the situation. The points listed under each heading suggest the kind of information that may be provided as and when appropriate.

A similar format may be used for reporting by sub-offices and out-posted staff to the country office.

In general, provide only new information. Do not repeat what has been reported in an earlier Sitrep. If nothing has changed under a particular heading, report "No change". Highlight changes and new developments, and anything requiring follow-up action by WHO.

Address country office Sitreps to DPM and EHA in WPRO and EHA-HQ.

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1. General situation

- nature of the disaster/emergency, changes since the last report and how the situation is expected to evolve
- characteristics of the affected areas and access to them
- climatic conditions – present and expected
- extent of damage to infrastructure (buildings, roads, bridges etc.) and status of transport/logistics system for emergency response

2. The affected population

- number of people in the affected area and any population movements
- numbers of dead and injured; death rate
- numbers of homeless and displaced people; locations of displaced camps/temporary settlements
- demographic breakdown, if unusual
- vulnerable/special groups

3. Public health situation and needs

- food, water and shelter – availability, needs and how needs are being met
- mortality and morbidity – current data, trends, etc.
- status and capacity of public health services

4. National & international response

- action by the government, MoH and other national entities
- action by donors
- UN response – activities of the UNDMT and individual UN agencies
- other organizations' responses (NGOs)
- coordination and cooperation among organizations involved in the public health activities

5. WHO response

- WHO activities in support of the MoH and in collaboration with UN and other partners (including participation in inter-agency/multi-sectoral assessment missions or consolidated appeal preparation)
- number of staff and their locations
- resources used; estimated cost of activities to date
- planned activities
- coordination with MoH and other organizations

6. Requirements for international assistance

- status of previous requests
- additional requirements for personnel, equipment, supplies, funds

7. Other information and issues

- administrative and security issues/concerns, if any
- action requested of WPRO and/or HQ

[58] Adapted from WHO *Emergency Field Operations*, EHA-FIELD/99.1, annex 5, and PAHO intranet

9.6 Format for an Assessment report

The following are the headings of the standard format proposed by EHA-HQ. The full format and related instructions/guidelines for the preparation of this assessment report are on the CD-ROM and the EHA Website.

This format may be adapted to the needs of the situation, especially in case of a sudden-onset disaster.

Location (country, region/area affected):

Organisation:

Date:

Prepared by:

Cleared/authorized by:

Executive Summary: main problems & needs, the likely evolution, the local response capacity and the additional requirements.

1. Main issue

- Nature of the emergency:
- The affected area
- The affected population:

2. Health Impact

- The direct impact: reasons for alert:
- Other reasons for concern
- Indirect health impact
- Pre-emergency baseline morbidity and mortality data, when available:
- Projected evolution of the health situation: main causes of concern in the coming months

3. Vital needs: the current situation

- Water
- Excreta disposal:
- Food:
- Shelter and environment on site
- Soap and buckets
- Fuel and cooking utensils
- Other vital needs (e.g. clothing and blankets)

4. Critical constraints

- Security
- Transport and logistics
- Social/political and geographical constraints
- Other constraints

5. Response capacity: resources that are functioning and close to the affected area

- Activities already underway
- National contingency plans, procedures, guidelines and special expertise
- Operational support
- Operational coordination
- Strategic coordination

6. Conclusions

- *Are the current levels of mortality and morbidity above the average for this area and this time of the year?*
- *Are the current levels of mortality, morbidity, nutrition, water, sanitation shelter and health care acceptable by international standards?*
- *Is a further increase in mortality expected in the next two weeks?*

7. Recommendations for immediate action

- *What must be put in place as soon as possible[#] to reduce avoidable mortality and morbidity?*
- *Which activities must be implemented for this to happen?*
- *What are the risks to be monitored?*
- *How can we monitor them?*
- *Which inputs are needed to implement all this (8.2-8.4)?*
- *Who will be doing what?*

9 . Emergency contacts

[#] Within 1-3 weeks, depending on local circumstances (access, logistics, etc). Additional requirements will be object of special operational planning and resource mobilization

9.7 Format for a project proposal/document[59]

Project (*Name of project*; very *short)*

Sector (*Health/Agriculture, Relief/Rehabilitation, etc.)*

Code (your *serial #*)

Appealing Agency ***

Area of Operations (*geographical area: district, region and country)*

Target population (*the population living in the project area*)

Implementing Agency ***, in collaboration with...

Timeframe **(***expected duration, rather than precise dates*)

Objective (*specific objective/s)*

Funds requested (*from the international community*)

Background

..... (state *the problem, in terms of hazards and vulnerabilities; it should include the reasons why the objectives are relevant to the country and/or to the wider relief/rehabilitation programme*)

Currently..... (*it should mention whether the project is new, or is underway, and only an extension is proposed, or whether the objectives are already tackled by other projects)*

In this context, *** (Name of Agency) intends to contribute to...(the *global objective)....* by ensuring that *.... (immediate objective/s)* .

Activities

*** will ..... (*project activities: essentially verbs; they should reflect the lines of the budget below*). *Special emphasis will go on*.... (if applicable: essential strategy notes).

Institutional arrangements and inputs

Activities will be implemented by ***, in collaboration with (*name of Division and Department* of *the national Ministry and/or UN agency involved*) and .....(other partners, as applicable).....

*** will contribute to the project.... (*this may include other donors' contributions*).....

Additional assistance is needed in order to.....

Outputs, reporting and evaluation

The activities above are expected to produce..... (*list the outputs: use only substantives, no verbs*).

Technical and administrative reports will be submitted by *** to the donor (and *the national authorities, if applicable*) every ..... A joint evaluation will be conducted by ***, ... and..... on.....

Budget	**USD**
.....	.....
.....	.....
.....	.....
.....	.....
Total costs (1)	.....
Total available from *** or other donors (2)	.....
Total requested (3 = 1 – 2)	.....

[59] From WHO *Emergency Field Operations*, EHA/FIELD/99.1, annex 5.24

9.8 Format for a post-disaster Disease Surveillance Report

Sample (Weekly) Morbidity + Mortality Report					
Health facility		District / town			
Name & designation of reporting officer Organization:		Reporting period from: ..... to:			
		New cases		Deaths	
#	Syndrome / Disease	Under 5 years	5 years and over	Under 5 years	5 years and over
1*	Acute watery diarrhoea				
2*	Bloody diarrhoea				
3	Fever (100ºF/38 ºC)				
4	Fever + rash (measles?)				
5*	Fever + cough or sore throat (acute respiratory tract infection?)				
6*	Acute neurological syndrome				
7*	Acute jaundice syndrome (+ fever)				
8	Conjunctivitis / eye disease				
9	Scabies / skin disease				
10	Neonatal tetanus				
11	Unknown disease occurring as a cluster				
12	Trauma / injury				
13	Severe Malnutrition				
14					
15	*other non-communicable diseases*				
	TOTALS NEW CASES & DEATHS				
	Number of revisits (old cases)				
TOTAL NUMBER OF VISITS (NEW + OLD)					
Remarks / changes in public health conditions (nutrition, water, sanitation, service provision, etc.)					
Signature:				Date:	
* Diseases of epidemic potential that should be reported to the Emergency Health Coordinator as quickly as possible (and then also be included in this report) Select the main cause for the consultation (or death) – ONE disease/syndrome for each case reported					

Notes:

- The list of syndromes/diseases must be adapted to local needs. E.g.: acute respiratory tract infections may be limited to lower tract infections or divided into upper and lower tract infections; leptospirosis or other conditions may be added; TB, sexually-transmitted infections, HIV/AIDS, may be added once the situation has stabilized.
- Recording males/females separately is a possible refinement, but the distinction is unlikely to be useful during an emergency
- Mental health problems may be included following traumatic events
- If there is no separate nutritional surveillance system but growth monitoring and other nutritional data (on wasting and/or birth weights) are collected at health facilities, these data should be reported on a monthly basis in a separate section of the form.

Separate, more detailed, morbidity and mortality reporting formats, an outbreak alert report and case investigation report are provided in *Communicable Disease Control in Emergencies*, WHO [2003 expected] and available as part of the *Communicable Disease Tool Kit* for the Iraq crisis http://www.who.int/infectious-disease-news/Iddocs/whocds200317/index.htm

9.9 Format for a Demography Report

Sample Weekly / Monthly Demography Report (especially for displaced populations)			
Town/village/settlement/camp	District		
Name & designation of reporting officer Organization:	Reporting period from: ..... to:		
Numbers	Under 5 years	5 years and over	Total
Population at beginning of this week/month			
Births this week/month	+		+
Arrivals this week/month	+	+	+
Deaths this week/month			
Departures this week/month			
Estimated population at the end of this week/month	=	=	=
Remarks:			
Signature:		Date:	

9.10 Terms of reference for an Emergency Health Coordinator

The following is edited from WHO *Emergency Field Operations*, EHA/FIELD/99.1, annex 1 which suggests possible TOR for a WHO staff member or consultant assigned to support the WR and assist the MoH in coordinating emergency health activities. These TOR would need to be further adapted for an EHC assigned by the MoH.

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1. Strengthen or establish the [MoH/WHO] emergency office by:

- Planning an emergency management capacity and support structure including administration, human resource management, logistics, communication, media management
- Determining a clear management and organization structure for the emergency office – organigram, responsibilities, links to regular programmes, lines of communication with all relevant national entities and other organizations (and between the WR, WPRO & WHO-HQ)
- Planning staff capacity, in numbers and qualifications to meet the requirements indicated in 2 to 6 below

2. Establish and/or reinforce emergency health coordination by:

- Supporting the national health authorities and specific task-forces to coordinate the health sector at central and decentralized levels
- Coordinating the health system response of the international community (UN and NGOs), sharing information, planning and monitoring progress
- Ensuring optimal coherence and impact of public health action within the framework of established health policy, making effective use of the health information system and good practice guidelines
- Providing guidance to international donors for resource mobilization and allocation, and for the appropriateness of proposals
- Participating in inter-sectoral coordination to ensure that all public health priorities are covered

3. Conduct rapid health assessments by:

- Understanding the health situation and identifying conditions that create risks to health
- Organizing rapid and follow-up health assessment by multi-disciplinary teams including national authorities, other UN agencies and NGOs
- Assessing and defining the health status of the population affected by the crisis, the major public health needs, resources and capacities of all main actors, including the affected population. Taking into account underlying causes, security and the human rights situation
- Making findings available to the affected community, the national health authorities and the wider humanitarian community

4. Define emergency health policy and programme priorities by:

- Determining the emergency strategy and priorities, and communicating relevant information to all concerned including the newsmedia
- Identifying and addressing issues relating to capacity, quality, distribution and equitable access of health services, and the link between relief efforts and long-term national priorities and capacities
- Providing guidance for planning of the required human resources, their training and safety, addressing the financing of the health system;
- Formulating and disseminating an essential drug policy adjusted to the emergency situation
- Planning health and nutrition programmes that address the most important causes of mortality and morbidity (minimum package of public health services, both curative and preventive)
- Identifying priorities and defining objectives based on an understanding of hazards and the need for appropriateness, coherence, effectiveness and impact
- Building on existing capacities and determining priorities in co-operation with national authorities, other UN agencies and NGOs
- Identifying priorities that address the particular needs of identified vulnerable groups, including children, elderly, disabled, IDPs, excluded groups, based on gender, etc.

5. Establishing and maintaining health & nutritional surveillance, producing health intelligence and managing information for health advocacy by:

- Ensuring that a health information system is set up that collects data on population, diseases, injuries, health services and health risks in the environment
- Ensuring that the health information system has adequate coverage of the affected area and the population
- Ensuring that the health information system produces warning indicators, data on health status, available resources and on underlying factors that cause ill health

- Making use of standard case definitions, reporting formats and frequency of reporting and builds as much as possible on existing surveillance systems to ensure its sustainability
- Making information available to the wider humanitarian community and neighbouring countries, for planning and decision making (e.g. through coordination meetings and an Internet website, that of the MoH or WHO)

6. Providing technical and normative support to national authorities, UN agencies, NGOs for public health interventions by:

- Relating to the health policy and priority interventions, technical public health support that is provided to WHO's partners in a timely and adequate manner, to promote adherence to international standards
- Basing technical support on assessed needs, best available evidence for response, international standards and good practice guidelines, and addressing levels of quality and modes of implementation that are realistic in relation to the circumstances
- Using technical support in disaster response as an opportunity to strengthen and develop the health system (e.g. by links to WHO's regular program or training of national staff, other UN and NGOs, in management and implementation)

9.11 Resources for an Operations Room

The following are indicative. Any operations room must be tailored to the particular needs and possibilities of the local situation.

Premises

- ✓ a room large enough to hold meetings and give briefings (preferably located in the MoH, the WHO office or the UN Resident Coordinator's office)
- ✓ space (in the same room or an adjacent room) for office equipment (see below), files, maps and reference material

Equipment

- ✓ computer workstation(s) internet/email connection, and with printer(s)
- ✓ telephones (preferably with teleconferencing facility), fax machine,
- ✓ photocopier
- ✓ filing cabinets, pigeon holes, bookshelves, wall clock
- ✓ files, stationery, calculator(s), computer disks, masking tape (to fix maps and charts on the wall), etc.

Information displays

Wallboards, maps and/or flip-chart sheets on the walls or display panels are needed to display key of information such as management structures; where different teams and organizations are working; the locations of health facilities, transport and other assets; stocks of critical items in different locations; surveillance data and trends, etc.

An overhead projector, TV and video cassette recorder (VCR) can be useful for presentations and briefings.

Maps

A large-scale map of the country and bordering countries showing the main towns, transportation routes (airports, highways, railways and shipping ports), national and provincial/district boundaries

Smaller scale maps of each affected area showing settlements, main routes, health facilities and water sources.

Use colour-coded pins or markers to show:

- where organizations are working.
- problem areas - new epidemics, direction of spread of diseases, etc.
- any insecure areas or routes

Maps can help to:

- breakdown the affected area into manageable sections
- plan the deployment of resources and delineate areas of responsibilities
- identify movements of people and disease, and thus predict future trends and problems
- brief the partners on the overall situation

Maps may be obtained from government departments, the national survey office, other UN agencies or the military (which often has the best maps).

Tourist maps from hotels and service stations are sometimes useful (more detailed than one would think) and readily available. If possible, laminate copies of key maps and mount them on the wall.

Charts

Tables and graphs can display information on demography, climate, disease prevalence, service provision, etc. in a useful and easily interpreted manner. They can help track the progress of the operations and identify gaps and changes. They can thus help in determining present and future resource requirements and in predicting future difficulties.

Organigrams can graphically display organizational/management structures.

Charts placed on the wall can be linked to the maps by lines of coloured thread, to show the areas to which they pertain.

HCC members can assist in regularly updating the charts

Examples of a couple of charts are provided at the end of this section. See WHO *Emergency Field Operations*, EHA/FIELD/99.1, 5.3 for additional explanation and suggestions.

Reference materials

Baseline (pre-disaster) details on demography, epidemiology, health service capacities and usage, water supplies, sanitation, climate, the economy, etc. will be useful.

Some sample charts[60]

Population affected							Correct as at: .. / .. / ..
Location	Total	Dead	Injured	Missing	Homeless	Disease	...

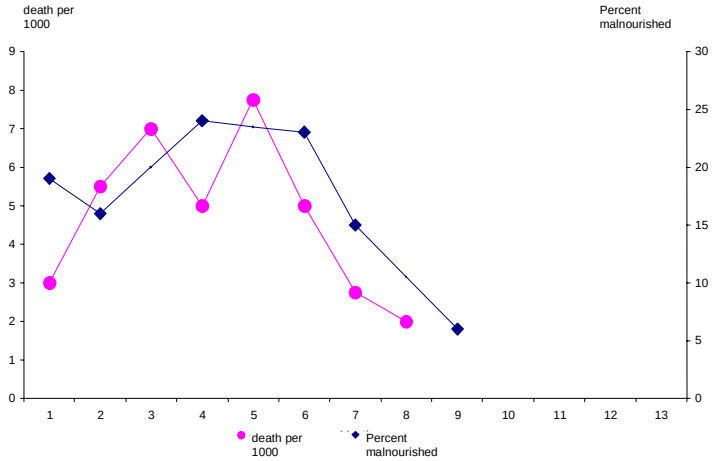
Contacts			Correct as at: .. / .. / ..
Organization	Name(s)	Tel numbers etc	Notes

Deadlines/Targets				Correct as at: .. / .. / ..
Date & time	Event/Action	Responsibility	Completed	Notes

Resources			Correct as at: .. / .. / ..
Items	Quantity	Current location	Notes

Travel				Correct as at: .. / .. / ..
Name	Departure date & time	Arrival date & time	Travel details	Purpose

Reported mortality and malnutrition rates



[60] Mortality/malnutrition graph from *Emergency Field Operations*, EHA/FIELD/99.1; other charts from *Standard Operation Procedures for SEARO in Emergencies*, draft, 2001

9.12 ***Draft Principles of Engagement***

The adoption of a basic set of agreed principles/'ground rules' by all organizations, especially NGOs, can greatly facilitate coordination and collaboration in pursuit of agreed health objectives.

The following draft 'principles of engagement' are adapted from *Technical and Administrative Implications of Applying "WHO Core Corporate Commitments in Emergencies" at field level* – Document 2, annex 2, draft, D A Bradt, 31 October 2001. This, or similar texts from other sources, may be adapted to local needs and circumstances.

If/when appropriate, WHO could accept the role of 'coordinating entity'. More often, WHO would support the official/unit within the MoH charged with that responsibility.

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1. Authority to work in [...*country*...] is conferred by the Government of [...*country*...] through the Ministry of Health.

2. Participants agree to conform to health policies and procedures established by the Government of [...*country*...] and the Ministry of Health, and in line with international recommendations published by the World Health Organization (WHO).

3. Participants agree to adhere to the NGO Code of Conduct and to respect as much as possible the standards presented in the Sphere Project *Humanitarian Charter and Minimum Standards for Disaster Response*.

4. In particular, participants agree to support and strengthen existing local health structures and organizations wherever possible – this includes seeking, even during emergency operations, to build local capacity to manage future disasters – and to collaborate with […*the designated coordinating entity*…] and other parties in a coordinated effort to address priority public health needs.

5. […*The coordinating entity*…] is designated by the Ministry of Health to coordinate organizations in the health sector and to convene regular health coordination meetings to exchange information, discuss technical and programmatic health issues, examine and seek solutions to practical problems and agree on actions to be taken. The meetings are intended to be interactive, field-oriented, and practical, and to promote transparency and professionalism among colleagues in humanitarian health assistance.

6. Participants agree to participate actively in health coordination meetings, including proposing to […*the coordinating entity*…] items to be included on the agenda.

7. Participants agree to provide information concerning their organizations' health activities in [...*country*...] to […*the designated coordinating entity*…] to enable a health intervention database to be established and kept up to date as a means of identifying service gaps, preventing duplication and optimising the use of resources.

9.13 Sample Coordination Formats

Gap Identification Formats [61]

The following formats can be used to record, for each area/site, the team or organization that is taking responsibility for each of the functions listed. This then shows the gaps that are uncovered.

Sectoral gap identification				
Function	Site 1	Site 2	Site 3	Site 4
Site Management				
Protection/ registration				
Security				
Logistics (transport and storage)				
Infrastructure				
Water				
Sanitation				
Health				
Food aid				
Shelter				
Other non-food relief				
Agriculture				
Education and training				
Community Development				

Health sector gap identification					
Function		Site 1	Site 2	Site 3	Site 4
Sector management					
Immunization					
Clinical health services	Health centres/ posts				
	Mobile clinics				
	Hospital				
Clinical pathology	Laboratory support				
Special services	Reproductive health				
	Maternal-child health				
	HIV/AIDS				
	Mental health				
	Supplementary feeding				
Epidemic preparedness					
Communicable disease control					
Community health education					
Epidemiological surveillance					
Medical logistics					

[61] Adapted from Technical and Administrative Implications of Applying "WHO Core Corporate Commitments in Emergencies" at field level – Document 2, annex 3, draft, D A Bradt, 31 October 2001

Actor Mapping Formats[62]

The following can be used to record where different organizations are working, what they are doing and with what resources. Separate tables may be prepared for UN agencies, inter-governmental organizations, national NGOs, international NGOs, and bilateral aid teams.

Who is working in what areas, with what resources?						
Organiz-ation	Present locations	Programme/ project focus?	Since when	Until when	Number of personnel/ resources/ capabilities	Contact Information

The following can be used to record details of donors.

Donor profiles					
Organiz-ation	Charac-teristics	Interests	Resources	Requirements	Contact Information

[62] Adapted from CARE Emergency Training Team materials as reproduced in ALNAP training module 2, 2002

9.14 Team building – hints for an emergency health coordinator [63]

> "Coordination is a seriously abused term. It was never supposed to mean centralisation, or dogmatic rigidity. The best coordination is that which identifies ways in which human capacities can be released and enhanced, in themselves and in a synergistic interaction with each other. It may often lead to decentralisation. It is a process which, by definition, cannot be carried out by one person, only by and in a team. Thus, all the members of such a team become coordinators."
>
> [Director-General for Development and International Economic Cooperation, UN]

Coordination is teamwork: make each partner feel part of it. Without being too strict on the sequence, you can adopt a progressive approach.

1. As a start, have the partners sharing information

- on their mandates, objectives, roles and responsibilities
- on their resources and capabilities
- on the type and quantity of assistance that they can provide
- on their areas of operations
- on the priorities that they want to address
- on their projects
- on their sources of data
- on their perception of the general context.

2. As next step, have the partners working together

- at assessing needs
- at setting the standards of assistance
- at mobilising external resources
- at ensuring access to the beneficiaries
- at building local and national capacities
- at training their own staff.

***3. In a more advanced phase, you will find that the team can share plans and resources*:**

- through joint contingency planning ('..*what if* ?')
- through joint strategic planning
- through joint operational planning
- by sharing their experts
- by sharing security systems
- by sharing logistics (communication and transport)
- by implementing ***joint operations.***

You can measure success at coordination by:

- the frequency of contact with all partners, at all levels
- the frequency of joint field missions
- the number of units/organizations regularly providing information and contributing constructively at coordination meetings
- the clarity of objectives and responsibilities of different partners
- the clarity of procedures for mobilising and deploying external assistance
- the existence of an overall plan of action and the resources to implement it, and the extent to which the activities of all partners fit within the plan

[63] Adapted from WHO *Emergency Field Operations*, EHA/FIELD/99.1, section 4.3

9.15 Chairing/facilitating a Meeting

The success of a meeting depends on good preparation and good chairing or facilitation. The topic(s) must also be ones the participants are concerned about.[64]

Before the meeting

Why meet? Set clear, realistic objectives

- ✓ What is the purpose of the meeting – Informing/exchanging information? Planning? Solving specific problems?
- ✓ What can you and the other participants realistically expect to get out of it?
- ✓ Is a meeting necessary? Can the objectives be achieved by a smaller group, a series of phone calls, or by email?

Be specific! Write down the objectives.

Decide on the type of meeting and chairing/facilitation

- ✓ Who needs to attend?
- ✓ Should the meeting be formal or informal?
- ✓ Who should chair and/or facilitate? – Designate a good/experienced chairperson or facilitator

Chairing or facilitating …
'Chairing' indicates a degree of formality – the chairperson is the focus of authority, participants address the chair for permission to speak. The chairperson has considerable real or potential power.
'Facilitating' indicates relative informality with the focus on communication, problem-solving, planning or decision-making as a group. The facilitator is not necessarily a focus of authority but has the task of helping the group to achieve its objective(s). Emphasis is placed on active and creative participation of group members.

Prepare the agenda

- ✓ Develop a written agenda with clear objectives and approximate timing for each item; include a broad statement of why the meeting is needed
- ✓ Make sure that the agenda is realistic – not too many items – and sequence the items appropriately
- ✓ Put difficult, important issues near the beginning (but deal first with something quick and simple)
- ✓ Plan breaks if the meeting is more than 1½ hours in length

Circulate the agenda and any background documentation (such as minutes of previous meetings) a few days in advance, together with the invitation and the list of participants

Make practical arrangements

- ✓ Prepare essential hand-outs/audio-visual materials in advance
- ✓ If the meeting is large, check the room and ensure the availability of flip charts, audio-visual equipment (if needed), water/refreshments, secretarial help, arrangements for urgent messages to be received outside the room (to avoid interruptions)
- ✓ Organize the room/seating arrangements

Seating arrangements
Everyone should be able to see each other!
For a relatively formal meeting, choose a circular or rectangular table arrangement. Avoid a long, narrow table, if possible, as this make communication difficult.
For an informal meeting, a semi-circle of chairs facing a flip chart is best for a small group, or number of separate tables oriented towards a focal point

At the beginning of the meeting

- ✓ Start on time!
- ✓ Have the participants introduce themselves if they do not know each other
- ✓ Clarify the objective(s) of the meeting and review the agenda and time limits
- ✓ Outline how the meeting will be conducted
- ✓ Identify the rapporteur/secretary for the meeting

[64] These notes are synthesized from *Chairing and facilitating meetings*, TRS 3, UNHCR 1990, and material prepared by the Asian Disaster Preparedness Center (ADPC)

- ✓ Ask if participants agree the agenda – accept minor changes if there is consensus
- ✓ If applicable, review action items of previous meeting(s)

During the meeting

The chairperson/facilitator should:

- ✓ start with an initial statement that sets the desired tone for the meeting
- ✓ be impartial and be seen to be impartial – avoid talking too much and getting personally involved in discussions
- ✓ stick to the agenda and keep the objective(s) in mind – keep the discussion focused on key issues and stop digressions; allow flexibility within agenda items for participants to express and develop closely-related issues and concerns if time allows
- ✓ encourage wide participation – ask for information and opinions
- ✓ summarize/reformulate and record key points – have the rapporteur/ secretary use the flip chart to record important points as they arise: this helps the group to stay focused, avoid repetition and reach consensus
- ✓ get agreement on specific proposals – write proposals on the flip chart then seek agreement on it and on who should do what, when

Facilitative behaviours
Listen actively
Ask open-ended questions
Be positive – encourage participation, focus on desired outcomes
Don't be defensive; do not take comments personally
Clarify and elaborate when needed
Test for consensus
Anticipate problems and try to prevent them; defuse clashes; deal calmly with difficult participants

After the meeting

Immediately after the meeting, discuss briefly with various participants how the meeting went and what changes could be made to improve the next meeting.

Within a few days, prepare and distribute a record of the meeting including:

- the conclusions/decisions/recommendations and the follow-up action required, by agenda item, with the name of the organization or person responsible for action
- the list of participants and those who were invited but unable to attend
- the time, date and place of the next meeting, if applicable.

Follow up to ensure that agreed actions are being taken.

9.16 Emergency Kits used by WHO

Kit	Description/ use	Packaging	Gross weight (Kg)	Volume (m^3)	Cost in May 2002
WHO drug and medical supply kits					
New Emergency Health Kit 98 (NEHK98)	Primary health care drugs and supplies for 10,000 population for 3 months	24 cartons on 2 pallets	910	4.260	E 4500
Basic kit (component of NEHK98)	Basic drugs and supplies for primary health care workers for 1,000 population for 3 months	1 carton	43	0.171	E 197
Italian emergency kits					
Kit A - Trauma drugs	Drugs for 100 trauma patients	91 cartons on 3 pallets	1 335	4.300	E 3070
Kit B - Trauma supplies	Supplies to be used with Kit A	33 cartons on 3 pallets	565	4.600	E 9485
Kit D - Diarrhoea & cholera drugs	Drugs, ORS and infusions to treat 100 patients with diarrhoea including cholera	121 cartons on 3 pallets	1 758	3.794	E 1415
Kit F - Diarrhoea & cholera supplies	Supplies to be used with Kit C	1 carton	125	0.740	E 1375
Other kits					
MSF Burn dressing module	Permit 40 major sterile dressings	1 carton	16	0.099	E 140
WHO emergency health library kit	Essential information resources on public health for disasters and emergencies	1 metal trunk	75	0.240	US$ 2300

WHO also supplies, but not as standard items:

- a water testing kit (including sample bottles, membrane filters and other supplies), cost US$1,292
- a mental hospital kits (drugs and syringes), cost US$150

9.17 New Emergency Health Kit 98

Purpose and use of the kit

The New Emergency Health Kit 98 (NEHK98) is designed to meet the primary health care needs of 10,000 displaced people without medical facilities, or a population of 10,000 with disrupted medical facilities in the immediate aftermath of a disaster, for 3 months.

Specific local needs must be assessed as soon as possible and further supplies must be ordered accordingly. The kit is not recommended for re-supplying existing health care facilities (but is sometimes used for this purpose).

Contents of the Kit

NEHK98 consists of:

- A ***basic unit*** containing 12 drugs (no injectables), renewable supplies and some essential equipment for primary health care workers with limited training:
  - To facilitate distribution to smaller health facilities, items are packed in 10 identical *basic kits* (1 carton each) for 1,000 persons
  - Basic kits can be ordered separately, if required
  - The basic unit and basic kits are available in two versions: with and without chloroquine
- A *supplementary unit* containing drugs and supplies to be used only by professional health workers or physicians.
  - It does not contain any of the drugs or supplies that are in the basic unit; normally, at least one (preferably several) basic kits should be available at the site where a supplementary unit is used
  - It comprises four modules that can be ordered separately, if required: supplementary drugs; supplementary infusions; supplementary renewable supplies; supplementary equipment

The supplementary drug module includes anti-malarial, psychotropic and narcotic drugs:

- The module can be ordered with or without anti-malarials
- The module can be ordered with or without psychotropics
- Tramadol can be requested in place of narcotics when no import licence can be obtained for the latter

There various options are summarized in the table at the end of this section.

The full contents lists for the basic unit and the modules of the supplementary unit are on the WHO-EHA Website www.who.int/disasters/…. and in *New emergency health kit 98*, WHO 1998 (in HeLiD) which also explains the assumptions on which the contents are based.

- The Kit does not include vaccines or immunization supplies, drugs for specific resistant malaria strains, or drugs for communicable diseases such as TB.
- The supplementary unit includes essential items for midwifery care and emergency contraception of rape victims. Comprehensive reproductive health services would require the UNFPA reproductive health kit, or similar.

The contents of the Kit are based on the average morbidity patterns among refugee populations and the use of ***standard treatment regimens*** recommended by the relevant technical units of WHO. The quantities of drugs supplied will therefore only be adequate if prescribers follow the guidelines for these treatment regimens.

Simple, symptom-based treatment guidelines for the proper use of the drugs in the basic unit are included in each basic kit . They are also presented in *New emergency health kit 98*, WHO 1998, annexes 1 to 3. Additional copies can be obtained from WHO-EDM.

Each supplementary unit include a more detailed manual describing the standard treatment regimens for target diseases, *Clinical Guidelines - diagnostic and treatment manual*, Médecines sans Frontières (MSF) – developed in collaboration between MSF and WHO – one copy in each of English, French and Spanish. Additional copies can be obtained from MSF.

Ordering the Kit or parts of the Kit

IDA in Amsterdam, Holland, supplies the NEHK98 Kit – or basic kits or supplementary modules – to WHO and many other organizations[65]. Kits are usually available, in Amsterdam, within 24 to 48 hours of receipt of an order from WHO-PRS, but may take longer if the global demand for Kits is high at the time.

A number of complete NEHK98 Kits (with anti-malarials), funded by the Government of Italy (GOI), are held in the UN Humanitarian Response Depot

[65] UNICEF assembles and supplies similar kits from its warehouse in Copenhagen, Denmark

(UNHRD) in Brindisi, Italy. Release of these kits has to be approved by the GOI, which then usually underwrites the cost of both the Kit and shipment. Requests are made through EHA-HQ. Requests supported by the local Italian embassy are more likely to be approved.

A country office requiring Kits should:

- specify its requirements – see options in the table below
- if funds are available, inform WPRO-SUP (copy EHA) of requirements, the allotment code and the funds allocated; SUP will check expected freight costs and advise whether the funds allocated are sufficient
- if kits are requested from the Italian stock in UNHRD, inform WPRO-EHA (copy SUP) of requirements and seek the support of the Italian embassy (where present)

Note that the processing of orders in WPRO and WHO-HQ may take 1 to 2 working days, preparation in Amsterdam 1 to 2 days, and delivery from Amsterdam to the specified destination 3 to 10 days depending on air-freight availability. (For some Pacific Islands, flights are infrequent and cargo space restricted.)

New Emergency Health Kit 98 Options			
Kits / units / modules	anti-malarials	psychotropics	narcotics
	Yes / No	Yes / No	Yes / No / Tramadol instead
NEHK98 complete [= basic unit + supplementary unit]			
Individual units			
Basic unit [= 10 basic kits]			
Supplementary Unit [= 4 modules)]			
Individual modules			
Basic kit			
Supplementary drugs module			
Supplementary infusions module			
Supplementary renewables module			
Supplementary equipment module			

9.18 Some useful Web-sites

Web site address	*Web site name/contents*
WHO sites	
http://www.who.int/emc	CSR
http://www.who.int/disease-outbreak-news/index.html	Disease outbreak news
http://www.who.int/disasters	EHA
http://www.who.int.medicines	Essential drugs
http://www.euro.who.int/emergencies	EURO - Emergency Preparedness and Response
http://who.int/emc-hiv	FNC/HIV
http://www.helid.desastres.net/	Health Library for Disasters
http://www.who.int/m/topics/health_map/en/index/html	HealthMap (CPE)
http://www.who.int/hpr	Management of non-communicable diseases (MNC)
http://www.who.int/mental_health	Mental health and substance dependence (MSD)
http:/www.who.int/nut	Nutrition for health and development (NHD)
http://www.paho.org/english/PED/	PAHO Preparedness and emergency
http://www.disaster.info.desastres.net/SUMA/	PAHO SUMA
http://www.polioeradication.org	Polio Eradication
http://www.who.int/reproductive-health	Reproductive health and research (RHR)
http://www.rbm.who.int	Roll Back Malaria
http://whosea.org/	SEARO
http://www.who.int/m/topics/tuberculosis/en/index/html	Stop TB
http://www.who.int/violence_injury_prevention	Violence and injury prevention (VIP)
http://www.who.int/dsa	WHO on-line catalogue
http://www.saturn.who.int	Full text technical documents, articles, press releases, publications

Other UN sites	
http://www.irinnews.org/	Integrated Regional Information Networks (IRIN)
http://acc.unsystem.org/scn/publications/html/rnis.html	Refugee Nutrition Information System
http://www.reliefweb.int/	ReliefWeb
http://www.unsystem.org/accscn	SCN (Sub-Committee on Nutrition)
http://www.who.unaids.org	UNAIDS
http://www.undmtp.org/	UNDMTP (Disaster Management Training Programme)
http://www.undp.org	UNDP
http://www.unfpa.org	UN Fund for Population Activities
http://www.unhcr.org/	UNHCR
http://www.unicef.org/	UNICEF
http://www.unisdr.org/	UN-ISDR (International Strategy for Disaster Reduction)
http://www.WFP.org/	WFP
http://www.worldbank.org/	World Bank

Other international/inter-governmental organizations & projects	
http://europa.eu.int/comm/echo/	ECHO (EU Humanitarian Office)
http://www.icrc.org	ICRC

http://www.ifrc.org/	IFRC
http://www.idpproject.org	Global IDP project
http://www.iom.org	IOM (International Organization for Migration)
http:/www.oecd.org/	Organization for economic cooperation and development
http://www.sphereproject.org/	Sphere Project

WHO collaborating centres & other important health institutions	
http://www.cred.be/centre/intro.html	Centre for research on the epidemiology of disasters (CRED), Louvain Belgium
http://www.cdc.gov	Centres for Disease Control (CDC), Atlanta USA
http://www.crid.or.cr/crid/	Centro Regional de Informacion Sobre Desastres (Latin America & Caribbean)
http://www.fond-merieux.org/	Foundation Merieux, France
http://www.medbc.com/	Mediterranean council for burns and fire disasters
http://www.hospitalseguro.cl/	WHO Collaborating Centre for Disaster Mitigation in Health Facilities
http://www.cdc.gov/nceh/ierh/default.htm	WHO collaborating Centre for Emergency Preparedness and Humanitarian Action (Office of International Emergency and Refugee Health, CDC)

Disaster management and other institutions and projects	
http://www.alnap.org/	Active learning network for accountability and performance
http://www.adpc.net	Asia Disaster Preparedness Center
	(ADPC), Bangkok Thailand
http://www.fema.gov/EMI/edu/higher.htm	Federal Emergency Management Agency (FEMA) USA
http://www.cred.be/emdat/	EM-DAT: OFDA/CRED international disaster database
http://www.idrmhome.org	International Institute for Disaster Risk Management (IDRM), Makati Philippines
http://www.iphn.org/weblinks.html	International poverty and health network
http:www.odihpn.org.uk	Overseas development institute, Humanitarian practice network (HPN)
http://www.colorado.edu/hazards/	Natural hazards centre, University of Colorado

Some major international NGO partners	
http://www.care.org	CARE
http://www.theirc.org/	International rescue committee
http://www.merlin.org.uk	Merlin
http://www.msf.org	Médecins sans frontières
http://www.oxfam.org.uk	Oxfam UK
http://www.scfuk.org.uk	Save the children UK
http://www.savethechildren.org	Save the children USA
http://www.wvi/org	World vision international

9.19 Conversion tables

METRIC TO ENGLISH		
To convert	**into**	**multiply by**
Length		
Mm	inches	0.03937
Cm	inches	0.3937
Meters	inches	39.37
Meters	feet	3.281
Meters	yards	1.0936
Km	yards	1093.6
Km	miles	0.6214
Surfaces		
cm2	square inches	0.155
m2	square feet	10.764
m2	square yards	1.196
km2	square miles	0.3861
hectares	acres	2.471
Volumes		
cm3	cubic inches	0.06102
cm3	liquid ounces	0.03381
m3	cubic feet	35.314
m3	cubic yards	1.308
m3	gallons (USA)	264.2
litres	cubic inches	61.023
litres	cubic feet	0.03531
litres	gallons (USA)	0.2642
ml	teaspoon	0.2
ml	tablespoon	0.666
ml	fluid ounces	0.333
litres	cups	4.166
litres	pints	2.128
litres	quarts	1.053
Weights		
grams	grains	15.432
grams	ounces	0.03527
kg	ounces	35.27
Kg	pounds	2.2046

ENGLISH TO METRIC		
To convert	**into**	**multiply by**
Length		
inches	mm	25.4
inches	cm	2.54
inches	meters	0.0254
feet	meters	0.3048
yards	km	914.4
yards	meters	0.9144
miles	km	1.609
Surfaces		
square inches	cm2	6.452
square feet	m2	0.0929
square yards	m2	0.8361
square miles	km2	2.59
acres	hectares	0.4047
Volumes		
cubic inches	cm3	16.387
cubic inches	litres	0.016387
cubic feet	m3	0.028317
cubic feet	litres	28.317
cubic yards	m3	0.7646
liquid ounces	cm3	29.57
gallons U.S.A.	m3	0.003785
gallons U.S.A.	litres	3.785
Teaspoons	ml	5.0
Tablespoons	ml	15.0
fluid ounces	ml	30.0
Cups	litres	.24
Pints	litres	0.47
Quarts	litres	0.95
Weights		
Grains	grams	0.0648
Ounces	grams	28.35
Ounces	kg	0.02835
Pounds	kg	0.4536

kg	tons (USA)	0.001102
kg	tons (long)	0.000984
tons (metric)	pounds	2204.6
tons (metric)	tons (USA)	1.1023
tons (metric)	tons (long)	0.9842

Pounds	tons (metric)	0.000454
tons (U.S.A.)	kg	907.2
tons (U.S.A.)	tons (metric)	0.9072
tons (long)	kg	1016.0
tons (long)	tons (metric)	1.0160

Centigrade to Fahrenheit: Multiply by 1.8 and add 32

Fahrenheit to Centigrade: Subtract 32 and multiply by 0.555

Weight of water by volume (at 16.7 degrees C or 62 degrees F):

1 liter	=	1 kilogram	1 U.K. gallon	=	10 pounds
1 U.K. gallon	=	1.2 U.S. gallons	1 U.K. gallon	=	4.54 litres
1 U.S. gallon	=	0.833 U.K. gallons	1 U.S. gallon	=	8.33 pounds
1 U.S. gallon	=	3.79 litres	1 liter	=	0.26 gallons
1 cubic foot	=	62.3 pounds			

Distance: 1 Nautical mile = 1.152 statute miles = 1.852 kilometres