Minimum Standards in Nutrition

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For the general glossary and acronyms, see Annexes 1 and 2 at the end of the book.

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Introduction

The minimum standards for Nutrition are a practical expression of the principles and rights embodied in the Humanitarian Charter. The Charter is concerned with the most basic requirements for sustaining the lives and dignity of those affected by calamity or conflict, as reflected in the body of international human rights, humanitarian, and refugee law. It is on this basis that agencies offer their services. They undertake to act in accordance with the principles of humanity and impartiality, and with the other principles set out in the *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief*. The Humanitarian Charter reaffirms the fundamental importance of three key principles:

* the right to life with dignity
* the distinction between combatants and non-combatants
* the principle of non-refoulement

The minimum standards fall into two broad categories: those that relate directly to people's rights; and those that relate to agency processes which help ensure people acquire these rights. Some of the minimum standards combine both of these categories.

1 The importance of nutrition in emergencies

Access to food and maintenance of adequate nutritional status is a critical determinant of people's survival in the initial stages of an emergency. Malnutrition can be the most serious public health problem and may be a leading cause of death, whether directly or indirectly. Those most commonly affected are children between the ages of six months and five years, though younger infants, older children, adolescents, pregnant women, breastfeeding women and other adults may also be affected.

The purpose of nutrition programmes is to correct and to prevent malnutrition. Programmes aiming to correct malnutrition may consider appropriate feeding, medical treatment and/or supportive care. Preventative programmes aim to ensure that the population has equal

access to food of adequate quantity and quality and has the means and know-how to prepare and consume it safely, and that individuals receive nutritional support as required.

As women usually assume overall responsibility for food in the household, they have an important role to play in helping to ensure that nutrition programmes are equitable, appropriate and accessible. For example, they can provide valuable information about feeding hierarchies, and how food is acquired by the affected population; they can also contribute to an understanding of gender roles and the cultural practices that affect how different members of the population access nutrition programmes. It is therefore important to encourage women's participation in the design and implementation of nutrition programmes wherever possible.

2 Finding your way around this chapter

This chapter is divided into four sections, each of which includes the following:

*** The minimum standards**: these specify the minimum levels to be attained in each area.

*** Key indicators**: these are 'signals' that show whether the standard has been attained. They provide a way of measuring and communicating both the impact, or result, of programmes as well as the process, or methods, used. The indicators may be qualitative or quantitative.

*** Guidance notes**: these include specific points to consider when applying the standard and indicators in different situations, guidance on tackling practical difficulties, advice on priority issues. They may also include critical issues relating to the standard or indicators, and describe dilemmas, controversies or gaps in current knowledge. Filling these gaps will help improve the minimum standards for nutrition in the future.

The first three sections of the chapter, Analysis, General Nutritional Support to the Population and Nutritional Support to Those Suffering From Malnutrition reflect the logical process which nutritionists usually follow in responding to a new emergency. Firstly, they need to understand the nature of the problem. Secondly, they deal with the largest group (ie the general population) to avoid further deterioration and thirdly, they take steps to reduce the risks of death and illness for those who are already malnourished. The fourth section, Human Resource Capacity and Training, applies to all work and deals with issues related to the human capacity required to implement effective nutrition programmes.

There are four appendices giving: the definitions of terms and acronyms; minimum nutritional requirements for emergency affected populations; minimum nutrient densities for minerals not included in Appendix 2; and a select bibliography.

Reference to other sectors' technical standards is made where relevant. The purpose of this is to highlight how work in one sector is closely linked to work in other sectors, and that progress in one is dependent on progress in other areas.

In particular, there are close connections between the nutrition sector standards and those in food aid. The two sectors overlap in terms of the information required for assessment of the situation and identification of needs. There is also commonality with respect to defining nutritional (and hence food) requirements.

The two have been kept as separate chapters for three reasons. First, nutrition in emergencies is concerned with more than making decisions about food aid needs. Second, food aid programming carries with it specific requirements regarding financial and logistical management procedures; merging the two sectors would have made the chapter too long and too broad. Third, nutrition is associated with broader issues of food security rather than simply food aid. Food aid might be one component of a food security response and further standards are needed to cover this area.

The Minimum Standards

1 Analysis

Nutrition is not a subject that can be considered in isolation from others. Health, agriculture, water, economics, religious and traditional beliefs, social practice and welfare systems are some of the most important factors affecting nutritional status. Analysis of the underlying causes of malnutrition may be a complex process but it is vital if we are to ensure that effective programmes are put in place.

Programmes that meet the needs of disaster-affected populations must be based on a clear understanding of the current situation, including political and security factors, and anticipated developments. The people affected by the disaster, agencies, donors and local authorities need to know that interventions are appropriate and effective. Analysis of the effects of the disaster, its impact on those factors which affect nutritional status and, eventually, the impact of the programme itself are therefore critical. If the problem is not correctly identified and understood then it will be difficult, if not impossible, to make the right response.

Standardised methods of analysis that are used across the sectors have great potential to rapidly identify acute humanitarian needs and to ensure that resources are appropriately directed. This section sets out agreed standards and indicators for collecting and analysing information to identify needs, to design programmes, to monitor and evaluate their effectiveness, and to ensure the participation of the affected population.

The standards for analysis apply before any programme takes place and throughout the programme cycle. Analysis starts with an immediate initial assessment that identifies the impact of the disaster and whether and how to respond. Analysis continues with monitoring, which identifies how well the programme is responding to needs and determines whether changes are required; and with evaluation, which determines the overall effectiveness of the programme and identifies lessons for the future.

The sharing of information and knowledge among all those involved is fundamental to achieving a full understanding of the problem and coordinated assistance. Documenting and disseminating information from the analysis process contributes to a broad understanding of the adverse public health and other consequences of disasters, and can assist in the development of improved disaster prevention and mitigation strategies.

The UNICEF conceptual framework for nutrition in emergencies has been used as a basis for the standards in this section. See the diagram below.

Before reading this section please see the definitions for *access*, *food security*, *malnutrition* and *social and care environment* in Appendix 1.

Conceptual Model of the Causes of Malnutrition in Emergencies

MALNUTRITION

IMMEDIATE CAUSES
affecting the individual

INADEQUATE FOOD INTAKE

DISEASE

UNDERLYING CAUSES
at the community or household level

HOUSEHOLD FOOD SECURITY
Access to food of sufficient quantity and quality
Availability of food

SOCIAL AND CARE ENVIRONMENT
Care for women and children
Infant and young child feeding practices
Women's role, status and rights
Cultural, social and economic context of household

PUBLIC HEALTH
Health environment
Access to health care
Quality of health services

BASIC CAUSES

FAMILY AND COMMUNITY RESOURCES AND CONTROL

FORMAL AND INFORMAL INFRASTRUCTURE
Civil society
Government structures

CONTEXT
Political, social, cultural and economic

POTENTIAL RESOURCES
Human, structural, natural, financial

Adapted from UNICEF (1997) and Oxfam (1997 draft).

Analysis standard 1: initial assessment

Before any programme decisions are made, there is a demonstrated understanding of the basic nutritional situation and conditions which may create risk of malnutrition.

Key indicators

* An immediate initial assessment that follows internationally accepted procedures is carried out by appropriately experienced personnel.

* The assessment is conducted in cooperation with a multi-sectoral team (water and sanitation, nutrition, food, shelter, health), local authorities, women and men from the affected population and humanitarian agencies intending to respond to the situation.

* The information gathered considers the national standards for nutrition in the country where the disaster has occurred, or in the country where humanitarian assistance is provided, if different.

* The needs of groups that are at risk of additional harm are considered.

* The information is gathered and presented in a way that allows for transparent and consistent decision making.

* Data are disaggregated by sex and age.

* An assessment report is produced, covering the following areas:

- Basic causes of malnutrition:

  Human, structural, natural and economic resources.

  The political and security context.

  Formal and informal infrastructure.

  Population movements and constraints on freedom of movement.

- Underlying causes of malnutrition:

  Food security.

  Public health.

  Social and care environment.

- Outcomes of nutritional stress:

Malnutrition.

Mortality.

Morbidity.

* In situations of prevailing insecurity, the assessment includes an analysis of factors affecting the personal safety and security of affected populations.

* Recommendations are made about the need for external assistance.

* Assessment findings are made available to other sectors, national and local authorities, participating agencies and male and female representatives from the affected population. .

Guidance notes

1. **Internationally accepted procedures for initial assessment**: see MSF (1995), Save the Children Fund (1995), Young (1992) and WFP/UNHCR (December 1997).

2. **Timeliness**: timeliness is of the essence for the initial assessment, which should be carried out as soon as possible after the disaster. As a general rule, a report should be generated within a week of arrival at the site of the disaster, though this depends on the particular event and the wider situation.

3. **People conducting the assessment**: people who are able to collect information from all groups in the affected population in a culturally acceptable manner should be included, especially with regard to gender analysis and language skills. Ideally, there should be a balance in the numbers of men and women taking part.

4. **Assessment procedure**: the procedure for conducting the assessment should be agreed upon by all participants before field work begins and specific tasks contributing to the assessment should be assigned accordingly.

5. **Sources of information**: information for the assessment report can be compiled from existing literature, relevant historical material, pre-emergency data and from discussions with appropriate, knowledgeable people including donors, agency staff, government personnel, local specialists, female and male community leaders, elders, health staff, teachers, traders and so on. Appropriate sources of pre-emergency data may be found from documents such as: health and nutrition surveillance data; demographic and health survey reports from the country of origin (produced by Macro International); refugee nutrition information system

reports (ACC/SCN); data bases (eg MEDLINE) for published literature and documents within relevant line ministries or Universities; and material from UN, donor and non-governmental agencies already working with the population. National or regional level preparedness plans may also be an important source of information. Group discussions with members of the affected population can yield useful information on beliefs and practices.

The methods used for collecting information and the limits of its reliability must be clearly communicated. Information should never be presented in such a way as to provide a misleading picture of the actual situation.

6. **Assessment report**: the assessment report should make clear how information was gathered and what gaps remain to be filled in the next stage of programme design. In the discussion on the underlying causes of malnutrition, it is valuable to highlight whether any pre-existing nutritional problems, including micronutrient deficiencies, are likely to have been worsened by the emergency, and whether there are particular groups which may be experiencing greater nutritional stress (eg pregnant and lactating women, adolescents, unaccompanied minors, children, elderly people, people with disabilities).

7. **Underlying issues**: an awareness of the rights of those affected by disasters, under international law, should underpin the assessment. Initial assessment and subsequent analysis should demonstrate an awareness of underlying structural, political, security, economic, demographic and environmental issues operating in the area. It is imperative that prior experience and the views of people affected by the disaster are taken into consideration when analysing the dynamics and impact of the new emergency. This requires inclusion of local expertise and knowledge in data collection and analysis of resources, capacities, vulnerabilities and needs. The current and pre-emergency living conditions of displaced and non-displaced people in the area must be considered. Gender roles within the social system also need to be taken into account, including cultural practices that contribute to women's nutritional vulnerability. For example, in certain cultures, women eat after everyone else. 8. **Recovery**: thinking and analysis concerning the post-disaster recovery period should be part of the initial assessment, so that interventions to meet immediate emergency requirements can serve to foster recovery among the affected population.

Analysis standard 2: response

If a nutrition intervention is required, there is a clear description of the problem(s) and a documented strategy for the response.

Key indicators

* Information on the following underlying causes of malnutrition is available and is analysed with regard to the nature and severity of the problem(s) and those worst affected:

    - Food security (regional, sub-group, household, individual): eg markets, production, livestock, assets, remittances, employment, food gathering, sufficiency of food (see Appendix 2 for population based nutritional requirements), food preparation, fuel, breastfeeding, endemic micronutrient deficiencies etc.

    - Public health: eg disease patterns; health care services; environmental risk factors: water, sanitation, vector-borne diseases, average parasite load; hygiene measures; traditional medicinal practices etc. (See Water Supply and Sanitation, chapter 1 and Health Services, chapter 5.)

    - Social and care environment: especially with respect to: marginalised or separated groups; pregnant and adolescent women; breastfeeding mothers; infant and young child feeding practices; shelter/crowding conditions; social support systems etc.

* Implementation strategies incorporate consideration of:

    - The estimated number of people affected and demographic characteristics.

    - The social and political structure of the population.

    - Special attention to groups at risk.

    - Access to the affected population and constraints on their freedom of movement.

    - Political, security and operating environment.

    - Existing policies concerning nutrition.

    - Local capacity and resources.

    - Local infrastructure and existing facilities and services.

    - The possible long-term implications and environmental impact of the situation and interventions proposed.

Guidance notes

1. **See also:** guidance notes for Nutrition analysis standard 1, above.

2. **Sources of information for these indicators might include**: the initial assessment report; minutes of coordination meetings; project proposals; analysis of relevant existing data, eg health and nutrition surveillance; burial counts and so on. This information may be followed up with quantitative and/or qualitative data gathering exercises to enable a more thorough analysis of the problem. Basic principles of transparency, validity and reliability must be respected and there are many different types of assessment protocol available which enable adherence to these principles. When anthropometric surveys are conducted, results must always be interpreted in the light of other factors relating to food security, public health and the social and care environment.

3. **Using different types of information**: the indicators for programme design are presented separately but in practice many types of information may have to be considered concurrently. For example, information that informs commodity selection in a food aid programme would need to be considered alongside those factors that inform the method of distribution. The system of assessment and analysis is flexible rather than rigid, and there are many linkages and overlaps that must be understood and accommodated.

4. **Sound methods and analysis**: information and sound methods must be accompanied by documented analysis. Assessment conclusions need to be internally coherent, clearly based on the information collected and linked to existing theory. (See nutrition analysis standard 1 and the conceptual framework, above.)

5. **Estimating requirements**: in order to assess the extent to which people are managing to meet their nutritional needs, it is necessary to have some reference for comparison. This is drawn from current WHO, UNHCR and WFP average requirements for population groups (see Appendix 2). However, there are two important points to consider before these requirements are used:

Firstly, the mean per capita requirements for population groups incorporate the requirements of all age groups and both sexes. They are therefore not specific to any single age/sex group and should not be used to assess requirements for an individual.

Secondly, these requirements are based on a series of assumptions which, unless true for the particular population, will lead to errors. Calculations for the requirements were based on a particular demographic profile:

Group	% of population
0-4 years:	12.37
5-9 years:	11.69
10-14 years:	10.53
15-19 years:	9.54
20-59 years:	48.63
60+ years:	7.24
pregnant:	2.4
lactating:	2.6
male/female:	50.84 / 49.16

(See: WFP/UNHCR (December 1997) and WHO (1997).

As the demographic structure of different populations varies, this will affect the nutritional requirements of the population concerned. For example if 26% of a refugee population were under 5 year olds, and the population was 50% males and 50% females, the requirement is reduced to 1,940 kcals.

Estimates of requirements must therefore be used with reference to information that is specific to the context. This enables the validity of the underlying assumptions to be tested. The following information is needed:

- Size of the population.

- The demographic structure of the population, in particular the percentage of under 5 year olds and the percentage of females.

- Mean adult weights and actual, usual or desirable body weight. Requirements will increase if the mean body weight for adult men exceeds 60kg and the mean body weight for adult females exceeds 52kg.

- Activity levels to maintain productive life. Requirements will increase if activity levels exceed light (ie 1.55 x Basal Metabolic Rate for men and 1.56 x Basal Metabolic Rate for women).

- Average temperature, and shelter and clothing capacities. Requirements will increase if the mean ambient temperature is less than 20°C.

- Non-nutritional needs which affect food needs: ie the potential role of food as a social and economic resource. Requirements will increase if there are any non-nutritional food needs such as religious festivals.

- The nutritional status of the population. Requirements will increase if the population is malnourished and has extra requirements for catch-up growth.

If it is not possible to incorporate this kind of information into the initial assessment, the figures in Appendix 1 may be used as a minimum in the first instance.

6. **Micronutrients – issues**: there are currently no estimates for population-level (rather than individual) requirements for most of the minerals, despite evidence highlighting their importance. As an interim guide, and pending further expert consultation by WHO, minimum nutrient densities (per 100 kcal) are proposed in Appendix 3.

For populations dependent on food aid, the choice of commodities (including decisions on fortification levels), should be based on the requirements of the population and the availability of foods which the population can access independently. Some of the food rations used currently for populations that are fully dependent on food aid may not be sufficient to meet requirements (particularly riboflavin (vitamin B2), niacin (vitamin B3), vitamin C, iron and folic acid). All micronutrients are vital for healthy life. Therefore where the assessment suggests that certain micronutrient requirements will not be met by the population themselves, the intervention must plan to meet the shortfall.

Even if the foods provided to a population meet the specified requirements, this cannot be taken as a proxy of adequate intake and utilisation by the body of micronutrients. Discrepancies that can occur at ration distribution or as a result of meal sharing within households affect the quantity of food eaten by individuals. Micronutrient losses can occur in other ways as well. For example losses can occur during transportation and storage of food; during processing (eg the reduction of B vitamins during milling); as a result of prolonged cooking, particularly for the water-soluble vitamins; and as a result of nutrients combining with binding agents in the diet which prohibit their absorption in the gut (eg phytates impair the absorption of iron originating from vegetable sources). Losses may also occur as a

consequence of disease, in particular parasite loads, where the body's ability to access and utilise the nutrients is restricted. It is therefore essential that monitoring of nutritional status is a component of all programmes.

See also Human Resource Capacity standard 1.

Analysis standard 3: monitoring and evaluation

The performance and effectiveness of the nutrition programme and changes in the context are monitored and evaluated.

Key indicators

* The information that is collected for monitoring and evaluation is timely and useful; it is recorded and analysed in an accurate, logical, consistent and transparent manner.

* Systems are in place that enable the impact (positive or negative) of the intervention on people's nutritional status to be monitored. This might include an active surveillance system if micronutrient deficiencies have been observed. (See Health Services, analysis standards for the health information system in chapter 5.)

* There is regular analytical reporting on the impact of the emergency and of the programme on the nutrition situation. There is also reporting of any contextual changes and other factors that may necessitate adjustment to the programme.

* Systems are in place that enable an information flow between the programme, other sectors, the affected population, the relevant local authorities, donors and others as needed.

* Monitoring activities provide information on the effectiveness of the programme in meeting the needs of different groups within the affected population.

* Women, men and children from the affected population are regularly consulted, and are involved in monitoring activities.

* The programme is evaluated with reference to stated objectives and agreed minimum standards to measure its overall effectiveness and impact on the affected population.

Guidance notes

1. **Use of monitoring information**: emergencies are volatile and dynamic by definition. Regular and current information is therefore vital in ensuring that programmes remain relevant. Information derived from continual monitoring of programmes should be fed into

reviews and evaluations. In some circumstances, a shift in strategy may be required to respond to major changes in the context or needs.

2. **Cooperation with other sectors**: information generated by the assessment process is used as an initial baseline for the health information system (see Health Services, chapter 5) and for monitoring and evaluation activities for the nutrition programme. Monitoring and evaluation activities require close cooperation with other sectors.

3. **Using and disseminating information**: information collected should be directly relevant to the programme, in other words it should be useful and should be used. It should also be made available as needed to other sectors and agencies, and to the affected populations. The means of communication used (dissemination methods, language and so on) must be appropriate for the intended audience.

4. **Constraints**: monitoring activity can be constrained by the difficulty of gathering reliable, valid information in a volatile and changing situation. For example, when a population is in a continual state of flux, moving to and fro across a border, over a prolonged period of time, there can be no assurance that measurements made in one instance relate to the same population in a different place or time. In such situations, therefore, data needs to be interpreted very carefully.

5. **People involved in monitoring**: when monitoring requires consultation, people who are able to collect information from all groups in the affected population in a culturally acceptable manner should be included, especially with regard to gender and language skills. Women's involvement should be encouraged.

6. **Evaluation**: evaluation is important because it measures effectiveness, identifies lessons for future preparedness, mitigation and assistance, and promotes accountability. Evaluation refers here to two, linked processes:

a) Internal programme evaluation is normally carried out by staff as part of the regular analysis and review of monitoring information. The agency must also evaluate the effectiveness of all its programmes in a given disaster situation or compare its programmes across different situations.

b) External evaluation may by contrast be part of a wider evaluation exercise by agencies and donors, and may take place, for example, after the acute phase of the emergency. When evaluations are carried out it is important that the techniques and resources used are consistent with the scale and nature of the programme, and that the report describes the methodology employed and the processes followed in

reaching conclusions. Outcomes of evaluations should be disseminated to all the humanitarian actors, including the affected population.

Analysis standard 4: participation

The disaster-affected population has the opportunity to participate in the design and implementation of the assistance programme.

Key indicators

* Women and men from the disaster-affected population are consulted, and are involved in decision-making that relates to needs assessment, programme design and implementation.

* Women and men from the disaster-affected population receive information about the assistance programme, and have the opportunity to comment back to the assistance agency about the programme.

Guidance notes

1. **Equity:** the participation of disaster-affected people in decision-making, programme design and implementation helps to ensure that programmes are equitable and effective. Special effort should be made to ensure the participation of women and balanced male and female representation within the assistance programme. Participation in the nutrition programme may also serve to reinforce people's sense of dignity and worth in times of crisis. It generates a sense of community and ownership which can help ensure the safety and security of those who are receiving assistance, as well as those who are responsible for its implementation.

2. **People can be involved in nutrition programmes in different ways:**, for example through involvement in the assessment team; provision of paid and volunteer labour in feeding programmes; through participation in decisions over selection of food commodities; by disseminating information about the use of any unfamiliar food aid commodities; by supplying information about people with special nutrition needs and supplying household lists.

3. **Coordination committees**: coordination committees help ensure people's involvement in the assistance programme. Gender, age, ethnicity and socio-economic status should be taken into consideration in order to ensure that committees adequately represent the affected population. Acknowledged political leaders, female and male community leaders and religious leaders should also be represented. The roles and functions of a coordination committee should be agreed upon when it is set up.

4. **Seeking views and opinions**: participation can also be achieved through regular polling and discussions. This can take place during distribution, through home visits or when addressing individual concerns. Group discussions with members of the affected community can yield useful information on cultural beliefs and practices.

2 General Nutritional Support to the Population

This section considers the nutritional resources and services required to ensure that the needs of the general population are met. Unless and until these needs are met, any targeted nutrition interventions are likely to have limited impact since those who recover would return to a context of inadequate nutritional support. They would therefore be likely to deteriorate once again.

Before reading the standards, please see the definitions for the International Unit (IU) and malnutrition in Appendix 1.

General nutritional support standard 1: nutrient supply

The nutritional needs of the population are met.

Key indicators

* Levels of moderate malnutrition are stable at, or declining to, acceptable levels.

* There are no cases of scurvy, pellagra or beri-beri.

* Rates of xerophthalmia or iodine deficiency disorders are not of public health significance (see guidance notes below).

* There is access to a range of foods - staple (cereal or tuber), pulses (or animal products), fat sources etc.

* There is access to vitamin C rich or fortified foods or appropriate supplements.1

* There is access to iodised salt for the majority (>90%) of households where iodine deficiency disorders are endemic.

* There is access to vitamin A rich or fortified foods or appropriate supplements.[1]

* There is access to additional sources of niacin (eg pulses, nuts, offal) if the staple is maize or sorghum.

* There is access to additional sources of thiamine (eg pulses, nuts, eggs) if the staple is polished rice.

* Infants under six months have access to breastmilk (or appropriate substitute).

* Children aged from about six months[2] have access to nutritious energy-dense foods.

* There is no indication that the extra nutritional needs of pregnant and breastfeeding women and adolescentsare not being met.

Guidance notes

1. **Malnutrition rates**: Improving trends in malnutrition might be indicated by health centre records, growth monitoring (health centre or community based), random sample nutrition surveys, results from screening, reports from the community or reports by community workers.

Nutrition survey results provide an estimate of the prevalence of malnutrition. The most widely accepted practice is to assess the level of malnutrition in children under five years old as a proxy for the rest of the population. However, even when there is no indication of malnutrition in under-five year olds, older children, adolescents or adult women and men may be affected. Care should thus be taken in making assumptions about the general population based on the conditions of young children. When there is reason to believe that other specific groups may be unduly affected, then they should also be assessed.

Deciding whether levels of malnutrition are acceptable (see general nutritional support standard 1) requires analysis of the current situation in the light of local norms. These might include levels of malnutrition in the population before the emergency; or levels of malnutrition in the host population if the affected population is displaced into a context where environmental and other external factors which increase mortality risk differ from those of their home area. Thus acceptable levels of malnutrition are those that are not associated with excess risk of mortality.

The risks associated with inadequate nutrient intakes for pregnant and breastfeeding women and adolescents include: pregnancy complications, maternal mortality, low birth weight and impaired lactation performance. It is assumed that food allocations within households account for these extra nutritional needs (pregnant women on average require an extra 285 kcal per day; lactating mothers require an extra 500 kcal). In some situations though, this may not be valid and women may need to be monitored, particularly with respect to iron, folic acid and vitamin A status. The prevalence of low birth weight babies (below 2.5kg) may also be a useful monitoring tool in some contexts. WHO recommend that if the prevalence exceeds 15%, then this indicates the need for a different level of public health response.

2. **Micronutrient deficiencies:** The indicators for general nutritional support standard 1 serve to highlight the importance of dietary quality. If these indicators are met, then deterioration of the micronutrient status of the population should be prevented.

There is a range of possible options for prevention of micronutrient deficiencies. These include: increasing the quantity of food in the general ration to allow more food exchanges; improving the nutritional quality of the ration; local purchase of commodities to provide nutrients otherwise missing in the ration; measures to promote local production of foods contributing nutrients estimated to be low; provision of micronutrient rich food stuffs as a supplement to rations; appropriate fortification of staple foods or blended foods; and/or medicinal supplementation.

Three micronutrient deficiencies (scurvy, pellagra and beri-beri) have been highlighted as these are the most commonly observed deficiencies to have resulted from inadequate humanitarian assistance. They are specified here because they are avoidable. Individual cases of scurvy, pellagra and beri-beri presenting at health centres, for example, are likely to be a result of restricted access to certain types of food and are therefore probably indicative of a population-wide problem. As such, they should be tackled by population-wide interventions. (In any context where there is clear evidence that these micronutrient deficiencies are an endemic problem, levels should be reduced to at least those that would have been expected had the emergency not occurred.)

Iron deficiency anaemia, particularly in pregnant women and growing adolescents is one example of other micronutrient deficiencies which may be important contributors to mortality. The emergency may or may not have elevated the prevalence of the deficiency. In situations where a chronic endemic situation is exacerbated by the emergency, special attention must be paid to possible prevention and correction measures (see above and targeted nutritional support standard 3). Indicators of programme performance will be context specific.

Tackling micronutrient deficiencies within the first phase of an emergency is complicated by difficulties in identifying them (see targeted nutritional support standard 3). The exceptions are xerophthalmia and goitre for which clear ‘field-friendly’ identification criteria are available. These deficiencies can be tackled by population level interventions (ie high-dose supplementation for children (see below) and salt iodisation respectively).

Indicators of clinical vitamin A deficiency (xerophthalmia) in children 6-71 months of age

(prevalence of one or more indicators signifies a public health problem)

Indicator	Minimum prevalence
Night blindness (present at 24-71 months)	>1%
Conjunctival xerosis with Bitot spots	>0.5%
Corneal xerosis / ulceration / keratomalacia	>0.01%
Corneal scars	>0.05%

See Sommer, A (1995)

When measles or other immunisation is carried out, which is often routine in emergencies resulting in displacement, it is usual practice to provide a vitamin A supplement to all children under five years of age, according to the following schedule:

Infants 6-12 months: 100,000 IU orally (repeat every 4-6 months)
Children >12 months: 200,000 IU orally (repeat every 4-6 months).

For clinical treatment of vitamin A deficiency, or in the case management of measles, WHO recommends:

Infants <6 months: 50,000 IU orally on day one; 50,000 IU orally on day two.
Infants 6-12 months: 100,000 IU orally on day one; 100,000 IU orally on day two.
Children >12 months: 200,000 IU orally on day one; 200,000 IU orally on day two.

This helps reduce mortality associated with measles. Furthermore, it is recommended where feasible that mothers receive a high dose of vitamin A (200,000 IU orally) as soon as possible after delivery and within 8 weeks. (See: WHO (1997), and Health Services standards for measles control, in chapter 5).

Indicators of iodine deficiency – goitre

(prevalence of (ideally) two indicators signifies a public health problem)

Indicator	Target population	Severity of public health problem (prevalence) Mild	Moderate	Severe
Goitre grade >0	school age children*	5.0%-19.9%	20.0-29.9%	>=30.0%
Thyroid volume >97th centile by ultra sound	school age children	5.0-19.9%	20.0%-29.9%	>=30.0%
Median urinary iodine level (µg/l)	school age children	50-99	20-49	<20
Thyroid Stimulating Hormone >5mU/l whole blood	neonates	3.0-19.9%	20.0-39.9%	>=40.0%
Median Thyroglobulin (ng/ml serum)	children and adults	10.0--19.9	20.0-39.9	>=40.0

**preferably children aged 6-12 years*

See WHO/UNICEF/ICCIDD (1994), Indicators for assessing iodine deficiency disorders and their control through salt iodisation. Document WHO/NUT/95.6, WHO, Geneva.

These indicators of iodine deficiency may be problematic: the biochemical indicators may not be possible in many emergency contexts, and the clinical assessments risk high levels of inaccuracy. Nevertheless, while assessment of urinary iodine is necessary to get a full picture of iodine status, a rough indication of the severity of the situation can be obtained by clinical examination of a valid sample of children aged 6 to 12 years.

3. **Dietary quality:** The indicators measure the quality of the diet but do not quantify nutrient availability. This is impracticable as it would impose unrealistic requirements for information collection.

Indicators can be measured using information from various sources gathered by different techniques. These might include: monitoring the food basket at the household level; assessing food prices and food availability on the markets; monitoring the routes along which food is moved; assessing the nutrient content of distributed food using food composition tables (or Nutcalc, see Appendix 4); examination of food aid distribution plans and records; conducting food security assessments; household surveys and/or reviewing existing literature, eg agency reports.

4. **Infant and young child feeding:** breastfeeding is the healthiest way to feed a baby in most circumstances, particularly in an emergency in which normal hygiene procedures may have been disrupted and rates of infection may have increased.

In situations where some mothers are not breastfeeding their infants there are three options:

a) Relactation, where mothers are informed, supported and encouraged by experienced individuals.

b) Formula feeding, if the milk can be prepared safely and where supplies can be guaranteed.

c) Traditional alternative feeding, supporting other methods mothers may be familiar with to ensure they are safe and appropriate.

It is normally very rare for mothers not to be able to produce breastmilk (only 1 or 2 per 10,000 mothers). However mothers may die or be separated from their infant. If it is not possible for the infant to have access to breastmilk (either from the mother, a wet nurse or a milk bank), then the provision of infant formula will be necessary. Whenever food commodities such as infant formula or commercial weaning foods are distributed, an intensive educational component must be an integral part of the work. This might involve intensive support for the infants' carers on methods for safe feeding (see general nutritional support standard 4); training of health professionals in lactation management; and promotion of, and support for, pregnant women and mothers of new-borns to breastfeed.

When infant formula is provided, there must be a guarantee that its provision can continue for as long as the infant needs it. The procurement of infant formula in emergencies must also adhere to the stipulations of the *International Code of Marketing of Breastmilk Substitutes* (WHO, 1981) which protects breastfeeding from commercial interests.

Young children require energy-dense foods since they are unable to eat large meals but have relatively high requirements given their body size. It is recommended that 30% of the energy content of their diet comes from fat sources. In cases where infants aged 6-24 months do not have access to breastmilk, nutritious energy-dense foods must be sufficient to fully replace the nutrients that would have been derived from breastmilk and complementary foods. For further information on complementary feeding, see WHO, 1998a.

5. **Support for breastfeeding women**: the implications of severe malnutrition, trauma and stress on the capacity of the mother to breastfeed are not known. Although the breastfeeding

mechanism itself is robust, research has shown clearly that the psychological state of the mother can affect the release of milk. In situations where the breastfeeding mother is affected by severe malnutrition, trauma or stress, she should, in the first instance, receive adequate support in order to encourage lactation.

6. **Breastfeeding and HIV transmission**: the HIV virus can be transmitted from mother to infant. A child stands the greatest risk - believed to be 20% - of vertical or mother-to-child transmission during the time of late pregnancy and childbirth. There is an additional risk that an infant will be infected through breastmilk. However, in situations where sanitation is inadequate and families are poorly resourced, death from diarrhoea is 14 times higher in artificially-fed infants that in those who are breastfed. In an emergency context, these risks must be carefully considered. It is important that breastfeeding is not undermined, particularly in situations where the HIV status of the mother is unknown.

General nutritional support standard 2: food quality and safety

Food that is distributed is of sufficient quality and is safely handled so as to be fit for human consumption.

Key indicators

* There are no outbreaks of food-borne diseases caused by distributed food.

* There are no unreasonable complaints about the quality of foods distributed - from recipients or programme staff.

* Suppliers of food commodities carry out regular quality control and produce commodities which meet the official government standards or Codex Alimentarius Standards (eg with regard to packaging, labelling, shelf life etc).

* All foods supplied are systematically checked by independent quality surveyors.

* All food received in the country of distribution, for the disaster-affected population, has a minimum six-month shelf life (except fresh produce and whole maize meal) and is distributed to the population before the expiry date.

* Adequate storage structures (in line with current recommendations) are in place and proper management of stores is conducted (see Food Aid resource management standard, in chapter 3*).*

* Staff have adequate knowledge about potential health hazards caused by improper handling, storage and distribution of food.

Guidance notes

1. **Sources of information**: information to find out whether the indicators have been achieved may be obtained from: quality control inspection reports, food labels, warehouse reports and protocols etc.

2. **Purchase of commodities**: the purchase of commodities is best done by specialists, for example at headquarters, regional offices or in specialised agencies (see Food Aid logistics standard in chapter 3). If errors are made, they are extremely difficult to correct at field level.

3. **Milling of maize meal**: whole maize meal has a shelf life of 6-8 weeks. Milling should therefore take place immediately prior to consumption. Alternatively, low extraction milling can be used; this removes the germ, the oil and enzymes which cause rapid rancidity.

4. **Storage**: see also Walker, D F (ed) (1992).

5. **FAO/WHO (mixed years), Codex Alimentarius**: see the select bibliography for the full reference.

General nutritional support standard 3: food acceptability

Foods that are provided are appropriate and acceptable to the entire population.

Key indicators

* People are consulted on the acceptability and appropriateness of the foods being distributed and results are fed into programme decisions.

* Foods distributed do not conflict with the religious or cultural traditions of the recipient or host populations (this includes any food taboos for pregnant or breastfeeding women).

* The staple food distributed is familiar to the population.

* Complementary foods for young children are palatable and digestible.

* There is no distribution of free or subsidised milk powder to the general population.

* People have access to culturally important condiments (such as sugar or chilli).

Guidance notes

1. **Monitoring of sales**: in any humanitarian intervention which involves the distribution of foods, it is important to monitor any sales and reasons why these are occurring. This would help interpret any change in trends as well as monitor effects on the local economy .

2. **Looting**: looting or theft of food, for example before distribution to families when bulk quantities might be stolen, could indicate that the commodity is seen as more valuable economically than nutritionally. If the staple food is looted, this may have important implications for the viability of the food aid programme. All looting incidents should be reported to the coordinating authorities immediately. (See Food Aid resource management standard, in chapter 3.)

Food aid is a valuable commodity and, as with other goods, its distribution carries security risks. It may be hazardous for people to go to the distribution point, as they may be exposed to attack. People may also risk attack by armed persons for their rations on their way back from distribution points. Where appropriate, alternatives such as provision of cooked meals should be considered. (See also Food Aid distribution standard, in chapter 3.)

3. **Support for breastfeeding women**: in populations where the habitual practice in infant feeding was to use breastmilk substitute, and where processed commercial products were given as weaning foods to young children, it might be necessary to support mothers in adopting new techniques during the emergency. Particularly important are measures to promote and support breastfeeding (see general nutritional support standard 1). In this sense, the emergency can sometimes provide an opportunity to change practices which pose health risks. However, an emergency is rarely the right time to encourage behavioural change which is not an absolute necessity.

4. **Powdered milk**: powdered or modified milks that have not been mixed with other commodities should not be included in a general food distribution because their indiscriminate use could result in serious problems. Of particular concern are the potential health hazards that are likely to occur as a consequence of inappropriate dilution, germ contamination or lactose intolerance.

General nutritional support standard 4: food handling and safety

Food is stored, prepared and consumed in a safe and appropriate manner, both at household and community level.

Key indicators

* There are no outbreaks of food-borne disease linked to a local food distribution site occurring as a consequence of hazardous food preparation.

* The coordinating body has received no reports from representatives of the affected population concerning difficulties in storing, preparing, cooking and consuming the food being distributed.

* Every household has access to at least one cooking pot, enough fuel for food preparation, water containers to store 40 litres; and 250g soap per person per month. (See Shelter and Site Planning, household items standards, in chapter 4; and Water Supply and Sanitation water supply standards, in chapter 1.)

* Where the food basket contains unfamiliar commodities, instructions on preparation are provided to households to maximise acceptance and minimise nutrient loss.

* Individuals who cannot prepare food or cannot feed themselves have access to a carer who can prepare appropriate food in a timely manner and administer feeding where necessary.

* Where food is distributed in cooked form, staff demonstrate knowledge about potential health hazards caused by improper storage, handling and preparation of commodities. (See human resource capacity standard 1.)

* Adequate milling or other processing facilities are available reasonably close to home if required, for example if whole grain is distributed.

Guidance notes

1. **Sources of information**: sources of information for these indicators might include programme monitoring systems and rapid household surveys.

2. **If access to cooking fuel is inadequate**: foods requiring less cooking time should be distributed (eg cereal flour rather than whole grain, parboiled pulses or rice). Where these foods are unfamiliar to the population, advice and support will need to be provided to ensure their proper use. If it is not possible to change the food commodities, then external sources of fuel supply should be established to fill the gap. (See Shelter and Site Planning, chapter 4.)

3. **Safe use of infant formula**: in the unusual situation of infants being fed formula milk, bottles should not be used as they are difficult to keep clean. Open cups (as opposed to feeding cups with a ‘lip’), may be used instead. There should be capacity for boiling water and for the thorough sterilisation of the cup (and spoon or saucer). Individuals administering

infant formula to babies should have an excellent knowledge of its proper and safe use. (See general nutritional support standard 1.)

4. **Food hygiene**: people's changed circumstances may disrupt their normal hygiene practices. It may therefore be necessary to promote food hygiene messages and measures compatible with local conditions and disease patterns (see Water Supply and Sanitation hygiene promotion standards, in chapter 1). It is also important to provide information to caregivers on the optimal use of household resources for child feeding and safe methods for food preparation.

5. **Food processing facilities**: access to grinding mills, as well as other facilities such as clean water, is very important not only for food processing but also to enable people to use their time in the best way. Caregivers spending excessive amounts of time waiting for these services could otherwise be preparing food, feeding children and engaging in other care-related tasks that have a positive effect on nutritional outcomes.

6. **Whole grains require longer cooking and more fuel than milled cereals**: firewood is usually gathered by women and girls, who may have to venture out of protected areas; this often increases the risk of physical attack and rape. Security measures may be needed to minimise the risk of this happening. (See Shelter and Site Planning, site standard 4, security and planning, in chapter 4; and Health Services, health care services standard 2, reduction of morbidity and mortality, in chapter 5.)

3 Nutritional Support to Those Suffering from Malnutrition

This section presents minimum standards for programmes aiming to correct existing malnutrition, including deficiencies in vitamins and minerals.

Malnutrition is associated with increased risk of death. The strength of this association largely depends on the patterns of disease and infection which, in turn, are influenced by the local environment. There is a strong relationship between malnutrition and infection, and their impact on mortality. In other words, the combined impact of malnutrition and infection is greater than would be expected from their total individual contributions to mortality. Understanding the underlying causes of malnutrition is vital in defining the appropriate form of assistance, whether in nutrition or in the other sectors.

Before reading the standards, please see the definitions for *Body Mass Index (BMI)*, *defaulter from a therapeutic feeding programme*, *exits from a feeding programme* and *malnutrition* in Appendix 1.

Targeted nutritional support standard 1: moderate malnutrition

The public health risks associated with moderate malnutrition are reduced.

Key indicators

* There is no increase in levels of severe malnutrition and/or there is no increase in numbers registered for therapeutic care.

* Surveillance systems are established to monitor malnutrition trends.

* Programme objectives reflect understanding of the causes of malnutrition and clear identification of the target group(s).

* All staff who have regular contact with mothers of young children are trained in the principles of infant and young child feeding in the emergency context. (See human resource capacity standards.)

* From the outset feeding programmes have clearly defined and agreed criteria for closure of the programme.

Guidance notes

1. **Sources of information**: information for monitoring adherence to this standard can be gathered from a wide variety of sources, including: programme monitoring data (including data from outside the nutrition sector); anthropometric surveys; feeding centre records (including rates of coverage); staff training protocols (particularly in anthropometric measurements); and/or project proposals.

2. **Demonstrating change in prevalence**: demonstrating a change in the indicator for the level of severe malnutrition may be difficult when the prevalence of severe malnutrition is low. Given the confidence intervals around the prevalence estimate, it may not be possible to demonstrate a statistically significant change.

3. **Programme design**: in contrast to the correction of severe malnutrition (see targeted nutritional support standard 2), moderate malnutrition can be addressed in many different ways. Programme design must be based on an understanding of the complexity and dynamics of the nutrition situation, and the factors contributing to and affecting it.

4. **Surveillance**: surveillance is an important component of information gathering and monitoring of the situation. The information gathered must be analysed in the light of seasonal and disease patterns and used to initiate appropriate responses and inform other programmes.

5. **Supplementary feeding programmes:** supplementary feeding programmes may be implemented in the short term before general nutritional support standard 1 and targeted nutritional support standard 2 are met. An assessment of the situation must justify a decision to close a programme, but if the other standards have been achieved a supplementary feeding programme should not last longer than six months.

Targeted nutritional support standard 2: severe malnutrition

Mortality, morbidity and suffering associated with severe malnutrition are reduced.

Key indicators

* Proportion of exits from a therapeutic feeding programme who have died is <10%.

* Proportion of exits from therapeutic feeding programme recovered is >75%.

* Proportion of exits from therapeutic feeding programme defaulted <15%.

* There is a mean weight gain of ≥8g per kg per person per day.

* Nutritional and medical care is provided to people who are severely malnourished, according to clinically proven therapeutic care protocols.

* Discharge criteria include non-anthropometric indices such as: good appetite; no diarrhoea, fever, parasitic infestation or other untreated illness; and no micronutrient deficiencies.

* Nutrition worker to patient ratio is at least 1:10.

* All carers of severely malnourished individuals are able to feed and care for them.

Guidance notes

1. **Programme duration**: the time needed to achieve the indicators for a therapeutic feeding programme is between one and two months.

2. **Links with other sectors**: achieving the indicators for therapeutic feeding depends on the achievement of the indicators and of the standards in other sectors (eg the existence of a functioning water and sanitation system). All information required to assess achievement of the standard will be available from records kept at the site of the therapeutic feeding and also reports from follow-up home visits.

3. **Coverage**: adherence to this standard and targeted nutritional support standard 1 will have a positive impact on the levels of severe malnutrition in a population, if coverage of therapeutic feeding is maintained at a high level. An indicator for coverage has not been stipulated as it is influenced by many context specific factors. Individuals cannot be forced to take up a service, but its use can be promoted and encouraged. Nevertheless it must be remembered that very low coverage (such as less than 30-40%) may be indicative of a poorly designed programme.

4. **Weight gain**: mean weight gain on exits ≥ 8g per kg per person per day applies to adults and children who receive therapeutic care. Similar rates of weight gain can be achieved in adults as in children when they are given similar diets. This indicator however may mask situations where patients are not improving and are not being discharged.

5. **Recovery**: as a rule of thumb, most cases of severe malnutrition should recover and be discharged after 30 to 40 days in a programme. HIV and TB may result in some malnourished individuals failing to recover. Such cases need to be documented and consideration of longer-term treatment or care should be made in conjunction with the health programme.

6. See also WHO (1998).

Targeted nutritional support standard 3: micronutrient deficiencies

Micronutrient deficiencies are corrected.

Key indicators

* There are no cases of scurvy, pellagra or beri-beri.

* Rates of xerophthalmia are not of public health significance (see general nutritional support standard 1).

* Rates of iodine deficiency disorders are not of public health significance (see general nutritional support standard 1).

* Appropriate WHO micronutrient supplementation protocols are implemented for individuals admitted to feeding programmes.

* All clinical cases of deficiency diseases presenting at health centres are treated using WHO micronutrient supplementation protocols.

* All children under five years old presenting at health centres with diarrhoeal disease receive Vitamin A supplements. (See Health Services measles control standards, in chapter 5.)

* All children under five years old presenting at health centres with hookworm, and who are not severely malnourished, receive iron supplements in conjunction with treatment for disease.

* Procedures to respond efficiently to micronutrient deficiency to which the population may be vulnerable are established. These might include active searching for cases, tracing and campaigning to raise public awareness.

Guidance notes

1. **Sources of information to measure the indicators might include**: health centre records, feeding programme records, nutrition surveys and case definitions for deficiency diseases.

2. **There is a range of possible options for the prevention of micronutrient deficiencies**: see general nutritional support standard 1, guidance note 2.

3. **Identifying micronutrient deficiencies**: recognition of some micronutrient deficiencies (eg iodine and vitamin A) is possible through simple clinical examination. Such indicators can then be incorporated into health or nutritional surveillance systems, although careful training of staff is required to ensure that assessment is accurate. Other micronutrient deficiencies cannot be identified without bio-chemical examination (eg iron deficiency anaemia). For these reasons, case definition of micronutrient deficiencies in emergencies is problematic and can often only be determined through the response to supplementation by individuals who present themselves to health staff.

4. **Supplements for pregnant and breastfeeding women**: pregnant and breastfeeding women should receive daily supplements of iron and folic acid (60mg iron per day, with 0.4mg folic acid, starting as soon as possible after the third month of gestation). This is to address nutritional anaemias and to prevent neural tube defects in babies. In emergencies, however, the provision of supplementation is problematic as women's compliance with the daily supplementation protocols has been shown to be very difficult to maintain. Community health workers will need to address this issue.

4 Human Resource Capacity and Training

All aspects of humanitarian assistance rely on the skills, knowledge and commitment of staff and volunteers working in difficult and sometimes insecure conditions. The demands placed on them can be considerable, and if they are to conduct their work to a level where minimum standards are assured, it is essential that they are suitably experienced and trained and that they are adequately managed and supported by their agency.

Capacity standard 1: competence

Nutrition interventions are implemented by staff who have appropriate qualifications and experience for the duties involved, and who are adequately managed and supported.

Key indicators

* All staff working on a nutrition programme are informed of the purpose and methods of activities they are asked to carry out.

* Assessments, programme design and key technical decision-making are carried out by staff with relevant technical qualifications and previous emergency experience.

* Staff and volunteers are aware of gender issues relating to the affected population. They know how to report incidents of sexual violence.

* Staff with technical and management responsibilities have access to support for informing and verifying key decisions.

* Staff responsible for assessing the nutritional status of individuals are trained and regularly supervised in the necessary techniques (weight, height/length, MUAC and use of appropriate indices) for children, adolescents and/or adults.

* Introduction of new equipment (for assessment of nutritional status, preparation of foods, testing of food quality etc) is accompanied by training and testing in their use.

* Food aid programme staff have the demonstrated ability to advise members of the affected population on safe and appropriate use and preparation of blended foods, if these are included in a general ration.

* Targeted feeding interventions have clear written guidelines and protocols.

* All staff involved in targeted feeding have been thoroughly trained and tested on application of the protocols.

* The treatment of severely malnourished people is supervised by a medically qualified, experienced practitioner with specific training in this area.

* Health, nutrition and/or outreach workers who have contact with moderately malnourished individuals or their carers (at home, in feeding centres, in clinics etc), have the demonstrated ability to provide appropriate advice and support as appropriate.

* Health staff have the demonstrated ability to advise mothers and carers on appropriate infant and young child feeding practices.

* Health staff have the demonstrated ability to identify key micronutrient deficiencies correctly - through clinical examination and/or biochemical analysis if available.

Capacity standard 2: support

Members of the disaster-affected population receive support to enable them to adjust to their new environment and to make optimal use of the assistance provided to them.

Key indicators

* Carers are trained in how to care for severely malnourished individuals after recovery and discharge to the home environment.

* Households are advised on preparation methods for blended foods, and their contribution to the family diet, particularly for young children.

* Mothers and caregivers identified for relactation receive support, advice and encouragement on a regular basis by experienced and trained women.

* Pregnant women and mothers of new-borns are advised on the benefits of breastfeeding and are provided with the necessary support.

* All members of the emergency affected population are informed about the range, location and timing of facilities and services.

Capacity standard 3: local capacity

Local capacity and skills are used and enhanced by emergency nutrition programmes.

Key indicators

* Women and men from the disaster-affected population are included in the planning, implementation, monitoring and evaluation of nutrition programmes.

* Staff understand the importance of strengthening local capacities for long-term benefit.

* The skills base within existing local partners and institutions and in the affected population is tapped and strengthened during the course of the humanitarian assistance programme.

Guidance notes

1. **See**: ODI/People In Aid (1998), Code of Best Practice in the Management and Support of Aid Personnel.

2.**Staffing**: staff and volunteers should demonstrate capabilities equal to their respective assignments. They should also be aware of key aspects of human rights conventions, international humanitarian law and the Guiding Principles on Internal Displacement (see the Humanitarian Charter).

Providing training and support as a part of emergency preparedness is important to ensure that skilled personnel are available to deliver quality services. Given that emergency preparedness cannot be assured in many countries, humanitarian agencies should ensure that qualified and competent staff are identified and properly prepared before eventual assignment to an emergency situation.

When deploying staff and volunteers, agencies should seek to ensure that there is a balance in the number of women and men on emergency teams.

Appendix 1

Definitions

Access

This term describes the availability of enough food (eg through production, markets, gathering in the wild, gift etc), and people's ability to acquire it (through their own labour, purchase, exchange etc). Access is central to the concept of food security (defined below) and should take account of seasonal dynamics and supply mechanisms.

ACC/SCN

United Nations Administrative Committee on Coordination / Subcommittee on Nutrition.

BMI Body Mass Index : $\frac{\text{weight (kg)}}{\text{height (m)2}}$ (a nutritional index for adults)

Defaulter from a therapeutic feeding programme

An individual who has not attended the feeding programme for more than 48 hours.

Exits from a feeding programme

Exits from a feeding programme are those no longer registered. The population of exited individuals is made up those who have defaulted, recovered (those who are referred) and died.

Food security

The World Bank's definition is used: access by all people at all times to enough food for an active, healthy life.

IU

The International Unit measures Vitamin A: 1 IU=0.3 µg Retinol Equivalent.

Malnutrition

Malnutrition is wasting (thinness) and/or nutritional oedema. Although micronutrient deficiencies are also forms of malnutrition, these are referred to specifically. Stunting is also a form of malnutrition but in disaster-affected populations is an indication of longerterm nutritional problems which preceded the disaster event. Correction of wasting and oedema reduces the risk of death. For these reasons, the nutrition standards only apply to nutrition activities which correct wasting and oedema (as well as micronutrient deficiencies).

Definitions of malnutrition

	Total Malnutrition	Moderate Malnutrition	Severe Malnutrition
Children 6.0-59.9 months	<-2Z scores WFH or 80% median WFH or <12.5 cm MUAC +/ or nutritional oedema	-3 to <-2Z scores WFH or 70%to <80% median WFH or 11.0 to <12.5 cm MUAC	<-3Z scores WFH or <70% median WFH or <11.0 cm MUAC +/ or nutritional oedema
Children 5-9.9 years	<-2Z scores WFH or <80%median WFH +/ or nutritional oedema	-3Z to <-2Z scores WFH or 70% to <80% median WFH	<-3Z scores WFH or <70% median WFH +/ or nutritional oedema
Adults 20.0-59.9 years	BMI <17 +/ or nutritional oedema	16 to < 17 BMI	see critical issues below

Children

Guidance notes:

Weight-for-height indicators use the NCHS/CDC reference data.

MUAC is one of the best predictors of death, partly as it is biased towards younger children. MUAC is often used for screening to select those most at risk.

WFH is the most commonly used indicator for assessing the severity of a nutritional problem. It is the preferred tool for assessments and surveys.

Critical issue

There are no agreed anthropometric cut-offs for malnutrition in infants below six months, apart from the presence of nutritional oedema. The NCHS/CDC growth references are not useful since they are drawn from a population of artificially-fed babies - whereas breastfed babies grow at a different rate. For this reason, it is important to assess infant feeding practices, particularly access to breastmilk, and the implications for support of the lactating woman, in order to determine whether malnutrition in this age group is a potential problem.

Adolescents

Critical issue

There is no clear, tested, agreed definition of malnutrition in adolescents (defined as 10.0-19.9 years by WHO). Indicators currently used include:

BMI-for-age, which is not applicable in contexts where growth retardation is prevalent and age is difficult to determine. In these circumstances, BMI-for-height could be used. Provisional cut-offs for both these indicators are given below. Maturational indicators, specifically menarche and adult voice, improve interpretation of BMI reference data as the peak in the adolescent growth spurt occurs prior to these milestones. However, the BMI cut-offs have NOT been validated yet and should be used with caution**.** It is imperative that any assessment of nutritional status in adolescents is accompanied by clinical assessment.

Provisional definitions of malnutrition in adolescents[1]

Total Malnutrition	Moderate Malnutrition	Severe Malnutrition
<-2Z scores BMI-for-age or <-2Z scores BMI-for-ht +/or nutritional oedema	-3 to <-2Z scores BMI-for-age or -3 to <-2Z scores BMI-for-ht	<-3Z scores BMI-for-age or <-3Z scores BMI-for-ht +/or nutritional oedema

These indicators use the NCHS/CDC reference standards.

It may also be possible to assess adolescents with respect to stage of maturation (rather than age or height), making it possible to use local patterns of maturation and thus negating the need for reference data. However, this is as yet at the concept stage and requires further investigation and validation.

Adults

Guidance note

Any assessment of severe malnutrition in adults should always be accompanied by clinical examination since, as with children, malnutrition associated with infection carries higher risks of death.

Critical issues

The cut-offs for adult malnutrition are indicators of chronic energy deficiency. There are no agreed cut-offs for rapid-onset malnutrition in adults, but evidence suggests that cut-offs for severe malnutrition could be lower than a BMI of 16. The cut-off must distinguish between those who require specialised food to recover (ie rapid-onset, severe malnutrition) and those who do not (ie those chronically energy deficient). This needs verification. Furthermore, a universal cut-off for BMI has limited application since there are large variations in BMI between populations, occurring independently of nutritional status. Such variations would have to be corrected for.

There are also dangers in using BMI as a tool for screening, since there are large variations in BMI within populations caused by body shape and not nutritional status. For this reason, adults should also be assessed with MUAC and appropriate cut-offs created.

MUAC may be used as a screening tool for pregnant women (eg as a criterion for entry into a feeding programme). Given their additional nutritional needs, pregnant women may be at greater risk than other groups in the population (see Nutrition Analysis standard 2). MUAC does not change significantly through pregnancy. MUAC <20.7 cm (severe risk) and <23.0cm (moderate risk) has been shown to carry a risk of growth retardation of the foetus.[2] The risk is likely to vary according to the population.

Elderly people

Critical issue

There is currently no agreed criterion of malnutrition in the elderly and yet this group may be at risk of malnutrition in emergencies. WHO suggests that BMI thresholds for adults may be appropriate for elderly people aged 60-69 years. Measurement accuracy is problematic because of spinal curvature (stooping) and compressing of the vertebrae. Arm span (the measurement from the tip of the middle finger on one hand to the tip of the middle finger on the other when arms are extended) can be used instead of height, but the multiplication factor to calculate height varies according to the population. BMI could be used on those elderly people able to stand up straight. MUAC may be a useful tool for measuring malnutrition in the elderly but research on appropriate cut-offs is currently in progress.

Mean weight gain (g/kg/d)

Calculated as follows: (weight on exit (g) minus lowest weight recorded during recovery (g)) + (lowest weight recorded during recovery(kg)) x number of days between lowest weight recorded and exit.

MUAC

Mid Upper Arm Circumference

NCHS/CDC

National Centre for Health Statistics / Centers for Disease Control, USA 1975

Nutritional oedema

Bilateral, symmetrical pitting oedema which cannot be accounted for by heart failure, gross proteinuria, renal or cardiac failure, liver disease or pre-eclampsia.

Proportion of exits defaulted

$$\frac{\text{number of defaulters in the programme}}{\text{number of exits}} \times 100\%$$

Proportion of exits died

$$\frac{\text{number of deaths in the programme}}{\text{number of exits}} \times 100\%$$

Proportion of exits recovered

$$\frac{\text{number of individuals successfully discharged in the programme}}{\text{number of exits}} \times 100\%$$

Recovered

To classify an individual as recovered from severe malnutrition he/she must be free from medical complications and have achieved and maintained sufficient weight gain (eg for two consecutive weighings). Cut-offs for weight gain (expressed as a nutritional index) at discharge from therapeutic care will depend on whether the patient is being referred to another feeding programme for the moderately malnourished (ie 'recovered' here includes those individuals who are referred to supplementary feeding); the type of programme; and the nature of the nutritional problem. Established protocols suggest appropriate discharge criteria for therapeutic care. These discharge criteria should be strictly adhered to, in order to avoid the risks associated with premature exit from the programme. Similarly, protocols define limits for the mean length of stay for patients in therapeutic feeding, aimed at avoiding prolonged recovery periods (eg typical lengths of stay may be 30-40 days).

Social and care environment

The provision in the household and community of time, attention and support to meet the physical, mental and social needs of household members.[3] Social norms and support mechanisms are important in considering the potential role and impact of individuals as carers in their household. There are six types of activities practised by caregivers: 1) care for women; 2) breastfeeding and feeding of young children; 3) stimulation of children and adolescents and support for their development; 4) food preparation and food storage practices; 5) hygiene practices; and 6) home health practices.

WFH

Weight for height (a nutritional index for children). In children below 85cm (or under two years of age), recumbent length is taken instead of standing height.

Notes

1. WHO (1997, draft), The Management of Nutrition in Major Emergencies. WHO. Geneva.

2. WHO (1995), Physical Status: The Use and Interpretation of Anthropometry. WHO. Geneva.

3. Based on definitions in: UNICEF (1997a).

Appendix 2

Nutritional Requirements

The following figures can be used for planning purposes in the initial stage of an emergency:

Nutrient	Mean population requirements
Energy	2100 kcals
Protein	10-12% total energy (52-63g), but < 15%
Fat	17% of total energy (40g)
Vitamin A	1666 IU (or 0.5mg Retinol Equivalents)
Thiamine (B^1)	0.9mg (or 0.4mg per 1000 kcal intake)
Riboflavin (B^2)	1.4mg (or 0.6mg per 1000 kcal intake)
Niacin (B^3)	12.0mg (or 6.6mg per 1000 kcal intake)
Vitamin C	28.0 mg
Vitamin D	3.2 - 3.8 µg calciferol
Iron	22mg (low bioavailability (ie 5-9%))
Iodine	150 µg

Adapted from: WHO (1997, draft) and WFP/UNHCR (December 1997).

Appendix 3

Provisional Nutrient Densities

In the absence of population requirements for these essential nutrients, the following nutrient densities are proposed as a provisional tool for planning purposes. Expert consultations in 1998 may result in new recommendations.

The Desirable Nutrient Densities relate to a refugee diet. The Lower Threshold Density is suggested as the minimum value below which the nutrient density of the whole diet should not fall.

Minerals: all values are per 100Kcal

	Unit Desirable Nutrient Density Lower Threshold Density
POTASSIUM (K)	mg 190 74
SODIUM (Na)	mg 60 26
MAGNESIUM (Mg)	mg 30 10
CALCIUM (Ca)	mg 84 28
PHOSPHORUS (P)	mg 70 21
ZINC (Zn)	mg 0.9 0.4
COPPER (Cu)	µg

95

28
SELENIUM (Se)

µg

3.6
1.85
MANGANESE (Mn)

µmol

0.3
CHROMIUM (Cr)

nmol

2
MOLYBDENUM(Mo)

nmol

5

FLOURINE (Fl)

µmol

<1

Source: Golden M H N, Briend A, Grellety Y (1995), Report of meeting on supplementary feeding programmes with particular reference to refugee populations. European Journal of Clinical Nutrition. No 49, pp137-145.

Appendix 4

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Other resources

Nutcalc is a simple software package for analysis of food rations run on MS DOS and developed by Action Contre la Faim (ACF).