HEALTH SERVICES

Description

This chapter reviews the essentials of an emergency health care system, including triage, the district health system, and a drug supply system.

Learning Objectives

- To characterise the consequences of disasters on health services, and the role of health services in disasters.
- To discuss the key steps to managing a mass casualty incident.
- To describe different strategies for setting up health services in emergency situations.
- To characterise the crucial role of community health workers and traditional healers in emergencies.
- To design a health centre with a logical patient flow.
- To discuss the key issues in managing essential drug supplies and the importance of standard protocols.
- To define indicators that may be used to monitor and evaluate health services in emergencies.

Key Competencies

- To understand the consequences of disasters and the role of health services in disasters.
- To recognise the staffing required to manage large numbers of casualties.
- To design appropriate facility-based and community-based health services.
- To understand the importance of supporting community health services.
- To design a drug supply system.
- To organise an information system to monitor and evaluate health services.

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Overview

Health services play a critical role in humanitarian emergencies. Immediately following a disaster, health workers and other emergency services (fire, police, etc.) are needed for search and rescue and triage operations. A large number of casualties may overwhelm existing health facilities. If the basic needs of disaster victims are addressed, the situation will stabilise within a short period. Continued emphasis on clinics or hospitals may create long queues of patients with relatively minor complaints while the real health problems of the affected community grow unnoticed. Because a certain level of curative care must be provided, the goals and limits of these services must be defined from the beginning. The priorities for health services should focus on treating common health conditions and involving all available health providers, including traditional healers. Curative health care must be linked with preventive health measures (vaccinations, water supply, sanitation, health education, etc.) and disease surveillance. Community health workers can be trained to gather health information and to involve the community in hygiene, nutrition, and environmental health activities.

The best way of setting up an emergency health program is to strengthen the local system. However, a parallel health system may be set up where local health facilities are not functioning or have a limited capacity. In these situations, emergency health care needs to be extended to the host population. The emergency health program must respect the host government's health policies, such as essential drugs, treatment protocols and referral system. An ongoing health information system for monitoring the health status of the affected population can be integrated, if possible, with the existing national health information system. In the post-emergency phase health services can be expanded to include treatment of chronic diseases (e.g. tuberculosis), comprehensive reproductive health and mental health care.

HEALTH SERVICES AND DISASTERS

Table 9-1: Terms and Definitions

Assistants or Auxiliaries	Medical assistants, nurse assistants, and technician assistants are health personnel who do not have the full training of the respective professional staff (doctors, nurse-midwife or technician), but dispense similar medical services under supervision. In some countries, medical assistants maybe called clinical officers or assistant medical officers and they may also be trained to perform minor surgery.
Community Health Workers /Volunteers (CHWs, CHVs)	Members of the community who are integrated into PHC programs after short training on health-related issues to act as direct intermediaries between the community participation and the health care administration. CHWs may be recruited as paid staff or volunteers. *Health Information Team* (HIT) are members of the community who are recruited and trained to quickly make contact with the community and establish information flow.
Dispensaries (Health posts)	Health facilities where community trained health workers offer a limited range of ambulatory care (treatment of minor injuries/ailments, immunisation, referral of serious cases). Usually run by medical auxiliaries and community health workers.
District Hospitals	Health facilities with the capacity to manage first-referral cases but for limited medical disciplines, namely emergency obstetrical/surgical care and follow-up, inpatient and rehabilitative care. Facilities include laboratory, blood bank, and X-ray services.
Essential Drugs	Drugs required for the treatment of common illnesses affecting a population.
Health Care System	The organisation of health care services within a designated geographical area (country, province, district, etc.).
Health Centres	First contact of the community with the formal health care system. Not usually staffed by medical officers, often run by medical assistants and other professional staff. Offer ambulatory care, limited inpatient care and reproductive health care, community outreach services, referral of emergencies and other serious conditions.
Hospitals	Health facilities that are permanently staffed by at least one physician. Offer medical consultation and 24-hour nursing care, basic emergency surgery and blood banking.
MCH	Maternal and child health clinic

Medical Officers (doctors)	Graduates of a medical school or faculty working in any medical field.
MOH	Ministry of Health
Nurses	Graduates of a nursing school working in any nursing field.
Nurse-Midwives	Graduates of a midwifery school working in any field of midwifery.
Primary Health Care Clinic	A health facility offering services to prevent or treat common diseases and injuries. Equipped with a regular supply of essential drugs and materials that are available, affordable, and culturally acceptable to a population.
Technicians	Graduates of a health technical school who perform duties in a laboratory, pharmacy, X-ray unit, public health field, etc.
Traditional Birth Attendants (TBAs)	Community-based midwives provide basic antenatal care and assist in child-birth according to local practice. Most TBAs are female and they are often illiterate.
Traditional Healers	Traditional practitioners (spiritual or religious healers, herbalists, bonesetters) with indigenous concepts about causes and treatment of illness. They rely on empirical training passed down generations and use religious or spiritual remedies, and some modern medicines, to treat ill health (common diseases, broken bones, depression, etc.) They are highly respected by their communities, particularly in rural areas.

Consequences of Disasters on Health Services

Disasters, whether they are due to natural or manmade, can create particular problems for health services.

1. The sudden occurrence of disasters can an disrupt health services either directly or indirectly, making it difficult for the existing health system to cope, as follows:
   - Damage to health facilities and equipment can result due to a rapid onset disaster such as flood or earthquake.
   - Cut backs in public health programs may occur due to the misuse of essential resources and inappropriate prioritisation and management of the injured.
   - Floods, conflicts, or earthquakes can make access to disaster victims difficult.
   - Loss of staff temporarily or permanently to incoming relief agencies offering higher salaries without long-term security.
   - Health facilities are poorly prepared for disaster situations or for a managing large number of victims.

2. Major disasters often cause large populations to move to areas where health services are ill prepared to cope with additional demands. This may increase their risk of illness and death. Supplies may be insufficient because of the following reasons:
   - Stocks of essential medical supplies are destroyed locally or centrally.
   - Health care supplies are difficult to obtain and distribute due to logistical problems.
   - Local production of goods is disrupted (due to floods, conflicts, or earthquakes).
   - Demand for health care is excessive (due to the size of the affected population and/or specific disease outbreaks).
   - Financial resources and foreign exchange are inadequate.

3. Different health problems tend to arise at different times following a disaster. Severe injuries requiring immediate care are frequently limited to the time and onset of the disaster. Thereafter, major outbreaks of communicable diseases may occur, particularly where there is overcrowding and poor sanitation. Death rates among displaced populations of 18-45 times greater than non-displaced populations have been reported in Sudan and Ethiopia. There are three major sources of disease among the displaced:

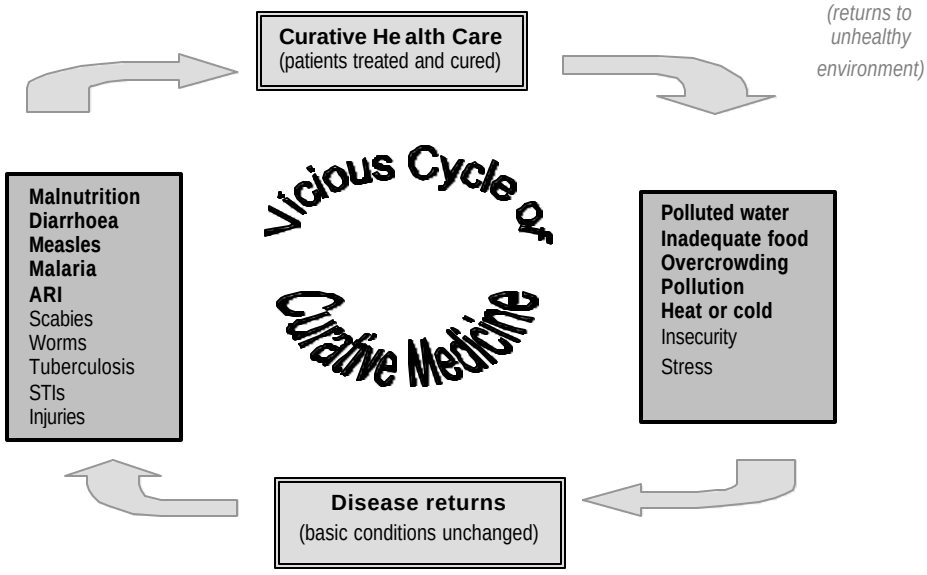
- Diseases that are imported by the displaced from their previous environment or travels (e.g. TB, body lice, parasites), or that are unique to their population (e.g., sickle cell disease).
- Diseases that are present in the new environment for which the displaced persons may lack immunity (e.g., malaria or meningitis).
- Diseases arising in the camp because of unhealthy living conditions (e.g., acute respiratory infections, diarrhoea, measles). The risk of acquiring these diseases is increased by malnutrition.

The Role of Emergency Health Services in Disasters

During the first few days following a disaster, the priority is usually to treat casualties and the sick or injured. Except in earthquakes, which may produce special demands, the number of disaster victims requiring medical care is usually low. Only 0.2 to 2% of flood victims have been reported to require medical care. Usually within 30 minutes of a disaster, up to 75% of the healthy survivors are actually engaged in urgent rescue activities. Teams of foreign rescue workers typically arrive much later (by at least 24-48 hours), often with inappropriate skills. They often bring large donations of drugs, clothing, mobile hospitals, etc. Some donations may be unnecessary, may strain existing storage facilities and transportation systems, and slow down the rescue operation.

The demand for curative care is highest during the acute emergency stage, when the affected population is most vulnerable to their new environment and before basic public health measures (e.g., water, sanitation and shelter) have been implemented. Thereafter, the priority should shift toward preventive measures, which can dramatically improve the overall health of the displaced population. Otherwise, any prolonged interruption in routine immunisations and other disease-control measures may result in serious outbreaks of measles, cholera etc. Figure 9-1 below illustrates that focussing mainly on curative services may not greatly improve their overall health.

Figure 9-1: Vicious Cycle of Curative Medicine



Disasters call for a co-ordinated response between curative and preventive health services, including food supply, water and sanitation, etc. In order to minimise mortality and morbidity it is also necessary to organise the relief response according to three levels of preventive health measures:

a. **Primary Prevention** is the ultimate goal of preventive health care. It aims to prevent the *transmission* of disease to populations that are generally healthy through the following actions:
   - Promotion of healthy practices
   - Public health measures to reduce a population's exposure to risk factors (e.g., supplying safe drinking water to prevent diarrhoea, supplying adequate food to lessen malnutrition, and distributing mosquito nets to prevent malaria).
   - Medical actions (e.g., chemo-prophylactics against malaria, immunisation against measles)

b. **Secondary Prevention** is the early identification and treatment of a diseased person to prevent the infection from progressing to a more serious complication or death. This can be done through the following actions:
   - Alleviating symptoms from diseases (e.g., giving oral rehydration solution (ORS) early to a child who has diarrhoea to prevent dehydration and possibly death).
   - Cure patients with disease by early detection and treatment of tuberculosis, dysentery, etc.

c. **Tertiary Prevention** aims to reduce permanent damage from disease (e.g., a patient is given rehabilitation to lessen the effects of paralysis due to polio or land mine injuries).

MANAGING A MASS CASUALTY INCIDENT (MCI)

A **mass casualty incident** (MCI) is any event producing a large number of victims such that the normal capacity of local health services is disrupted. Common causes of an MCI include floods, fires, explosions, industrial accidents, or conflict situations.

Typically after an MCI, the response may be delayed due to poor communication. Valuable resources at the disaster site are used up in attempts to save the most gravely injured victims who cannot survive, while those who are more likely to survive receive little attention. Inadequate transportation may decrease the survival of victims in critical condition. The following patients will frequently reach the health facility first:

- those nearest to the arriving ambulances
- those who are first to be rescued
- those who are the most gravely injured

If there is only one first referral health facility, it may quickly become overwhelmed. Limited resources are used to care for victims arriving first, even though most of them may have minor injuries. As a result, they tie up the personnel, examining rooms, supplies, etc. increasing the risk of death for critically ill victims whose survival depends on receiving prompt medical attention.

Understanding Triage

Triage is defined simply as sorting and prioritising patients for medical attention according to the degree of injury or illness and expectations for survival. Triage is carried out to reduce the burden on health facilities. By providing care to victims with minor or localised injuries, health facilities are freed to attend to more critical tasks. It is necessary where health facilities cannot meet the needs of all victims immediately, particularly following an MCI.

The goal of managing a mass casualty incident is to minimise the loss of life or disability of disaster victims by first meeting the needs of those most likely to benefit from services. This goal can be achieved by setting the following priorities for triage:

- *Priorities for transportation to the hospital* — patients to be referred according to the priority of their medical condition.
- *Priorities for care in the field* — based on visible colour-coded tags used to categorise patient needs.

Basic triage is done against "absolute" rather than "relative" considerations. This means that each patient's need for medical care is judged as being urgent or not urgent, based on his or her condition rather than relative to other patients. International colour codes for categorising patients have been developed that use the following criteria:

- The *nature and life-threatening urgency* of the patients' present condition rather than the order in which they arrived, as normally done in emergency care facilities.
- The *potential for survival* (i.e., prognosis) which identifies those patients with the most urgent need of care. This concept is critical and can greatly influence the overall survival rate of disaster victims.

  Note: *Most health workers new to MCI have no experience with this concept.*
- *Stabilising all* patients first before giving further care to any individual. *Definitive care* (e.g., cleaning and/or stitching wounds, antibiotic treatments, applying plaster for fractures, etc.) can be started once no more casualties arrive and all the injured are in stable condition.

Figure 9-2: Field Triage Flow Chart Using International Convention Colour Codes

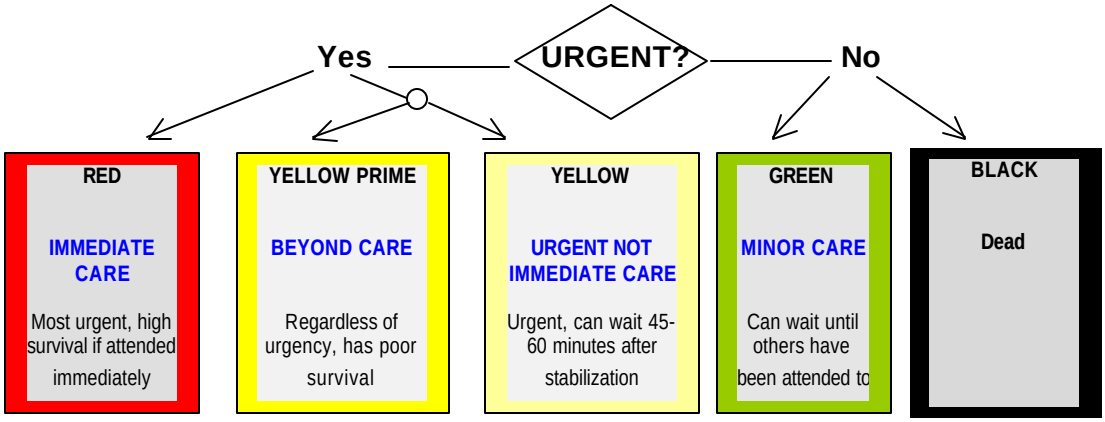


Table 9-2: Detailed Guidelines for Performing Triage

GUIDELINES FOR TRIAGE					
	RED	**YELLOW PRIME**	**YELLOW**	**GREEN**	**BLACK**
Priority	Transfer immediately to a referral hospital with a medical escort in an equipped ambulance	Transfer, only after evacuating all Red victims, with a medical escort in an equipped ambulance	Transfer to a referral hospital in ambulance with first aid escort	Transfer to an appropriate health care facilities by available vehicles without escort	Transfer to morgue
Urgency	Most urgent (fluids, intubation, fasciotomy)	Urgent (constant, intensive care)	Urgent (IV line, drugs, immobilise fractures)	Not urgent (splint or dressing)	Non-Urgent
Condition	shock/hypoxia present/imminent	Deep shock, needs exceed available resources	Stable for 1 hour, can wait at field	Stable till end of response	No pulse or respiration, no blood pressure or heart beat
Injuries	Life-threatening	Catastrophic	Systemic effects, not yet life-threatening	Localised	Fatal
Potential for Survival	High after immediate care & transportation	Very poor	High after support treatment	Good	None
Examples	Intra-abdominal injury, shock status from any cause	Massive skull or chest injuries, extensive and severe burns	Heart attack, compound fractures, severe burns	Minor fractures, burns or wounds	Dead

The most experienced health worker performs triage, assisted by competent staff. Triage is an ongoing process that begins when patients arrive at the medical post and continues as their condition evolves until they are evacuated to the hospital. The triage officer later does more careful examinations within each group of patients and makes decisions based on other factors (e.g., age, general health, or change in physical condition).

Following are some general rules for triage:

- In triage of borderline cases, select the more urgent category.
- When children are involved, give them priority to adults *in the same triage class.*
- Give injured triage personnel or their family members high priority to minimise anxiety and to facilitate efficient response.
- Victims with hysteria or hysterical relatives should be considered as higher priority than the medical condition warrants. These victims are given priority for transfer to a health facility because it is important to maintain calm at the scene.

Preparing to Manage an MCI

Management of MCI begins with being prepared to mobilise resources and follow standard procedures in the field and at the hospital. Hospitals with a limited number of emergency workers may find it difficult to hold regular training sessions on MCI management. Countries with limited resources should focus on the following:

- improving routine emergency services for sudden-impact, small-scale incidents (e.g., car accidents or accidents in the home). To avoid confusion, the same procedures that are necessary to save lives during an MCI should be performed as routine emergency services.

- co-ordinating activities that involve more than an emergency medical unit (police, fire fighters, ambulances, hospitals, etc.).
- ensuring a quick transition from routine emergency services to mass casualty management
- establishing standard procedures for managing all incidents (small or large scale) — search and rescue, first aid, triage, transfer to hospital and hospital care.

MCI procedures should be adapted to the local situation in terms of staff skills, transport and communication, supplies and equipment. Standardisation of routine emergency activities will make the teams more efficient and improve the overall survival of MCI victims. Each emergency unit (police, fire, health) should be prepared to respond to an MCI. Standard kits for field triage should be maintained and drills should be conducted regularly to develop well-co-ordinated teams of trained personnel.

Table 9-3: Minimum Requirements for a Standard Triage Kit

List of Basic Needs	
• Maps, stationery • Means for communication and transportation • Area lighting, flashlights • Identification devices for area, staff and victims: flags, arm bands, triage tags • Stretchers, boards, blankets • Protective devices: gloves, masks, etc.	• Medical disaster kit: oxygen, airway, intubation set, ventilation bag, suction device, chest tube set, tracheostomy set, etc • IV fluids, drugs for shock , tourniquet • Dressing/Splint kit: compresses, antiseptics, suture set, splints, gloves • Blood pressure cuff, stethoscope • Scissors, adhesive tape

In addition to the basic supplies provided through such kits, an MCI situation requires the immediate arrival of appropriate staff.

Table 9-4: The Key Staff Needed to Effectively Manage an MCI

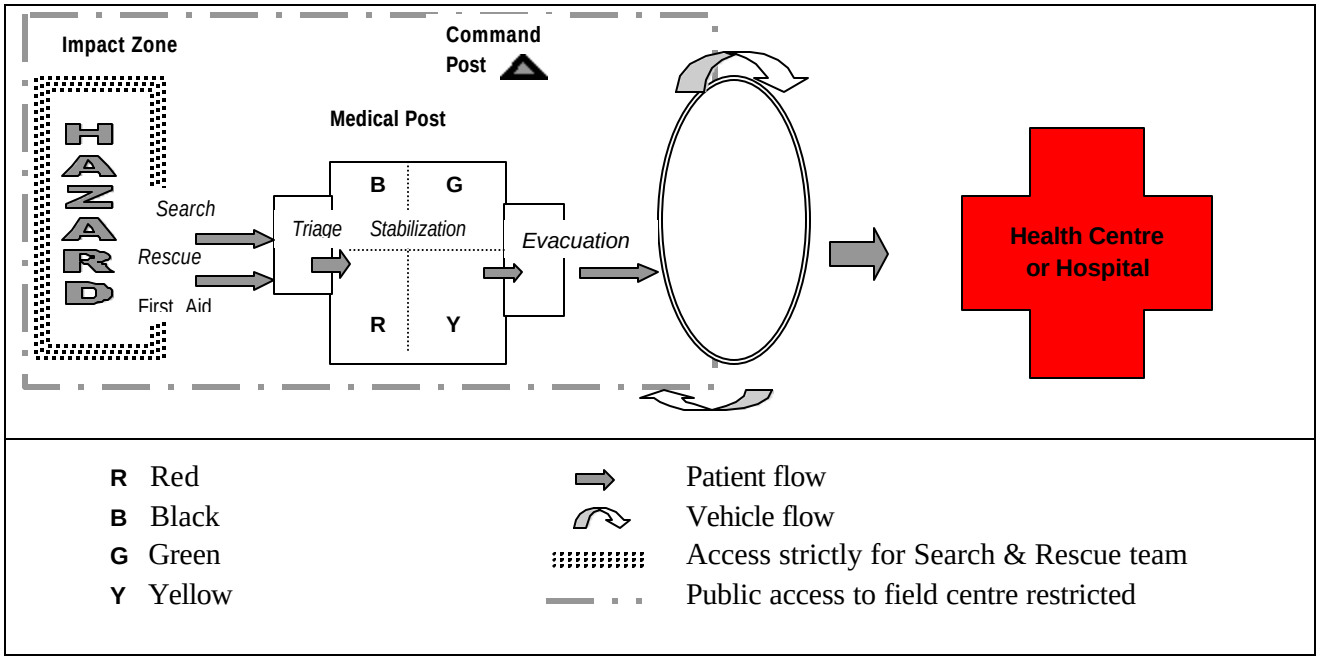
Staff Needed for MCI Management	
Category	**Description**
Command Post Team	High ranking personnel from police, fire, health sector or defence service.
Evacuation Team	Transport officer, ambulance driver, escorts, and stretcher bearers.
Hospital Team	All the key hospital staff (Administrator, Matron, Stores Manager, Pharmacist, etc.) must be mobilised and the acute care departments should be strengthened with staff from less acute areas.
Incident Commander	Most senior police (or other disaster-specialised person) experienced in MCI management.
Search and Rescue Teams	Skilled staff from fire service, police, and special units. May be assisted by trained Red Cross or other volunteers.
Security Team	Personnel from police or defence service.
Triage Officer	Most senior health worker (e.g., anaesthetist, surgeon, district health officer).
Triage Team	Minimum of one doctor and nursing staff to rotate around the medical post, assisted by a registration clerk. Specific staffing of the Triage, Stabilisation, and Evacuation zones will depend on availability of backup emergency health workers and the magnitude of the disaster.

Ethical issues may challenge the implementation of triage, particularly for health workers. All teams need training in the community ethics of MCI management. This will help them to save the greatest number of lives as possible by focusing the limited resources on those who can be saved rather than the most gravely injured.

Basic MCI Management

Basic MCI management is composed of a series of steps that collectively meet the immediate health needs of disaster victims. It begins with search and rescue from the disaster site and ends with referral to the health facility or release for home care. The general organisation of an MCI management centre is illustrated in Figure 9-3 below.

Figure 9-3: General Organisation of a Mass Casualty Management Field



Each team operates within a specific area, aiming to remove all victims away from the disaster site, and to transport the critical cases to health facilities. Each team's responsibilities are listed below.

1. The **Initial Assessment Team**, led by the Incident Commander, establishes the following information:
   - the time and extent of the damage
   - the potential continuing danger from the disaster
   - the estimated number of casualties and those exposed
   - the resources needed for response

   A single map is created indicating the main topographical features, the victims, potential risk areas, access roads, etc.
2. The **Incident Commander** based at the Command Post has overall authority for co-ordinating the multi-sectoral operation. It is the responsibility of the Command Post Team to set up the field posts and continuously assess and report on the general situation.
3. A **Security Team** is needed to protect restricted areas, to limit further danger from the disaster, and to provide crowd control in order to ensure the safety of responders and victims.
4. The priority of the **Search and Rescue Team** is to locate and evacuate victims from the impact zone and transfer them to the medical post after assessing their status. They may provide essential first aid measures to victims in the impact zone (e.g. control bleeding, maintain clear airways), but this is not the place for cardiopulmonary resuscitation (CPR).
5. A **Medical Post** should be established as close as possible to the impact zone while maintaining a safe distance. The medical post should be located in a building or shelter, where possible.

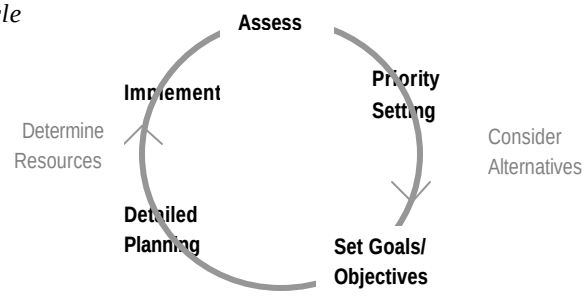
6. The **Triage Team**, under the leadership of the Triage Officer, tags, treats, and releases patients from the medical post according to their health conditions. Each stage must be completed before the next step can be taken. The type of care given is limited to first-aid and emergency medical care. Under limited resource conditions (e.g. staff shortages), the small emergency health team may be required to rotate within the medical post in order to attend to all patients.
7. The **Evacuation Team** is responsible for the safe transfer of stabilised victims to a health care facility using the most appropriate transport and escorts available. Victims with minor injuries may be transferred by non-medical transport after all acute victims have been evacuated.
8. On arrival at the hospital, every injured person should be reassessed, stabilised, and given definitive care. The colour-coded tags are strictly for field triage and field use. They should not be used for documenting health care in the hospital.

Many factors can affect the quality of triage, e.g., the patient's condition, access to health facilities, and the availability of resources (information, hospitals, personnel, and supplies). Monitoring of patients in the triage area may be prolonged if the stabilisation area is overloaded, if resources for evacuation are inadequate or the receiving facility requests a delay. If there is only one health care facility within a disaster region and the victims are stabilised in the field, transport can be staggered. This way, the health facility will not become overwhelmed.

Hospitals should discharge all inpatients that can safely be discharged, while ensuring the care for the remaining patients is not compromised. Hospitals should also regularly advise the Incident Commander about their health care capability and capacity so that the transfer of MCI victims is well organised. If the hospital's capacity or capability is low, patients and victims may have to wait a long time for treatment in surgical or intensive care units.

PLANNING EMERGENCY HEALTH SERVICES

The Planning Cycle



Assessment and Priority Setting

Because resources are limited, planning of emergency health services should be based on the best available information. A needs assessment can gather information that is critical for prioritising health care needs. Emergency health planners must involve all concerned groups (the central government, local authorities and agencies, health professionals and leaders from the affected and local communities) in carrying out the assessment and drawing conclusions. The assessment report should indicate whether there is a need for external assistance, and appropriate strategies which target health problems that cause the greatest mortality and morbidity. The report should be shared with national and local authorities and the affected population. Thereafter, assessment findings should be incorporated into the local health information system or be used to set up a new information system.

Table 9-5: Sample Checklist for Initial Health Assessment

Preparation
- Obtain available information on the disaster affected population and resources from host country ministries and organisations.
- Obtain available maps or aerial photographs.
- Obtain demographic and health data from international organisations.

Field Assessment
- Determine the total disaster affected population and proportion of children less than 5 years old.
- Determine the age and sex breakdown of the population.
- Identify groups at increased risk.
- Determine the average household size and estimates of female heads of households

Health Information
- Identify primary health problems in country of origin if refugees are involved.
- Identify primary health problems in the disaster-affected area if no refugees are involved.
- Identify previous sources of health care.
- Ascertain important health beliefs and traditions.
- Determine the existing social structure and the psycho-social dimensions of the situation.
- Determine the strengths and coverage of local public health programmes in people's country of origin.

Nutritional Status
- Determine the prevalence of protein-energy malnutrition (PEM) in population less than 5 years of age.
- Ascertain prior nutritional status.
- Determine the hierarchical food allocation practices as the affect the nutritional status of vulnerable groups.
- Determine the prevalence of micronutrient deficiencies in the population less than 5 years of age.

Mortality Rates
- Calculate the overall mortality rate (crude mortality rate — CMR).
- Calculate the under-5 mortality rate (age specific mortality rate for children under five years old).
- Calculate cause specific mortality rates.

Morbidity
- Determine age and sex specific incidence rates of major health problems and diseases that have public health importance, including sexual violence and rape.

Environmental Conditions
- Determine climatic conditions; identify geographic features; ascertain local disease epidemiology; assess access to affected population; assess the level of insecurity and violence.
- Assess local, regional, and national food supplies (quantity, quality, types), distribution systems, co-ordination and services of existing organisations, logistics of food transport and storage, feeding programmes, and access to local supplies.
- Assess existing shelters and availability of local materials for shelter, access, amount of land and building sites, topography and drainage, blankets, clothing, domestic utensils, fuel, livestock, money.
- Identify and assess water sources, quantity, quality, transport and storage.
- Assess sanitation including excreta practices, soap, vectors and rats, burial sites.

Resources Available
- Identify and assess local health services including: access to facilities, health personnel, interpreters, types of facilities/structures, water, refrigeration, generators at facilities, drug and vaccine supplies.

Logistics
Assess transport, fuel, storage of food, vaccines and other supplies, communication.

Source: Sphere Project, 2000

Emergency health care needs to be focused on the most urgent health problems. These problems may vary, depending on the nature and magnitude of the disaster, and whether there is long-term population displacement. Any interventions that are recommended following the assessment should aim at preventing excess mortality and morbidity as well as anticipate future health problems from the evolving emergency situation.

A simple technique can be used to rank problems and identify priority health interventions within the selected health services, as shown in Table 9-6 below.

Table 9-6: Ranking Health Problems

		Frequency of Disease Diagnosis	
		High	**Low**
Risk of Excess Mortality or Morbidity	**High**	Malaria Diarrhoea	Tuberculosis Epilepsy
	Low	Intestinal worms URTI	Ringworm Arthritis

Diseases that occur very frequently and are associated with a high risk of death (e.g., malaria and diarrhoea in children under age five) should be addressed before other diseases that also have a high frequency but low risk of serious illness or death (e.g., intestinal worms).

Considering Alternatives

After setting the priorities of an emergency health program, it is important to consider the consequences of other health problems that were not addressed, for example:

- Ignoring harmful traditional practices, such as female genital mutilation (FGM), or harmful remedies for a person with epilepsy, may cause permanent injury to the victim.
- A higher number of tuberculosis cases among displaced populations may increase the risk of infection to the host countries' population.
- A large population of adolescents in a displaced population with a high prevalence of sexually transmitted diseases (STDs) may increase the spread of HIV/AIDS.
- Neglecting the local population in disease control activities may render the control measures among the displaced population ineffective.

Setting Goals and Objectives

The **goals** for establishing emergency health care for large displaced populations may be defined as follows:

- *to reduce excess mortality and morbidity*
- *to target the health problems that cause excess mortality*

The above goals may be expanded to include the following:

1. To reduce excess mortality and morbidity by providing appropriate medical care to the following:
   - the injured in the aftermath of a disaster
   - those with clinical illness due to communicable diseases

2. To target the health problems that cause excess mortality through a preventive approach as follows:
   - **Preventive health measures —** a combination of primary, secondary, and tertiary preventive measures can be effective in preventing excess mortality.
   - **Targeting vulnerable groups** for preventive health services (e.g., children under age 5, women, the elderly, unaccompanied minors).
   - **Monitoring** population and health services data in order to detect emerging health problems.

   For further details on preventive health measures, refer to the *Control of Communicable Diseases* chapter.

Both immediate and long-term **objectives** may be defined, which target groups with an increased risk of death and illness (e.g., children under age 5, women, unaccompanied minors, the elderly, etc.). Targets for each objective can later be used to evaluate the program in achieving stated objectives. For example:

- whether 85% of the patients with tuberculosis completed treatment within the stated time period.
- whether the death rate of children under 5 years is declining or has returned to pre-disaster levels.

Detailed Planning

A plan of action needs to be developed which defines how program goals and objectives will be reached. The following steps may be used to develop a plan of action:

1. Identify the priority health services needed.
2. Define the level of health care that will be provided.
3. Define the strategy for providing health services.
4. Set standards for health services.

Each step is described in detail below.

1. Identify the priority health services needed and when they should be established.

The type of emergency health care established will depend on the emergency situation. It is important to plan the program in phases, based on the priority health needs. Relief agencies frequently encounter a high death rate during the acute emergency phase. As a result, the priority services during this phase should be those that have a direct impact on the morbidity and mortality of the displaced population.

Not all problems can be addressed at the same time. Some services must be introduced during the acute emergency phase, while others may be planned but not implemented until the post-emergency phase. Table 9-7 below defines which health services should be implemented during the acute phase and which may be introduced later.

Table 9-7: Phases of Emergency Health Services

DIFFERENT PHASES OF EMERGENCY HEALTH SERVICES		
Health Service	**Acute Emergency Phase**	**Post-Emergency Phase**
Child Health	• Curative: manage common diseases (ARI, diarrhoea measles, malaria, skin infections, anaemia) • Immunisation: measles • Nutrition: assessment, rehabilitation, vitamin A	• IMCI protocols (ARI, malaria, diarrhoea, etc.) • EPI program (measles, diphtheria, polio, whooping cough, TB)
Curative Care	• Manage common diseases (triage, outpatient, referral, inpatient, dressing/injection) • Standard procedures for patient management including admissions and referrals	• Manage tuberculosis under special conditions • Consider other chronic diseases (diabetes mellitus, hypertension, arthritis) in mid-level developing countries, heart disease
Surgery	• Manage minor injuries • Refer emergency conditions and major injuries to hospital • Temporary field unit if poor access to referral hospital	• Surgery for chronic conditions such as hernia or uterine prolapse
Reproductive Health	Minimum Initial Service Package (MISP): • Manage sexual/gender violence including emergency contraception • Conduct safe deliveries • Refer obstetric complications to Emergency Obstetric Care (EOC) facilities • Provide free condoms • Promote universal precautions against HIV/AIDS	Comprehensive care: • Provide ANC: risk screening, supplements, immunisation, monitor signs, prophylactics • EOC including treating complications of abortions • Post-natal care (PNC): nutrition, health education on breast feeding and infant care • Family planning information and services • Prevention and treatment of STI/AIDS
Pharmacy	New Emergency Health Kit	Essential drugs and supply (stratified for different levels) Diagnostic flow charts and standard treatment protocols

continued

Health Service	Acute Emergency Phase	Post-Emergency Phase
Laboratory	• Initially none: clinical diagnosis or referral of specimens • Consider during a major disease outbreak or high drug-resistance (malaria, dysentery)	Basic laboratory investigations to improve diagnosis and quality of care (malaria smear, stool ova/cyst, haemoglobin, gram stain, sputum smear, blood sugar, HIV test). Possibly blood transfusions
Mental Health	Prepare plans	Community-based programme for the emotionally traumatised
Health information System (HIS)	Needs Assessment: • Rapid surveys (best possible samples) Establish surveillance system using simple indicators • Daily death rates: #/10,000 people/day • Daily morbidity rates • Demographics: census, rate of influx	Ongoing surveillance using comprehensive indicators • Weekly or monthly morbidity/mortality rates (depends on event): #/1,000 people/month • Regular population-based surveys (generalisable) • Periodically modify the HIS to monitor less urgent diseases, or differences in disease patterns
Preventive Health	Community Health Worker activities include: • 1^0 prevention: IEC on child care, assist immunisation • 2^0 prevention: ORT, identify/treat cholera, malaria • 3^0 prevention: recognise/refer cases of malnutrition for treatment • Data collection: disease surveillance, population estimates	• Community mobilisation for disease control activities • Tertiary care: reduction of physical disability

2. Define the level of services to be provided.

Emergency health care should be implemented at the most appropriate level of the PHC system available. The PHC system should include the following levels of care:

- Home or family level
- Community level including CHWs and other home visitors
- Peripheral health facilities (dispensary or health post)
- First level health facilities (health centre)
- Referral hospital

Note: *Not every emergency will require all levels of care.*

Because resources are limited, only those levels that will effectively prevent excess illness and deaths should be introduced. For example, the community and first level of health care, which are most cost-effective, may be introduced at the beginning of the emergency. Additional levels of health care may later be introduced according to their potential for preventing excess illness and deaths. Table 9-8 shows the range of activities and potential capacity for different levels of care.

Table 9-8: Levels of Emergency Health Care for Displaced Populations

Levels of Emergency Health Care for Displaced Populations (emergency phase)				
	Community- Level	***Peripheral Level***	***1st Level Facility***	***1st Referral Hospital***
Facility	Depends on type of activities (home-visits can be supervised from health post)	Dispensary or health post (ambulatory care)	Health centre	District hospital, Field hospital
Capacity (Ratio to Population)	1 CHW per 500-1000 persons	1 facility per 5,000-10,000 persons	1facility per 30,000-50,000 persons or 1 per every 10 km	1 facility per 150,000-300,000 persons
Health Activities	Case-finding, referral, health education, data collection (curative for common ailments, e.g. fever, diarrhoea)	Curative for minor ailments, referral, ORT, dressing, immunisation, data collection	Child care, health education, outpatient/ inpatient care, referral, essential drugs, reproductive health, (possibly basic laboratory, transfusion, surveillance)	Emergency obstetric care, emergency surgery, outpatient/ inpatient care, referrals, follow-up, rehabilitative care, laboratory, blood bank, X-ray, logistics

3. Define the strategy for establishing health services.

There are two basic strategies for providing emergency health care to a large displaced population: facility-based health care and community-based health care. Each strategy is described below.

A. Facility-Based Health Care

There are three ways of establishing facility-based health care:

I. Augment the Local Health Care System (This is the preferred approach.)

As much as possible, avoid building a "special emergency hospital." Some local health systems do have the capacity to absorb the additional demand of displaced populations, for example:

- If the total displaced population does not overwhelm the local services.
- If there is little political tension between the local population and the newcomers.
- If there is no excess demand for health services (no disease outbreak or mass casualty incident).

Even though the host country is primarily responsible for the care of displaced populations, relief agencies should try to strengthen the capacity of the local health care system. Existing health facilities should be assessed and repaired. Tents may be donated in order to increase the size of the facility. The overall quality of local health services may be improved through the regular supply of essential drugs and training of staff. Advantages of augmenting local services include the following:

- Both the host and displaced populations benefit, thereby reducing resentment from the local population.
- Resources are not wasted on duplication of existing services.
- Local health authorities get directly involved with the problems of the displaced population.

Certain issues must be agreed upon:

- Compensate local services for extending health care to the displaced population, e.g., pay the user fees for displaced people where cost-recovery programs exist. UNHCR covered the fees for refugees in Guinea at the same rate as the locals. In Kenya, outpatient consultations for refugees were free, but UNHCR was charged double rates for inpatient care and diagnostic procedures.
- Provide means for communication and patient transfer between different levels of health care sites to improve access to health care and referral services.
- Provide incentives for existing health workers handling an increased workload. Additional staff, e.g., a surgeon or other staff from less affected areas may "seconded" to the emergency health program, or various in-service training courses may be organised.
- Identify measures that can promote the return of health demands to normal or pre-disaster levels.
- Agree on changes to national health policies — e.g., tuberculosis treatment and measles vaccination programs for large displaced populations may differ from those in place for host populations.

II. Set Up a Separate Health Care System

Sometimes there is no access to local services, or they may be overloaded, have a severe shortage of staff, etc. If setting up new facilities is the only option, then it is important to seek approval from the national health authorities from the beginning. Where possible, policies of the host country health system should be adopted for the following:

- clinical diagnosis and therapeutic protocols
- essential drugs and drug supply
- patient flow and referral system
- health information system
- training curriculum for health workers (including health workers from the displaced population)
- minimum staffing levels per facility (including expatriates)
- co-ordination of health care and relations with the national health care system

Many issues need to be considered when setting up a separate health care system, for example:

- There may be marked differences between the level of health services for displaced populations and locals. This is more likely to occur if the local health care is sub-standard. In addition, the host government may be concerned that health services for the displaced population (which are free and of better quality) may create competition with local and private health services (which are based on cost-recovery).
- Most of the health workers should be recruited from the displaced population in order to overcome cultural and language barriers. However, their foreign medical documents may not be recognised by the host government.
- Higher salaries from externally funded relief programs may drain local staff from local facilities.
- Since both the displaced and local populations are at risk during a disease outbreak, relief agencies should support local health authorities to implement effective disease control measures.
- Host populations should have access to health care services set up for displaced populations where local health facilities are lacking or cannot be strengthened.

III. Mobile or Satellite Clinics

Outreach services are appropriate for delivering preventive care such as immunisations or antenatal care. They also allow supervisors to visit health workers based in the community (CHWs, TBAs, auxiliaries). However, mere contact with medical care at regular intervals does not ensure that the community has *access* to health care. Access implies a continuous relationship between those who need services and the health care provider. Outreach clinics are not the appropriate facility for the treatment of serious medical conditions that require more frequent follow-up.

Facility-Based Health Care — Key Points

The aim of establishing an emergency health system should be to strengthen the local health system. Whichever strategy is adopted, all services should function effectively and be well co-ordinated to achieve the following:

- *Comprehensive Care* — looking for other conditions that a patient may not report, e.g., depression in a patient with persistent headaches or abdominal pain (somatisation).
- *Continuity of Care* — following-up referrals, defaulters of anti-tuberculosis treatment or immunisation.
- *Integrated Care* — linking curative with preventive care at every opportunity, e.g., combine child immunisation with ante-natal clinic days.

B. Community-Based Health Care

Strengthening local health facilities does not guarantee that everyone will use them. Many patients, some seriously ill, may still not pursue medical treatment, even if the facilities are nearby or provide free services. Possible barriers to seeking health care include:

- Lack of awareness of available services
- Lack of access due to various reasons (too far, inconvenient hours of operation, health workers' poor attitude, no money for drugs, ethnic-based or politically-based discrimination, inadequate security)
- Lack of health care resources (drugs, materials, staff, services)

I. Setting up a Community Health Worker Program

Community Health Workers (CHWs)—also known as Health Information Teams (HITs), home visitors (HVs), Village Health Volunteers—are members of the community who are trained to act as direct intermediaries between the beneficiary population and the health care system.

The purpose of setting up a network of CHWs is to extend the coverage of emergency health care through preventive health activities such as disease control and surveillance, as well as mobilising the community for public health initiatives. CHWs can reduce the patient burden at health facilities by increasing the population's awareness of how to improve their own health and take preventive health measures, e.g., taking ORS early to prevent dehydration. This allows staff at health facilities to concentrate on more severe conditions.

The appropriate level of CHW training depends on both the available resources (including CHW trainers and supervisors) and their expected role in providing primary health care (PHC). During the acute emergency phase, initial training should focus on simple priority tasks that address immediate health needs such as:

- Identifying cases of disease as early as possible
- Referring the seriously ill as early as possible

- Identifying vulnerable groups
- IEC (information, education, and communication) about disease prevention and control (e.g., water and sanitation, re-hydration, good nutrition, immunisation, safe motherhood care, condom distribution, and protection from sexual violence)
- Data collection on all the above activities

The following points should be considered when setting up a CHW program:

- Ensure that CHWs are selected from all ethnic groups and that at least half are female.
- Realise that some CHWs may be illiterate and will need support in keeping records of their activities.
- PHC programs work better when the role of the CHW is well-defined, and when they receive visible support from both the community and the entire health care team.

II. Integrate Alternate Health Providers (Traditional Healers and Private Practitioners)

Some members of the displaced populations may prefer taking their health problems to other health care providers. Health workers in the facilities should try to understand their reasons for seeking health care from the following health providers:

a. Traditional Healers

Many displaced people are from rural areas with traditional concepts of illness and disease. They may believe that some health problems (e.g. mental illness or a STDs) result from a curse or wrong-doing. They may believe that only traditional healers can cure these diseases by applying healing rituals based on indigenous ideas about the causes of illness. Traditional practitioners treat health problems in various ways e.g., appeal to ancestors or higher spirits, use herbal remedies or change one's diet by increasing food or fluid intake. Some methods of healing may even appear harmful because they produce bruises. However, giving respect to traditional healing and religious practices of the displaced community can reduce their resistance to Western treatment.

Many rural populations also consult traditional healers for their health problems because these healers seem responsive to their overall health care *demands* instead of addressing only their "medical needs." (They differ from health professionals who are trained to manage medical problems according to technical criteria.) Traditional practitioners include the following:

- *Spiritual healers* are especially skilled in helping "sick souls" cope with "evil spells" and acute psychological and social stress.
- *Traditional healers* may specialise in bone-setting, as well as the treatment of common ailments. In emergencies, healers may not have access to the herbs and plants they normally use. If these remedies are not harmful, field staff should help healers to obtain them or give alternatives. Some traditional healers may be willing to use modern treatment (e.g., ORT).
- *Traditional birth attendants (TBAs)*
  Whether *trained* formally or informally, TBAs provide a wide range of services to pregnant women and new mothers including washing a woman's soiled clothes after clinical birth or cooking and caring for her other children. Because not all deliveries can be conducted in the health facilities, TBAs may take charge of about 50-80% of all births among the displaced population. Therefore, most expectant mothers and children who are at "special risk" will fall within the TBAs areas of influence.

There is a critical need for skilled TBAs in order to reduce maternal mortality in emergency situations. The TBAs' knowledge and skills in monitoring pregnancies and conducting safe deliveries at home should be assessed. Further training should be provided on detecting and managing high-risk pregnancies and complicated deliveries, in counselling on child spacing and childcare, and in keeping records of their activities. TBAs require regular supplies and supervision.

- *Elders* are older men and women responsible for puberty rites, (e.g., circumcision) and for educating adolescents on sexuality, reproduction, and family life.

b. "Modern" Health Practitioners

Within the displaced population, there may be doctors and nurses who have been formally trained in their country of origin but lack certification to work in the local health sector. For this reason, it may not be possible to incorporate them directly into the emergency health program. However, the emergency health system should encourage their co-operation in order to streamline patient management practices (especially drug treatments) and reporting of communicable diseases. They should be encouraged to use the referral system (upper and lower levels).

c. Non-Government Organisation (NGO) Hospitals

These hospitals may have been set up by religious institutions long before the emergency. They often provide quality health care for a small fee. The critical role these hospitals play at the onset of a disaster may be overlooked after the emergency health system is set up. Close links should be maintained for mutual support within the health care system.

d. Other Service Providers

Members of the community may informally provide services such as religious education and rites (e.g., marriage and burial), and family counselling, etc. The overall health needs of the community can be more strongly represented within the emergency health system by integrating community elders, religious leaders, teachers, and social service organisations. They should have access to basic training, such as first aid.

Community-Based Health Care – Key Points

Integrating modern with traditional medicine can increase the effectiveness of emergency health services. The health teams can try to collaborate with traditional healers and the private health services since each provider has something to contribute to the health of the displaced people. Both qualified and traditional health practitioners can manage broken bones. However, the qualified health provider may be better able to treat meningitis, while traditional healers may be more skilled in managing grief and depression. Where possible, training workshops, regular meetings, and supervision visits should be established for the alternate health providers. This will improve patient care and referral and will discourage harmful practices. Traditional healers can also participate in preventive health measures such as immunisations and HIV/AIDS prevention.

4. Set standards for emergency health care.

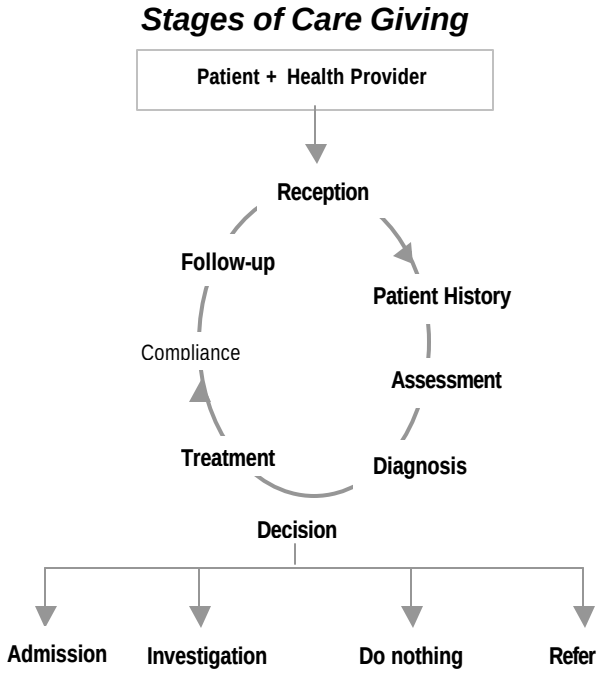
Because emergency health programs involve health workers and organisations with different training backgrounds, it is necessary to standardise the delivery of services. Relief agencies should make it known from the beginning which standards or protocols are to be followed (MOH, WHO, etc.) These standards can be used later to evaluate the program. Advantages of standardising emergency health care include the following:

- Makes it easier to integrate new staff members.
- Regulates patient referrals to higher levels of care.
- Improves management of drugs and equipment.
- Prevents competition between facilities providing the same level of care.

a. **Standardising the Care-Giving Process**

Care-giving procedures may vary for health providers at various levels of care. For example, the highly-trained health workers in hospitals can apply a wide range of diagnostic and care giving procedures, whereas CHWs based in the community should only use those procedures which reflect their level of training and competence. Figure 9-4 below illustrates the stages of care giving.

Figure 9-4: Stages of Care Giving



Health care providers should be trained to approach each patient's health problem in a systematic way. After receiving a patient, one should take a clinical history, do a physical assessment, and make an interim diagnosis. A decision can then be made whether to treat the patient with medical drugs or procedure, give advice on home care, make a referral or follow-up. If the health care provider decides to do nothing, he or she must explain to the patient why this decision has been made. Otherwise, patients may lose confidence in the health system and become less keen to follow advice on preventive measures.

For health care to be effective, the clients should accept the decision and follow the instructions of the health care providers (e.g., taking medications as advised). Whether or not a patient is willing to "follow doctor's orders" may be influenced by the following:

- cultural beliefs about the cause and outcome of the illness
- how much advice a patient receives about their illness and the treatment needed
- use of standard health cards (patient medical records which document the patient's clinical history, diagnosis, decisions made, and future appointments)
- type of treatment prescribed (drugs, injections)
- possible follow-up visit from a community health worker

b. **Use Standard Health Cards**

Health workers should document each patient's diagnosis and specific treatment in a standard way. Health cards or exercise books for each patient can be introduced and kept either at the registration office or by each family. These will help in follow-up of patients as well as in monitoring the quality of health care.

c. Standard Case Management

Standard case management procedures need to be established to prevent unnecessary treatment or investigations and wastage of limited resources (drugs, staff time, etc.). These procedures include:

- *Standard diagnostic protocols and case definitions*— Standard procedures for diagnosing common illnesses have been developed. Many of them represent simple flow charts that use standard case definitions to identify key signs from the patient's history and physical assessment, and where necessary, laboratory investigations. (Refer to Appendix A for IMCI protocols.)
- *Standard investigation procedures* — a laboratory may be set up before or during the post-emergency phase at the health centre. Standard laboratory procedures (specimen collection, storage, and analysis) should be used to confirm a diagnosis and define the drug sensitivity patterns of disease pathogens during major outbreaks (e.g., malaria, cholera).
- *Standard treatment protocols* — Most countries have established national treatment protocols for common ailments, based on the essential drugs supply.

  Note: *for some diseases, e.g., tuberculosis, the treatment of displaced people may differ from that of the host population.*
- *Standard admission criteria* — standardising admission procedures will prevent the admission of non-serious cases that may overload inpatient facilities. Standard clinical procedures and guidelines for managing serious health problems will ensure that critically ill patients are promptly admitted and given the appropriate care, including close monitoring. In addition, standard procedures should in place for referring inpatients to health care units after treatment of an emergency condition (e.g., severely malnourished patient referred to therapeutic feeding centre after treatment for pneumonia).
- *Standard referral criteria* — Standardising the criteria for patient referral will help define the limit of each level of care and the health conditions that require higher level attention and skills. This prevents emergency cases being delayed at lower levels of the health system and non-emergency cases being forwarded to higher levels.

Estimating Resources

Depending on the nature and magnitude of the disaster, the demand for resources in the acute phase may be excessive due to injuries or disease outbreaks. For example, as much as 2-3% of the population may initially use the health services. However, following an effective relief response, the daily outpatient clinic attendance can quickly drop to about 1% of the population, of which 1% may need to be hospitalised. Table 9-9 estimates resources needed for health services.

Table 9-9: Estimating Resources Needed for Health Services

ESTIMATING NEEDS FOR HEALTH SERVICES (in post emergency situations)	
Basis	**Estimated Needs**
4 consultations/person/year (at peripheral level)	1% of population attend health facility daily
Hospitalisation rate of 40 /1,000 population/ year	1% of those attending will be hospitalised
Average period of hospitalisation = 7 days	1 hospital bed required for every 1,000 people
Average length of consultation = 7 minutes	

Example: For a total of 50,000 displaced people expect the following:

- 40-50/1,000 to be hospitalised => 2,500 inpatients per year
- 4Total days of hospitalisation to average 7 days per inpatient => 17,500 days
- Minimum capacity for daily hospitalisation ~ 50 beds

  (Note: Should add another 10 beds to cover fluctuations in number of admissions. More than 50% of the clients are usually under 15 years old, 50-60% of whom may be under the age of 5 years.)

1. Estimating Staff Requirements

Staffing at every level of the PHC system should match the health needs of the population. The number of outreach workers recruited (e.g., CHWs, TBAs, etc.) should reflect the gender and cultural profile of the displaced population. In emergencies, some CHWs with prior training may already exist within the displaced population. If more CHWs are required, people who are respected and knowledgeable about the health needs of their community should be selected. Various incentives may be used to pay outreach workers, such as self-help, food-for-work, or wages. Table 9-10 shows the Sphere Project's suggestions for staffing at each PHC level.

Table 9-10: Minimum Standards for Staffing at Each PHC Level

Minimum Standards for Staffing Requirements	
Community Level: at least 50% of outreach workers should be female	
• Community Health Worker:	1 per 500-1000 population (30 home visits/day)
• Community Health Worker Supervisor:	1 per 10 community health workers
• Traditional Birth Attendant:	1 per 3000-4000 population
• Traditional Birth Attendant Supervisor:	1 per 10 traditional birth attendants
Peripheral Level: total of 2-5 workers, at least one qualified	
• Nurse midwife:	1 per 50 consultations/day
• Auxiliary staff for ORT, dressing, registration, etc.	
Central Level: minimum 5 medical staff, 1 doctor	
• Physician or senior clinical officer:	2 per 20,000 (40-50 consults/day)
• Health workers:	1 nurse per 20-30 beds, 1-2 pharmacy, 1-2 dressing/sterilisation
• Auxiliary staff + clerks, guards, cleaners	
Referral Hospital Level: (up to 150,000 population)	
• Physician	2-4
• Clinical officer (medical assistant)	1 per 40-50 consultations/day
• Nurse	1 per 20-30 beds (8 hour shifts), 8-10 per 20,000 population
• Ancillary staff	(anaesthesia, laboratory): 4 for 3 shifts (8-hour)
• Administration	2 (including health information)
• Auxiliary staff and others	15 staff including 2 clerks, ambulance driver

On recruitment, all staff should be and informed about the purpose of their activities and trained in what they are expected to carry out.

Table 9-11: An Example of a Detailed Job Description for a Community Health Worker

DUTIES OF A COMMUNITY HEALTH WORK (CHW)
Screen new arrivals • assess new arrivals individually for early detection of priority medical problems
Conduct home visits • measure MUAC, refer cases of malnutrition and kwashiorkor to feeding centres, follow-up • recognise and refer cases of fever, dehydration, cholera, acute respiratory distress • IEC on family health issues: child care and development, immunisation, environmental sanitation, personal hygiene, reproductive health and available services
Support MCH and nutrition activities IEC, registration, or give direct assistance during: • surveys on EPI coverage or nutrition, selective feeding, micro-nutrient supplementation, deworming • selecting feeding programs, micronutrient supplementation • mass immunisation campaign • deworming campaign
Monitor community health • deaths: graveyard counts and verbal autopsies • births, sickness: home visits • demography: may do household registration, census, mapping
Mobilise the community • participate regularly in PHC activities, e.g., cleanliness campaign, mass immunisations, surveys • meet regularly with local health committee (elders, women groups, schools) in the zone to identify priority health needs
Treat minor ailments • scabies, conjunctivitis • diarrhoea – distribute ORS and counsel on preparation and administration

2. Estimating Essential Drug Requirements

Essential drugs are defined as those drugs that are needed to treat common diseases affecting a population. Most countries have developed essential drug lists that are appropriate for treating local disease problems in normal situations. Standard lists of drugs may be used to standardise emergency health care as follows:

Essential Drugs for the Acute Phase

Up to 90% of illnesses among displaced populations in developing countries are caused by five communicable diseases (e.g., ARI, diarrhoea, measles, malaria, and skin conditions). One way of preventing the spread of diseases and long-term complications is to detect and treat affected persons with the appropriate drugs as soon as possible. Whenever possible, the emergency health system should adopt the national drug policy or the WHO list of essential drugs (which can serve as a guideline where there is no national policy).

These essential drug lists may be adapted to different levels of care as follows:

1. a *basic list* of drugs for the CHWs who treat symptoms at the community and home level
2. a *supplementary list* for medical assistants and nurses who prescribe drugs at health posts and health centres
3. a *special list* of drugs for doctors and nursing personnel working in specialised units at the hospital, such as an operating theatre for emergency obstetrics or major injuries

The World Health Organisation (WHO) has designed the 1998 **New Emergency Health Kit (NEHK)**, which contains the medical supplies and drugs for treating the most common illnesses among displaced populations. Using these standard health kits during the acute emergency phase allows a swift and effective response to the priority health needs of a displaced population. The consequences of drug shortages due to delayed drug orders (*the pull system*) are more severe than the waste of unused supplies from the standard health kits (*the push system*). NEHK. provide drugs and medical supplies for 10.000 people for approximately 3 months. They are shipped in 2 *pallets* (components) as described below:

a. The first pallet contains **10 Basic Units**, each packed as a separate unitsto allow easy distribution to smaller health facilities. *Each single basic unit*:
   - Contains 12 essential drugs (no injectables), medical supplies, and essential equipment for 1,000 consultations (see table below).
   - Can be used by PHC workers with limited training stationed at health posts or health centres.
   - Includes treatment guidelines (based on symptoms) for PHC workers to ensure proper use.

Table 9-12: Drug Contents of Each New Emergency Health Kit

Drug Contents
One Basic Unit in the New Emergency Health Kit
(for 1,000 people for approximately 3 months)
source: New Emergency Health Kit – WHO, 1998

Drugs/Medicaments	*Quantity*
Acetylsalicylic acid 300 mg	3 X 1000 TAB
Aluminium hydroxide 500 mg	1 X 1000 TAB
Benzylbenzoate 25% application	1 X 1 L
Cetrimide 15%/ Chlorhexidine gluc 5% (savlon)	1 X 1 L
Chloroquine 150 mg base (uncoated)	2 X 1000 TAB
Cotrimoxazole 400 mg + 80 mg scored	2 X 1000 TAB
Ferrous sulphate 200 mg + folic acid 0.25 mg	2 X 1000 TAB
Gentian violet, powder	4 X 25 g
Mebendazole 100 mg	1 X 500 TAB
ORS (oral rehydration salts) for 1000 ml water	2 X 100 SAC
Paracetamol 100 mg	1 X 1000 TAB
Tetracyline hcl 1% eye ointment	1 X 50 TUB

b. The second pallet contains the **Supplementary Unit** in 14 boxes which hold additional drugs and supplies. The supplementary unit is only useful when the basic unit is also available.
   - It contains infusions and other drugs, equipment and supplies not included in the basic unit.
   - It should be used at the first referral level by physicians and medical professionals.
   - It includes treatment guidelines for common diseases (from the humanitarian organisation Medecins Sans Frontiers).

Note: *The total gross weight.of the NEHK is 892 kg per kit with a volume of 4.3 m^3. Approximate cost USD 5.700 (with anti-malaria drugs). The NEHK may be ordered from WHO Department of Humanitarian Action.*[i]

Health workers should understand the assumptions upon which the New Emergency Health Kit is based (see Table 9-13). This is because the quantities of the basic and supplementary units will be adequate only if they treat patients according to the recommended guidelines.

Table 9-13: Assumptions for Using the New Emergency Health Kit (1998)

Assumptions for Using the New Emergency Health Kit

(10 Basic Units + 1 Supplementary Unit):

1. Half of the population is between 0-14 years of age.
2. The average number of patients presenting themselves with common symptoms or types of diseases is predictable.
3. The basic level of the health care system will be staffed by health workers with limited medical training, who will treat symptoms rather than diagnose diseases, and who will refer to the next level those patients who need more specialised attention.
4. The first referral level of health care is staffed by experienced medical assistants or doctors, with no or very limited facilities for inpatient care.
5. Both the basic and first referral health care facilities are within reasonable reach of a target population of 10,000.
6. Up to 10% of patients may need to be referred from the basic health care to the next higher level.
7. The *entire* kit will cater for a population of 10,000 in 3 months (assuming every individual in the population will, on average, consult health facilities 4 times per year)
8. Standardised treatment schedules will be used to manage the common symptoms or types of diseases.

Note: *The drugs and supplies in the NEHK are appropriate only for the acute emergency phase and have not been intended for managing patients with chronic medical needs or major surgical conditions.*

Essential Drugs for the Post-Emergency Phase

After the acute emergency phase, additional drug requirements for the displaced population should be assessed and further supplies ordered as necessary. Certain factors may influence the medical supply needs, for example:

- the demographic profile of the target population and the frequency of ill-health among high risk groups
- the physical condition of the displaced population and common disease patterns
- local or regional differences in seasonal climate, topography, drug sensitivity and resistance to micro-organisms
- the level of training and medical practices of the health care providers in the emergency health system
- the level of services available locally and the effectiveness of the referral system
- the role of the host country Ministry of Health (MOH) in developing drug policies and essential drugs lists, in distributing information on drug safety and use, and in carrying out quality control on drug manufacturers
- the existing resources and local availability of drugs and supplies

The potential consequences of introducing new drugs or equipment should be weighed against the advantages of existing treatment. For example, a new drug may create a "false epidemic" through increased consultations for a specific disease.

Note: *Treatment of chronic diseases (TB, hypertension, diabetes, etc.) for displaced populations requires a cautious approach. If narcotic drugs (e.g. morphine, pethidine) and psychotropic substances (e.g., diazepam, chlorpromazine) are essential for emergency medical care, then the WHO guidelines for the supply of controlled substances for emergencies should be followed.*

IMPLEMENTING EMERGENCY HEALTH SERVICES

Setting Up a Health Centre

If a new facility has to be established, then the first priority is to obtain permission from the local authorities. Since there is no standard model for designing a health facility for emergency health care, the design will depend on the existing MOH models, the health needs of the displaced population, and the available resources, including local building material. Sometimes non-medical premises, (e.g., churches or schools), may be made available on a short-term basis for emergency health care. However, these buildings may be unsatisfactory in terms of isolating patients or achieving good hygiene. A health centre site should be organised so that health services are provided safely and efficiently. Additionally, the facility should be flexible enough to meet changes in function due to new technology or future growth.

Once constructed, the health centre should meet the following criteria:

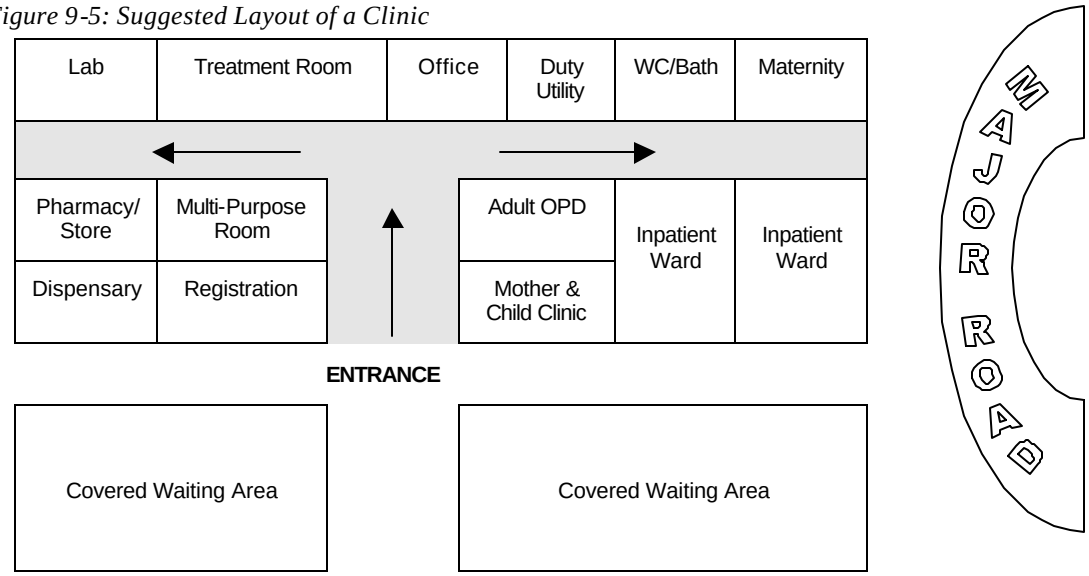
- within reasonable walking distance for the affected population
- near an all-weather road
- controlled access to the site
- sufficient space for a waiting area adjacent to the clinic (with protection from rain or sun)
- adequate water supply (40-60 litres per inpatient per day, 5 litres per outpatient per day, extra supplies, laundry, etc.)
- adequate latrines and waste disposal
- sufficient drainage for the site
- adequate security around the site
- functioning communication system
- a generator for supply of electricity

The health facility should be functional and economical to maintain. The initial high demand for medical services will soon return to pre-disaster levels following effective preventive health measures. Planners should estimate the size of the facility based on the expected long-term use as well as the number of staff, furniture, and equipment required to deliver the health services. Four or five rooms of 15 m^2 and a covered waiting area are usually adequate. The design of the facility should ensure that all rooms, including toilets and internal corridors, have direct, natural daylight and ventilation. Corridors should allow for smooth patient flow from one area to the next and provide adequate waiting room. Since more than 80% of outpatients usually require drugs or medical supplies, the pharmacy should be close to the outpatient services.

Note: *Contingency plans should be made for handling unexpected population influxes or major disease outbreaks.*

Figure 9-5 below shows a simple layout of a health centre, which can cater for a population of 20-30,000 with 10 beds for inpatient or day care.

Figure 9-5: Suggested Layout of a Clinic



Organising Health Services

The following key issues must be addressed when organising services in a health facility.

Mother and Child Health Care

- Initially, health care for mothers and children should target all children under 2 years, as well as pregnant and lactating women. Once resources are adequate, coverage may be extended to children under 5 years.
- Ensure that the needs of both mother and child are met during the same visit.
- Female CHWs and TBAs should be trained to provide culturally appropriate health education on immunisation, breast feeding, and infant care and to refer pregnant women for ante-natal care. They should function both at the health facility and within the community.

General Curative Care (adult and paediatric)

- In some cultural settings, women over 15 years may have to receive general curative care at the mother and child clinic, separate from the male outpatient facilities.
- Treatment programs for tuberculosis and other chronic diseases may be introduced under the right conditions.
- Care for emergencies at night and on weekends can only be scheduled after certain conditions are met (e.g., staff security, modest kitchens, laundry, etc).
- Outpatient consultations may be scheduled for morning sessions, while afternoons are for emergency services, community health visiting, specialist clinics, and training activities.

Reproductive Health Care

Reproductive health care involves much more than the maternal and child health (MCH) services commonly provided in relief programs. An effective reproductive health care program should be sensitive to the needs of different sexes and different age-groups, i.e., it should also serve the needs of single women, widows, older women, adolescents, and men. In some cases, clients may require services from health care providers of the same gender, based in separate clinics for men and women, though not necessarily in a separate facility. Reproductive health care should be fully integrated within the existing health, social, and community services. The following services may be initiated during the acute emergency phase:

- *Safe Motherhood* — screen for high-risk pregnancy, and provide iron/folate supplements, tetanus-toxoid immunisation, and health education. Trained TBAs should have clean delivery kits and regular supervision.
- *Emergency Obstetrical Care* — establish referral procedures easily understood by all staff members. These procedures should link detection of obstetric emergency with the immediate desired action.
- *Family Planning*— provide emergency contraception on request.
- Treatment of sexually transmitted infections and prevention of HIV/AIDS. Ensure that all health workers are aware of the risks of getting HIV/AIDS from direct exposure to HIV-infected body fluids. The facility should be equipped to enable them to take universal precautions against HIV/AIDS.
- *Addressing sexual and gender-based violence* (e.g., rape victims, domestic violence, etc.)
- *Other reproductive health issues* — abortion, adolescent health, female genital mutilation, etc.

Note: *For more information, please refer to the* Reproductive Health *chapter.*

Managing Essential Drug Supplies

Health care providers as well as patients see drug supplies as a vital part of health care:

- For health care providers — the regular supply of medicines is a key indicator of a well-functioning health system and is essential for patient satisfaction. Frequent shortages frustrate health care providers, especially when their patients need drug treatment in order to recover from their illness.
- For patients — from the patient perspective, the most visible symbol of quality care is the availability of medicines. If medicines are available, patients are likely to be satisfied with the services and will be encouraged to visit the health facilities again.

Sometimes, a shortage of drugs may occur due to financial, logistical or managerial weaknesses. Patient visits to health facilities may subsequently drop by 50-75%. Below is a list of common problems that may arise when managing drug supplies:

- Procuring drugs inappropriately —purchased drugs may be unregistered, nearing the expiration date, or contain drug information in an unfamiliar language. This can be harmful to patients
- Handling drugs poorly — drugs can spoil during transportation and storage, or may be stolen due to poor security.
- Distributing drugs inefficiently — the supply of essential drugs is irregular.
- Prescribing drugs inappropriately — health care providers prescribe too many drugs (polypharmacy) or prescribe injections or antibiotics when they are not needed.
- Failing to follow “doctor’s orders” — patients fail to complete the full course of treatment due to bad side effects or misunderstanding instructions about drug intake. Some patients may sell their drugs.

Most problems of managing drug supplies can be overcome by standardising procedures — from drug procurement to prescription and dispensing.

Table 9-14: Standardising Drug Supply Procedures

Procuring a Drug Supply

- Improve efficiency by ordering or purchasing in bulk. This will prevent surpluses and interruptions in the drug stocks.
- Only order what is necessary
- Obtain drugs locally through existing supply systems where possible
- Obtain from reliable sources using the WHO certification scheme and WHO guidelines for international procedures for controlled medicines
- Follow standards for quality, packaging, and labelling drugs
- Donations of drugs should follow donor guidelines:
  - to provide maximum benefit to the recipient
  - to be given with respect for wishes and authority of the recipient
  - no double standards in quality
  - based on thorough and effective communication between donor and recipient

Handling the Drug Supply

- Transport and store essential drugs and supplies under the best possible conditions. This will promote safe and effective use by minimising delays, theft, and spoiling from moisture, heat, direct sunlight, physical damage, and rodents.
- Limit access to warehouse to authorised employees. Secure access to drug storage areas through an inner door.
- Set aside a more secure area for controlled substances (antibiotics, narcotic painkillers).
- Develop a drug classification system (oral, infusion, injectable, external). Then, arrange all supplies alphabetically.
- Maintain an essential drug supply line for each level of health care and a simple control system.
- Conduct regular inspections of stocks and records. Ensure drugs are issued first in, first out (FIFO). Drugs that have been on the shelf the longest should be the first drugs to leave the shelf.

Distributing the Drug Supply to Health Facilities and Disbursing to Individual Patients

- Locate the pharmacy in a suitable area of the health facilities, and ensure pharmacy staff are trained.
- Limit access to large quantities of high-cost drugs.
- Establish disciplinary procedures for theft.
- Establish regular routines for drug requests using standard forms (adapt from local or regional medical supply system).
- Establish standard treatment protocols (from national or WHO model).
- Encourage all health care providers to follow effective prescribing practices: use cheap but effective drugs in standard doses, and avoid wasting injections, antibiotics, or other drugs.
- Establish safe dispensing practices (first in, first out) while educating patients on the appropriate use of drugs.

Training and Supervision

The performance of all health workers should be evaluated periodically. Training should be organised whenever their skills are found to be inadequate for delivering services. Training should be tailored to the participants needs and existing resources. When training community health workers (CHWs), avoid using abstract facts (e.g., the pathology of diarrhoea). Instead, equip them with enough information to perform their tasks effectively. For example, discuss the symptoms of a child with diarrhoea and the consequences of not administering oral rehydration therapy (ORT).

Adequate supervision is required for each level of care. Supervisors need to check that standard procedures are being followed. They should promptly address problems as they arise and provide enough support to enable health workers to function effectively. They can also interview patients as they leave the health facility and determine how the health providers served them, and whether they were satisfied with the health services. Regular meetings should also be scheduled for the health team to develop solutions to problems and promote team spirit between different health services. Representatives from the community and other sectors can also participate in these meetings. Major problems that are identified need to be addressed by all concerned.

MONITORING AND EVALUATING EMERGENCY HEALTH SERVICES

MONITORING

The key to successful implementation of emergency health care is monitoring the use and quality of health services. Most countries have a national health information system that monitors facility-based health care. The strength and capacity of this health information system should be assessed and, if necessary, adapted to suit the priority needs. Because the inpatient and outpatient mortality and morbidity rates cannot be assumed to reflect the mortality and morbidity patterns for the whole population, data should be collected at health facilities as well as from the community. Analysing this information can help detect important trends in the population's health status, PHC services used, and disease patterns. The following guidelines can be used to establish a health information system where the national information system is non-existent or very weak:

1. The reporting lines should be well-defined. Every level of health care in the PHC program should hold someone accountable for compiling and transmitting the data at appropriate intervals and giving feedback to the health staff. The health centres can be made responsible for co-ordinating information from other PHC services within its catchment area (e.g., water and sanitation, food and nutrition, etc.).
2. Train the health workers who will collect the data. Ensure they understand the purpose and importance of uniform collection and reporting of data. Data collectors should be adequately supervised.
3. Provide the tools and equipment necessary for recording the information. Data collection forms may be adapted from those used by the host country MOH for monitoring health services.
4. Define the information required and the methods and sources for data collection (see the following table)

Table 9-15: A Summary of the Health Information and Tools for Monitoring Different PHC Activities

PHC Activity		Information	Tools
Curative Care	**Outpatient (adult, paediatric)**	Morbidity (incidence, prevalence), mortality (age, sex, cause, date), total attendance	registers, patient cards, daily tally, monthly summary, annual summary and disease notification forms
	Inpatient (adult, paediatric)	Mean length of stay, bed occupancy, case fatality rate	registers, patient cards, admission/discharge forms
	Maternity	Birth weight, stillbirth rate, maternal mortality rate, use of maternity services	
Preventive Care	**Immunisations**	Immunisations given	Daily tally, monthly summaries, annual summaries, health cards
	Ante-natal Clinics	Attendance, percent at risk, tetanus toxoid given	Registers, monthly summaries, annual summaries
	Family Planning	Numbers of new acceptors and those continuing	Client forms, registers
	Growth Monitoring	Attendance, underweight rate, percent at risk	Master chart, registers, health cards
Supply/Stock	**Essential Drugs**	Consumption, stock	Daily tally, monthly summaries, annual summaries
	Non-Drug Supplies	Inventory	
	Vaccines	Inventory	
Other	**Cold Chain Temperature Chart**	Function	Forms, temperature charts
	CHW	Coverage, supervision, training given	
	Laboratory	TB smears, malaria, parasites found	
	Water Supply	Quantity provided, coliform counts	

5. Analyse the information to identify priority health problems and the groups at increased risk of excess mortality and morbidity. The analysis should consider the underlying political, economic, and environmental issues surrounding the emergency situation.

6. Transmit the analysis to decision-makers using targets and critical indicators that are easily interpreted. All decisions should be communicated to the providers of the raw data (e.g., via newsletters). Any data collection that is not visibly linked to an action is a waste of resources.

7. Field supervisors and health co-ordinators should review the process of data collection and streamline areas of weakness. The information system should evolve as the need for information changes, providing any additional resources needed to maintain this system.

Note: *Refer to the* Management *chapter for more details about a setting up an information system.*

Key Issues in Monitoring

- Central birth and death registers should be introduced at each health facility, and health workers trained to properly use and maintain them.
- Mortality registers should include information on age and sex of the deceased and the cause, date and location of death.
- Periodic retraining of health workers should be organised to ensure uniform collection and reporting of data.
- The local health officials should be contracted to provide guidelines on repeat and new case definitions.
- Health workers should be trained to seek and provide assistance to extremely vulnerable individuals (unaccompanied minors, the malnourished, the physically- and mentally-disabled, the elderly, etc.)

EVALUATING

Emergency health services should be evaluated in order to determine the following:

- the appropriateness of the program and how effectively it is implemented
- the achievements of the program (intended and unintended)
- the factors affecting access and coverage of services

The process and frequency of evaluation will depend on the available resources. Evaluating health care programs is not simple because it is difficult to separate the outcome of individual services. In addition, health outcomes are extremely difficult to link to cause and effect.

Table 9-16 on the following page lists indicators from the Sphere Project that may be useful for evaluating health services.

Table 9-16: Minimum Standards for Health Services

MINIMUM STANDARD	KEY INDICATORS
HEALTH CARE SERVICES: **Appropriate Medical Care**	• Are interventions designed to be responsive to the identified major causes of excess deaths, disease and injuries? • Do local health authorities lead the health care effort and are local health facilities used, where possible? • Are participating humanitarian agencies co-ordinating with the designated lead health authority? • Is the health care system able to cope with the high level of demand? • Is the health care system flexible enough to adapt to changes identified by the health information system?
HEALTH CARE SERVICES: **Reduction of Morbidity and Mortality**	• Are emergency health services implemented through an existing PHC system, where available? • Are health care interventions implemented at the appropriate level of the PHC system? • Is emergency health care, including treatment of injuries and disease, provided to the population largely at the community level? • Is the staffing at each level of the PHC system appropriate to meet the needs of the population? Are only those levels required to reduce excess mortality and morbidity introduced and used? • Are health professionals from the disaster-affected population integrated into the health services as much as possible? • Were the outreach workers recruited from the community and do they reflect the gender and cultural profile of the population they serve? • Do all health care providers agree on the common use of standard procedures for diagnostic techniques and the treatment of the major diseases causing excess mortality and morbidity? • Was the New Emergency Health Kit used to start the intervention? Were additional drugs ordered according to the national or WHO recommended essential drug list? • Are drug donations that do not follow guidelines used? Are they disposed of safely? • Are universal precautions to prevent and limit the spread of infections taught and practised? • Has transportation been organised to enable patients to reach referral facilities?
HUMAN RESOURCE CAPACITY & TRAINING: **Competence of Health Workers**	• Are all staff working on a health intervention informed of the purpose and method of activities they are asked to carry out? • Do the staff with technical and management responsibilities have access to support for informing and verifying key decisions? • Are new medical supplies and equipment introduced with thorough explanations and supervision? • Do targeted health care procedures have clearly written guidelines and protocols? • Is the treatment of severe disease or injury supervised by a medically qualified and experienced practitioner with specific training in this area? • Do staff responsible for health care interventions have the appropriate training or experience, and are they supervised in the use of recommended treatment protocols, guidelines, and procedures?
HUMAN RESOURCE CAPACITY & TRAINING: **Support**	• Are all members of the affected population informed about the availability of community health workers, home visitors, and the location of health facilities and services?
HUMAN RESOURCE CAPACITY & TRAINING: **Local Capacity**	• Are local health professionals, health workers, leaders and women and men from the disaster-affected population included in the implementation of health interventions? • Do the staff understand the importance of strengthening the capacities of local health systems for long-term benefit? • Does the emergency health program tap into and strengthen the existing local partners and institutions? • Is training provided to community outreach workers?

Source: Sphere Project, 2000

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