

**HOW TO HELP
THE CHILDREN
IN
COMPLEX HUMANITARIAN
EMERGENCIES:**

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A Practical Manual

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Index

ACKNOWLEDGMENTS	5
1 INTRODUCTION	6
2 PERSONAL PREPARATION	7
3 WHAT, WHY, WHERE, WHO	9
POPULATIONS AFFECTED	10
EARLY and LATE PHASES	11
EMERGENCY PHASE RELIEF MEASURES	12
ACUTE and LONG-TERM EFFECTS	13
4 THE MAJOR PLAYERS	14
THE UNITED NATIONS AGENCIES	15
The DHA	15
The UNHCR	15
The UNDP	16
The WFP	16
UNICEF	16
The WHO	16
THE INTERNATIONAL RED CROSS AND RED CRESCENT MOVEMENT	17
The ICRC	17
The National Red Cross and Red Crescent Societies	18
The International Federation of Red Cross and Red Crescent Societies	18
NON-GOVERNMENTAL ORGANIZATIONS (NGOs)	19
COALITION MILITARY FORCES	20
LOCAL GOVERNMENT ORGANIZATIONS	21
THE CHE RESPONSE SYSTEM	21
5 PRIORITIES FOR CHILDREN	22
FOOD	22
CLOTHING	22
SHELTER and PROTECTION	23
SANITATION	24
HEALTH CARE	24
6 UNACCOMPANIED MINORS	26
EMERGENCY PHASE	26
LATE PHASE	27
7 PRIORITIES FOR WOMEN	28
PHYSICAL SAFETY	28
HYGIENE	28
FOOD DISTRIBUTION	29
SHELTER	29
HEALTH CARE	29
POLICY-MAKING	30

8 CHILD HEALTH ASSESSMENTS.....	31
NUTRITIONAL ASSESSMENT.....	32
Weight.....	32
Height.....	32
Edema.....	33
Mid upper arm circumference.....	33
Interpreting the measurements.....	33
Estimating sample size.....	34
Choosing a sampling frame.....	34
9 EPIDEMIOLOGY.....	36
HEALTH INDICATORS.....	36
SOURCES OF INFORMATION.....	37
DATA COLLECTION METHODS.....	37
EFFECTIVENESS OF AN INDICATOR.....	37
PRESENTATION OF DATA.....	38
INCIDENCE AND PREVALENCE.....	39
STATISTICAL ANALYSIS AND TOOLS.....	39
INTERPRETATION OF THE RESULTS.....	40
DECISION-MAKING.....	41
10 WATER AND SANITATION.....	42
WATER PURIFICATION PROGRAMS.....	43
SANITATION.....	44
11 WARMTH, CLOTHING, HOUSING.....	47
12 NUTRITION.....	48
BREASTFEEDING.....	49
PROTEIN ENERGY MALNUTRITION.....	50
TREATMENT OF MALNUTRITION.....	51
Acute Phase.....	51
Refeeding and long-term effects.....	51
13 DEVELOPMENT AND MENTAL HEALTH.....	53
DEVELOPMENTAL RESPONSES TO TRAUMA.....	53
Toddlers.....	53
School-Age Children.....	53
Preadolescents.....	54
Adolescents.....	54
POST-TRAUMATIC STRESS DISORDER.....	54
MENTAL HEALTH PROBLEMS.....	55
THE RESILIENCE PROJECT.....	55
I HAVE:.....	55
I AM:.....	55
I CAN:.....	56
MENTAL HEALTH INTERVENTIONS.....	56
TENDER LOVING CARE.....	57
14 ROUTINES FOR CHILDREN.....	59

15 IMMUNIZATIONS	60
MEASLES	61
DIPHTHERIA	62
PERTUSSIS	62
POLIO	62
TETANUS	63
TUBERCULOSIS	63
MENINGOCOCCAL MENINGITIS	63
VACCINE INJECTION TECHNIQUE.....	64
VACCINE HANDLING AND STORAGE.....	64
16 MEDICAL ISSUES	65
THINGS TO KEEP IN MIND	65
What special information do you need from the family?	67
How do you deal with 100 or more sick children in a single day?.....	67
SIGNS AND SYMPTOMS	67
DIFFERENTIAL DIAGNOSES.....	69
INFECTIOUS DIARRHEAL DISEASES.....	69
17 OBSTETRICS AND NEWBORN RESUSCITATION.....	71
PLANNING and PREPARATION.....	71
DANGER SIGNS IN PREGNANCY	71
PREPARATIONS FOR BIRTH	72
STAGES OF LABOR.....	72
CARE OF THE NEONATE	73
THE THIRD STAGE OF LABOR.....	74
18 LANDMINES	75
ANTI-PERSONNEL LANDMINES	75
CHILDREN and LANDMINES	75
FIRST AID and ADVOCACY	76
19 INTERNATIONAL LAW	77
HUMAN RIGHTS.....	77
INTERNATIONAL HUMANITARIAN LAW	78
THE CONVENTION ON THE RIGHTS OF THE CHILD.....	79
PRACTICAL CONSIDERATIONS.....	79
20 ETHICAL ISSUES	80
CHILD COMBATANTS.....	80
ADVOCACY	80
21 EXAMPLES: GOOD AND BAD.....	82
A POOR SITUATION.....	82
A GOOD SITUATION.....	82
22 RESOURCES	84
BOOKS and MANUALS	84
THE WORLDWIDE WEB.....	85

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1 INTRODUCTION

This manual is written for people who work in complex humanitarian emergencies (CHEs) and are experts in their own area, but may not be child health specialists.

The number of CHEs affecting children increased dramatically in the last decade of the twentieth century. Half of the individuals living in any refugee setting are under 15 years of age. Morbidity and mortality in CHEs are highest for children under 5 years of age. It is important that humanitarian workers be prepared to address child health issues in CHEs.

I have worked as a pediatrician-volunteer on behalf of various agencies in CHEs for more than 30 years. My observation is that children suffer much in these situations. They suffer both acutely and over their lifetimes, for early CHE experiences often lead to long-term physical and mental health problems. Regrettably, I have seen little improvement during the last 30 years in assessments and programs related to the special needs of children in CHEs. Most CHE workers recognize that children have special needs, but rarely do they have the experience or knowledge necessary to meet those needs. Therefore, we developed this manual for field use, in a format that we hope is short, practical and readable.

It is not always clear why programs for children in CHEs tend to get low priority. Some possible explanations are that children have no power; they are poor advocates for themselves; and their voices are rarely heard in policy discussions. For these reasons, the needs of children are often ignored in many types of public programs throughout the world. In CHEs, well-meaning workers often lack specific child health or child development expertise. They may be unaware that children are not little adults. They may not realize that children move through many different developmental stages and therefore have rapidly changing needs. They may simply be overwhelmed by the demands of the more vocal adult populations in CHEs.

People throughout the world emphasize that “children are the future.” At the same time, well-educated adults do not know that the brains of young children develop most rapidly in the first year of life and that most brain development is completed by age three. It is these very young children who are the most helpless, the most vulnerable, the least able to communicate what they need and yet are at the greatest risk of suffering irreversible brain injury in CHEs. Programs for children should have top priority in refugee settings. However, experienced child health specialists are rarely present in CHEs and hence children’s needs often go unmet.

Everyone who works in a refugee setting, whether they have a child health background or not, recognizes the importance of water, food, shelter and sanitation. Everyone should also know how to provide for these and the other needs of children in a developmentally appropriate and nurturing manner. We hope this manual will provide some basic and useful information on how to help the children in complex humanitarian emergencies.

Karen Olness, MD

2 PERSONAL PREPARATION

Working in a complex humanitarian emergency (CHE) is usually an intense experience, which can be both rewarding and traumatic. You can never be certain as to what you will encounter. Try to answer the following questions prior to departure in order to clarify expectations and minimize the unknown.

Why are you doing this? Possible reasons include altruism, excitement, escapism, professional interests, family history and travel interests. Beware of the latter; travel interests can interfere with the commitment needed to work effectively in a CHE.

Who are the players? How many agencies are involved? Who is in charge?

What is the history of events that led to the CHE?

What are the relevant political, ethnic, economic and cultural issues?

Is the situation acute and recent or has the refugee camp existed for some time?

What will your duties be?

What are the personal security and health risks for you?

Who will be your day-to-day working colleagues?

What are the logistics? How will you get there?

What will your accommodations be? What is the availability of food and water? Will there be opportunities to bathe?

How will you communicate with your family, friends and colleagues at home?

What are the anticipated problems for children? What are the usual medical problems in the region?

Are there disease outbreaks or epidemics in process?

What is the nutritional state of the children?

What is the likelihood that the children have been immunized?

Are there unaccompanied minors (children who have been separated from their families)?

We recommend obtaining as much information as possible regarding the questions listed above. At the same time, be prepared to tolerate uncertainty, as information may not be available in the midst of a CHE.

For packing lists, it is best to consult with those who have traveled before you to the same CHE, as specific items will vary by location and conditions. There are resources on the worldwide web

and in print that provide comprehensive packing lists and preparation materials for international medical volunteers (see the last chapter of this manual). Listed below are additional ways to personally prepare for work in a CHE that are based on the experience of others who have succeeded.

Do as much as possible to prevent illness in yourself and your co-workers. Get reasonable immunizations. Prepare an emergency medical bag.

Discuss your plans with family and friends. Arrange for regular communication with them.

Pack with attention to the children you will be seeing as well as to your own needs. Small toys, chewing gum, crayons and paper are a few favorite items.

Bring helpful manuals, books and references. A brief resource list is included at the end of this manual.

Consider bringing camping equipment, depending on the living situation anticipated for CHE workers.

Keep a focus on prevention and what can be done to eliminate the acute problems you will encounter.

Consider what can be done in the present to minimize long-term mental health consequences among children affected by a CHE.

Keep a journal. Include daily notes related to what you learn and experience, as well as ideas to help prepare your successors.

3 WHAT, WHY, WHERE, WHO

Disasters can be defined in several ways. An objective definition is that disasters involve the destruction of property, cause injury and/or loss of life and affect large populations. A more subjective definition is that disasters exceed the capacity of a community to function normally, thus creating the need for outside assistance.

Historically, disasters are described in distinct categories such as natural or manmade. Manmade disasters include those that are technological in nature and complex humanitarian emergencies (CHEs).

- ***Natural disasters***: floods, typhoons, tsunamis, earthquakes ...
- ***Technological disasters***: industrial, chemical, radioactive...
- ***CHEs***: civil conflict, economic collapse, population displacement...

A more modern perspective on disasters acknowledges the overlap that occurs between these distinct categories. We now recognize that common problems underlie the extent to which an event can or will lead to a disaster. During periods of extreme stress, critical gaps in a country's infrastructure are most easily exposed. Frequently, the public health system proves to be the weakest link. Hence, when an event does occur, the country is unable to respond effectively and a disaster results.

Socio-political and economic dynamics have become enmeshed with disasters during the post-cold war period. Less industrialized countries frequently spend a large portion of their Gross National Product (GNP) in the immediate response to a disaster, leaving few resources for recovery and rehabilitation. Ultimately, these countries become unable to respond to future disaster situations. For example, a natural drought preceded the war and civil strife that occurred in Somalia in 1980. It was late in the crisis when the international community recognized the need for extensive humanitarian assistance.

CHEs are disaster situations that involve a myriad of political, military, economic and/or natural constraints. CHEs combine internal conflict with large-scale displacement of people and economic, social and political instability. As the total number of disasters has risen over the past ten years, the proportion due to CHEs has dramatically increased.

DECLARED DISASTERS*

<u>Years</u>	<u>Natural Disasters</u>	<u>CHEs</u>
1983	37	6
1984	37	4
1985	34	4
1986	37	3
1987	50	4
1988	60	6
1989	48	10
1990	33	20
1991	46	19
1992	50	15
1993	43	22
1994	38	26

* From the United States Agency for International Development and Office of Foreign Disaster Assistance

POPULATIONS AFFECTED

The victims in CHEs tend to be large populations, vulnerable groups, minority ethnic groups or cultures on the brink of extinction. Vulnerable groups are sub-populations that are particularly prone to illness and malnutrition such as infants, pregnant and lactating women, the elderly and the handicapped. Common terms used to describe different populations in CHEs are refugees, internally displaced persons and unaccompanied minors.

- ***Refugees***: Individuals who have been forced to leave their own country.
- ***Displaced Persons***: Individuals who have been forced to leave their homes but remain within their own country.
- ***Unaccompanied Minors***: Children who have been separated from their parents or adult caretakers.

During the last two decades, it is estimated that disasters adversely affected 800 million people and inflicted property damage exceeding 50 billion dollars. Half of the people affected by CHEs are children. Over 15 million children were affected annually by CHEs during the last five years alone. Unfortunately, we see no signs of these numbers diminishing. The severe impact of CHEs on humanity becomes only more apparent as their frequency rises. In the past, the impact of war and conflict on humanity was measured by counting military casualties. This yardstick is no longer adequate. Victims in CHEs are 5:1 civilian over military with the majority being women, children and the elderly.

Overall mortality associated with CHEs

Bosnia	250,000
Somalia	350,000
Sudan	600,000
Rwanda	1,000,000

EARLY and LATE PHASES

Humanitarian workers must maintain an overview perspective in order to effectively address the issues created by a CHE. Disasters have distinct stages, frequently referred to as emergency and late phases.

- ***Early / Acute / Emergency phase***
(0-1 month)

- ***Late / Recovery phase***
(1-6 months)

- ***Rehabilitation / Development phase***
(6+ months)

During the emergency phase of a disaster, the most urgent survival needs of the refugees must be met. These needs include food, water, sanitation, emergency shelter, health care and preliminary steps toward reunification. From the onset, relief efforts must be provided in a manner that ensures fair distribution. One of the most critical aspects of the emergency phase is to initiate record keeping with placement of identification bands, especially for children. It is in the chaos of the emergency phase that many children are separated from their families.

EMERGENCY PHASE RELIEF MEASURES

- ***Immediate record-keeping:*** name, age and gender of all incoming refugees or displaced persons, identification bands for children less than 10 years of age
- ***Rapid assessment of the emergency situation and the affected population:*** define the magnitude, environmental conditions, major health/nutrition needs and local response capacity
- ***Provide adequate shelter and clothing:*** exposure to elements can lead to death and increased caloric needs
- ***Provide adequate food:*** ensure adequate calories and frequent meals for children, support breastfeeding
- ***Provide elementary sanitation and clean water:*** minimum 3-6L/person/day of reasonably clean water
- ***Institute diarrhea control program:*** community education, improve sanitation and water source
- ***Immunize against measles and provide Vitamin A supplements:*** Vitamin A decreases the fatality rate of measles
- ***Establish primary care medical treatment:*** appropriate to the prevalent diseases and treatment standards of the local population
- ***Establish disease surveillance and a health information system:*** monitor treatment effectiveness, realign priorities
- ***Organize human resources:*** identify leaders for water and food distribution, community health workers, surrogate parents for unaccompanied minors
- ***Coordinate activities:*** local authorities, relief organizations, military personnel

Once the late phase of a disaster begins, it is appropriate to address a much broader field of concerns; the goals should expand on emergency phase issues and incorporate long-term needs. For example, late phase efforts should include the establishment of an expanded immunization program, maternal and child health programs, educational systems for children and adults, psychological counseling, etc. Throughout a CHE, decisions must reflect the phase and needs of the individual disaster situation

ACUTE and LONG-TERM EFFECTS

While it is common to describe the impact of CHEs in terms of mortality, the morbidity associated with CHEs is usually far worse. Morbidity is more challenging to measure; it may present as acute illness or injury, or as a myriad of serious, chronic problems. For decades after a CHE, the children and the world community continue to feel its chronic impact. The true depth and breadth of the morbidity inflicted by CHEs is frequently underestimated.

- ***Mortality***: number of deaths
- ***Morbidity***: number of cases of illness or injury

The acute causes of morbidity associated with CHEs include an array of medical conditions. The most commonly encountered are diarrheal disease, dehydration, respiratory illness, malaria, burns, trauma, fatigue/heat exhaustion and obstetric/neonatal emergencies. Although these may seem similar to the pathology found in adults, each of these conditions requires consideration of issues that are unique and critical to the care of children.

For example, while the nutrition of children is usually considered an acute issue, it can have lifelong consequences. A single episode of severe malnutrition during the first year of life has been associated with irreversible brain injury. In addition, evidence from several studies suggests a causal relationship between undernutrition and behavioral development. We do not know to what extent the long-term outcomes of early malnutrition are present in the 700 million adolescent and adult survivors of CHEs today.

The psychological trauma inflicted upon children in CHEs is one of the most difficult morbidities to appreciate. Many studies suggest that disaster situations cause psychological trauma in children. It is now well accepted that manmade disasters, like CHEs, are associated with a higher incidence of psychological dysfunction. The experience of psychological trauma varies depending on the age and nature of the child. While the earliest signs of trauma begin during and immediately after a disaster, it may take decades for children to process the experience. In some cases, the children may never completely recover.

We know that war, crime and scarcity of resources all contribute to the evolution of CHEs. The long-lasting psychological trauma and potential brain injury created by these events are crippling to both children and communities. These insults result in populations that are less productive and less capable of dealing with the same issues that triggered the CHEs. Until this loop is interrupted, it will be difficult to escape future CHEs and their worldwide impact.

4 THE MAJOR PLAYERS

Throughout history, leading nations have responded to disaster situations by offering their own resources in aid as a “good neighbor gesture.” As the number of complex humanitarian emergencies (CHEs) has risen over the past two decades, the need for external assistance has grown. In 1985, 22 million people were internally displaced or refugees; in 1995, this figure increased to 37 million people. Similarly, the budget of the United Nations High Commissioner for Refugees (UNHCR) increased from \$500 million to \$1.5 billion over the same time period. Over the years, a complex system of international humanitarian response has developed that involves governmental and non-governmental organizations (NGOs). The major players in this system are listed here and are then described in more detail below.

The United Nations (UN)

Department of Humanitarian Affairs (DHA)
UN Development Program (UNDP)
UN High Commissioner for Refugees (UNHCR)
World Food Program (WFP)
World Health Organization (WHO)
Food and Agriculture Organization (FAO)
The United Nations Children’s Fund (UNICEF)

International Red Cross and Red Crescent Movement

International Committee of the Red Cross (ICRC)
International Federation of Red Cross and Red Crescent Societies
National Red Cross and Red Crescent Societies

United States Government Agencies

United States Agency for International Development (USAID)
Office of United States Foreign Disaster Assistance (OFDA)
Disaster Assistance Response Team (DART)
United States Department of Defense (DOD)

Coalition Military

Civil-Military Operations Center (COMC)
Peacekeeping
Peace Enforcement

Local Government Organizations

Ministries of Health
District Health Directors

Non-Governmental Organizations (NGOs), selected examples

American Refugee Committee (ARC)
Cooperative for American Relief Everywhere (CARE)
Catholic Relief Services (CRS)
International Rescue Committee (IRC)
Medicins Sans Frontiers (MSF) / Doctors Without Borders
Oxford Committee for Famine Relief (OXFAM)
Save the Children Fund
World Vision

THE UNITED NATIONS AGENCIES

The United Nations (UN) was established in 1945 as the administrative body of a multilateral treaty, which is voluntarily endorsed by supporting nations. According to its 1948 charter, the UN is charged with safeguarding human rights and equal rights for all nations.

The UN involvement in international situations is limited by the conditions of its multilateral treaty. Specifically, the UN cannot impose “the threat or use of force against the territorial integrity or political independence of any state.” In addition, it cannot provide aid across uninvited borders. This latter provision can be over-ridden by the Security Council, which is a smaller governing body of leading nations within the UN. If international security is threatened, the UN Security Council can dismiss the national sovereignty policies. However, the time restraints inherent to this process lead to significant delays in the UN response to many CHEs.

The DHA

In 1992, the UN established the Department of Humanitarian Affairs (DHA) to coordinate emergency humanitarian assistance. The DHA advises the UN Secretary-General regarding emergency situations, oversees the coordination of UN agencies in response to CHEs and mobilizes the international community. In emergency situations, the DHA unifies the various UN relief agencies and coordinates their efforts with non-UN organizations, principally NGOs. Theoretically, the DHA has the ability to mobilize funds quickly. It can then direct this funding to non-UN organizations, since these non-UN organizations are able to respond more quickly in an emergency situation.

The UNHCR

The United Nations High Commissioner for Refugees (UNHCR) was established by the United Nations General Assembly in 1951. Prior to 1990, the UNHCR mandate was to guarantee the protection of refugee populations and to find permanent solutions to their situations. Since then it has been expanded to include action to prevent refugee movements. Based on this expanded mandate, the UNHCR can provide assistance to civilian populations who are victims of hostilities, regardless of refugee status. Thus, the UNHCR may provide assistance to populations who are not externally displaced.

The UNDP

The United Nations Development Program (UNDP) is active in a country prior to a crisis situation. The role of the UNDP senior member in the country is to coordinate all UN humanitarian missions. However, the UN agencies are frequently found to work independently.

The WFP

The World Food Program (WFP) was created in 1961 to provide food aid to non-industrialized countries. This aid is offered in the form of economic development programs and emergency relief. The WFP is designed to target food towards special segments of the population, such as children, lactating women and the elderly. The WFP also coordinates efforts with other UN agencies and with local NGOs. For example, the WFP may coordinate with the local Red Cross group, such that the local group takes responsibility for food distribution.

UNICEF

The United Nations Children's Fund (UNICEF), created in 1946, is mandated to protect children and to promote the application of the Convention on the Rights of the Child around the world. The convention specifies that children have the right to enjoy the best health possible. UNICEF's field activities are diverse; they address nutrition, water supply, immunizations, education, material provision, management, logistics and technical support to social programs. The general assembly created UNICEF as an organization to provide assistance to all countries worldwide. Although most of its activities fall into the area of development, UNICEF does intervene in emergency situations. Unlike other UN agencies, UNICEF may provide assistance even without permission of existing governments. Also, UNICEF may raise funds from private sources. All other UN agencies rely on monies donated from member nations.

The WHO

From the beginning, the UN acknowledged the critical need for improving the health of humanity. This is evident in a memorable quote from the 1945 discussions: *Medicine is one of the pillars of peace* (US Archbishop, later Cardinal Spellman). To this end, the World Health Organization (WHO) was established in 1946 to act as a directing and coordinating authority in international health. The WHO gives assistance to governments on request and focuses the development process on people and their right to health.

In June 1948, the First World Health Assembly convened to determine the priorities of the WHO. Although its main focus was disease control, it also emphasized the socioeconomic, cultural and political dimensions of health. The first two decades of WHO were dominated by campaigns against malaria, tuberculosis, small pox, yaws, syphilis and leprosy, among many other diseases.

In 1977, the World Health Assembly determined that the social target for WHO and governments should be "the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life." This led to the well-known international conference on primary care held in September 1978 at Alma-Ata (Kazakhstan). This meeting produced the Declaration of Alma-Ata which identified the following eight essential elements of primary health care:

education concerning prevailing health problems and methods to address them
promotion of food supply and proper nutrition
provision of adequate supply of safe water and basic sanitation
maternal and child health care, including family planning
immunization against the major infectious diseases
prevention and control of locally endemic diseases
appropriate treatment of common diseases and injuries
provision of essential drugs

THE INTERNATIONAL RED CROSS AND RED CRESCENT MOVEMENT

The International Red Cross and Red Crescent Movement encompass the International Committee of the Red Cross (ICRC), the International Federation of the Red Cross and Red Crescent Societies and all of the recognized National Red Cross and Red Crescent Societies. The Federation serves as the central secretariat of the National Red Cross and Red Crescent Societies. In 1989, an agreement was made between the ICRC and the Federation that clearly delineates the roles and responsibilities of each individual organization. The ICRC heads the Movement's international activities in armed conflicts and other situations requiring a specifically neutral and independent organization. The Federation Coordinates the National Societies efforts in peacetime and disaster situations.

The highest deliberating body of the Movement is the International Conference of the Red Cross and Red Crescent. This body promotes dialogue with the signatory States of the Geneva Convention and provides a forum in which States can be brought to confront the responsibilities this law imposes on them. The International Conference can pass resolutions, make recommendations and formulate draft proposals concerning international humanitarian conventions. In addition, it can assign mandates to the ICRC and the Federation.

The ICRC

The ICRC is the world's oldest and largest relief organization. It was founded in 1863 as the International Committee for Relief to Soldiers, adopting the symbol of a red cross on a white background. In the following year, the Swiss Federal Council organized an international conference, where the *Geneva Convention for the Amelioration of the Condition of the Wounded in Armies in the Field* was created. In 1880, the International Committee for the Relief of Soldiers officially adopted the name of the International Committee of the Red Cross.

Through the Geneva Conventions and their additional protocols, the international community has placed mandates on the ICRC. In 1977, protocols were added to the Conventions that specifically address internal and international conflict/civil disturbances (such as CHEs). As described in article nine of the Geneva Convention, the ICRC has the right and the duty to intercede across borders in both international and non-international conflicts. This mandate supersedes any existing government. When there is no identifiable protecting power, as is the situation in many CHEs, the ICRC serves to safeguard the interests and humanitarian functional needs of the victims. In 1990, the United Nations General Assembly granted the ICRC observer status.

The role of the ICRC includes maintaining and disseminating the Fundamental Principles of the Movement, namely humanity, impartiality, neutrality, independence, voluntary service, unity and universality (Article 4). By functioning as a neutral, independent humanitarian provider, the ICRC offers relief assistance and legal protection to victims. In addition, “the ICRC may take any humanitarian initiative which comes within its role as a specifically neutral and independent institution and intermediary, and may consider any question requiring examination by such an institution.”

The neutrality of the ICRC is essential to its role in any relief operation. In the case of CHEs, the ICRC will be present only if the parties in conflict agree to recognize and uphold the ICRC’s neutrality. The ICRC offers assistance to people regardless of their nationality, color, religion, social position or political affiliations. The details of every ICRC relief convoy are completely disclosed to all belligerent parties. By operating on all sides of the conflict, the ICRC ensures its neutrality.

The National Red Cross and Red Crescent Societies

The National Societies have roles in both peacetime and armed conflict. In peacetime, the National Societies’ activities are generally concentrated in areas of health, health education and natural-disaster relief. With support from the Federation, the National Societies work in areas as diverse as blood donation, disease and epidemic prevention, first aid, social welfare, AIDS prevention and treatment, communication systems and disaster-preparedness programs. When called upon by the ICRC, the National societies offer relief assistance to the victims of armed conflicts. The ICRC may call upon health care personnel from countries that are not involved in the conflict.

The International Federation of Red Cross and Red Crescent Societies

The Federation was founded in 1919, during the aftermath of World War I. Its general objective is “to inspire, encourage, facilitate and promote at all times all forms of humanitarian activities by the National Societies with a view to preventing and alleviating human suffering and thereby contributing to the maintenance and the promotion of peace in the world.” It also serves to organize, coordinate and direct international relief actions and represent the National Societies at the international level.

In 1994, the International Red Cross and Red Crescent Movement joined with six of the world’s oldest and largest NGOs to outline a professional *Code of Conduct*. This describes the universal basic standards by which the Movement and registered NGOs should work in disaster assistance. The ten principal points by which signatories have voluntarily agreed to abide are:

The humanitarian imperative comes first.

Aid is given regardless of race, creed or nationality of the recipients and without adverse distinction of any kind. Aid priorities are calculated on the basis of need alone.

Aid will not be used to further a particular political or religious standard.

We shall endeavor not to act as instruments of government foreign policy.

We shall respect culture and custom.

We shall attempt to build disaster response on local capabilities.

Ways shall be found to involve program beneficiaries in the management of relief aid.

Relief aid must strive to reduce future vulnerabilities to disaster, as well as meeting basic needs.

We hold ourselves accountable to both those we seek to assist and those from whom we accept resources.

In our information, publicity and advertising activities, we shall recognize disaster victims as dignified humans, not hopeless objects.

NON-GOVERNMENTAL ORGANIZATIONS (NGOs)

Although NGOs number more than 20,000 worldwide, only a small percentage of these are involved in disaster and humanitarian relief. About 30 NGOs provide 95% of the assistance in CHEs. Most NGOs are small, originate in industrialized nations and focus on development projects. Since their perspective is colored by individual strengths, NGOs usually find a niche of needs that they target.

NGOs base their actions on the principal that the rights of suffering people transcend the principles of sovereignty and non-interference. Unlike the ICRC, NGOs have engaged in cross-border operations without the approval of the host government. In addition, not all NGOs maintain a position of neutrality. Some NGOs have spoken out openly against the atrocities of individual governments. Consequently, NGOs may risk provoking hostility from warring factions.

In CHEs, NGOs share the common goal of relieving misery from disease and starvation. However, as a relief system they tend to function in a loose framework. They vary in size, structure, objectives, religious and non-religious affiliations. The NGOs ability to succeed in their task is largely based on their ability to mobilize funds. Thus, all NGOs compete with each other for a limited allocation of resources. In many cases, NGOs receive funding from UN agencies. The NGOs then work in coordination with the UN agencies as implementing partners.

NGOs may also receive funding through grants from the US government. In the case of US foreign aid, the source of funding is the United States Agency for International Development (USAID). In emergency situations, the Office of Foreign Disaster Assistance (OFDA) and their Disaster Assessment Response Team (DART) coordinate disaster response in the field. Ideally, this arrangement provides the most expeditious allocation of funds. Defined by law, OFDA may assist in providing basic needs (food, water, shelter, sanitation, medical care and heat). Thus, OFDA is not involved in the provision of funds for development and/or reconstruction.

Through a complex evolutionary process, NGOs have emerged as the faction primarily responsible for providing assistance to those in need during CHEs. In recent years, the environment of CHEs has become more ambiguous and tense with worsening security. Despite increasing danger, NGOs persist in their efforts to provide humanitarian aid. Greater emphasis is being placed on the preparation and training of NGO workers. It is critical that NGO workers be

proficient in basic self-preservation and security behaviors. NGO workers must also be aware of land mine locations and public health indicators. Finally, NGO workers must fully comprehend the surreptitious interactions between tribal, clan and/or warring factions; recognize who to work with among local leaders; and learn how to collaborate respectfully with those leaders, without causing offense.

COALITION MILITARY FORCES

During emergency situations, security is provided by the UN in the form of peacekeeping or peace-enforcing military forces. Sanctioned by the Security Council, member nations must contribute military units to a coalition force. The utilization of a coalition force sanctioned by the UN Security Council was established by the precedent set during the Kurdish refugee crisis in 1991. Due to the essential nature of establishing the security of relief operations, the coalition military and the UN humanitarian agencies/DHA are operationally in charge of these military forces.

The Kurdish refugee crisis is recognized as being the first occasion during which NGOs and the military were able to create an effective collaborative relationship. By perceiving the military as an ally, NGOs were able to accomplish their humanitarian activities through use of the coalition's protective transport, communication and shelter. The success of the Kurdish crisis is frequently attributed to the military's fielding of an unusually high number of personnel drawn from the civil affairs units. These personnel, competent in civil administration, medicine and engineering, complemented the NGO community well.

The role of the military is limited to the emergency phase of CHEs only. Although there is an apparent distinction as to the type of coalition dispatched, all military troops may have duties that include true humanitarian service roles. Under UN Chapter VI, peacekeeping actions provide defensive military operations to monitor an existing agreement between warring factions, and are undertaken only with the consent of all belligerent parties. The troops are supplied for primarily non-combat roles. In chapter VII, peace-enforcing actions are provided to compel compliance with UN Security Council resolutions using all necessary measures. These interventions involve armed military forces. Due to the ineffectiveness of such troops in Bosnia, attention was called to the special need for UN coalition troops in situations where no peace agreement exists. In these situations, peace-maintaining troops are used. These troops are more heavily armed than other troops.

LOCAL GOVERNMENT ORGANIZATIONS

Working in conjunction with local government organizations is essential to the success of any CHE endeavor, large or small. In some unfortunate situations, there may be no effective government that has survived. In all other situations, the local government organizations should be involved from the earliest possible moment. Local government frequently proves to be an important resource with unique insight into situations. Including the local government in initial assessment and planning efforts can expedite the process and provide the community with a sense of ownership. By fostering this relationship through out the entire process, the possibility of creating sustainability is maximized.

THE CHE RESPONSE SYSTEM

Although the CHE response system has evolved to best serve and protect the most vulnerable in emergency situations, it is extremely complex. It is a system that is both difficult to understand and to work within. With the many players as its wheels, the CHE response system has become an enormous machine with a bumpy ride. It has difficulty navigating around the smallest obstacles and so the most vulnerable get caught under the wheels. In the midst of policy-making and mandate enforcement, the children are frequently forgotten. In order to maintain the effectiveness of the CHE response system, we must all keep our priorities and objectives in focus. Who are we here to serve? Who is the largest group affected by CHEs? Who is the most vulnerable? It is the responsibility of every individual to advocate for the children. With each decision made, regardless of size, the question must be asked, “How does this effect the children and our future?”

5 PRIORITIES FOR CHILDREN

The needs of children during CHEs require special attention. A careful, proactive approach from the start can make a remarkable difference in outcomes for children affected by disasters. Children are not miniature versions of adults; they have unique requirements that make them particularly vulnerable during CHEs. Unlike adults, children lack the reserves required to endure acute stress. Due to their small size and different metabolic function, they develop dehydration, malnutrition and fatigue more quickly. Hence, the delivery of basic needs is different for children in CHEs than for adults.

Children are also different in their susceptibility to illness and psychological stress. For example, children have immature immune systems and are more likely to contract infectious diseases than adults. In addition, these diseases tend to be more severe in children. CHEs also cause disruption in critical stages of child development. Many children experience separation from adult caretakers. While separation from support systems is known to be associated with poor health outcomes in all people, this is particularly true for unaccompanied minors who have lost parental protection. The ability to process trauma and loss is made more difficult by the fact that children do not think abstractly. This is an important consideration in addressing the mental health needs of children in CHEs.

The basic requirements of children involved in CHEs include food, clothing, shelter and sanitation. Although these appear no different from those of adults, their successful provision to children requires different considerations. Ensuring fair and effective distribution of supplies to children is one of the greatest challenges facing humanitarian workers.

FOOD

For infants, food is breast milk. Substitutes are only considered acceptable in extreme situations. The supply of breast milk is sensitive to many factors, including maternal stress, hydration, physiology, nutrition and birth spacing. It is therefore critical that lactating women be given supplemental nutrition and psychological support.

For children, the fact that they have smaller total caloric requirements than adults does not simplify the situation. Children need smaller, more frequent portions of food. If young children are given their entire ration of food in one sitting, adults or older children who can tolerate larger portions will ultimately eat the food. This leads to total caloric deprivation of younger children. In addition, children are more sensitive to micronutrient deficiencies than adults. Careful consideration of the caloric source is critical to their overall health outcome.

Of particular importance is fair distribution of the food supply. Children are usually dependent on adults for their supply of resources. In situations where adults are not present or reliable, humanitarian workers must assume the role of provider and protector. For instance, one way to ensure fair distribution of the food supply is to create separate areas for providing meals to children.

CLOTHING

The issue of children's clothing is frequently overlooked, despite being a basic need. In less industrialized countries, children may often play barefooted and wear little clothing. This is not acceptable attire in an unnatural, stressful situation such as a CHE. Being naked and barefoot

in a CHE leads to unjustified suffering for children and places them at increased risk for infectious disease and trauma. Providing children with clothing that fits their size will help lessen the likelihood that the clothing will be taken from them by adults.

SHELTER and PROTECTION

For children, shelter not only incorporates protection from the elements, but also protection from exploitation, abuse and negative influences of some adults. Unfortunately, children are the easiest targets for corrupt adults in CHEs. When children are exposed to negative influences and poor adult role modeling, the effects can be long lasting.

Many children affected by CHEs are in the midst of critical phases of development with respect to a sense of morality. For example, children aged seven to twelve years are learning to formulate concepts of right and wrong (concrete operations). During puberty, children begin to perform abstract thought processes (formal operations), which include exploration of morality issues. It is during this time that children consider their own response to questions such as: *“Does the end justify the means?”*

When children lack appropriate role models during these developmental stages, the end result can be devastating; children may be permanently crippled with a warped sense of morality. This outcome alone can have a devastating effect on society when these children become adults. Examples include situations in which young children are forced to become soldiers of war, perform brutal acts of violence, murder/maim their own family members or are subject to sexual abuse and rape.

In many CHE situations, creating separate facilities for children may be the safest solution. During the emergency phase, it is essential to identify and collectively house all unaccompanied minors. Gender differences should be considered in arranging shelter for older children. Eventually, foster care arrangements should be made for all unaccompanied minors. During the late phase of CHEs, it is important to create areas where routine, group activities can take place for children. This is a simple way in which responsible adults can monitor the activities to which children are exposed.

SANITATION

Children prove to be a particular challenge in the area of sanitation. Children find it natural to defecate and urinate indiscreetly. For this reason, children are the most difficult group in which to create compliance in the use of defecation fields, latrines and basic hygiene. Although adults may frequently ignore these childhood indiscretions, this is a grave mistake. Not only are children more likely to be victims of infectious disease, but children are generally the prime spreaders of infectious disease. The most effective control measure in the spread of disease is proper sanitation. Thus, efforts to educate children and provide adult role models in the area of sanitation will have a great impact on the incidence of infectious disease spread by the fecal-oral route.

HEALTH CARE

The delivery of pediatric medical care must be adapted to the age and stage of child patients. Clinicians should take care to approach children in a child-friendly manner. Since children frequently cannot express or describe their symptoms, health care workers must be sensitive to body language and physical cues. To successfully observe and gather this information, health care workers must make special efforts to create a non-threatening and comfortable examination environment.

A helpful approach for younger children is to ask a mother to undress her child and to keep the child seated on her lap. The clinician can then complete the history while observing the child in a natural state. An experienced child health care provider can acquire a majority of the diagnostic information prior to physically touching the child. For example, when undressed and comfortably seated in the mother's arms, a child in respiratory distress can be clearly identified by visual examination. If this same child is frightened and crying throughout the physical exam, it may be difficult to collect useful information.

Children have many specific medical issues that are either unique to them or have different presentations than in adults. These will be discussed in greater detail in later chapters; two examples are presented here.

Dehydration. The consequences of dehydration (particularly when caused by an infectious agent) are often more severe in children. For example, adults infected with rotavirus will experience several days of fever, diarrhea and discomfort. For infants, this infection can be fatal. Infants and children become dehydrated much more rapidly than adults. Some factors that contribute to this are a lack of stored excess body fluids and the increased loss of body fluids that children experience due to their increased body surface to body mass ratio. In addition, infants under seven months of age are at greater risk of electrolyte abnormalities due to the diminished concentrating ability of their kidneys. These electrolyte abnormalities can lead to severe complications of dehydration, which include seizures, cardiac arrhythmia, stroke and loss of limbs.

Medications. Children require special consideration in the use of medications. Medication doses need to be calculated on the basis of weight in children. They may be absorbed or metabolized differently in children who are malnourished. Children experience different side effects and possess different abilities in taking medications. Their compliance with medical advice is generally dependent on adults.

These examples illustrate how helpful it can be to have child health specialists present in CHEs. However, all humanitarian workers need to have a basic understanding of the special needs of children in order to provide effective services in CHEs.

6 UNACCOMPANIED MINORS

The separation of children from their parents has serious, far-reaching consequences. Parents are the main providers for all children. Without them, children suffer from lost access to resources and emotional insecurity. Children who are separated from their parents or adult caretakers in complex humanitarian emergencies (CHEs) are called *unaccompanied minors*. These children may have become separated during the initial exodus from their family home; they may have become lost in a crowd; they may have been abandoned; their family members may have died. It is frightening and traumatic for children to lose their parents amidst a CHE.

During the initial period of separation, unaccompanied minors suffer from a loss of all basic requirements, leaving them at high risk for malnutrition, infectious disease and exploitation. Due to their lack of experience and their inability to think abstractly, children are at a disadvantage without the guidance of adults. It is critical that children be provided with a safe, supportive and stable environment. Loss of such an environment during childhood can cause serious developmental and psychological trauma that can affect children for a lifetime.

EMERGENCY PHASE

Humanitarian workers must take a proactive approach to the issue of unaccompanied minors. It is clear from previous CHEs that children are at high risk for separation from their parents or adult caretakers during population movements. Although difficult to obtain in statistical form, the numbers affected are large. Many of these separations can be prevented if an identification or record keeping system is quickly established for children and families entering a CHE. Once separation has occurred, a few basic principles can guide humanitarian workers and lessen the traumatic impact on children.

Have an established plan. Prepare yourself and fellow workers; assess the setting and resources; establish a plan for unaccompanied minors.

Take a proactive approach. Prevent the separation of children from adult caretakers. Give adults mechanisms to help keep track of their children. For example, family identification cards can be pinned on children's shirts or can be worn as tags or wristbands.

Attempt immediate reunification. When an unaccompanied minor is identified, immediately try to find an adult nearby who knows the child. A relative or neighbor who will take responsibility for the child is the best alternative if the parent cannot be found. This gives the child the best chance of returning to his/her family.

Document immediately. Record details about the separated child in as much detail as possible. Write down whatever the child or other witnesses tell you. Take pictures of the child before bathing or changing his/her clothes.

Find foster homes and surrogate caregivers. It is well established that children do better in foster situations than in orphanages. Orphanages are not a good replacement for family and community living. Be aware of different norms and expectations regarding foster care in different cultural settings.

Discourage the misconception that "children are better off with the relief workers." Mothers have been known to pretend that their children are unaccompanied minors in order to place them

in the care of humanitarian workers in hopes that the children will have better access to resources.

LATE PHASE

During the later phases of CHEs, the specific needs of children continue to differ from those of adults. An overriding theme is that children require a safe, stable environment in which to grow; an environment that gives them a sense of physical and emotional security. The creation of a sense of community, with provision of surrogate parents for unaccompanied minors, is essential to foster normal growth and development. In addition, children must be protected against unnecessary exposure to harmful experiences. All unaccompanied minors have undoubtedly survived traumatic experiences. There is no need to allow for additional insults.

Once again, humanitarian workers must provide for basic needs in a child-friendly manner. In addition, they must take the responsibility of safe guarding the children's portions of food, shelter and clothes. Basic medical care designed for children is essential, beginning with a thorough assessment of the children's medical conditions, immunization coverage and nutritional status. All medical programs should include an appropriate program of immunizations, careful growth and nutritional monitoring, supplemental feeding programs and psychological assessments. This should be coordinated with a strong maternal child health program that focuses on prenatal, obstetric and family planning care.

Children do suffer from the long-term consequences of psychological trauma. Frequently, they show symptoms of such trauma in ways that are not obvious to adults. For example, children may regress developmentally; they may start bedwetting; they may be hyperactive or inattentive; they may become aggressive or withdrawn; they may engage in repetitive behaviors. Continual surveillance for these symptoms and others is necessary. Ideally, child health specialists should be present in all CHEs to provide preventive and therapeutic counseling for children. At a minimum, humanitarian workers should provide children with culturally appropriate avenues in which to express themselves in their everyday lives. This is the first step to a healthy recovery.

It is incredibly important that humanitarian workers foster and nurture a sense of hope for the future in children affected by CHEs. It has been demonstrated that hopelessness is associated with an increased risk of death. A practical and useful method of instilling hope is through education. When people start learning, they begin to live for the future. For small children, school offers a normal, structured routine that they desperately need. Adolescents benefit from school in many ways; it gives them a sense of purpose and bolsters their concept of personal identity. In addition, caretakers should be incorporated into the educational process. This is an excellent opportunity to make an impact on child health and child care behaviors.

7 PRIORITIES FOR WOMEN

Nancy A. Hazleton

Women and children represent over 80 percent of the population in complex humanitarian emergencies (CHEs). With the publication of the UNHCR Guidelines for Refugee Women, these specialized needs have at last become recognized and codified in policy documents. However, policy only presents a first step. In order for these guidelines to become a reality, implementation is of critical importance.

As women represent caregivers and, in many instances, have become the heads of families, their roles are in flux. Important considerations in planning stable living situations for them are:

PHYSICAL SAFETY

Women's physical safety should be foremost in the minds of camp designers and administrators. There are many reports from Rwanda, Bosnia, and the Congo of how women were physically in danger when engaging in daily living activities such as laundry and foraging for firewood. Attention must be given to how the risk of physical violence toward women can be eliminated.

HYGIENE

Since women are the primary caregivers in the family unit, clean surroundings and water will not only help to ensure the health of the children under women's care, but also help to maintain the health of mothers. Basic public health measures of hygiene, clean and available water supplies, and waste disposal are essential. It is preferable to invest in the overall health of the family unit rather than focusing on heroic measures after, for example, an infant becomes severely ill. Often when a mother is ill, there is no one to care for her children and she is unable or unwilling to leave her living area for medical attention.

Women's special hygiene needs include sanitary supplies. Without this basic item available and provided, as a matter of course, to all women past puberty, women are unable to leave their living environment, to receive health care, cook, or receive food distributions. Cotton cloths can be used and reused for this function. Areas should be made available where the cloths can be washed and hung out privately. This very important matter is often ignored in CHE situations.

Women's latrines and bathing areas should be kept separate from latrines for men. In these separate areas, space can be made for washing and drying sanitary supplies. In a CHE situation with its inherent personal loss and devastation, the recognition of personal dignity and privacy can be reassuring to women.

FOOD DISTRIBUTION

Since many women and children are separated from their husbands and fathers in a CHE, food distribution should not be given only to males. Efforts should be made either to take food to where the women are or to arrange for separate distribution schedules to the women. Prior to the initiation of transportation of any food supplies, dietary preferences should be studied and food familiar to the refugee group should then be sent. Consideration should be given to how women get fuel for cooking, other cooking supplies, and how to increase the ease of cooking for them.

SHELTER

The purpose of shelter is to provide protection from the elements, warmth and privacy. While imported materials can be used, it is preferable to use local building items that are culturally appropriate. Providing these materials to women increases their sense of self-determination through building their own environment. If local building materials are unavailable, it is preferable that housing be built in smaller scale clusters with latrines, food distribution centers, laundry and health care facilities in the immediate area. This can prevent security and privacy problems that are frequent in large “tent cities.”

HEALTH CARE

While a range of health care services are appropriate for all groups, such as immunizations and emergency care, the special health care needs of women must be recognized and planned for in a detailed manner. Reproductive health care (including prenatal, delivery and post-partum services) is essential in any health operation, but critical in CHEs where there are more adult women than men. Gynecologic care with specialized attention to those women who have experienced genital mutilation and subsequent health problems should be available in private areas and provided by culturally sensitive staff.

Health visits provided at home are beneficial to mothers and children and can be accomplished through a system of indigenous health extenders who know the language and health customs of the women.

Midwives and doulas (labor and delivery companions) from the local culture may be enlisted to provide prenatal, delivery and postpartum services. WHO training manuals on normal labor and delivery are available for the education of midwives, doulas and other community health workers.

Women who have experienced sexual violence should be provided with appropriate physical and mental health services. HIV/AIDS may be common in many CHE situations. Efforts to prevent transmission of HIV and other sexually transmitted diseases should include education, distribution of condoms, and family planning services.

Traditional medicine, as used in the local culture, should be recognized and employed when practical. Every culture has its own pharmacopoeia, healers and medical traditions that are familiar and comforting to its peoples. The WHO estimates that more than 60% of the world's population uses some form of traditional medicine. Enlisting traditional healers in CHE health plans is worthwhile for the benefit of the patient, family and community.

POLICY-MAKING

An important way to ensure that the needs of women with respect to physical safety, hygiene, food distribution, shelter, and health care are met in CHEs is to have experienced women on the planning and implementation teams. The common experiences of women as child-bearers, caretakers, homemakers and food preparers provide understanding that crosses cultural and geographic boundaries. Sensitivity to the special needs of women can lead to reductions in morbidity and mortality of both women and children. More women are needed to work in the international agency policy-making that drives relief efforts, as well as to work on the ground in CHE situations. The female victims of CHEs should be involved in making plans related to health, social services and logistics that will impact themselves and their families.

8 CHILD HEALTH ASSESSMENTS

In the emergency phase of a CHE it is important to do the following assessments with respect to child health:

“Eyeballing” the children as you walk through the area or as you observe children who may be walking by in refugee groups. Note how the children are dressed, whether or not they have shoes, how many of them appear dehydrated, their general state of nutrition, evidence of injuries, evidence of fear or anxiety and whether or not there appear to be unaccompanied minors. Are mothers able to breastfeed young infants?

Do a survey of those children who are attending an acute care clinic or tent. What are the diagnoses? The most common problems? Do you find evidence of measles, malaria, meningitis, dysentery, dehydration and/or malnutrition? Keep careful records on the first 200-300 children you see. This information can provide a guide to acute prevention programs, needed supplies, drugs, and equipment, and for reporting to local authorities.

If possible, get copies of immunization records (e.g. Road to Health cards) or oral reports with respect to immunization histories for a sample of children. This information can guide immunization programs, as well as help health workers anticipate the infectious diseases for which children are at risk.

Develop an assessment of mortality via body counts or interviews with a specific number of families.

Do a formal nutrition survey as soon as possible.

Arrange for a survey related to potential post-traumatic stress problems. Arrange for interviews with a sample of families in order to learn which stressors have been most common for the children. These may include deaths of family members, witnessing violence, starvation, personal abuse, loss of home, cold weather and acute illness.

The above sampling should also include an assessment of parental capacity. What stressors and privations have they endured? Are they malnourished? Are they ill? Are the women pregnant? How many are breastfeeding?

It is preferable to use sound epidemiological principles when doing such surveys. However, delaying these assessments and surveys because one lacks a measuring board or because the tents are moved frequently is not in the best interests of the children. Furthermore, it is important to survey and act on the information gained at the same time.

NUTRITIONAL ASSESSMENT

A nutrition survey is especially important when a majority of refugees are children under five years of age. The basic information to be collected includes:

- weight
- height
- age
- sex
- color of hair
- presence of edema

The plan for a nutritional survey should be developed in collaboration with refugees who are leaders. These leaders can help select people to assist in data collection. In general, one develops small teams that include two measurers and a supervisor. Before embarking on the formal survey, the team members should practice correct measurements; these must be checked.

Weight

In acute situations, the scale used for young children is usually a 25 kilogram (kg) hanging spring scale, graduated by 0.1 kg. The scale is hooked to a tree or to a stick held by two people. Although weighing pants are often used in Africa, many Asian villages have perfected the use of a comfortable weighing bamboo basket, which is much more acceptable to young children. In cold countries and in some cultures it may be impossible to undress a child for weighing. The average weight of the clothes should be evaluated and deducted from the measure. The weight is then recorded to the nearest 100 grams. Every morning the scale should be checked against a known 10kg weight. If the measure does not match the weight, the springs must be changed or the scale discarded.

Height

Children who are more than two years old are measured while standing and younger children are measured while lying down. If exact age is unknown, as may be true with young unaccompanied minors, those children who are more than 85 centimeters (cm) are measured standing and those who are 85 cm or less are measured while lying down.

Either a measuring board can be made or children can be measured on a table that is marked for the head position. The assistant holds the sides of the child's head and positions the head against the headboard, which should be perpendicular to the table. The feet are placed against the footboard and the measurement is read. Children more than two years of age are encouraged to stand upright in the middle of the board. Ankles and knees are firmly pressed against a vertical measuring board while the measurer positions the head and the cursor. The child's head, shoulders, buttocks, knees and heels should be touching the board. The measurer reads the measurement to the nearest 0.1 cm. The assistant writes down the measurement and repeats it to the measurers to insure that it has been heard and recorded correctly.

Edema

Edema is an abnormal collection of fluid in the extracellular space of the body and is a sign of malnutrition. In order to measure edema, normal thumb pressure is applied to the foot or the leg for three seconds. If a shallow print or pit remains when the thumb is lifted, then the child has edema. The edema should be present on both of the child's feet or legs if it is caused by malnutrition.

Mid upper arm circumference

This measurement is used for children between one and five years of age. A mid upper arm circumference (MUAC) insertion tape is used. The thin end slips through the opening at the wider end and the measurement is read at the point indicated by the arrows. The MUAC is measured on the left arm at the mid-point between the elbow and shoulder. The measurement is read to the nearest 0.1 cm. MUAC may seem easier to measure than weight-for-height (WFH), but in fact more mistakes are made in measuring MUAC. Because of the variability among measurers for MUAC, we do not recommend using it if height and weight measurements can be done. If needed, the MUAC can be used to screen large numbers of children in search of those who may be malnourished. The standard MUAC measure denoting severe malnutrition is <12.5 cm.

Interpreting the measurements

In general one calculates the weight-for-age index, the weight-for-height index and the height-for-age index. These are compared to values for a reference population, usually to the reference values collected by the National Center for Health Statistics (NCHS) in the United States. In emergency situations where acute forms of malnutrition are the predominant pattern, the weight-for-height (WFH) index is the most appropriate to quantify levels of current acute malnutrition. The WFH index does not require age determination, which is often difficult to ascertain in a CHE situation.

The Centers for Disease Control (CDC), which is based in Atlanta, Georgia, has software that is user-friendly and excellent for calculating the anthropometric indices described. The results of these indices may be reported as percentages of the median, percentiles and/or Z scores. The Z scores express a child's weight or height as a multiple of the standard deviation (a measure of the spread of values around the mean) of the reference population, and are also known as "standard deviation scores." Z scores are more statistically correct than percentages of the reference group mean.

Estimating sample size

In general one chooses children between 6 and 59 months of age for a nutritional survey. Because they are growing rapidly, a diminished food supply will affect them first. Sample size is usually based on an expected prevalence of malnutrition between 5 and 20%. The formula for calculation of the sample size is the following:

$$n = t^2 * \frac{P * q}{d^2}$$

n = sample size

t = parameter related to the error risk, equals 1.96 or 2 for an error risk of 5%

p = the expected prevalence of malnutrition in the population, expressed as a fraction of 1.

q = 1 - p, the expected proportion of children without malnutrition, expressed as a fraction of 1.

d = the absolute precision, expressed as a fraction of 1.

In general, t is fixed to 1.96 and can be rounded up to 2. The expected prevalence is usually chosen to be closer to 50% than truly expected in order to get a sufficiently large sample size. Precision is arbitrary and can be modified.

For example, if expected malnutrition is 20% and desired precision is 3 %, the sample size estimate is:

$$n = 1.96^2 * \frac{0.20 * 0.80}{0.03^2} = 711$$

Choosing a sampling frame

Sampling methods include random sampling, systematic sampling and cluster sampling. Systematic sampling can be used in well-organized refugee camps or in neighborhoods where houses are arranged in blocks and lines. One can then sample every nth household, where n is any whole number. Random sampling can be used if there is a list that includes every individual in the population, which is unlikely in the early states of a CHE. Names are drawn randomly from the list. A third method is two-stage cluster sampling. A number of clusters are randomly chosen, then a certain number of children are selected from each cluster and these children are surveyed. Within each cluster, children will have a tendency to be more similar to one another with respect to nutritional status. Therefore, the sample size should be twice as large for cluster sampling than it would be for random or systematic sampling.

Cluster sampling is most often used in the emergency phase of a CHE. The clusters or units may be villages, camp sections or specific geographical areas. The number of children to be selected in each cluster is determined by dividing the total sample size by the number of clusters. For example, the calculated sample size (from above) of 711 should be doubled to 1422 for cluster sampling. If the sampling frame uses 30 clusters, then 1422 divided by 30 equals approximately 50 children in each cluster.

When clusters are identified, the data collectors should go to the center of each cluster and choose a random direction by spinning a bottle. The surveyor walks in the direction indicated by the bottle, moving from the center to the border of the cluster, and counts the number of households encountered along the way. The first household to be visited is randomly selected from among these counted households by drawing a random number. The next nearest household available is selected until the required numbers of children in the cluster have been measured.

9 EPIDEMIOLOGY

The study of the distribution and determinants of disease frequency in human populations.

Epidemiology is a fundamental component of relief work. Although frequently thought of as the study of epidemics, field epidemiology involves:

- Gathering information on health problems
- Identification of information sources
- Gathering data, surveys
- Presentation, statistical analysis and synthesis of data collected
- Decision-making based on data results

Epidemiological programs can be roughly divided into two categories: surveillance and ad hoc investigations. Epidemiological surveillance refers to the routine surveillance of health problems that serve as an early warning system for health care workers. Ad hoc investigations include the initial assessment/survey of a situation or epidemic.

Before initiating a survey, the goals and limitations of the investigation must be clearly delineated. Surveys are often considered essential in the early response to complex humanitarian emergencies (CHEs). However, conducting a survey that is not followed by policy decisions is a waste of resources and raises false hopes among participants. The first consideration in implementing most surveys is to ascertain whether the person commissioning the study has the means to act on its results.

HEALTH INDICATORS

Due to constraints of time, money and people, it is unrealistic to collect all of the data that could possibly be used in following the evolution of an emergency. Instead, specific health indicators are used which are chosen for their relevance in describing a given situation or its evolution over time. In general, indicators are used that are directly related to health (morbidity, mortality, nutritional status) or to the environment (physical, economic, social, political or health care service environment). A number of criteria are useful in selecting appropriate health indicators:

- Relevance to what the study is supposed to measure
- Ability to be precisely defined
- Ability to be analyzed in relationship to other parameters
- Availability of a test to measure the effectiveness of the indicator

SOURCES OF INFORMATION

After defining the type and number of indicators required, the epidemiologist must determine where the necessary data can be collected. The source of the data will be dependent on the type of information sought and details specific to the emergency situation. Possible sources include:

- The population (e.g. refugees)
- Administrative services
- Community health services
- Health care facilities
- The humanitarian agencies

DATA COLLECTION METHODS

Once epidemiologists have determined “what to collect” and “where to collect,” they must decide how to collect the data. There are basically two choices: go out and look for it or wait for it to come to them. A number of factors influence the choice between these two, including:

- Time available for data collection
- Physical access to information sources
- Degree of reliability required
- Degree of continuity required
- Existence and status of a functional local health information system

EFFECTIVENESS OF AN INDICATOR

When considering the effectiveness of an indicator, several characteristics should be considered:

1. **Representativeness.** Does the indicator actually measure what you are looking for? For example, if concerned with measuring acute malnutrition, weight-for-height measurements would be an appropriate indicator. In contrast, weight-for-age measurements would reflect both acute and chronic malnutrition.
2. **Standardization.** Is the same measuring method consistently used for a given indicator? Standardization allows one to compare data from different sources and different times.
3. **Reliability.** Is the measure repeatable? Reliability is dependent upon the variation present in the instrument and in the item being measured. Reliability is affected by variation within the same measurer (intra-observer reliability) and by variation between different measurers (inter-observer reliability). In CHE situations, a number of unique factors may effect the reliability of an indicator, such as frequent changes in health care workers, rapid training of local personnel, and limited time to execute and plan the measuring activities.
4. **Applicability.** Can the method for measuring the indicator be realistically used in the field during an emergency situation?

5. **Acceptability.** Is the measure acceptable to the population being assessed and to the local authorities?
6. **Validity.** How well does the indicator work? This is commonly reflected by the following expressions:

SENSITIVITY = true positives ÷ (true positives + false negatives)

SPECIFICITY = true negatives ÷ (true negatives + false positives)

POSITIVE PREDICTIVE VALUE = true positives ÷ (true positives + false positives)

Desirable qualities in a measure include representativeness, validity and reliability. Qualities that are particularly relevant in CHE situations include applicability and acceptability.

PRESENTATION OF DATA

The data collected must be converted into more usable forms, such as percentages, rates, tables and graphs. Most data should be expressed in the form of a rate, where the numerator represents the number of individuals affected (or the number of events that occurred) and the denominator represents the entire population of interest. Rates allow health care workers to follow trends, compare populations and conduct ongoing surveillance. The most commonly used rates in CHEs are mortality rates, malnutrition rates and rates of incidence of the most common diseases. Humanitarian workers should become familiar with these.

Crude Mortality Rate (CMR), the most specific indicator of population health:

- baseline – 0.5 deaths/10,000/day
- effective relief - <1.0 deaths/10,000/day
- serious – 1.0 – 2.0 deaths/10,000/day
- crisis - > 2.0 deaths/10,000/day

Under Five Mortality Rate (U5MR), for children under 5 years of age:

- Baseline – 0.8 – 1.2 deaths/10,000/day
- Serious - > 4.0/10,000/day

Cause-Specific Mortality Rate, the proportion of deaths due to a specific disease:

- Used to measure effectiveness of interventions

Case Fatality Rate, the proportion of individuals with a specific disease that die.

Age- and Sex-Specific Mortality Rates

- Calculated as secondary analyses
- Defines populations at increased risk

Acute malnutrition rate, calculated for children less than 5 years of age:

- Second most specific indicator of population health
- Should include the prevalence of both acute protein-energy malnutrition and micronutrient deficiencies

INCIDENCE AND PREVALENCE

Care must be taken to clearly identify rates as either incidence or prevalence, which are defined below:

Incidence: the number of new cases that occur during a given period of time; provides information about the spread of disease, of particular concern in CHEs.

Prevalence: the number of cases present at a particular moment in time; useful for evaluating diseases of longer duration, such as tuberculosis.

STATISTICAL ANALYSIS AND TOOLS

Basic statistical analysis addresses three concepts: data distribution, sampling and statistical comparison. Data distribution refers to the variability and central tendencies of the study results obtained. Sampling refers to the manner in which a study population was chosen, such that study results are representative of the general population. Statistical comparison involves looking for differences in the study results obtained from different populations.

The initial analyses for data distribution focus on measures of central tendencies. These include the mean, median and/or mode. The most common measure used is the mean. The next step of analysis focuses on measures of variability, which include:

- **Mean deviation:** the summation of individual deviations \div by the number of observations
- **Variance:** the summation of the squares of individual deviations \div by the number of observations
- **Standard deviation:** the square root of the variance

The standard deviation is used to create a distribution curve. Most health indicators will have a normal distribution, also called a Gaussian or bell-shaped curve, around a central mean. The area under the curve that is within ± 1 , ± 2 and ± 3 standard deviations represents 68%, 96% and 99% of the population respectively.

In order to obtain a sample which is representative of the population being studied, all of the people in the population being studied must have an equal chance of being included in the sample; this minimizes bias. There are many acceptable sampling methods, including:

- Simple random sampling
- Stratified random sampling
- Systematic sampling
- Cluster sampling

The size of the sample should be large enough to reduce sampling error to an acceptable level and small enough to be cost-effective. Calculation of sample size is dependent on the type of sampling employed. Sample size and sampling methods are discussed in more detail in the chapter on child health assessments. EPINFO is a computer program can be used to calculate sample size, as well.

Some common measures of comparison and statistical tests are listed here:

- **Relative risk:** the ratio between the rate of a variable expressed in two populations
- **Odds ratio:** the ratio between the probability that a subject has been exposed to a risk factor and the probability that a control has been exposed to a risk factor
- **Chi-squared test:** compares the number of individuals from two or more populations who do or do not possess the characteristics being studied.
- **Student's t-test:** compares two means from two samples taken from two populations
- **Correlation coefficient:** describes the association between two variables as either evolving in the same direction (positive correlation) or evolving in the opposite direction (negative correlation)
- **Analysis of Variance (ANOVA):** compares the results of several sets of data by examining the variability between the sets of measures and the variability within each set

Whenever a sample is used to describe a population, there is a certain risk of error. The results obtained will vary from the truth by some amount. The amount error risk that is acceptable is pre-determined. In general, epidemiologists allow a 5% risk of accepting results that support a difference between two populations when in fact there is no difference (type I error). This risk is expressed as a probability, *the p-value*. The difference between two populations is significant when the probability of making a mistake is less than 5% ($p < 0.05$). Differences are highly significant when the probability of making a mistake is less than 1% ($p < 0.01$).

INTERPRETATION OF THE RESULTS

When data analysis is complete, epidemiologists must decide what their results mean. This begins with an assessment of whether the results are any good and whether they been analyzed correctly. Factors to be considered in the critique of data collection methods include the relevancy of indicators, adequacy of sample size and accuracy of recording. Factors to be considered in the critique of statistical methods include confidence intervals and the appropriateness of the statistical test used. Epidemiologists must also consider the results in a broader context:

- Is the information pertinent to the current phase of the disaster?
- Do the data accurately describe the situation? Do the data represent all groups? Are the data reliable?
- In what context were the data collected? How might the data have been affected by local climate, the socio-cultural environment and population influx?

DECISION-MAKING

In CHE situations, the primary goal of epidemiology is to facilitate fast decisions about what to do. Ultimately, epidemiologists can make one of the following choices based on the results of a survey:

- Do nothing
- Carry out more specific investigations
- Repeat the same study within a given period of time
- Intervene immediately

10 WATER AND SANITATION

Effective water purification and sanitation programs are the most critical and fundamental elements of any relief operation in complex humanitarian emergencies (CHEs). The relationships between the environment, water supply and disease are well accepted. Many diseases are associated with water shortages, contaminated water, poor sanitation and poor excreta disposal. In CHEs, the establishment of effective water and sanitation programs decreases total mortality more than any other intervention. In a 1985 review of 67 studies from 26 countries, the impact of water supply and sanitation led to mean reductions in diarrhea morbidity of 22% and total mortality of 21%.

All health care workers should be able to understand and monitor the effects of water and sanitation programs in CHEs. In particular, health care providers should be able to recognize the health problems related to ineffective water and sanitation programs and be familiar with the key elements of water and sanitation programs. They must be able to determine when a sanitation specialist is needed.

Water and sanitation programs should be established during the earliest phases of a crisis situation and must be maintained throughout the crisis. The promotion of sustainability should be incorporated into the initial plan. Community involvement in all phases of the plan is essential to ensure sustainability.

In the initial planning phase, community involvement will lead to the most culturally sensitive and acceptable programs. Water and sanitation programs that fail to address the cultural needs of a community will not be used. For example, the potable (drinkable) water supply must not only meet biological standards, but must be palatable and physically acceptable to those who drink it. In later phases, effective water and sanitation programs will require continual maintenance and monitoring. If the community has ownership of these programs, they are more likely to meet the maintenance needs of the programs.

The unique impact and needs of children must be considered when establishing water and sanitation programs. Children are the primary source of disease spread by the fecal-oral route. Not only do children have an increased incidence of these diseases, but they also have an increased burden of bacterial and parasitic loads. They are much less discrete with regards to urination and defecation. They will choose to relieve themselves in open, public spaces before traveling a significant distance or using a space that they may perceive as frightening. Also, children do not understand and are not concerned with careful hand washing. For these reasons, it is critical that latrines be readily available, child-friendly and near to an easily accessible water source for hand washing. Above all, children need consistent adult role models. Thus, effective hygiene education targeting all age groups is necessary.

WATER PURIFICATION PROGRAMS

The basic goals of effective water purification programs are to provide an adequate amount of safe water and to ensure fair distribution. Any water program is only as strong as the weakest of these links. The ideal amount of water supplied during a CHE is greatly determined by the phase of the disaster situation and the anticipated length of need. During the emergency phase of a disaster, the absolute minimum requirements for water must be met. Although greatly affected by exertion, physiologic minimums are 3 liters per person per day in temperate climates and 6-10 liters per person per day in hot climates.

As soon as possible, the water supply must be increased from these physiologic minimums. For example, a water supply of 20-25 liters is needed to maintain minimal hygiene. This requirement must be met if one hopes to impact health status. In order to maintain a field hospital, 35–40 liters per person per day must be provided. As a disaster situation evolves, or if a prolonged need is anticipated, other factors must be considered. Cultural variations in hygiene and cooking practices lead to very different water demands. Populations may have greatly increased water needs due to livestock. A cow drinks 30 liters of water per day! It is critical to use local experts to define immediate and long-term water needs.

The first step in providing safe water is to identify and protect available water sources. Currently used water sources must be identified and new water sources defined. All possible water sources should be considered, including rainwater, surface water, spring water and ground water. Once again, the contribution of local experts in this task is invaluable. It is critical that potential and existing water sources be protected from pollution. It is much more efficient to prevent pollution of a water source than to purify that same source.

Theoretically, the definition of safe water is determined by the anticipated use of that water. Potable water must be significantly more pure than water supplied for bathing and washing. It is well accepted that provision of an adequate amount of impure water has a greater impact on health than a small amount of pure water. Unfortunately, it is unrealistic to create two separate water supplies in most CHE situations. Thus, it is ideal to have all of the water supply be potable. In addition, there must be appropriate containers for transport of this water. The quality of the water supplied is irrelevant if the population being served uses contaminated buckets.

The definition of potable water is water that contains **< 10 fecal coliform organisms per 100 ml**. Potable water must be both biologically and culturally acceptable. If the water is clean but cloudy, will people drink it? The three basic principles of water purification are settlement, filtration and disinfection. In general, a combination of these three approaches works best. Water purification through boiling is not practical for large populations, since boiling 1 liter of water requires ½ kilo of wood.

The main goal of settlement, also referred to as storage, is the removal of organic matter. This process may be facilitated by use of aluminum salts, which bind organic matter and speed up the sedimentation process. Less disinfection is required when organic matter is removed at this stage of the purification process. Also, certain pathogens may be eliminated merely by the passage of time. For example, cercariae that transmit schistosomiasis die within 48 hours.

Although there are a variety of filtration methods, sand filtration is the most common approach. Slow sand filtration (0.2 m/hr) is based on the principle of natural filtration through the soil. Water is purified as it passes through alternating layers of sand, gravel and charcoal.

Disinfection refers to the addition of chemicals to water in order to eliminate organic matter. Careful control over this process is essential. By far, the most commonly used disinfectant is chlorine. When using chlorination, several basic principles should be remembered. Five milliliters of 1% chlorine will treat 20 liters of water. Five milliliters is about one teaspoon, although many teaspoons are smaller than this. There are many preparations of chlorine; this dosage refers to the amount of free chlorine added. Thus, the effective dose of free chlorine is 0.5 mg/liter, acting over a period of half an hour. Over-chlorination will lead to toxicity.

The most difficult element to create in a water purification program is fair distribution. Without community leaders advocating for equitable water use, success is unattainable. In unsuccessful situations, it is the most vulnerable members of the population who are denied access to water. In some situations, it may be necessary to establish a community-managed guard system over the water supply. Consideration must be given to areas requiring disproportionate amounts of water, such as hospitals, health centers and fire fighting facilities. There should always be a reserve of water in case an interruption occurs in the current water supply.

SANITATION

The single most effective control measure of infectious disease spread is proper sanitation. In general, there are two modes of transmission of infectious disease: direct contact and environmental contact. Transmission through direct contact is most effectively decreased through the supply of adequate amounts of water and the promotion of good hygiene. For example, surfaces such as dishes, stethoscopes, toys and pens often contain disease-causing pathogens. Transmission through the environment can occur via water, food, soil, insects and air. All of these elements must be considered when developing sanitation programs.

The rate of infectious disease transmission by the fecal route is directly affected by the quantity and quality of excreta produced. Although it is impossible to control the quantity of excreta produced, it is possible to affect the quality of the excreta. Based on the phase of the emergency, it may be appropriate to chemically treat the infected individuals and thereby decrease the spread and prevalence of disease. In certain situations, it may be appropriate to implement prophylactic treatment to decrease the carrier rate. Infection and medication must be considered individually in every situation. For instance, the treatment of severe intestinal

helminthic infections can lead to the development of bowel obstruction and perforation. This is a particular risk for children. Thus, in a transient, mobile population with lack of access to adequate medical facilities, it would be inappropriate to treat intestinal helminthic infections.

When designing sanitation programs, the key considerations are similar to those relevant to developing water programs: cultural sensitivity, community involvement and health education.

There are many factors associated with the cultural acceptance of sanitary facilities, regardless of type. In 1985, it was estimated that only 18% of rural populations in developing countries had access to sanitary facilities. With this in mind, it is not surprising that people will frequently find it unclean to defecate in an area that someone else has already used. People tend to search for areas that provide some level of privacy. Keeping latrines open to sunlight makes them more appealing for human use, but also increases fly infestation. Children are particularly afraid of using latrines for fear that they will fall in the open receptacle. Some simple considerations may alleviate a significant portion of these issues: the designation of male and female areas, using some form of barrier and creating stable surfaces around latrines.

Community involvement is even more important in sanitation programs than in water programs. In general, sanitation programs require less technology than water purification. Thus, the community can be involved at all levels of the program, including design, construction and maintenance. In reality, there is a much greater need for prolonged, intensive maintenance in sanitation programs than in water programs. Since the maintenance associated with sanitation programs is not the most pleasant duty, the community will be much more responsive to meet this need if they have ownership in the project.

The success of sanitation programs hinges upon effective educational programs. In many situations, sanitation programs do not parallel societal norms. People frequently view use of sanitation facilities as bothersome, unclean and unnecessary. If a population is expected to make significant behavioral changes, they must have seen a convincing presentation of the necessity. Without a strong, fundamental educational component, sanitation programs will fail. Educational programs can be tailored to bridge the gap of cultural acceptability. For example, topics that are traditionally considered unacceptable to discuss in public may be effectively presented through school children, puppets, pantomime or parades.

There are several approaches to developing sanitation programs. The choice of which technique to employ should be based on the phase of the emergency, anticipated need, environment and cultural acceptability. Immediate precautions should focus on *separation* and *containment*. Separation refers to keeping excreta separate from the water and food supply. People frequently view water sources, such as riverbanks, streams and ponds, as ideal places to defecate. Even if not currently needed, these water sources will often become needed with increasing population demands on the water supply. Fields with crops are also viewed as an ideally private area to relieve oneself. This too increases the rate of disease transmission.

Instead of identifying areas that are inappropriate for use, it is much easier to specify appropriate areas for defecation and urination. This is the basis of containment. The simplest application of this theory is creating defecation fields. These are designated areas for excreta, which are located at significant distance from areas of high traffic, food preparation and water supply. If possible, these areas should have some barrier for privacy. Also, it is critical that defecation fields are located downhill from camps in order to avoid contamination of the water table.

A full description of intermediate and long-term measures for sanitation is beyond the scope of this manual. Intermediate measures consist of various latrine forms, including family, communal and trench latrines. Of these options, family latrines are the best choice for several reasons. Since used by a small group of individuals, they minimize the rate of infectious disease spread. Also, this form of latrine tends to promote ownership and results in the best maintenance. When a prolonged need for sanitation programs is anticipated, pit latrines offer the ideal long-term solution. This type of latrine is superior in terms of excreta removal and community acceptance, but is more costly and requires a higher level of technical skill.

11 WARMTH, CLOTHING, HOUSING

Morbidity and mortality increases for children who lack adequate warmth, clothing and housing in complex humanitarian emergencies (CHEs). Unaccompanied children are especially vulnerable to these problems. Without family advocates, they are likely to be displaced from the best available shelters, to have clothing and blankets stolen, and to lack access to stoves or fires. The risk is even higher for those malnourished children who lack subcutaneous fat stores.

In the Goma refugee situation of 1994, the lack of clothing and blankets combined with rainy, cool weather resulted in unaccompanied infants and toddlers dying from low core body temperatures. During the movement of refugees back to Rwanda in December 1996, there were 400,000 children (90% of children) who lacked footwear, while 75% of adult males and 60% of adult females had shoes. As a result of walking long distances barefoot, the children suffered tissue breakdown on the soles of their feet with rapid invasion by “jiggers” and subsequent deep infections, including osteomyelitis.

Fear and anxiety can reduce the core body temperature of children. A study sponsored by the National Institutes of Health (NIH) showed that core temperatures of newly hospitalized children dropped two degrees during the first 48 hours of hospitalization. The temperature drop was attributed to stressors such as strangers, laboratory procedures and a strange environment. Refugee children also experience fear and anxiety, which may place them at risk for lower core body temperatures.

During refugee movements there may be no alternative but to sleep out in the open. The best way to provide warmth for children is for them to sleep next to their parents or other children in an area that is out of the wind. Priority should be given to using available clothing and blankets for the smallest and most malnourished of young children. Hay, grass and straw, if available, can be used to provide warmth while sleeping. Plastic sheets can be cut up into makeshift clothing or blankets that will hold body heat. Studies of “kangaroo” holding of infants by their mothers (i.e. skin to skin against the chest and abdomen) have found that this is an effective way to warm and nurture even premature infants.

Shoes, of the zori or flip-flop variety, can be made out of old rubber tires or constructed from wood, if these materials are available. While it is generally desirable to bathe children, this is not recommended in cold situations where there is lack of heat, clothing and shelter. Bathing results in a decrease of core temperature that may be harmful if the child cannot be re-warmed immediately. If bathing of children is done outside, this should occur at the warmest time of the day.

If tents or other temporary type shelters are available, they should be set up in such a way that snow or rain moves away from the structure. Desert tents can be modified for use in a rainy situation. Shelters made of plastic sheeting and poles can provide useful, temporary housing. Nursing mothers, young children and especially unaccompanied minors, should receive priority in assignment of whatever shelters are available.

12 NUTRITION

Malnutrition remains one of the top five pediatric killers worldwide. Children less than 5 years of age are among the most acutely affected by undernutrition. The evolution of malnutrition is complex and strongly linked to many social and political factors that are frequently triggered by natural disasters. Children affected by complex humanitarian emergencies (CHEs) are particularly vulnerable to all forms of malnutrition, including both protein energy malnutrition (PEM) and micro-nutrient deficiencies.

The importance of breastfeeding and the consequences of malnutrition during the early years of life are well recognized. In order to minimize the long-term complications of malnutrition during this critical developmental stage, it is imperative that adequate nutrition be maintained through the effective promotion of breastfeeding. When prevention fails, then the identification and treatment of malnutrition must be effectively implemented as soon as possible.

Protein energy malnutrition (PEM) can refer to either acute or chronic undernutrition and includes both kwashiorkor and marasmus. The occurrence of PEM in populations affected by CHEs is well recognized. The following malnutrition prevalence rates are provided by the combined efforts of the Centers for Disease Control (CDC), the United Nations High Commissioner for Refugees (UNHCR), the International Committee of the Red Cross (ICRC), Medicins Sans Frontiers (MSF) and Save the Children Fund:

Acute Malnutrition Prevalence Rates

In selected refugee & displaced populations
(Children 6-59 months)



Country of Origin	Country of Asylum	Year	🌸 Acute Malnutrition Prevalence
Somalia	Kenya	1991	29%
Iraq	Turkey/Iraq border	1991	4%
Somalia	Internally displaced	1992	47-75%
Sudan	Internally displaced	1993	75-81%
Rwanda	Burundi	1994	13-20%
Rwanda	Zaire	1994	18-23%

Micronutrient deficiencies also play a key role in nutrition-related morbidity and mortality. Micronutrient deficiencies have been consistently reported in refugee populations.

Micronutrient Prevalence Rates

Disease	Year	Location	Prevalence
Scurvy	1984	Sudan	22%
	1985	Somalia	6-44%
	1989	Ethiopia	1-2%
Iron Deficiency Anemia	1990	Syria, Jordan,	55-74% (children)
		West Bank & Gaza	13-63% (women)
	1990	Ethiopia	10-13%

BREASTFEEDING

The most basic step in preventing PEM and micronutrient deficiencies is to promote breastfeeding throughout the first two years of life. The following is a brief highlight of selected benefits from breast milk:

- Breast milk protects and promotes infant health by augmenting the infant's immature immune system from birth into the second year of life.
- Breast milk contains antibodies directed against many infectious agents, including shigella, salmonella, cholera, rotavirus, RSV, poliovirus, influenza, giardia and candida.
- The protein composition of breast milk correlates with the ability of the infant's digestive tract to absorb various proteins.
- As the child's digestive tract develops, the composition of breast milk changes to parallel the digestive abilities of the child.
- Breast milk provides for 100% of energy needs up until 6 months of age.
- At 12 months of age, breast milk may provide for up to 35% of the infant's total energy intake.
- All of the necessary nutrients and water are provided by breast milk for the first 6 months of an infant's life with the exception of:
 - **Vitamin K** – ideally given as an injection after birth
 - **Vitamin D** – only necessary if the child is exposed to less than 30 minute per week of sunlight
 - **Flouride** – required after 6 months of age, in areas where the water is not fluoridated
 - **Vitamin B₁₂** – if mothers are strict vegetarians
- Breastfeeding has many psychological benefits, including the promotion of maternal-infant bonding and the empowerment of women over their situation.
- Breastfed children may graduate immediately from the breast to a cup. This avoids the use of bottles, which can transmit infectious diseases.

In light of the advantages afforded by breast milk, breastfeeding should be the option of choice in all situations. In less industrialized countries and in all CHEs, the risk

of infectious disease secondary to bottle feeding far out weighs the risk associated with breastfeeding, even when using wet nurses or in the case of maternal HIV infection.

There are many factors that affect the success of breastfeeding, including maternal stress, hydration, nutritional status and the frequency of suckling. Thus, lactating and pregnant women should be recognized as vulnerable populations. Pregnant and lactating women need increased rations of food and water and should receive iron/folic acid supplements. In stable populations, these women must be carefully evaluated for enrollment in supplemental feeding programs. In transient populations, pregnant and lactating women should be transported along with other vulnerable populations when at all possible.

PROTEIN ENERGY MALNUTRITION

As previously mentioned, the clinical presentation of protein energy malnutrition (PEM) includes marasmus and kwashiorkor.

The word ***kwashiorkor*** originates from an African language, meaning “disease of the deposed or separated child.” Kwashiorkor often occurs during the toddler period when a child has been deposed from the mother’s breast by a new sibling. Children with kwashiorkor have a height and a weight that are lower than expected for their age. They appear lethargic and miserable and tend to move very little. Their unsmiling faces have “chipmunk” or swollen cheeks. Muscles, especially of the upper arms and buttocks, are wasted, weak and atrophic. Skin appears dry and roughened, and there are areas that appeared to be burned. Edema is noticeable on lower extremities. Hair is dry, sparse and sometimes appears blonde or red in usually dark-haired children. Full-blown kwashiorkor is easy to diagnose; the clinician should note earlier signs of malnutrition such as lightening of hair roots, decreased elasticity of external ears and apathy.

Children with ***marasmus*** generally appear emaciated or wizened. Muscle wasting is striking. They demonstrate hair and skin changes less frequently than do children with kwashiorkor. They are likely to act hungry, in contrast to children with kwashiorkor who are more apathetic. According to the Wellcome Trust classification of malnutrition, children with marasmus are below 60% of the expected weight for age. Clinically, children may present with symptoms from both kwashiorkor and marasmus.

Whenever PEM has been identified, concurrent micronutrient deficiencies are likely. A population approach should be employed when deficiencies are prevalent on a large scale. Interventions include advocating for changes in general rations, mass provision of supplements, stimulating garden projects and considering food fortification.

It is imperative that the prevalence of PEM and micronutrient deficiencies be accurately determined. Instructions for nutritional surveys are given in the chapter on child health assessments. During the initial assessment period, rapid nutrition surveys must be completed. After they are completed, more thorough assessments can be completed in conjunction with a supplemental feeding program.

TREATMENT OF MALNUTRITION

The treatment of severe PEM consists of two phases. The **first phase** requires 24-hour care and typically lasts 1-7 days. Medical care focuses on rehydration, initiation of nutritional treatment and medical treatment. Malnutrition is associated with increased morbidity and mortality from all diseases. The main causes of death in severe PEM are addressed during the first phase of supplemental feeding programs. These include dehydration, infection, hypothermia, hypoglycemia, cardiac failure and severe anemia. Nearly all children suffering from severe PEM are suffering from infection. The most common infections encountered are respiratory tract infections, urinary tract infections, measles, gastrointestinal infections, malaria, skin infections and septicemia (bacterial infections of the blood).

The **second phase** of treatment for PEM can be structured as an outpatient, or day care, intervention. This phase focuses on transitioning to the social environment and completing medical treatment and nutritional rehabilitation. After stabilization during the first phase, children are able to tolerate larger caloric intakes.

Acute Phase

Fluids must be given cautiously. Use oral rehydration in frequent, small amounts whenever possible. Monitor the patient's weight, urine frequency, pulse and respiratory rate. Development of eyelid edema or pulmonary crackles may indicate that the child is overhydrated. Children with PEM are often given multiple drugs for concurrent infections. There is evidence of impaired drug metabolism in malnourished children and some antibiotics impair intestinal absorption of nutrients. For example, aminoglycoside antibiotics impair absorption of amino acids; sulfa drugs delay gastric emptying. Before giving medications, the clinician should ask, "How may these drugs inhibit the nutritional rehabilitation of this child?"

Most persons experienced in treating PEM are impressed with the efficacy of milk in the initial weeks of treatment. Other protein preparations are cheaper but have qualitative deficiencies. If possible, milk-based treatment should be used for the first month of rehabilitation. A suggested feeding schedule for the severely malnourished child is as follows:

Day	# of Feedings	Protein
1	12	4.3% dextrose in 1/5 NS
2	12	½ strength milk
3	8	½ strength milk
4-5	6	full strength milk
6 +	6	high energy formula

After the first week, the patient can be switched to a high calorie formula given every four hours, day and night. Intakes of 200 kilocalories/kilogram/day are desirable. High calorie formula containing 40 kilocalories/ounce can be prepared by mixing milk protein formula powders with vegetable oils and sucrose or, preferably, dextrins. The final formula should produce 9-12% energy as protein, 50-60% as fat and 35-45% as carbohydrates.

Refeeding and long-term effects

Each treatment unit must develop a protocol for refeeding that is consistent with the available foods and the available nursing care. Malnourished children recover much better with

oral feedings; essential regeneration and hypertrophy of the intestinal mucosa does not occur with parenteral feeding.

It is important that all supplemental feeding programs be continually monitored for effectiveness. Parameters by which the effectiveness of feeding programs can be measured include attendance rates, mean length of stay, recovery rates, deaths, defaulters and relapse rates. Also, it is important to maintain continued nutritional surveillance of the general population. Using this data, it is possible to calculate the coverage rate of a feeding center. The coverage rate refers to that proportion of children, out of all of those suffering from severe malnutrition, who are participating in the supplemental feeding program.

The long-term consequences of severe malnutrition are devastating to both the individual and the community. During the first half of gestation and the first three years of life, brain development occurs which is crucial to focusing attention and inhibition. These are skills that are integral to planning, problem solving and sound critical judgment. Evidence from many studies suggests a causal relationship between undernutrition and behavioral development. In the seminal work completed by Dr. Janina Galler, one episode of severe malnutrition during the first year of life is associated with subsequent problems in learning and attention by the age of 9 to 10 years. These long-term outcomes of early malnutrition may affect millions of adolescent and adult survivors of malnutrition. Rapid recognition and treatment of malnutrition in CHEs is important in the prevention of these long-term effects.

13 DEVELOPMENT AND MENTAL HEALTH

Man-made disasters are associated with higher levels of developmental and psychological trauma than are natural disasters. War may cause a child to experience the death of a loved one, loss of home and possessions, and relocation from familiar surroundings. This can also occur after natural disasters; however children are more likely to encounter loving adults and assistance immediately after a natural disaster. War results in many children witnessing brutal acts of violence to themselves or to family members. The distress for a child is compounded by the fact that his/her bulwark, the parents, are also experiencing loss, stress, fear and grief. These feelings are transmitted to the child who then feels more vulnerable.

DEVELOPMENTAL RESPONSES TO TRAUMA

Note that these typical responses to disasters may vary according to the culture and prior living situations.

Toddlers

Reaction is often like that of parents
Regression in behaviors
(e.g. may forget toilet training)
Decreased appetite
Nightmares
Muteness
Clinging
Irritability
Exaggerated startle response

School-Age Children

Marked reactions of fear and anxiety
Increased hostility with siblings
Somatic complaints (e.g. stomach aches)
Sleep disorders
School problems
Decreased interest in peers, hobbies, school
Social withdrawal
Apathy
Reenactment via play
Post-traumatic stress disorder

Preadolescents

Increased hostility with siblings
Somatic complaints
Eating disorders
Sleep disorders
Decreased interest in peers, hobbies, and school.
Rebellion
Refusal to do chores or to help
Interpersonal difficulties
Post-traumatic stress disorder

Adolescents

Decreased interest in social activities
Decreased interest in peers, hobbies, school
Anhedonia
Decline in responsible behaviors
Rebellion, behavior problems
Somatic complaints
Sleep disorders
Eating disorders
Change in physical activity
(both increase and decrease)
Confusion
Lack of concentration
Risk-taking behaviors
Post-traumatic stress disorder

POST-TRAUMATIC STRESS DISORDER

The diagnosis of post-traumatic stress disorder (PTSD) is made when the following symptoms persist for more than one month:

Re-experiencing the event through play, nightmares or flashbacks; distress with events that resemble or symbolize the trauma.

Routine avoidance of reminders of the event or a general lack of interest in life.

Increased sleep disturbances, irritability, poor concentration, startle reaction, and/or regression.

Mutism, refusal to speak.

MENTAL HEALTH PROBLEMS

In CHE situations it is important to monitor children and adolescents for symptoms of psychological trauma and to intervene when they occur. Such monitoring can be done via teachers, indigenous healers, community health workers or food servers. It is important to inform these people about the special mental health risks to children and how to help them.

One approach is to talk with parents and caretakers about their children. Do they note significant changes in a child's behavior? Are children confused and upset? If the children are toddlers, do they cry constantly or are they mute? Do they manifest head banging and rocking or other self-stimulatory behaviors? Are they unresponsive to physical contact? Do they show developmental regression? Another approach is to observe children at play. Does the play seem normal? Are children acting out recent events of the disaster? Are children speaking? Individuals who work in CHEs should also pay close attention to signs of severe depression in mothers including lethargy or hyperactivity, inability to care for children, problems sleeping, frequent weeping and loss of appetite. Maternal depression is associated with concomitant symptoms in their children.

THE RESILIENCE PROJECT

Dr. Edith Grotberg defines resilience as a “universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity.” The purpose of the international resilience project is to promote resilience in children around the world. There are interactions between culture and resilience factors. Some cultures are more concerned with discipline and reconciliation; others are more concerned with punishment and guilt. Some cultures expect children to be dependent on others for help in adversity; others expect children to be self-reliant at an earlier age. Parents in some countries maintain close relationships with their children well into adolescence and other cultures do not. Regardless of these differences there are three sources of resilience ideas for children in most stable cultures: “I HAVE, I AM, I CAN.”

I HAVE:

People around me I trust and who love me, no matter what.
People who set limits for me so I know when to stop before there is danger or trouble.
People who show me how to do things right.
People who want me to learn to do things on my own.
People who help me when I am sick, in danger, or need to learn.

In CHE situations children often lose the adult support described under “I HAVE.” This leads to their being overwhelmed by the adversities of CHEs.

I AM:

A person people can like and love.
Glad to do nice things for others and show my concern.
Respectful of myself and others.
Willing to be responsible for what I do.
Sure things will be all right.

In CHE situations children may lack role models for the ideal personal qualities listed. They are at risk for never having the opportunity to develop such qualities and for becoming antisocial adults.

I CAN:

Talk to others about things that frighten or bother me.

Find ways to solve problems I face.

Control myself when I feel like doing something not right or dangerous.

Figure out when it is a good time to talk to someone or to take action.

Find someone to help me when I need it.

In CHEs children may not find respected adults who can help them to do the things listed or to feel secure. They then can have difficulties coping as they grow older because they have not had opportunities to practice problem solving with adult assistance, to develop self-control, or to talk with trusted people about things that bother them.

Even in the CHE setting, resilience can be promoted in children. Any person or staff providing services (I HAVE) can attempt to connect each child to a trusting, loving older person. Any person working with children can praise their accomplishments, show love and empathy, and encourage their hope and confidence (I AM). And any person, especially in educational settings, can help children master skills (I CAN).

MENTAL HEALTH INTERVENTIONS

Factors that improve the mental health of refugee or internally displaced children include:

A return to the security that a stable family offers.

Living in a stable environment that does not change from day to day.

Provision of material needs such as food, water, medical care, and clothing.

Organized education programs.

Some understanding of what has happened and why, especially for the older children.

The opportunity to complete all normal stages of child development.

A belief in the future and the opportunity to influence what happens to them.

Time and opportunity to recover after their experiences and to grieve over deaths of those who were close to them.

The World Health Organization (WHO) has published an excellent manual on mental health of refugees (see the chapter on resources). It provides guidance about how non-mental health professionals can learn to help refugees who are suffering mentally. It includes guidelines for teaching relaxation exercises, simple massage and breathing exercises, as well as ways to recognize serious psychological or psychiatric disorders. It discusses how to involve traditional healers in mental health treatment, how to help victims of rape or torture and how to help the children. The WHO manual emphasizes that mental health records require careful thought. They should reflect the child's culture and should include no information that could threaten or harm the child or the child's family. The United Nations High Commissioner for Refugees (UNHCR) suggests that diagnostic labels should not be given to adults or to children. Records should just describe the behavior. For example, "Child C is often seen crying during the day and is refusing food", or "Child A cannot sit still in school and does not do any work in school."

TENDER LOVING CARE

Children involved in CHEs are at high risk for both physical and psychological sequelae. The consequences may affect their personalities, behaviors, learning abilities and adult work over a lifetime. Some of the negative psychological outcomes can be prevented or mitigated by rapid, early interventions. Most importantly, children need tender, loving care (TLC). The components of TLC involve the whole family and community:

Provide encouragement and support to parents. This can include arranging for home visitors, developing groups for mothers and young children to discuss the new problems of raising children in a CHE setting, and teaching ways to stimulate children in difficult CHE environments. The latter includes how to make toys from local materials. Mothers can benefit from day care programs that provide a few hours of care and stimulation for their preschool children. In day care, children can join in group play activities, including singing, dancing and games that use simple props. We have used empty plastic bottles to make puppets, or grass and sticks to make dolls, etc. In cultures that have traditions of handiwork such as making baskets, musical instruments or sewing, it is helpful to get materials for these activities and offer them to both adults and children.

Support breastfeeding mothers with food, liquid and emotional support so that they, in turn, are able to provide sustenance to their infants. By reducing the stress on lactating mothers, the breast milk supply will improve.

Find reliable 24-hour caretakers for unaccompanied minors, especially for those under school age. The caretakers should be female and can include adolescent refugee girls, volunteers from NGOs, older siblings in families who have lost their parents and elderly women. The caretakers, ideally, should be of the same ethnic group and speak the same language. However, if this is not possible, then a loving person of another ethnic group and speaking different language, is preferable to no caretaker. Providing such caretakers is urgent, especially for children under two years. Infants and toddlers do not survive in CHEs if they lack 24-hour loving, attentive caretakers. Encouragement, recognition and support must be provided to the caretakers as well. Supervising health workers should observe caretakers to be certain that they are not abusing the children under their care.

Mental health support includes feeding. Young children must be fed frequently. Ideally, toddlers should be fed 4-5 times a day. The nurturing associated with feedings is especially important to the youngest children in CHEs.

TLC includes bathing children, playing with them, talking with them, carrying those who cannot walk, helping them with toileting in a sanitary manner and maintaining routines as much as possible.

Organized efforts to identify local leaders, religious leaders and healers are important. Such individuals, who are respected and who know the language and culture can be helpful in addressing and reducing the emotional problems of children.

Many children are helped by the opportunity to talk about what they have witnessed, to act out what they have experienced or to make drawings. Caretakers should not interfere with a child's repetitious post-traumatic talk and play, unless it is dangerous.

Adolescents involved in CHEs can benefit most from being involved in school and community activities. A sense of responsibility and purpose leads to an improved sense of personal competence, mastery and hope.

14 ROUTINES FOR CHILDREN

Children need to have some certainty and predictability in their CHE situations. They experience terrible disruptions and losses when they leave familiar surroundings and become refugees. Those who have been separated from their family suffer the most. Provision of routines provides some stability and reduces anxiety. Routines for children should be planned as carefully as the distribution of food in CHEs.

Routines for children may focus on feeding (especially important for the very young), play, school, religious or cultural activities, and work. Children and adolescents are often perceived as being in the way, as just hanging around, or as non-contributors in CHEs. They can, in fact, help in a variety of tasks, such as caring for young unaccompanied minors, gathering wood, distributing water, working in gardens, making food, assisting in health clinics and making clothing. Adolescents can prepare entertainment programs for younger children. Depending on the culture, these may include pantomime, puppets, storytelling or musical programs.

There are often teachers, coaches, artists or musicians among refugee adults. When identified, they can be enlisted to help with organized programs for children. Adults should recognize the importance of role modeling in all situations, including CHEs. They can provide surrogate parenting for children without parents. Adults should make sure that customary holidays are recognized and that festivities include children if culturally appropriate.

Schools can be conducted in most refugee settings, once the emergency phase has passed. Although books, chalkboards, paper and pencils may be unavailable, teaching can occur via voice, music, acting, use of leaves, stones or twigs to represent numbers for math problems, and other creative means.

Routines to be considered and established by CHE workers include:

- Meals
- Stores
- Schools
- Religious teaching
- Sports
- Music
- Bathing, washing clothing
- Holidays and festivals

In summary, establishment of routines is reassuring to children in CHE situations and should be a high priority in planning for them.

15 IMMUNIZATIONS

Immunization protects against some of the most serious childhood diseases. Included in the list of vaccine preventable diseases are measles, diphtheria, pertussis, tetanus, polio, tuberculosis and meningitis. The World Health Organization (WHO) calculated that in 1992, immunization prevented 2.9 million deaths from measles, neonatal tetanus and pertussis, and prevented 563,000 cases of paralytic poliomyelitis. Through immunization, children are protected against specific diseases and their dangerous complications. A child who is not immunized is more likely to become undernourished, disabled and die.

In emergency situations, the role of immunization must be prioritized in conjunction with the entire health situation. During the emergency phase, defined as that time during which the crude mortality rate (CMR) is higher than 1/10,000/day, the most common cause of disease and death is infection, often aggravated by malnutrition. Most of these early infections cannot be effectively prevented by immunization. Also, mass immunization programs consume a significant portion of available resources, which may be better utilized elsewhere during the emergency phase. In general, mass immunization programs during the early phase of a disaster are not recommended. The exception to this rule is measles vaccination or an epidemic such as meningococcal meningitis. These situations are always high priorities.

After the emergency phase has ended, an immunization program should be established as an integral part of the long-term health program. Each situation must be evaluated to determine which diseases take priority, what is the magnitude of the problem and what are the vaccination capabilities. Due to the substantial resources required, immunization should be targeted against the diseases that cause the highest potential morbidity and mortality. Ideally, immunization programs should be instituted prior to the existence of an epidemic. Meningitis is the exception to this rule. In order to determine the size of the group at risk for developing disease, the degree of existing immunity must be determined. Existing immunity may be secondary to previous exposure or prior immunization. Efforts should be made to identify groups who are at higher risk of disease, such as those who are malnourished, immunocompromised or in close contact.

The target population of an immunization program should be tailored to the individual situation. Although routine immunization programs are ideal, mass immunization programs offer a more effective strategy in emergency situations. The following is a practical schedule for *mass immunization* as proposed by the International Committee of the Red Cross (ICRC):

- BCG for children under one year
- Measles for children aged 6 months to 5 years
- DPT for all children under 5 years
- Polio for all children 5 years
- Tetanus for women of childbearing age

Note: the definition of “childbearing age” must be culturally determined.

Routine immunization programs should be based on the WHO recommendations listed below. Efforts should be made to stay within the framework of each country’s Expanded Programme of Immunization, which is based on the WHO recommendations:

- BCG at birth
- Polio at birth and then with each DPT
- DPT at 6, 10 and 14 weeks
- Measles at 9 months

There are very few contraindications for vaccination. According to the WHO “routine vaccinations should be administered unless the child’s condition makes hospitalization necessary.” Vaccination of immunocompromised children is frequently avoided. However, in developing countries where the chance measles and polio infection is high, the risk of vaccination must be carefully weighed against the risk of acquiring disease. At present, BCG is contraindicated in children presenting with clinical signs of AIDS; all other immunizations are indicated. Fear of interruption of the vaccine schedule should not preclude initiation of immunization programs. Interruptions will not lead to the need to repeat the entire schedule. **Malnutrition is not a contraindication for vaccination.**

All immunization programs must be continually evaluated. Careful records should be kept to determine the number of vaccines given, the number of children immunized and the preservation of the cold chain. The cold chain requires that vaccines be kept continuously refrigerated, even in transit, in order to maintain potency. Immunization effectiveness can be measured through a comparison of the incidence of disease in children immunized vs. children not immunized. In order to facilitate evaluation and to best serve the children, all children should be given an immunization record.

The immunity conferred to children through breastfeeding should not be underestimated. Human milk protects and promotes infant health by augmenting the child’s immature immune system. Efforts to support lactating women are a key component of any immunization program.

MEASLES

- Highly contagious respiratory disease
- Symptoms: rash, high fever, cough, runny nose, red watery eyes, lasts about a week
- Common complications: ear infection and pneumonia
- Rare complication: encephalitis -- associated with convulsions, deafness or mental retardation, affects roughly 0.2 % of all infected children
- Mortality: 1- 2 per thousand
- **Assigned highest priority early in emergency phase**
- Target populations:
 - emergency phase – all children ages 6 months to 5 years upon arrival in camp
 - long-term refugee health program – children ages 9 months to 5 years
 - outbreaks – change lower limit to 6 months of age
- Children receiving first immunization between 6 and 9 months require a second immunization as soon as possible after 9 months

- If there is insufficient vaccine available to immunize all children, target high risk groups as follows:
 - ❑ Undernourished or ill children on inpatient wards or enrolled in feeding centers
 - ❑ All children ages 6 to 23 months
 - ❑ All children ages 24 to 59 months
- Based on surveillance data during outbreaks, individuals older than 5 years of age may require immunization
- Additional interventions for children with clinical measles:
 - ❑ Monitoring of nutritional status
 - ❑ Enrollment in feeding programs
 - ❑ Vitamin A supplementation
 - ❑ ORT for diarrhea
 - ❑ Antibiotics for acute lower respiratory infection

DIPHTHERIA

- Respiratory disease spread by coughing and sneezing
- Gradual onset of sore throat and low grade fever
- Complications:
 - ❑ Development of membrane in throat which may interfere with swallowing or breathing
 - ❑ Heart failure
 - ❑ Paralysis

PERTUSSIS

- Respiratory disease spread through intense coughing
- 3 clinical stages
- **Catarrhal** (1-2 weeks) – gradually increasing cough, rhinorrhea, fever and anorexia
- **Paroxysmal** (2-4 weeks) – paroxysms of coughing (with a whoop) triggered by eating, drinking, talking and crying, also associated with blue spells and vomiting
- **Convalescent** (1-2 weeks) – decreasing severity of cough and vomiting, may persist for several months
- Complications :
 - Bronchopneumonia
 - Encephalitis
 - Neurologic sequelae

POLIO

Spread through poor hand washing (fecal – oral transmission)

Symptoms: fever, sore throat, nausea, headaches, stomach aches, possible neck and back pain or stiffness

Complications:

Paralysis
Death

TETANUS

Neurologic disease caused by bacteria entering the body through a break in the skin. The bacteria produce a toxin that attacks the nervous system.

Early symptoms: headache, irritability, jaw & neck stiffness

Late symptoms: severe muscle spasms in the jaw, neck, arms, legs, back & abdomen

Frequently occurs in the neonatal form in less industrialized countries due to lack of maternal immunization. In 1993, neonatal tetanus caused more than 500,000 infant deaths.

All woman of reproductive age need a complete schedule of tetanus toxoid vaccination.

TUBERCULOSIS

Spread by respiratory secretions and coughing.

Infection may be active or inactive.

Symptoms of active disease include weight loss, fevers, night sweats, cough productive of mucous or blood, chest pain, swollen lymph nodes.

Vaccination produces partial immunization that prevents the development of serious complications, such as meningitis and dissemination to bone, skin and other organs.

MENINGOCOCCAL MENINGITIS

In areas where epidemics of meningococcal meningitis are known to occur, surveillance for meningitis is critical. The requirements for surveillance include a standard case definition, identified laboratory facilities with supplies and an established reporting network.

As soon as an outbreak of meningococcal meningitis is suspected, high priority must be placed on identifying its etiology, sero-group and antibiotic resistance. Cerebral spinal fluid (CSF) or petechial washings must be transported to a pre-identified laboratory with adequate capabilities for analysis. Endemic rates of meningococcal disease vary based on geographic area, season and age. In a refugee camp population, a doubling of cases from one week to the next over a period of three weeks may be used as a rough indicator of a meningitis outbreak. After an outbreak has been confirmed by laboratory analysis, a presumptive diagnosis may be made based on the presence of clinical symptoms and cloudy appearing CSF. Clinical symptoms include fever, severe headache, neck stiffness, vomiting and photophobia (pain with viewing light).

Meningococcal vaccination is indicated during an outbreak. Due to the short period duration of vaccine protection in children, preventative vaccination is not effective. Immunity is achieved within 1 week of vaccination. Prior to initiating a vaccination campaign, the following criteria must be met:

- Laboratory confirmation of disease
- Identification of sero-group A or C
- The disease must affect children > 1 year of age (for group A) or > 2 years of age (for group C)

If possible, household contacts of identified cases should receive first priority. Due to the tendency of cases of meningococcal meningitis to cluster geographically, mass immunization campaigns are most efficient if started in the areas affected first. In general, vaccination of children and young adults between ages 1 and 25 years will cover at risk populations.

In a refugee setting, mass chemoprophylaxis has proven to be ineffective. It is not recommended. The gold standard of treatment is intravenous (IV) penicillin. If this is not feasible, intramuscular (IM) injections of long-acting chloramphenicol have been found to be effective. A second dose of chloramphenicol will be required in 25% of cases. Patients require inpatient monitoring to determine the need for a second dose.

VACCINE INJECTION TECHNIQUE

The route and site of vaccine injection affect vaccine efficacy. Diphtheria, tetanus and pertussis vaccines should be administered intramuscularly. Inactivated polio vaccine (IPV), meningococcal and measles vaccines should be injected subcutaneously. Injection technique and needle length are both important to proper vaccine delivery.

Injectable vaccines should be administered in a site as free as possible from the risk of local neural, vascular or tissue injury. Preferred sites include the anterolateral aspect of the upper thigh and deltoid area of the upper arm. These sites are good for vaccines administered either subcutaneously or intramuscularly. The WHO technique for intramuscular injection involves stretching the skin flat between the finger and thumb, and pushing the needle down at a 90 degree angle through the skin. This technique should be used in combination with a 16 mm (5/8-inch) needle for effective intramuscular delivery.

VACCINE HANDLING AND STORAGE

Improper vaccine storage conditions can lead to vaccine failures. Certain vaccines, such as oral polio and measles, are very sensitive to increased temperature. Others vaccines are sensitive to freezing. The latter include diphtheria, tetanus, pertussis and IPV. Recommendations for the handling and storage of vaccines are summarized in the package insert for each product. All personnel involved in vaccine handling must be familiar with the standard storage procedures to minimize vaccine failure.

WHO publications and the American Academy of Pediatrics *Red Book* contain detailed guidelines regarding the personnel, equipment and procedures needed to run an effective immunization program.

16 MEDICAL ISSUES

The medical needs of children in complex humanitarian emergencies (CHEs) vary depending on the area of the world, their prior immunizations, the season and the level of sanitation. In general, the primary medical risks relate to malnutrition and to infectious diseases. In many situations children are at risk for injuries related to unexploded ordnance, traffic accidents, dog bites, physical abuse and/or flying debris (as in an earthquake or tornado). Some basic resource books that are helpful in addressing pediatric medical needs are listed in the last chapter of this manual.

THINGS TO KEEP IN MIND

Traditional treatments. In the United States about a third of families regularly use alternative or complementary medical treatments. In the less industrialized world, eighty per cent of health care is provided through traditional means. This includes herbal remedies, various soil preparations, healers who may use both oral and spiritual interventions, bone setters, acupuncture, chi kung practitioners, moxibustion and hundreds of others. Families who flee in CHE situations will often bring their own traditional medications with them. In refugee settings, traditional healers often provide much care. It is important for relief workers to learn who are the traditional healers and to work collaboratively with them. This includes showing them respect, engaging them in health projects, learning from them and teaching them some interventions such as the use of oral rehydration solutions. It is important to know the difference between genuine traditional healers and quacks. If possible, it is also important to know about the types of plant-derived treatments. There may be dangerous interactions between herbal treatments and prescribed medications.

Growth charts are for the whole world. An unfortunate rationalization for the acceptance of stunting as normal is the common belief that standard growth charts are correct for western populations only. There are a few exceptions, but, in general, children from all ethnic groups should fall within the NCHS growth standards.

Prevention should be concurrent with acute care. If you treat many children with the same infectious disease, ask about immediate interventions that can prevent additional cases. For example, if there are no defecation fields or latrines, can they be built? Can water be chlorinated? Can immunizations be given?

Cross-cultural issues affect medical care. If you do not know, ask questions about cultural taboos related to examinations, medications, foods, etc.

Local practitioners often know a lot about treating children in their environments. Ask them for advice and work with them.

Children, in general, fear strangers who offer medical care. In some cultures children do not express their fear directly as many western children do. The child health worker must recognize that fear may be present and may condition a child negatively for a lifetime. In spite of the urgency, the misery, the crisis, still do what you can to mitigate the fear of children. Carry a few toys, play with children and examine children while parents are holding them.

The milieu of a CHE makes children more susceptible to infectious disease. Anxiety, depression, malnutrition, poor sanitation and exposure to new organisms all increase the likelihood that children will get sick.

Supportive care in a pediatric hospital is not assured. One must consider how to insure that intravenous lines will be tended, medications given on schedule and to the right child, and that feedings will be given to ill children. If parents are not available to supplement nursing staff, special arrangements must be made for ill children.

Malnutrition affects pharmacokinetics in children. For example, acetaminophen is not recommended in malnourished children because malnutrition reduces the ability of the liver to degrade acetaminophen.

Drugs stored under incorrect conditions may lose potency. The majority of medications stored under ambient conditions in climates with high humidity and temperature will not be effective after two to three months.

Many drugs have negative side effects with respect to nutrition. These side effects may be significant in children whose nutritional status is borderline. For example diphenhydramine interferes with amino acid transport in the small intestine.

Treatment of intestinal parasites is not a priority in an acutely ill child. The benefit of antihelmintics and purges for intestinal parasites is not worth the risks of toxicity and bowel obstruction or volvulus. Use these drugs after the child's general status has improved.

Interpreters vary in ability. Many interpreters who offer themselves in these urgent situations have no medical background. If their social status is different from that of the family being interviewed, the family may be reluctant to give information. Provide training to interpreters, if possible.

Ready-made packets of oral rehydration powder or high protein refeeding mixtures may be unavailable. Be prepared to make these treatments with local ingredients. In NW Pakistan, for example, oral rehydration solutions are made from wheat flour and salt. In NW China they are made from millet, sugar and salt.

Reliable measuring tools are helpful. It is possible to construct a height and length board out of smooth wood. 25 kilogram hanging Salter scales should be available in CHE situations. If possible, young children should be suspended in a basket rather than the uncomfortable hanging pants or slings.

Blankets and clothing are part of treatment. Young children die from cold and exposure in cool climates.

Disposable equipment is reused. Syringes, IV tubing and gloves are often reused in CHE situations. Resterilization of disposable equipment may not be possible.

Remember to bring your own examining equipment. In CHE situations the child health practitioner should provide an otoscope, ophthalmoscope, blood pressure cuff (child size), small percussion hammer and stethoscope. It is also wise to carry a child sized ambu bag with several masks, a small kit with emergency drugs for children, a few intraosseous trocars and plenty of disposable gloves.

What special information do you need from the family?

In addition to the usual information about acute conditions, find out how long it has been since the children left their home. Did they witness or experience violence? Did they lose a family member? If the children are able to speak, are they speaking normally since the disaster? Who is the usual caretaker? (Sometimes it is a young sibling.) Do the children receive any traditional treatments or medicines? Have the children been passing worms? Are the parents ill?

How do you deal with 100 or more sick children in a single day?

Take time to plan for a patient flow and triage system. If there are no trained individuals to help you, train a few people to weigh, measure, wipe off the examining area, count out pills, clean wounds, explain ORT to mothers, etc. After you have organized a system, move yourself as little as possible. Let the child be brought to sit on the caretaker’s lap on a chair next to yours or sitting on the ground next to you, or let the infant be laid on the table or counter in front of you. If you can speak the language, this greatly increases efficiency. The requirement for an interpreter slows the process. The foreign examiner should learn some basic greeting phrases immediately and make efforts to learn some basic questions related to a medical history. In most of these situations, the examiner will hear the same questions asked scores of time each day and can learn to both ask the questions and comprehend the responses.

SIGNS AND SYMPTOMS

Acute signs and symptoms may represent tropical, infectious or parasitic diseases in children. While one often lacks laboratory and radiological tools to facilitate diagnoses, it is helpful to think of both usual and unusual differential diagnoses that might explain signs and symptoms in a sick child.

Sign or Symptom	Think of:
Buboes(large lymph nodes)	Plague
Cardiac failure	Beri-beri, Chagas’ disease, diphtheria, Lassa fever, nematode myocarditis, pericardial amebiasis.
Coma, Semicoma	Cerebral malaria, TB meningitis
Cough, Tachypnea	Sleeping sickness(trypanosomiasis) Melioidosis, tuberculosis, hydatid lung cyst, pulmonary phase of nematode migration
Conjunctival Injection	Marburg and Ebola virus disease, Measles
Diarrhea, dehydration	Malaria, melioidosis
Fever of unknown origin	Malaria, typhoid, tick fever, rabies,

Erythema Nodosum	Lassa fever, trypanosomiasis
Gray Skin	Leprosy
Hallucinations	Leishmaniasis (kala azar)
	Malaria, Japanese B encephalitis, rabies, Lassa fever, Venezuelan equine encephalitis
Headache with paresthesias	Eosinophilic meningitis
Hematuria	Schistosomiasis, bladder stone, Tuberculosis
Hepatomegaly	Ameboma, kala azar, flukes, hepatitis
Intestinal obstruction	Nematode bolus, amebiasis
Iritis, keratitis	Onchocerciasis
Jaundice	Malaria, typhoid, schistosomiasis, kala azar
Malnutrition	Tuberculosis, AIDS, kala azar
Nasal obstruction	Myiasis
Nephrotic syndrome	Malaria, leprosy
Palpebral edema	Chagas' disease
Paralyses	Polio, schistosomiasis, konzo (cyanide poisoning via cassava) tuberculosis
Petechiae, purpura	Dengue shock syndrome, Korean hemorrhagic fever, Ebola fever, typhus
Pneumonia	Melioidosis, tuberculosis
Splenomegaly	Kala azar, malaria, typhoid
Seizures	Tetanus, cysticercosis, malaria, rabies, TB meningitis, eosinophilic meningoencephalitis, Japanese B encephalitis
Shock Syndrome	Dengue, intestinal perforation due to typhoid, Ebola fever, malaria
Skin nodules/ulcers	Onchocerciasis, leprosy, anthrax melioidosis, typhus, cutaneous leishmaniasis, gnathostomiasis, dracontiasis
Stroke	Cysticercosis
Transient swellings	Filiariasis (loa loa)

DIFFERENTIAL DIAGNOSES

Regardless of the area of the world, the following conditions may explain observed signs and symptoms:

- AIDS
- Acute appendicitis
- Bacterial meningitis
- Cardiac failure
- Cat scratch disease
- Collagen-vascular diseases such as rheumatoid arthritis
- Infectious hepatitis, A, B, C, E
- Malignancies
- Metabolic diseases such as hypothyroidism or diabetes
- Micronutrient deficiencies, e.g. Beri beri
- Pertussis
- Physical or sexual abuse
- Poisoning
- Rabies
- Roseola
- Scabies
- Streptococcal Pharyngitis
- Syphilis
- Tetanus
- Toxic reaction to medications
- Tuberculosis
- Urinary tract infections

INFECTIOUS DIARRHEAL DISEASES

Amebiasis: Stools often contain blood and are foul smelling. Children are not as ill as with acute bacillary dysentery. Progression of symptoms is usually gradual over 3-4 weeks. Abdominal pain is common. Some children have intermittent constipation and diarrhea. Amebic abscesses may become evident months after initial diarrhea.

Campylobacter gastroenteritis: Fever, diarrhea and abdominal pain are primary symptoms. Vomiting occurs in a third of children. Half of children develop blood in stools several days after onset of the illness, which usually lasts a week. Stool odor is foul.

Cholera: Stools are profuse and often have a whitish color (“rice water”). Children rapidly become dehydrated and develop profound shock.

Escherichia coli: Various types include *Enterotoxigenic E coli* (watery stools, may cause severe dehydration in infants), *Enteroinvasive E coli* (dysentery with blood and pus, fever, nausea, cramps, resembles shigella), *Enteropathogenic E coli* (green, slimy stools without blood), *Enterohemorrhagic E coli* (begins with nausea, vomiting, abdominal pain and watery diarrhea that progresses to bloody diarrhea over several days. Note: classic hemolytic-uremic syndrome follows EHEC enteritis in 10-50% of patients).

Giardiasis: The onset of illness may be slow. Stools are often yellow, bubbly, and malodorous, but mucous and blood may be present. Symptoms often include anorexia, abdominal cramps, flatulence, belching and nausea. Some children have intermittent constipation.

Rotavirus gastroenteritis: Vomiting and large amounts of bright green, watery stool are most common. Fever occurs in some children.

Salmonella diarrhea: vomiting and moderate amounts of slimy, foul smelling stool occur. High, prolonged fever occurs in some children. Stool sometimes contains blood and mucous.

Shigella gastroenteritis: Fever is present. Vomiting is rare. Stool volume is small and odorless, but stools contain blood and mucous. Shigella infection can cause seizures.

Yersinia enterocolitica gastroenteritis: Younger children have diarrhea with or without blood, fever and vomiting for about two weeks. Older children may have a clinical picture similar to appendicitis.

Treatment for Diarrhea: Most important is to provide fluids for rehydration. Breast milk is recommended for infants at normal levels of consumption during diarrhea. Children should be provided solid foods such as rice, wheat noodles, bananas and/or carrot soup, in addition to rehydrating fluids. Specific drug treatment is recommended for amebiasis, campylobacter, EPEC, ETEC, EIEC, giardiasis and shigella. Anti-motility drugs should not be used for any type of diarrhea in children because they prolong diarrhea and excretion of the infecting organism.

Care for the child health provider: When working with children who have diarrhea, it is crucial that caretakers wash hands frequently and avoid getting instruments contaminated with stool. Shigella has been cultured for as long as 17 days after inoculation on a toilet seat or medical instrument. If handwashing facilities are not available, carry purell or lysol lotion for hand disinfection.

17 OBSTETRICS AND NEWBORN RESUSCITATION

PLANNING and PREPARATION

Establishing appropriate policies and care paths for pregnant women and newborns in complex humanitarian emergencies (CHEs) can prevent a significant amount of morbidity and mortality. In all CHE situations, pregnant women, post-partum women and newborns must be identified as vulnerable populations. These women and infants should receive priority access to medical care, transportation and secure rations. Policies should be established to promote breast-feeding; lactating women should receive additional rations due to their increased caloric needs. Once in the late or recovery phase of a CHE, all women of childbearing age should receive a tetanus booster to prevent neonatal tetany.

Health care workers should become aware of local resources, birthing customs and cultural practices of newborn care. In many cases, the local population will be able to provide additional birthing resources. These resources may be best identified with the help of community leaders. Health care workers should identify local hospital and clinics, midwives, traditional healers and traditional birth attendants. All of these elements can be incorporated into birthing algorithms.

Birthing algorithms should be prepared in advance, so that they are available as a guide at the time of labor. The majority of births can be successfully completed in the field with minimal intervention from health care workers. Health care workers should be able to identify high-risk births, realize the capabilities of the field hospital, realize the capabilities of referral hospitals and have a safe, reliable method of transportation identified in advance.

DANGER SIGNS IN PREGNANCY

All pregnant women should be monitored for complications. The following list can serve as a screening tool to identify women who need more careful evaluation and possible intervention:

- Headaches
- Vaginal bleeding
- Fever
- Swelling of face or hands
- Blurred vision
- Abdominal pain

PREPARATIONS FOR BIRTH

Health care workers should make certain that all of the basic equipment for newborn delivery and resuscitation are assembled and, above all, CLEAN prior to delivery. The following is an example of a basic equipment list:

- Two pieces of string (each roughly one foot long)
- A razor blade or sharp scissors
- A bar of soap
- Four pieces of cloth (one to wash the infant's eyes, one to wipe the infant, one to wash the mother's genitals after birth, one to clean up after the birth)
- A bulb suction
- Neonatal face mask
- Neonatal ambu bag
- Gentian violet
- Laryngoscope and endotracheal tube for removal of meconium
- Gloves

The most important aspect of all births is to maintain cleanliness. The razor blade and the strings must be boiled and cooled. The strings should be left in the water until used. Health care workers should wash their hands and forearms with soap and water, wash the mother's genitals and wash their hands again. When available, gloves should be worn and universal precautions followed to protect the infant, mother and health care worker.

STAGES OF LABOR

During the first stage of labor, the muscles of the uterus tighten and relax in order to push the baby down and out, causing the cervix (the opening of the uterus) to open. During this stage, the mother experiences increasing pain in her lower abdomen and back. Bloody mucous and/or a gush of blood from the vagina is normal. The pains come at regular times and are accompanied by hardening of the abdomen. The mother should rest between the pains. **Vaginal exams are not necessary; they increase the risk of infection and may cause discomfort to the mother.**

During the first stage of labor, the involvement of a traditional birth attendant can be priceless. To help during this stage, the health care worker can:

Suggest that the mother frequently change position to be more comfortable (walking, squatting, moving from side to side, using hands to pull knees up)
Talk to the mother and reassure her that everything is okay
Make sure that the equipment is ready to go

The second stage of labor is when the baby passes down the birth canal and out the vagina. During this stage, pains will come every two minutes or less. **Do not leave the patient** when the pains are strong and coming often. Rectal pressure increases similar to the pressure of a bowel movement. The mother wants to push. Coach the mother to push when she feel pain and rest when the pain stops. When the mother has pushed several times, the head of the baby will stay in the opening.

Put your hand on the baby's head to stop it from coming out too quickly. In most cases, the baby's head will be face down during delivery. Put your hand against the part of the mother where the baby's face will come (below the vagina) to support the tissues and support the descent of the head. Take the baby's head in both hands and **lower it down very carefully** to help the top shoulder come out first. Then raise the head to ease the bottom shoulder up and out. If the shoulders do not come out easily, first call for help and then open mother's legs as wide as possible. Try and rotate, or corkscrew, the infant by sliding your hands along the shoulders (not the head). If this fails, you may have to cut an episiotomy, which is a small, midline incision of the mother's tissue from the posterior vaginal opening towards the rectum. If the above steps fail, you may have to reach in and try to deliver the posterior arm. Put your hand on the bottom shoulder blade and "sweep" the arm across the baby's chest. **NEVER, NEVER, NEVER PULL ON THE BABY'S HEAD!!!**

Using the boiled strings, tie the umbilical cord in two places close to the infant, about an inch apart. Using the boiled razor or scissors, cut the cord between the two knots. Protect your eyes, since blood may spurt from the umbilical cord when cut.

CARE OF THE NEONATE

Place the baby on the mother's abdomen. This will provide warmth and facilitate bonding. Dry the infant vigorously and remove the wet towel. Position the infant and suction the mouth, then nose. Wipe the infant's eyes with a clean cloth. If available, place topical tetracycline or a topical macrolide antibiotic ointment in the infant's eyes. In many settings this will not be available. Allow the infant to breastfeed.

When labor has been stressful, the infant may have had a bowel movement prior to delivery. When this happens, the birthing fluids may become stained dark yellow to black and thicken in consistency; this is referred to as meconium. If the neonate breathes this fluid (meconium) into their lungs, they may develop difficulty breathing and/or pneumonia after birth. Health care workers should monitor the color and consistency of birthing fluids throughout labor. **If any sign of meconium is noted, the health care worker must suction the infant's nose, mouth and pharynx prior to delivering the shoulders.** If very thick meconium is noted prior to delivery, health care workers should be prepared to intubate the infant and suction meconium from the airway prior to the first cry. This procedure requires some source of suction and may pose an obstacle in the field. Due to the risk of infection to the health care worker, we do not recommend that oral suction be used.

Health care workers must be cautious when considering the use of intubation for more aggressive resuscitative measures. When creating birthing algorithms, local capabilities must be known in advance. If there is no system in place that can reliably provide advanced life support, then intubation of a newborn may only prolong suffering for the family and the infant. Additionally, health care workers must be sensitive to cultural norms and expectations.

THE THIRD STAGE OF LABOR

The third stage of labor involves the delivery of the placenta. The placenta should come out easily. Never pull on the cord. Delivery of the placenta can be slow and may take up to an hour. When the placenta is delivered, it must be examined to see if it is complete. If the placenta does not come out in an hour or if it looks torn with missing pieces, this is not normal; transport to the hospital is the best option.

Some bleeding after delivery of the infant is normal, usually about two to three cups. It is useful for health care workers to practice estimating bleeding by spilling water onto cloths. **It is not normal for the mother to lose more blood after the placenta is out.** Health care providers can try to stop the bleeding through a number of methods:

- Massage the top of the uterus
- Pitocin – 10 mg IM (may be repeated up to 3 times)
- If available, follow with Methergine – 0.2 mg IM
- Consider intravenous fluids
- Plan for rapid transport to a hospital, if available

18 LANDMINES

The landmine crisis is well recognized as a global catastrophe. Although determining exact statistics from individual regions is difficult, the following estimates from the International Committee of the Red Cross (ICRC) illustrate the scope of the problem. Over the past 20 years, hundreds of thousands of people have been killed or maimed by landmines. Each day, landmines kill 30 people and maim countless others. In Cambodia alone, there is an estimated 1 amputee per 236 people. According to United Nations (UN) estimates, it would take 1,100 years to clear the 110 million active landmines that are in place in 64 countries. Prior to the Ottawa convention to ban landmines in 1997, an additional two million mines were being laid annually.

ANTI-PERSONNEL LANDMINES

Anti-personnel landmines were designed to cause more destruction than any other weapon created. They are scattered in areas of combat in order to protect military facilities and restrict enemy movement. Although some mines are designed to result in 100% mortality, many mines are designed to severely injure soldiers. When a soldier is injured by a mine, several people are required to carry, evacuate and care for him. Landmines drain enemy resources and destroy combat morale. Witnessing a land mine injury can cause acute and long-term psychological trauma.

Due to the indiscriminate nature of anti-personnel landmines, civilian populations experience the destructive force of landmines both during and after a conflict. Landmines remain for decades, destroying croplands and devastating communities. Beyond the acute injuries inflicted, landmines diminish future productivity through blindness, deafness and loss of limbs. When a land mine survivor is the head of a family, his entire family suffers financially and emotionally. The psychological trauma caused by landmines is significant. No one can measure the long-term effects of the terror and hopelessness they create.

CHILDREN and LANDMINES

The number of civilian, non-combatant land-mine casualties varies based on region, type of mines and political situation. ICRC database estimates that at least 20 percent of landmine victims are children. There are many reasons why children in complex humanitarian emergencies (CHEs) are at particular risk of falling victim to anti-personal landmines. CHEs usually create areas of extreme overpopulation. Children often have no safe places in which to play. In this situation, a poorly marked and desolate landmine field becomes an appealing playground...a wide open field to run in or the perfect building for hide and seek. Many times, children find the actual mines to be an attractive toy. This is particularly true when the mines are designed to look like toys. The unpredictability of detonation contributes to the problem. A group of children may play catch with a mine hundreds of times before it explodes.

In order for health care workers to decrease the risk of landmines to children, fundamental precautions must become engrained in child behavior. One of the most beautiful, and dangerous, qualities of childhood is the ability to be completely absorbed in fantasy. When children are playing, they do not remember school lessons. Thus, land mine education must result in learned behaviors that children consistently display. This can be accomplished by repeated teaching games that are designed to take advantage of children's wonderful imaginations. One approach is to use bright and colorful cartoons of children in unsafe, landmine situations as story telling guides. Then allow the children to tell you, and each other, the story in the picture. By subtly guiding the child through the exercise, health care providers can effectively communicate the morale of the story. This type of interaction also provides children with an outlet to express any fears or anger they may have related their experiences with landmines.

Health care workers should educate themselves on the local existence of landmines and how they are marked. Although no universal marker for mine fields has successfully been implemented, every community develops its own system for marking these areas. These markers must be incorporated into the teaching games so that children become very familiar with them. Children should learn about other markers that suggest the presence of landmines, such as abandoned or exploded cars in fields or shelled out, empty buildings. Children can rehearse scenarios of what to do once in a landmine field.

FIRST AID and ADVOCACY

Prompt first aid is the most effective step in maximizing the medical outcome. If applied incorrectly, first-aid measures may lead to medical complications. In areas with known mine fields, health care workers need special training in these measures: stopping obvious external hemorrhage, appropriate use of intravenous fluids and antibiotics, wound immobilization and pain management. When possible, a referral system should be established well in advance. Once stabilized, patients should be transported to the nearest hospital.

In order for the appropriate resources to be available, health care workers must serve as advocates for those injured by or in danger from anti-personnel landmines. The magnitude of the problem must be identified and made known. Hospitals need to be supported with adequate medical supplies, staff and training; medical systems must be remodeled to include extensive rehabilitation and counseling services; landmine survivors need to be empowered to function in society. Without these interventions, the community will suffer greatly. The only effective solution to the worldwide landmine catastrophe is a total ban on the production, export and use of anti-personal mines. Such a ban is outlined in the Ottawa treaty signed by over 120 nations in December 1997.

19 INTERNATIONAL LAW

“All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.”

*The Universal Declaration of Human Rights,
The United Nations, Article 1*

Human rights and humanitarian law play an important role in complex humanitarian emergencies (CHEs). Because of the chaos and breakdown inherent in CHEs, these rights and laws may be the only guide for human conduct that remains following a disaster. They are followed imperfectly on a global level. Yet, each individual effort to adhere to these principles contributes to the goal of worldwide respect for human rights.

There is an important difference between human rights and humanitarian law. The former is a broad set of principles regarding the inherent dignity and respect due to all mankind in all circumstances. The latter is a series of laws that attempt to protect human rights in the context of armed conflict. More recently, attention has focused on the issue of children in the context of human rights.

HUMAN RIGHTS

The Universal Declaration of Human Rights as affirmed by the United Nations (UN) can be read on the worldwide web at <http://www.asociety.com/udhr.html>. A few key articles are listed here:

Article 2. “Everyone is entitled to all the rights and freedoms set forth in this declaration, without any distinction of any kind, such as race, colour, sex, language, religion, political, or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty.”

Article 5. “No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.”

Article 14. “(1) Everyone has the right to seek and to enjoy in other countries asylum from persecution. (2) This right may not be invoked in the case of prosecutions genuinely arising from non-political crimes or from acts contrary to the purposes and principles of the United Nations.”

Article 25. “(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control. (2) Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.”

INTERNATIONAL HUMANITARIAN LAW

Better known as the Geneva Conventions, these are actually a series of documents developed over decades for the protection of human rights in the context of armed conflict. They provide detailed rules, which parties to the conflict are bound to follow. These rules attempt to balance human rights with military necessity, the latter being those actions that are necessary to overpower the opponent. They apply specifically to the treatment of wounded and sick members of the armed forces (First and Second Convention), the treatment of prisoners of war (Third Convention) and the protection of civilians in time of war (Fourth Convention, Protocols I and II).

The Geneva Conventions specify that wounded and sick members of the armed forces will be respected and cared for without distinction, particularly with respect nationality; that military ambulances and hospitals and their personnel will be respected and protected; and that a red cross on white background is a sign of immunity. The International Committee of the Red Cross (ICRC) is the neutral and independent agency charged with safeguarding these principles.

These international humanitarian laws apply to medical personnel when their own country is engaged in armed conflict or when their government or relief agencies decide to place them at the disposal of one of the armed parties or the ICRC. Medical personnel may be military or civilian and are defined broadly to include all those participating in activities that support medical purposes. This includes personnel who may not be directly involved in the provision of medical care, but provide support services for those who are (e.g. transportation).

The duties of medical personnel are to give humane treatment to sick and wounded persons; to abstain from all acts of hostility; to carry only light weapons for use in their own defense or the defense of the patients for whom they are responsible; to display the sign of the red cross on their chest and back; and to refrain from committing grave breaches or abuses of international humanitarian law. The principal mission of medical personnel is to assure the protection of human life and health. Medical care is to be provided based on medical necessity and without any distinction other than medical criteria. All medical personnel are to abide by the *Geneva Oath*, which is:

- To exercise his/her profession with conscience and dignity.
- To treat the health of his/her patient as his/her principal concern.
- To respect secrets entrusted to him/her.
- To abstain from any religious, national, racial, political, or social discrimination in the performance of his/her duty.
- To pay absolute respect to human life.
- Not to use his/her medical knowledge against the laws of humanity, even under threat.

In turn, all medical personnel are accorded respect and protection under the law. They have the right to require authorities to provide means and facilities for the discharge of their duties; to access places where their services are necessary; to visit prisoners of war; and to protect themselves and their patients from reprisals. Medical personnel are explicitly protected from being compelled to act contrary to medical ethics or to give information about the wounded and sick in their care. Medical personnel whose country is not a party to the conflict or who are working for a relief agency or the ICRC are exempt from capture and should be returned expeditiously to their party. Permanent military medical personnel and civilian medical personnel of a party to the conflict may be detained only if their services are required to tend prisoners of war. They may not be required to do work other than that concerned with their medical duties.

The Geneva Conventions make a distinction between military and civilian persons in time of armed conflict. Civilians are those who do not or no longer take any active part in the hostilities. They are afforded respect and protection under the law. Specifically, they are to be provided special safe zones, which contain no military objectives. Starvation or destruction of their means of survival as a method of warfare is prohibited. Slavery is forbidden. Civilian populations are often displaced in time of conflict. Those who remain in their country but not in their homes are called displaced persons. Those who flee to another country are called refugees. Whether displaced or refugees, children constitute large proportions of these civilian groups.

THE CONVENTION ON THE RIGHTS OF THE CHILD

Most countries in the world have ratified the Convention on the Rights of the Child, but not the United States. Established by the UN in 1990, the Convention has a section on armed conflicts: “In accordance with their obligations under International Humanitarian laws in armed conflicts, States Parties should take all feasible measures to ensure protection and care of children who are affected by an armed conflict.” (Article 38, pt 4)

PRACTICAL CONSIDERATIONS

In reality, there is poor compliance with international humanitarian law and human rights in most CHEs, especially with respect to women and children. Most conflicts are multi-faceted and subject to a confusing blend of political, military, economic, ethnic and social forces. In the process, the distinction between civilian and military persons has been lost. Since the protections afforded by humanitarian law are not universally known or respected, humanitarian aid workers must maintain a high level of personal caution. There are times when personal security issues conflict with the humanitarian mission. Team decisions regarding the balance between human rights, humanitarian assistance, individual responsibility and safety may be necessary to resolve these conflicts.

20 ETHICAL ISSUES

A Universal Declaration of Human Rights exists. International Humanitarian Law exists. Most countries have ratified the Convention on the Rights of the Child.

And most humans, regardless of culture or ethnic background, would agree that innocent children should not suffer. Yet they do suffer enormously in complex humanitarian emergencies (CHEs) and antecedent conflicts because of ethical breaches.

CHILD COMBATANTS

One ethical breach that currently occurs on a large scale is the use of children as soldiers and perpetrators of violence. For example, in Sierra Leone, children as young as 8 years of age have been forced to commit atrocities against family and friends, which destroys their moral framework. Without this moral framework, children can become frightening and impulsive combatants. Another notable example is the Lord's Resistance Army (LRA) in Northern Uganda, which has kidnapped young children and forced them to participate in brutal raids of local villages, burning homes and killing people with machetes. Young girls have been enslaved by the LRA and subjected to repeated rape.

It may be hard for humanitarian workers to believe that the playful children they encounter in CHE settings have experienced or participated in violent crimes. Even if perpetrators, these children are victims and require compassion and protection from further harm. Information shared by children regarding atrocities they may have committed must be handled with care and confidentiality. While western nations often detain or incarcerate child offenders, this is not a practical approach in CHE settings. Local leaders should be called upon to develop a plan for rehabilitation and treatment of child combatants. Every attempt should be made to help these children resume normal development, rebuild moral character and reintegrate into the community.

ADVOCACY

Humanitarian workers must be aware of the interplay that occurs between personal, social, political and medical ethics in CHEs. There are many different players in CHE settings, including governments, political factions, organizations, humanitarian workers and victims. The principles and values of these disparate groups vary tremendously. Many may be unaware of international human rights and humanitarian law. What can health workers do to uphold ethical principles for children?

Advocacy is probably the most powerful tool and can be used in the field, as well as in home communities. Providing information to organizations, political leaders, the media and colleagues in child health fields about ethical breaches against children is helpful. The public and persons in power need to know that millions of children have been killed or seriously injured in CHEs over the last decade. In CHE settings, childhood injuries are usually treated without access to analgesia, anesthesia or surgical facilities. Tens of millions of children have been made homeless or orphaned, have witnessed or experienced violence and have suffered immeasurable psychological trauma as a result of CHEs. It is simply unacceptable to stand by as children suffer in these ways.

The Carnegie Commission and the United Nations (UN) have recommended that a UN force be created specifically to protect children in CHE situations. While this is welcome, at the present time it is the local directors of relief programs who have the greatest ability to uphold basic ethical principles on behalf of children. They can do this by stating the question at each planning meeting: *“What is best for children?”* Directors can also ensure that staff members know the specifics of international law that relate to children. They can organize meetings with workers on the ethics of food distribution, health care, housing and education. They should recognize when conflicts arise related to ethics and children, and facilitate meetings between the disagreeing parties. Humanitarian workers in the field should inform their directors of ethical breaches that affect children. Whistle blowing on behalf of children is never wrong.

21 EXAMPLES: GOOD AND BAD

A POOR SITUATION

5,000 displaced families and 600 unaccompanied minors (orphans) are directed to a refugee camp area that has little vegetation and no water supply except from rain. Initially families sleep in the open (it is the rainy season). After two weeks UNICEF sends in tents, but they are desert tents and leak with rain. The unaccompanied minors are placed in a cluster of large tents, divided according to age, ranging from toddlers to teenagers. The majority of the younger orphans are naked, and have diarrhea and respiratory infections. Three weeks after establishment of this refugee area, there are no latrines and no wells.

Two large tents are organized as a clinic and hospital where expatriate volunteer physicians and nurses are working. There has been no survey to identify refugee health personnel. Large amounts of intravenous (IV) solutions and antibiotics are brought into the refugee camp, sent by NGO relief agencies. No oral rehydration packets are available. The volunteer medical staff are busy from morning until dark (there is no electricity) treating acutely ill children. In the hospital there are no hand washing facilities or toilets.

Food supplies are air-dropped and distributed to heads of families. Since there is no cooking fuel, initial food supplies are C rations. The orphan children are fed C rations once a day and are also given high protein biscuits. Drinking water is trucked in and distributed to families in jerry cans. Expatriate volunteers carry jerry cans of water to the orphan area and provide the children with cups of water throughout the day. Because of security problems, the volunteers are not allowed to stay with the orphans at night. There are a few refugee adults who volunteer to help the orphan children at night.

The orphan children appear listless and dejected. Clinical diagnoses of tuberculosis, shigella dysentery, and meningococcal meningitis are made. In 4 weeks, 100 orphans have died.

What are the priorities? What can be done to improve the present and future situation for the unaccompanied minors?

A GOOD SITUATION

A complex humanitarian emergency has developed as a result of ethnic warfare and 100,000 people have become refugees. Half of them are children under 15 years. Most are in excellent nutritional and physical condition at the time they leave their homes. They travel for only a few days before reaching a refugee camp. International relief agencies have anticipated their movement and have already prepared tents and an address system for housing. Safe water and food is available.

Incoming refugees are identified upon entrance with respect to name, sex and age. Identification bands are placed on wrists of children who are younger than 10 years. Upon entrance, refugees are queried with respect to skills. Those with skills in education, social work and health areas are rapidly involved in prevention programs for the refugee camp. Refugees are provided with preventive information related to the use of available food, latrines, water, childcare, safety, environmental hazards and medications. Special attention is paid to nursing and pregnant women; they are given food supplements and vitamins. Plans for birth are discussed and delivery kits prepared.

Parents are given information about the special needs of their children. Unaccompanied minors are identified and photographed rapidly. Photographs are posted throughout the camp in order to facilitate reunification. In the interim, refugee families are identified who will take care of unaccompanied minors as foster parents. Educators establish temporary schools and playground areas within two weeks of the refugee movement. Camp rules include the requirement for school for children ages 6 years and above. Teachers include programs to counteract the stress and anxiety experienced by the children. Relief agencies provide drawing materials, balls for various games and simple musical instruments that are familiar to the refugees.

Surveys are done with respect to illnesses and nutritional status of both adults and children. Household members are queried regarding whether they have witnessed violence, experienced personal abuse or been separated from family members. Refeeding programs are initiated immediately for malnourished children. Plans are made to involve adults in some form of work, if it appears that their refugee status will persist beyond a few weeks.

Clinics are organized for children under 5 years of age, involving refugees as much as possible. Arrangements are made for all young children to visit these regularly and for immunizations to be updated. When the time comes for transfer to other camps, relocation to other countries or return to their homelands, refugees are provided with records regarding the health and educational status of their children.

22 RESOURCES

This chapter lists some print and web resources that may be helpful in complex humanitarian emergencies. This list is not comprehensive, but rather gives a sample of the resources available.

BOOKS and MANUALS

Psychosocial Issues for Children and Families in Disasters. *American Academy of Pediatrics Work Group on Disasters.* US Department of Health and Human Services, 1995.

1997 Red Book. American Academy of Pediatrics (AAP) Infectious Diseases Committee. AAP, 1997.

Appropriate Technology Sourcebook: A Guide to Practical Books for Village and Small Community Technology. Darrow K and Saxenian M. Stanford, CA, 1993.

Tropical Paediatrics. Goyens P and Lamotte PJ. Vevey, Switzerland: Nestec Ltd, 1996.

Nutrition for Developing Countries, 2nd edition. King FS and Burgess A. Oxford: Oxford University, 1993.

War and Public Health. *International Committee of the Red Cross.* Geneva: ICRC, 1997.

World Disaster Report. International Federation of Red Cross and Red Crescent Societies, 1996.

Tropical and Geographical Medicine Companion Handbook. Mahmoud AAF. New York: McGraw-Hill, 1993.

Health Care for Refugees and Displaced People. Mears C and Chowdhury S. Oxford: Oxfam, 1994.

Nutrition Manual. *Medicins Sans Frontiers,* 1995.

Practical Pediatrics in Developing Nations: A Manual for Physicians and Physician Assistants. Olness K. Minneapolis: Minnesota International Health Volunteers, 1988.

Military Medical Humanitarian Assistance Course Manual. Uniformed Services University of the Health Sciences - Department of Pediatrics, Bethesda, MD, 1998.

The Impact of Armed Conflict on Children. *The United Nations,* 1996.

Declaration on Human Rights. *The United Nations.*

Refugee Children: Guidelines on Protection and Care. *The United Nations High Commissioner for Refugees (UNHCR).* Geneva: UNHCR, 1994.

Mental health of refugees. *UNHCR/WHO.* Geneva: WHO, 1996.

Handbook for emergencies. *UNHCR/WHO*. Geneva: WHO, 1996.

Facts for Life. *UNICEF/WHO/UNESCO*, 1997.

Beyond Child Survival: Maternal and Child Nutrition in Sub-Saharan Africa. *United States Agency for International Development (USAID)*, 1995.

The World Health Report: Bridging the Gaps. *The World Health Organization (WHO)*, 1995.

Disabled Village Children: A Guide for Community Health Workers, Rehabilitation Workers and Families, 2nd edition. Werner D. Palo Alto: Hesperian Foundation, 1996.

Where There is No Doctor. Werner D. Palo Alto: Hesperian Foundation, 1992.

THE WORLDWIDE WEB

www.aap.org

The American Academy of Pediatrics

www.basics.org

E-mail: Infoctr@basics.org

Provides Basics Publications regarding child survival activities.

www.cdc.gov

The Centers for Disease Control

Provides traveler's health information, geographic health recommendations and disease information.

www.charity.org/hvo.html

Health Volunteers Overseas

www.cihi.com

The Center for International Health Information

Provides country health profiles and information about USAID programs.

www.dwb.org

Doctors without Borders (Medicins Sans Frontiers)

www.gen.emory.edu/MEDWEB/medweb.html

Provides health overview reports of each nation.

www.gen.emory.edu/MEDWEB/

keyword/pediatrics/world_health.html

keyword/pediatrics/tropical_medicine.html

keyword/public_health/world_health.html

These all have superb links.

www.imva.org

The International Medical Volunteers Association

Provides great preparation resources for medical volunteers.

www.info.usaid.gov/hum_response

United States Agency for International Development

Contains information from the Office for Foreign Disaster Assistance (OFDA), including the Field Operations Manual.

www.paho.org

Pan-American Health Organization

Provides information regarding the SUMA program, a system for planning and coordinating refugee needs.

www.pedschat.org

The International Pediatrics Chat website

www.reliefweb.int

Provides information on complex humanitarian emergencies, natural disasters and country backgrounds.

www.unicef.org

The United Nations Children's Fund

www.unhcr.ch

The United Nations High Commissioner for Refugees

www.unv.org

United Nations Volunteers

www.urmc.rochester.edu/IPA/pubs/inch.htm

The International Pediatrics Association