

# MODULE 13

## MANAGEMENT OF SEVERE ACUTE MALNUTRITION

Part 1: Fact sheet

Part 2: Technical notes

Part 3: Trainer's guide

Part 4: Training resource list



**Harmonised Training Package (HTP):**  
Resource Material for Training on  
Nutrition in Emergencies. Version 2, 2011

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### Module 13: Management of severe acute malnutrition

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## The Harmonised Training Package (HTP): Resource Material for Training on Nutrition in Emergencies

### What is the HTP?

The Harmonised Training Package: Resource Material for Training on Nutrition in Emergencies (the HTP) is a comprehensive documentation of the latest technical aspects of Nutrition in Emergencies (NiE). The word **Harmonised** reflects the pulling together of the latest technical policy and guidance, the word **Training** refers to its main application and the word **Package** refers to the bringing together of the subject matter into one place. It is organised as a set of modules by subject, each containing technical information, training exercises and a resource list for use in training course development.

The HTP is an initiative of the IASC Global Nutrition Cluster (GNC) and has been endorsed by the GNC and its member's agencies. In 2007, the IASC GNC commissioned the UK based partnership, NutritionWorks, to develop a training resource to facilitate capacity development in the NiE sector. HTP Version 1 was launched in 2008. HTP Version 2 update in 2010/11 was funded under an USAID OFDA grant to the UK based charity, the Emergency Nutrition Network (ENN). The update was undertaken in an ENN/NutritionWorks collaboration, with NutritionWorks responsible for overall coordination and editorial management, and editorial oversight and module production supported by the ENN.

### What the HTP is not

The HTP is not a ready-to-use training course. It cannot be used as an 'off the shelf' package; rather, it should be used as a resource package during a process of course development by experienced trainers.

### Who is the HTP for?

The HTP is a primarily a **resource for trainers** in the NiE sector and it can be used by individuals to increase their technical knowledge of the sector. It is designed to provide trainers from any implementing agency or academic institution with information from which to design and implement a training course according to the specific needs of the target audience, the length of time available for training and according to the training objectives. It is written in clear English and will be available in other languages in the future.

### How is the HTP organised?

The HTP is organized into four sections containing a total of 21 modules which can be used as stand-alone modules or as combined modules depending on the training needs.

#### Section 1: Introduction and concepts

1. Introduction to nutrition in emergencies
2. The humanitarian system: Roles, responsibilities and coordination
3. Understanding malnutrition
4. Micronutrient malnutrition
5. Causes of malnutrition

#### Section 2: Nutrition needs assessment and analysis

6. Measuring malnutrition: Individual assessment
7. Measuring malnutrition: Population assessment
8. Health assessment and the link with nutrition
9. Food security assessment and the link with nutrition
10. Nutrition information and surveillance systems

### **Section 3: Interventions to prevent and treat malnutrition**

11. General food distribution
12. Management of moderate acute malnutrition
13. Management of severe acute malnutrition
14. Micronutrient interventions
15. Health interventions
16. Livelihoods interventions
17. Infant and young child feeding
18. HIV/AIDS and nutrition
19. Working with communities in emergencies

### **Section 4: Monitoring, evaluation and accountability**

20. Monitoring and evaluation
21. Standards and accountability in humanitarian response

Each module contains 4 parts which have a specific purpose as follows:

**Part 1:** The Fact Sheet – provides an overview of the module’s topic and is designed for non-technical people to obtain a quick overview of the subject area.

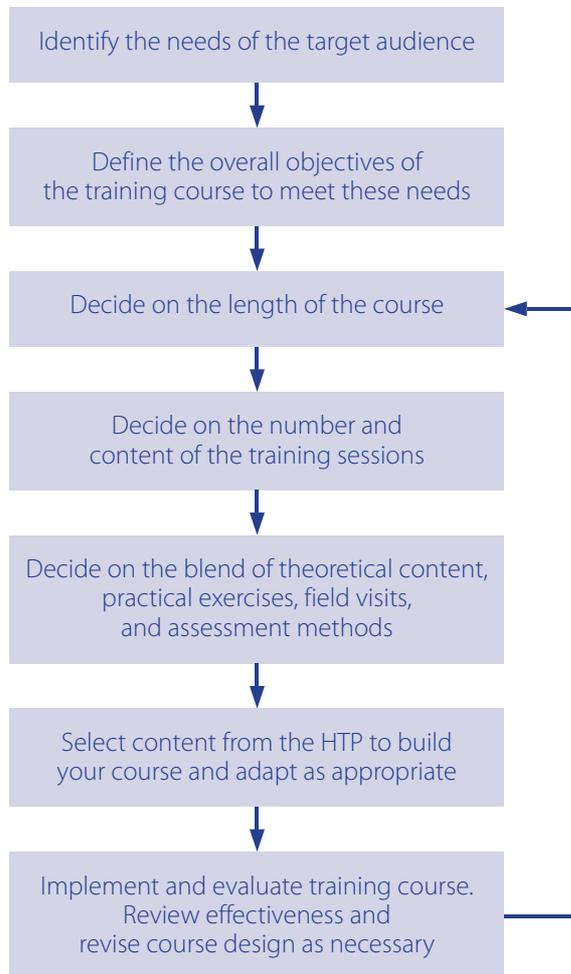
**Part 2:** The Technical Notes – for trainers and trainees, provides detailed technical guidance on current policies and practice.

**Part 3:** The Trainers’ Guide – aims to help trainers develop a training course and provides tips and tools which can be adapted to the specific training context.

**Part 4:** Resources – lists of relevant available resources (including training materials) for the specific technical area.

## How to use the HTP

The HTP should be used during a process of course development. The process of course development involves a number of steps and these are summarised in the diagram below.





## PART 1: FACT SHEET

The fact sheet is part one of four parts contained in this module. It provides an overview of therapeutic care for severe acute malnutrition. Detailed technical information is covered in part two. Words in *italics* are defined in the glossary.

### Introduction

The main objective of therapeutic care is to save the lives of individuals with *severe acute malnutrition* (SAM). SAM is a complex medical condition. It can be identified using *anthropometry* (body measurements). Management of SAM involves a combination of routine medication, specific therapeutic foods and individualised care. Therapeutic care programmes can obtain very high recovery rates (above 80 or 90 per cent) and reach most malnourished individuals in the community.

Therapeutic care has evolved in recent years from an approach based solely on inpatient care to an integrated strategy in which those with SAM and medical complications are treated in hospitals and those with no medical complications are treated at community level. This community based approach has been made possible through the development of *ready to use therapeutic foods* (RUTFs) which can be consumed by the patient at home. It was endorsed in 2007 by a joint United Nations statement.

The therapeutic care module uses Community-based Management of Acute Malnutrition (CMAM) as the generic term for describing the approach and package of services for the management of individuals affected by *acute malnutrition* as it is the most widely used.

### Components of therapeutic care/CMAM

Acutely malnourished children are identified in the community or directly in the health facility. Three forms of treatment are provided according to the severity of the child's condition:

1. Individuals with *moderate acute malnutrition* (MAM) and no medical complications are supported in a *supplementary feeding programme* (SFP) which provides dry take-home rations and standard medicines. The objectives of SFP programmes are to treat moderate acute malnutrition and decrease the incidence of SAM. Technically this is not therapeutic care, but SFPs are usually linked to therapeutic care during emergencies.
2. Individuals with SAM with no medical complications are treated in *outpatient care* sites (health centres or posts), with RUTF and routine medicines. These are taken at home, and the child attends the outpatient care site weekly or biweekly.
3. Individuals with SAM who have medical complications need to be treated in *inpatient care* until they are well enough to continue being treated in outpatient care. Infants below six months of age with SAM are also treated in inpatient care.

A further essential component of CMAM is community mobilization and active case finding.

### When to start therapeutic care

Four main considerations are taken into account:

1. A **global acute malnutrition rate** above 10% or between 5% and 9% plus the presence of aggravating factors could be considered as threshold for starting or strengthening CMAM.
2. **Contextual factors** including the causes of malnutrition, the socio-economic situation, the food security situation, general ration quantity and allocation, the presence of other interventions and projected future needs that will need to be addressed.
3. **Public health priorities** or whether other priority needs are already being met (e.g., access to food, shelter, safe water, sanitation) and if there are plans for integration of management of SAM into national routine health care services.
4. Availability of qualified human, material and financial **resources**.

## Community mobilization

Community mobilisation aims to sensitise, inform and educate the community on nutrition matters in order for the community to internalize them and to promote and encourage their active participation in the activities for the management of acute malnutrition. It allows early detection and referral of cases to appropriate nutrition or health services (clinics or hospitals) and their follow-up. It is an important factor for obtaining **good coverage** through good uptake of the services provided by the population in need within a specific health catchment area.

## Outpatient care

Outpatient care is provided for children (older than six months) presenting with SAM without medical complications and for patients that have recovered in inpatient care after they have regained appetite. Outpatient care facilities can be set up at health centres, or in dedicated sites. In emergency settings, they are often organised in the same facilities as SFPs. Patients visit centres once a week (or once every two weeks when distance or security conditions compel). These centres are usually run by health workers.

## Admission criteria

Admission into a therapeutic program is based on *weight for height* (WFH) and/or *mid upper arm circumference* (MUAC) and/or presence of *bilateral pitting oedema*. The combination of admission criteria into a therapeutic programme and the respective cut-off points could vary from place to place depending on the local context. Recommendations in national guidelines should be used when available. Some organisations use only MUAC and bilateral pitting oedema to select admissions, as these tools are simple to learn and quicker to undertake. Adults and adolescents are admitted on the basis of low *body mass index* or MUAC or presence of bilateral pitting oedema.

## Inpatient care

Inpatient care is provided for the treatment of cases with medical complications or infants less than six months old or for those that cannot participate in outpatient care (e.g. where

outpatient care is not available). It can be organised as residential care (with the patients staying overnight) or, less often, as day care (with the patients returning to their homes for the night). It can be established as an attachment to an existing hospital or health centre, or as an independent structure. Medical treatment and therapeutic feeding are given according to the principles of WHO guidelines. Average length of stay before referring to outpatient care is 7 to 10 days.

Malnutrition requiring inpatient care is identified by the presence of:

- Anorexia (lack of appetite), or
- Severe oedema or
- *Marasmus* with any level of oedema, or
- The presence of associated medical complications (such as extensive infections)

Infants below six months of age with severe acute malnutrition are always admitted to inpatient care with their mother or caretaker.

Inpatient care facilities should be staffed with nurses and with physicians (at least part time and reachable 24 hours), feeding assistants (one assistant for ten patients), cleaners and kitchen staff. One supervisor (usually a clinician) is needed for each inpatient feeding facility.

N.B: Inpatient and outpatient care are different components of the same programme. Even if sometimes they are implemented by different agencies, they need to be integrated and coordinated to be effective.

## Treatment protocols

Routine medicines are given to children on admission to both inpatient and outpatient care. When children are being transferred between inpatient and outpatient therapeutic care units, care must be taken not to repeat treatments already given in the treatment unit the child was first admitted to. The table below summarise the routine treatments recommended in therapeutic care.

Medication	When
Amoxicillin	At admission
Anti malaria (according to national protocol)	Test at admission if clinical signs
Mebendazole or Albendazole	Single dose at second week
Vitamin A	Single dose at discharge
Measles vaccination	During treatment

Routine antibiotics are given to all children, given the high prevalence of silent infection in severe malnutrition. Anti-malarials are often included in areas of high *malaria* prevalence. Anti-malarial treatment should follow national guidelines. Immunisation status of children should be checked at each visit according to the standard immunisation schedule. Children older than nine months are normally vaccinated against measles if they have not received the dose already.

A second line antibiotic is used in inpatient units if a child fails to respond to routine antibiotics. The use of IV lines is strictly avoided except in case of septic shock or septicemia.

### Feeding protocols

Nutritional management in outpatient units uses Ready-To-Use therapeutic Foods (RUTF). RUTF are soft or crushable foods that can be consumed directly from the packet by children from the age of six months. RUTF is provided at between 150 and 220 kcal/kg/day. Commonly practiced dosing is 200 Kcal/kg/day. Children should be assessed for appetite to eat RUTF before admission to outpatient care and on a weekly basis once admitted. Children who fail the appetite test should be referred to an inpatient unit. Children need to be offered clean drinking water along with RUTF both at facility level and at home.

Patients with complicated SAM or with no appetite should be admitted to an inpatient facility for the *stabilisation phase*. This is achieved with F75 *therapeutic milk* and specific medical treatment. Meals are given six to eight times per 24 hours (throughout the day and night). The patient should not receive any other food during this period.

When appetite returns and oedema is reduced, the patient is ready for the *transition phase* of inpatient care. During the transition phase the patient should receive an increased amount of energy, but still needs careful monitoring. RUTF/F100 is started during this period. If the patient eats more than 75% of the daily RUTF ration, then the patient is transferred to an outpatient programme. If the patient does not take enough RUTF or has difficulties swallowing, a replacement feed (F100, a specialised therapeutic milk to promote weight gain) is given.

As soon as the child starts gaining weight without developing complications he/she is upgraded to the *rehabilitation phase* which ideally should be implemented in outpatient care using RUTF. When this is not possible, the patient should stay in inpatient care for the remainder of treatment with F100.

Infants below six months of age (or below three kg of weight) are treated with a different protocol aimed at reinstating breastfeeding, when this is appropriate for the mother or another female carer. This is achieved by a method called *supplementary suckling technique* where the infant is fed diluted F100 through a tube attached to the mother's nipple thereby stimulating milk production at the same time as being fed. The mother is also stimulated to breastfeed and once milk is being produced by the mother, the amount of therapeutic milk given is reduced until the child is gaining weight and breastfeeding and can go back home.

HIV-infected malnourished patients can recover their nutritional status with these protocols although minor modifications may need to be made to the antibiotics given. To prevent toxicity, antiretroviral drugs are started only when nutritional status improves and any metabolic disturbances have been corrected.

It is important to train mothers or caretakers on how to feed their child properly. This advice should include breastfeeding (when this is appropriate for the mother or a female carer), use of available local foods, and use of therapeutic products offered as part of the treatment.

### Emotional and Physical stimulation

Throughout treatment, it is important to promote emotional and physical stimulation of the child, to prevent developmental delays and mental disorders. Special programmes for this should be organised in all centres.

### Monitoring, discharge and referral

During outpatient care, the patient visits outpatient facilities every week or every two weeks for follow up and receives routine drugs and RUTF. During these visits, health and nutritional education, with an emphasis on appropriate *infant and young child feeding* practices, should be given. If the patient is not recovering at home, or if complications occur, the patient is assessed by a clinician and referred to inpatient care if necessary. Referral of patients from inpatient to outpatient or vice versa needs to be managed carefully so that there is no discontinuity of treatment.

During treatment the patient is monitored through a patient's card where weight, MUAC, clinical assessments and treatment received are noted. Individualised patient monitoring cards are used in outpatient care and multi-chart in inpatient care.

Patients are discharged from outpatient care when they meet target weight for height or MUAC, and have good weight gain with no signs of oedema for two weeks. Patients discharged from therapeutic care are then followed up at an SFP for a period of four months.

**Key messages**

1. Severe acute malnutrition is a complex medical condition that needs specialised care to save the patient's life.
2. Therapeutic care programmes can deliver treatment in different ways. Current protocols can obtain very high recovery rates and reach most malnourished individuals in the community.
3. Therapeutic care programmes are initiated when population malnutrition and mortality rates reach specific levels taking into account contextual factors, available resources and other public health priorities.
4. Therapeutic care components include inpatient care for individuals with complicated severe acute malnutrition and infants less than six months with severe acute malnutrition and outpatient care for individuals with uncomplicated severe acute malnutrition.
5. Community mobilisation, case finding and sensitisation are key elements of therapeutic care programmes.
6. Management of patients involves a combination of routine medication, special therapeutic foods and care. Only a small percentage of patients will need specialised medical treatment due to medical complications.
7. Malnourished children below 6 months are managed largely through reinstating breastfeeding with special techniques when this is possible.
8. HIV-infected malnourished patients can recover their nutritional status with normal treatment protocols. When available, antiretroviral treatment should be given only after completing stabilisation and transition phases of treatment of severe acute malnutrition.
9. Therapeutic care programmes can work in conjunction with SFPs and other health and nutrition programmes to obtain maximum impact at the population level.
10. Therapeutic care should be integrated into routine primary health systems in post and non-emergency situations.

# PART 2: TECHNICAL NOTES

The technical notes are part two of four parts contained in this module. They provide information on management of severe acute malnutrition and cover the major technical details, highlighting challenging areas and providing guidance on accepted current practice. Words in italics are explained in the glossary.

Other modules which are complementary to this one include:

- HTP Module 6: Measuring Malnutrition
- HTP Module 12: Management of Moderate Acute Malnutrition
- HTP Module 15: Health Interventions
- HTP Module 18: HIV-AIDS and Nutrition
- HTP Module 19: Working with communities in emergencies
- HTP Module 20: Monitoring and evaluation

#### Summary

This module is about management of cases with *Severe Acute Malnutrition (SAM)*. It describes the principles and the components of current approaches and the internationally validated protocols in use.

These technical notes are based on the following references and the Sphere Standard in the box below:

- WHO and UNICEF (2009) *Joint Statement on WHO Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children*
- FANTA-2/Valid/Concern Training Guide for CMAM, 2008
- WHO, WFP, SSCN, UNICEF (2007) *Joint Statement on Community-based Management of Severe Acute Malnutrition*
- Valid International (2006) *Community-based Therapeutic Care (CTC). A field manual*. Oxford: Valid International, First Edition.
- WHO (2003) *Guidelines for the Inpatient Management of Severely Malnourished Children* Geneva: WHO
- WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers*. Geneva: WHO
- The Sphere Project (2011), *Humanitarian Charter and Minimum Standards in Humanitarian Response*, chapter 3

**Key messages**

1. Severe acute malnutrition is a complex medical condition needing specialised care to save the patient's life. Current protocols for the management of severe acute malnutrition can obtain high recovery rates and good coverage by offering adapted care for the specific conditions of the patient.
2. Management of acute malnutrition cases involves a combination of routine medication, specific therapeutic foods and individualised care, and includes four components:
  - Community mobilisation and community case finding
  - Outpatient care for children 6-59 months with SAM without medical complications
  - Inpatient care for children 6-59 months with SAM with medical complications, and for infants, adolescents and adults
  - Management of *Moderate Acute Malnutrition* (MAM) for children, pregnant and lactating women with infant under 6 months, and other vulnerable groups (see module 12)
3. Activities for the management of SAM cases should be integrated, when possible, into routine health care services (outpatient and inpatient) with sites decentralised to provide optimal access to services
4. Community mobilisation combined with community case finding for early detection of cases are key elements for the success of the treatment and the reduction of SAM related mortality and morbidity
5. HIV-infected patients with SAM can recover their nutrition status with the current treatment protocols for SAM. Immediate cotrimoxazole prophylaxis and antiretroviral treatment (when available after the stabilisation of medical complications) should be given.

**Sphere standard****Management of Acute Malnutrition standard 2: Severe acute malnutrition**

Severe acute malnutrition is addressed

**Key Actions**

- Establish from the outset clearly defined and agreed criteria for set-up or increased support to existing services, and scale down or closure
- Include inpatient care, outpatient care, referral and community mobilisation components interventions for the management of severe acute malnutrition
- Maximise access and coverage through involvement of the community from the outset
- Provide nutritional and medical care according to nationally and internationally recognised guidelines for the management of severe acute malnutrition.
- Discharge criteria include both anthropometric and non-anthropometric indices
- Investigate and act on causes of default and non response or an increase in deaths
- Address Infant and Young Child Feeding (IYCF) with particular emphasis on protecting, supporting and promoting breastfeeding

**Key indicators**

These indicators are primarily applicable to the 6-59 month age group, although others may be part of the programme.

- More than 90% of the target population is within <1 day's return walk (including time for treatment) of the programme site
- Coverage is >50% in rural areas, >70% in urban areas and >90% in camp situations
- The proportion of discharges from therapeutic care who have died is <10%, recovered is >75% and defaulted is <15%

Source: Sphere Handbook, 'Chapter 3: Minimum Standards in Food Security and Nutrition', The Sphere Project, Geneva, 2011.

## 1. Introduction

This module is based on international recommendations, updated protocols and existing training materials and covers current approaches and protocols for the management of severe acute malnutrition (SAM) as they are applied by agencies and national health systems in a variety of contexts (emergency, post-emergency and development).

In the past treatment of *acute malnutrition* was almost exclusively in response to a nutrition (humanitarian) emergency situation. Current development of simpler, effective and more affordable protocols has led many countries to integrate management of SAM into routine health care services. Nowadays, while seeking to make treatment available for the greatest number of individuals, most agencies' current emergency response interventions also aim to strengthen local capacities and seek sustainability of management of SAM by supporting Ministry of Health (MOH) structures/staff and facilitating integration and national scale up of activities for management of SAM. The module tries to illustrate through a variety of case studies the different scenarios for emergency response.

This module uses Community-based Management of Acute Malnutrition (CMAM) as the generic term for describing the approach and package of services for the management of individuals affected by acute malnutrition as it is the most widely used. However, different agencies use other expressions or phrasings when presenting the same activities and others differ on the specific components that should be considered as part of the model.

It is important to avoid inappropriate use of terms like 'community care' or 'treatment in the community', which causes confusion and leads people to think that CMAM refers to all aspects of child care happening in the community or that the decision for treatment is taken at community level. The term 'community-based' refers to involving communities from the outset of programmes to promote understanding of treatment and for early detection of cases, referral and follow-up.

## 2. Principles of management of severe acute malnutrition (SAM)

The management of SAM, with or without medical complications, includes the package of activities aiming to decrease mortality and morbidity related to acute malnutrition and potentially contributing to a reduction in its prevalence.

Until recently individuals with SAM were treated exclusively at the hospital level. Coverage rates obtained through the inpatient model were low and it was expensive for:

- The system, because of the need for complex infrastructure and expert human resources,
- The society, because of poor access and low coverage that causes late detection of cases and therefore poor outcomes (excess morbidity and mortality), and
- The families, because of high economic and social opportunity costs associated with e.g. hospital travel and stay, interrupted care of other household members and disrupted *livelihood* activities

In 2007 *community-based management of severe acute malnutrition* was endorsed by the United Nations for the treatment of SAM.<sup>1</sup> This was based on evidence from successful programmes that used the Community-based Therapeutic Care (CTC) approach.

The components of community-based management of acute malnutrition are:

- Community mobilisation and case-finding
- Outpatient *therapeutic care* for SAM without complications
- Inpatient therapeutic care for SAM with complications
- Inclusion of management of *moderate acute malnutrition* (MAM) where in place

Internal coordination between the different components is essential. Linkages with the community ensure the adequate referral of children to the services and the follow up of cases enrolled in outpatient care services. Efficient tracing systems are fundamental for the continuity of care for children moving between inpatient and outpatient care services, or between management of SAM and *Management of Acute Malnutrition* services.

Various terms have been used to describe the 'model' comprising these components and to reflect their integration within existing health systems:

<sup>1</sup> Community Based Management of Severe Acute Malnutrition: A Joint Statement by the World Health Organisation, World Food Programme, the United Nations System Standing Committee on Nutrition and the United Nations Children's Fund. May 2007.

Box 1: Terms commonly used

**CTC or Community-based Therapeutic Care, Ambulatory Care, Home-based Care:** terms used in the first programmes using the approach in emergency settings and led by NGOs. Still used by some agencies when referring to the approach itself or to its outpatient care component.

**CMAM or Community-based Management of Acute Malnutrition:** generic term used by various agencies for programmes comprising the above components in either emergency or non-emergency context. The term was proposed by a few agencies in 2008 and validated by the GNC. This term will therefore be used for the purposes of this document.

**IMAM or Integrated Management of Acute Malnutrition:** the shift from a hospital-based to a community-based approach facilitated the integration of outpatient care for the management of SAM without medical complications into routine primary health care services in MOH structures. The term IMAM has been used by various agencies and countries to emphasise this aspect of the approach.

In the same way, the designation of different components of CMAM can vary, mainly when countries adapt the name of the services to their own system specificities. Terms used are:

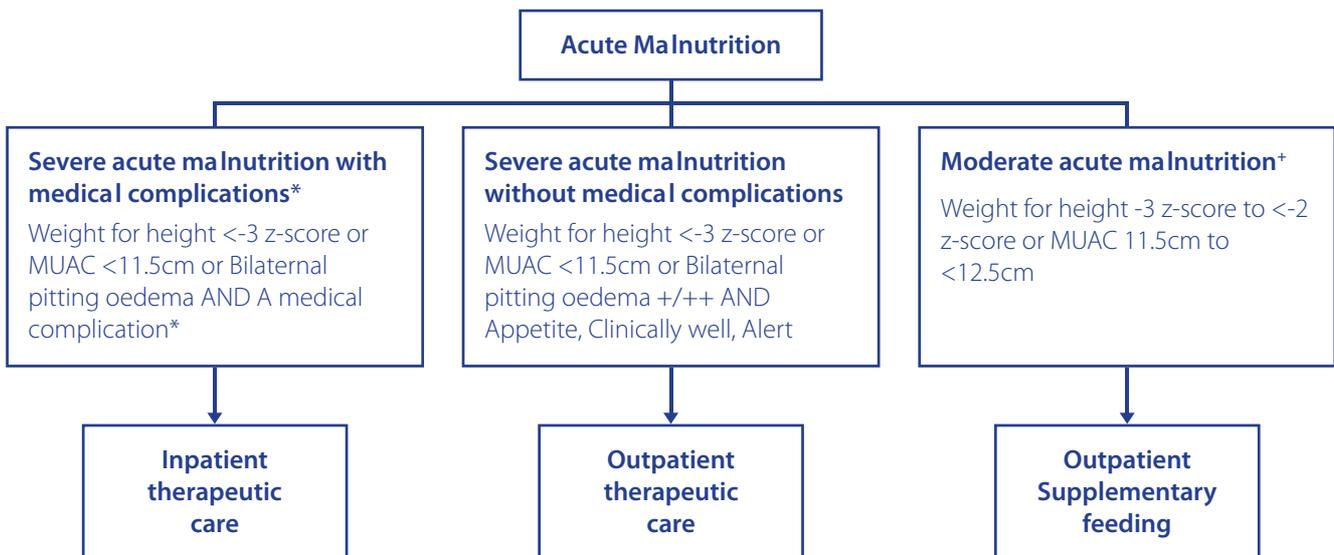
- **Outpatient Therapeutic Care or Programme (OTC/OTP)** for outpatient care
- **Stabilisation Centre (SC)** for inpatient care

This shift from hospital-based exclusively inpatient treatment to an integrated community-based approach was possible thanks to several elements, mainly:

- The advent of **Ready to Use Therapeutic Foods (RUTF)** that allows safe use of the dietary treatment at home (see below)
- The **new classification for acute malnutrition** (figure 1) that introduces new clinical elements to define SAM and allows for the provision of a more adapted treatment according to the patient's medical and nutrition condition
- Screening and admission by *Mid-Upper Arm Circumference (MUAC)*.

A new classification for acute malnutrition

Figure 1: The new classification of acute malnutrition<sup>2</sup>



\* Medical Complications: severe bilateral pitting oedema (+++), marasmic kwashiorkor, anorexia (as demonstrated by an appetite test with RUTF), intractable vomiting, convulsions, lethargy or not alert, unconsciousness, lower respiratory track infection, high fever, severe dehydration, severe anaemia, hypoglycaemia, hypothermia, signs of xerophthalmia (corneal xerosis, ulceration, cloudiness or keratomalacia). Others always admitted to inpatient care are: infants less than 6 months (or <4kg) with visible wasting.

+ if a child with Moderate Acute Malnutrition has severe medical complications they would be referred to an inpatient facility for treatment of those complications but would still be registered for supplementary feeding and be provided with the corresponding ration.

<sup>2</sup> Adapted from Collins S, Yates R (2003), *The need to update the classification of acute malnutrition*. The Lancet Vol. 362, Issue 9379, Page 249, July 19

Other elements that underpin the new approach are:

- Community mobilisation,
- Timely detection of cases in the community,
- Simplified management of cases at health centre level and integration of treatment into routine health services.

### Community mobilisation

Community mobilisation aims to sensitise, inform and educate the community on nutrition matters in order for the community to internalise them and to promote and encourage their active participation in the activities for the management of acute malnutrition. It allows early detection and referral of cases to appropriate nutrition or health services (clinics or hospitals) and their follow-up. It is an important factor for obtaining **good coverage** through good uptake of the services provided by the population in need within a specific health catchment area.

### Timely detection of cases

Evidence shows that treatment of children with SAM is easier when they present for treatment before the onset of medical complications. Active case-finding is done in the communities by community health workers and/or community volunteers. They detect wasting using MUAC and the presence of oedema in children under 5 and refer all suspected cases to health facilities. Program experience has shown that, where community mobilisation is well implemented, self-referral/passive case finding also occurs. That is, where carers with children suffering from SAM self-present at health facilities for treatment. This may be as a result of hearing about the programme and the type of children it can help from other members of the community or other caregivers with children receiving treatment.

### Integration

Integration into health care services implies the recognition by the ministry of health of the importance of the treatment of severe acute malnutrition for children under 5 and the role it can play in affecting morbidity and mortality in the country.

The CMAM approach provides a means of delivering services for children with SAM that are integrated into routine primary health systems of countries.

Where CMAM is already present in a country, efforts should be made during emergencies for the strengthening of the national health system, aiming for improvement of access to treatment and **greater coverage** at local and national level. In countries where integration is planned for the post-emergency period, emergency programmes should be designed in coordination with national authorities so that implementation modalities adopted during the emergency period are more likely to be successfully integrated into the national health services.

### Linkages with other programmes

The linkages established between management of SAM activities/programmes and other health and nutrition related activities are key for its success. Because of this, where other interventions do not exist or are weak, efforts should be made to develop and support such interventions in an integrated fashion. Linkages should work in both directions in order to increase mutual benefits, mainly coverage of both SAM treatment and complementary services and effectiveness of treatment (e.g. for prevention of relapse from SAM). In some cases CMAM can be used as an additional entry point for provision of other health and nutrition related activities by using the contact created between the community and health facilities to provide wider services such as *infant and young child feeding* support.

Examples of programmes and strategies to which CMAM should, depending on the context, make connections with are:

- **Nutrition:** Infant and Young Child Feeding (IYCF), Growth Monitoring (GM), Essential Nutrition Actions (ENA), including micronutrient *supplementation*
- **Health<sup>3</sup>:** Integrated Management of Childhood Illnesses (IMCI) and Community-IMCI, Expanded Programme of Immunisation (EPI), HIV/AIDS and Tuberculosis treatment programs, *Diarrhoeal* disease and *Malaria* control, national child survival or immunization days
- Others related to: Water, Sanitation and Hygiene, *Food Security*, Social Welfare, Emergency Preparedness/Response plans, Education

### Ready-to-use Therapeutic Foods (RUTF)

RUTF are soft or crushable foods that can be consumed directly from the packet by children from the age of six months. RUTF formulation is specifically for the dietary treatment of SAM before the onset of medical complications or when these are under control after stabilisation.

<sup>3</sup> Refer to HTP Module 15: Health interventions

RUTF has a nutrient composition based on that of the F100 liquid/milk diet which has been recommended since 1999 by WHO for the recovery phase in the management of SAM. It differs in that it has an *energy* density that is >5 times that of F100 (543 kcal/100 g compared to 100kcal/100g in the F100 milk made up) due to the absence of water in the product. It does however have a similar ratio of nutrients to energy as the F100. It is produced by replacing part of the dried skim milk used in the F100 formula with peanut butter. It also differs in that it contains a low dose of iron not contained in the F100 formula. Studies have shown that it is at least as well accepted by children as F100; that it is effective for rehabilitating severely malnourished children, and that it promotes faster weight gain than F100.<sup>4,5,6,7</sup> RUTF nutrition composition has been developed based on metabolic and clinical research and its formulation allows rapid growth and recovery of children with severe acute malnutrition.

RUTF can only be given to children aged six months or above. Infants less than 6 months do not have the reflexes to swallow solid foods and also have a metabolism which needs higher water intakes than older infants. (Note: it is advisable to use the actual age to determine suitability for RUTF and not to use length of 65cm as a proxy to indicate 6 months of age as in stunted populations many infants of 6 months or older have a length less than 65cm).

RUTF is designed to be consumed by children without addition of water to the product. Bacteria need water to grow and they cannot proliferate in RUTF in case of accidental contamination. For this reason, RUTF is safer than liquid diets in home settings and when hygienic conditions are not perfect. However, due to its nutrient density, children eating RUTF must drink plenty of safe water in addition to RUTF.

The most commonly used type of RUTF is a lipid based form made of peanuts, milk powder, oil, sugar and a mix of micronutrients. Amount of such type of RUTF per packaging unit varies, depending on the composition of the product and its origin. The most common presentation is sachets (packets) of 92gr of peanut-based spread<sup>8</sup>, equalling about 500 kcal. Other types of packaging contain larger amounts of the product thus prescription of rations in any specific context should be calculated according to the available product to provide 200kcal/kg/day for each child. Another RUTF is available in a dry biscuit form which requires a separate calculation.

### 3. Community mobilisation

Community mobilisation in CMAM covers a range of activities designed to open a dialogue, promote mutual understanding, encourage active and sustained engagement from the target community as well as improve case finding and follow up. The goal of the community mobilisation component of CMAM is to improve treatment outcomes and coverage. If community members are unaware of the service, or the type of children it treats, or are confused or misinformed about its purpose, they may not benefit from it or may even prevent others from benefiting. This promotion of understanding has therefore been found to be a crucial part of successful programmes.

A community mobilisation strategy should be planned and implemented before the start of treatment activities in the health facilities.

#### Initial community assessment

A community assessment is the first task for the development of the community mobilisation strategy and is the learning phase: it will provide planners with a rough sense of how the community is organised, how acute malnutrition is understood, how the CMAM services are likely to be received, and how the community can best support them. Information should be collected from lay people in the target communities and from staff and caregivers using a qualitative methodology. The following features are likely to impact on service delivery, demand and access and therefore should be included in any community assessment:

- Community perceptions of acute malnutrition
- Health seeking behaviour and decision makers for accessing treatment
- Key community figures, and structures (administrative and leadership)
- Existing community-based organisations and groups
- Potential candidates for case-finder role
- Existing links and communication systems between health facilities and the community
- Formal and informal channels of communication
- Formal and informal health services
- Potential barriers for children with SAM to accessing treatment

<sup>4</sup> Briend A, et al. *Ready-to-use therapeutic food for the treatment of marasmus*. Lancet 1999;353:1767-8

<sup>5</sup> Diop El et al. *Comparison of the efficacy of solid and liquid therapeutic foods for the rehabilitation of severely malnourished children: a randomized trial* Am J Clin Nutr 2003; 78: 302-7

<sup>6</sup> Ciliberto MA et al. *Comparison of home-based therapy with ready-to-use therapeutic food with standard therapy in the treatment of malnourished Malawian children: a controlled, clinical effectiveness trial* Am J Clin Nutr 2005; 81: 864 -70

<sup>7</sup> Linneman Z. *A large-scale operational study of home-based therapy with ready-to-use therapeutic food in childhood malnutrition in Malawi* Maternal and Child Nutrition 2007, 3, pp. 206-215

<sup>8</sup> PlumpyNut® from NUTRISET France

### A Community mobilisation strategy

The strategy will define the way that mobilisation activities – especially case-finding – are to be carried out and sustained. The community mobilisation strategy should define the parameters of the CMAM services; address the barriers to access identified in the assessment and build a case-finding and referral system around the existing skills and resources.

### Developing messages and materials

The use of simple, standardised messages to explain CMAM (how it is offered, and to whom) will help to replace rumour with accurate information. Messages need to be informative but concise and be designed if necessary to be read aloud to an illiterate audience. They should be translated into the relevant local languages, and adapted as necessary for different audiences or method of use.

Core information to be communicated in most settings includes the following:

- Description of the target children using local descriptive terms for wasting and swelling,
- Explanation of the benefits of CMAM, noting that only a few children with SAM who are sick may need to be treated at the hospital,
- Explanation about the identification and referral process noting that thin or swollen children can also self-refer to the nearest health facility to be checked,
- Time and date of outpatient care sessions at the nearest health facility and locations of those facilities as well as locations of any hospitals or health centres offering inpatient care for SAM

Identify and use an appropriate term in the local language to communicate that the RUTF is a medicinal food. This will help to minimise misunderstandings about the services and the product when it is first introduced. In a country with several major language groups, several different terms may need to be used

**Visual aids** enhance the impact of messages. Pictures depicting SAM children with the most easily recognisable symptoms of oedema and wasting for the community will strengthen communications, and are an important means of circumventing some of the cultural and linguistic obstacles to describing the target population.

All messages, visual aids and suggested local language names for the RUTF should first be tested with the community to ensure they are comprehensible and appropriate for use.

### Raising Community Awareness

Raising community awareness works best through existing channels, organisations and structures within the community. The following is a suggested order of priority through which awareness raising activities may initially be carried out:

1. A week/a few days prior to CMAM launch: Key community figures
  - Meeting at health facility to orient them to CMAM
2. At / just after launch: Selected official forums
  - Village meetings, committee meetings, health days and education sessions, church services or mosques, radio
3. In the weeks following launch: Informal channels
  - Funerals, markets, water-points
4. In the weeks following launch as children improve/ over long term: Caregivers of beneficiaries

N.B: Community mobilization is a continuous process. It is important that initial community mobilization activities are maintained throughout the service provision stages.

**Box 2: Roles for Community Mobilisation**

Assigning responsibility for community mobilisation is essential to ensure the adequate planning, implementation and monitoring of the activities.

An overall (**MOH national level**) focal person should be identified to manage the whole mobilisation process and ensure a coherent nationwide strategy, including the integration of community activities into existing community health/nutrition programmes

A responsible person for the implementation/monitoring should be identified at each **district/department/health zone level**. Often the most appropriate person is somebody who already has responsibility for Health Promotion, Outreach or Extended Health/Nutrition activities

In each **health facility**, the health worker in charge will be responsible for coordinating with Community Volunteers (CV) or Community Health Workers (CHWs) assigned to community case-finding and follow up

**Community volunteers (CV) and community health workers (CHW)** should be trained on MUAC measurements and detection of oedema (for case finding), home follow up of cases and community sensitisation. They should be the link between the population and the health/nutrition services and should be identified within existing networks. Where possible additional training on infant and young child feeding for example can help to ensure the sort of linkages for prevention of SAM and continued recovery post discharge that were mentioned earlier.

**4. Case-finding and triage for severe acute malnutrition****Definition of severe acute malnutrition**

Severe acute malnutrition is defined by low *weight for height* (WFH) and/or low Mid-Upper Arm Circumference (MUAC)<sup>9</sup> and/or the presence of bilateral pitting oedema. Cut off points for anthropometric measurements for the diagnosis of SAM are WFH <-3 z-score or MUAC <11.5cm.

The term SAM refers to two different entities with different clinical and pathological characteristics: *marasmus* and *kwashiorkor*.

The most evident clinical feature of marasmus is severe wasting with loss of muscle and fat mass, resulting in low WFH and/or low MUAC. Patients are extremely emaciated with thin, flaccid skin and prominent scapulae, spine and ribs. Advanced SAM also presents with anorexia, associated infections and behavioural changes (apathy and irritability).

Clinical features of *kwashiorkor* include bilateral pitting oedema of the lower legs and feet (generalized oedema in advanced cases, affecting face, hands, arms, trunk), loss of muscle and fat mass (that can be masked by oedema), skin lesions, changes of hair colour (lightening) and texture (dry, thin, and brittle) and behavioural change (apathy and more often irritability).

**Box 3: Assessing kwashiorkor or nutritional oedema**

Bilateral pitting oedema is verified when normal thumb pressure applied on top of both feet for three seconds leaves a pit (indentation) in the foot after the thumb is lifted.

There are three grades of nutrition oedema:

Grade 1 or (+): When oedema is present in both feet

Grade 2 or (++) : Oedema in both feet and legs

Grade 3 or (+++) : Oedema in both feet, in legs and in hands or face (or generalised)

Association of both forms, known as *marasmic-kwashiorkor*, has been found in various studies to correlate with a higher mortality than for the individual conditions<sup>10</sup>.

<sup>9</sup> Refer to HTP Module 6: Measuring Malnutrition, for measurements (weight, height/length and MUAC) and WFH index

<sup>10</sup> Ahmed et al. (1999), *Mortality in Severely Malnourished children with Diarrhoea and use of a standardised management protocol*. The Lancet, Volume 353, Issue 9168, 5 June 1999, Pages 1919-1922

### Challenge 1: The “rejection” issue<sup>11</sup>

An overall challenge is to ensure that the maximum number of children with SAM are identified in a timely fashion at community level while avoiding ineligible children presenting for treatment and carers having to be turned away. This can occur either as a result of self referral or of incorrect referral by community volunteers or community health workers. As new services are initiated there is always a compromise or balance to be struck between encouraging the community to attend without raising unrealistic expectations of what the service can provide to whom.

The use of MUAC (a simple and transparent measure of SAM), with the addition of the presence of bilateral pitting oedema, was found after review to be the indicator best suited to screening and case detection of malnutrition in the community. Unlike previous systems where community level screening was based on MUAC followed by admission based on WFH, both identification and admission based on MUAC minimises the problem of rejecting children once they reach the health centre.

Rejection of referred children on presentation at health facilities is a common cause of ill-feeling in the community, and has been shown to rapidly impact on participation and therefore coverage. Handling inadmissible children and their caregivers in a positive and informative way is paramount and can also contribute to raising awareness of the programme and of severe acute malnutrition as a life threatening condition.

#### Case finding for SAM

Early detection of SAM cases is essential for the success of their treatment and should be done both at community level and in health facilities.

- **Active case finding** refers to the identification of acutely malnourished children by community health workers or volunteers in communities.
- **Passive case finding** refers to the identification of acutely malnourished children by health workers after presenting during routine child visits and/ or general consultation at the health facility or hospital.
- When CMAM activities have been long established in an area and communities have been adequately mobilised most cases will arrive spontaneously at health facilities for screening and treatment and **self-referral** will become a great source of identifying new cases.

At the community level, identification of children with SAM is carried out by measuring MUAC and assessing presence of bilateral pitting oedema. All children aged 6-59 months with a MUAC less than 11.5cm or presenting with bilateral pitting oedema should be referred to the nearest health facility for confirmation and treatment. Older children and adults are identified by the presence of visible severe wasting, or by the use of MUAC where cut-offs have been agreed or bilateral pitting oedema and referred to the nearest health centre.

Infants less than 6 months will be referred based on their weight for height indicator or bilateral pitting oedema. If not possible at community level, cases with visible severe wasting and difficulties in breastfeeding should be referred. These infants will be sent directly to inpatient care for treatment.

At health facility level health staff should screen all children attending the structure. This should be done during routine primary health care services (e.g., EPI, Growth Monitoring) or when children attend any other consultation. Health facilities also play a critical role in confirming the eligibility of children referred by the community and ensuring they are enrolled in the appropriate nutrition service. Therefore, health workers should confirm MUAC measurement and recheck bilateral pitting oedema for children referred by the CHW or CV.

If the enrolment for treatment of SAM includes the WFH criteria, staff should also measure the weight and the length or height of all children presenting and compare the child's weight against a WFH look-up table to see whether the child's weight is below the -3 z-scores from the median.

#### Triage for identification of SAM with or without medical complications

Two elements support the decision on whether the child with SAM should be treated in outpatient or inpatient care:

- Absence or presence of **medical complications**: medical complications should be assessed by a thorough medical examination and accurate medical history with the mother (or caregiver)
- Good **appetite** or poor appetite: this is evaluated through the “appetite test” whereby the child passes or fails the test to eat RUTF

<sup>11</sup> Myatt et al. (2006), *A review of methods to detect cases of severely malnourished children in the community for their admission into community-based therapeutic care programs*. Food and Nutrition Bulletin Vol 27 (3 Suppl), S7-23.

### Medical examination at health centre level

The medical examination for a child with SAM follows the same steps and procedures as those recommended for any sick child and is summarised in the IMCI protocols. The examination should be carried out by a trained health worker. It should start with the taking of a medical history followed by a physical examination.

The medical history provides a background to the episode of malnutrition and highlights immediate problems and concerns. It should include assessment of:

- Usual diet before current episode of illness,
- Breastfeeding history,
- Food and fluids taken in the past few days,
- Recent sinking of eyes,
- Duration and frequency of vomiting or *diarrhoea*, appearance of vomit or diarrhoeal stools,
- Time when urine was last passed,
- Contact with people with measles or tuberculosis,
- Any deaths of siblings
- Birth weight,
- Milestones reached (sitting up, standing, etc.)
- Immunisations.
- Chronically ill person in the household (HIV and TB)

The clinical examination assesses whether the child presents with any sign of severe illness or medical complications:

- Enlargement or tenderness of the liver, jaundice,
- Abdominal distension, bowel sounds, “abdominal splash” (a splashing sound in the abdomen),
- Severe pallor,
- Signs of circulatory collapse: cold hands and feet, weak radial pulse, diminished consciousness,
- Temperature: hypothermia or fever,
- Thirst,
- Eyes: corneal lesions indicative of Vitamin A deficiency,
- Ears, mouth, throat: evidence of infection,
- Skin: evidence of skin lesion or infection or purpura,
- Respiratory rate and type of respiration: Signs of pneumonia or heart failure,
- Appearance of faeces.

Taking axillary temperature and a respiration count for one full minute while the child is calm is an essential part of this examination.

### Appetite test

Lack of or poor appetite is sometimes the only sign of the presence of medical complications in an acutely malnourished child. It can be caused by infection, poor liver and metabolic functions or deficient gastro intestinal function. A child unable to eat RUTF will not be consuming it at home leading to quick deterioration in nutrition status.

**Pass appetite test:** The child eats at least one third of a packet of RUTF (92 g) or three teaspoons from a pot.

**Fail appetite test:** The child does NOT eat one third of a packet of RUTF (92 g) or three teaspoons from a pot.

It is not necessary to conduct the appetite test if the child is very ill, e.g., has pneumonia, persistent diarrhoea, dysentery, measles or malaria, or any of the general danger signs. This child should be immediately referred to inpatient care.

Table 1: Case definitions for the most common medical complications at health centre/clinic

Medical complication	Case definition
Anorexia, poor appetite*	Child is unable to drink or breastfeed; Failed RUTF appetite test
Intractable vomiting*	Child vomits after every oral intake
High fever	Child has high body temperature, or axillary temperature $\geq 38.5^{\circ}\text{C}$ , rectal temperature $\geq 39^{\circ}\text{C}$
Hypothermia	Child has low body temperature, or axillary temperature $< 35.0^{\circ}\text{C}$ , rectal temperature $< 35.5^{\circ}\text{C}$
Lower respiratory tract infection	Child has a cough with difficult breathing, fast breathing (If child is 2-12 months: 50 breaths per minute or more; if child is 12 months-5 years: 40 breaths per minute or more) or chest indrawing
Severe <i>anaemia</i>	Child has palmar pallor or unusual paleness of the skin (Compare the colour of the child's palm with your own palm and with the palms of other children)
Skin lesion	Child has broken skin, fissures, flaking of skin
Unconsciousness*	Child does not respond to painful stimuli (e.g., injection)
Lethargy, not alert*	Child is difficult to wake. Ask the mother if the child is drowsy, shows no interest in what is happening around him/her, does not look at the mother or watch your face when talking, is unusually sleepy
Hypoglycaemia	There are often no clinical signs of hypoglycaemia. One sign that does occur in a child with SAM is eye-lid retraction: child sleeps with eyes slightly open
Convulsions*	During a convulsion, child's arms and legs stiffen because the muscles are contracting. Ask the mother if the child had convulsions during this current illness
Severe dehydration	Child with SAM with a recent history of diarrhoea, vomiting, high fever or sweating and recent appearance of clinical signs of dehydration as reported by the caregiver

The signs marked with (\*) are IMCI danger signs

#### Box 4: How to conduct the appetite test

The appetite is tested by giving the child a packet (sachet, pot) of RUTF and observing how he/she eats it. It can be done while the health worker starts the medical history with the caregiver but it is generally better to leave the child with the mother alone in a calm and quiet place. This will prevent the child becoming afraid of the environment or health facility staff and refusing to eat.

- Leave the child with the caregiver in a separate and quiet place.
- Explain to the caregiver the reason for the test and how it is going to be carried out.
- Verify with the caregiver how long since the child ate or drank before the appetite test to ensure that a failed appetite test is not due to the child just having eaten.
- The caregiver should wash their hands and the child's hands and face before the test starts.
- The caregiver should be comfortably seated with the child before offering the sachet or pot of RUTF for the child to eat.
- If the child refuses to eat, the caregiver should continue to gently encourage the child to eat. However, the child should not be forced.
- Provide clean water for the child to drink while he is eating the RUTF.
- Observe the child eating the RUTF during 30 minutes and decide if the child passes or fails the test.

**Box 5: Criteria for direct admission to inpatient therapeutic care**

To be referred immediately to the nearest hospital for inpatient therapeutic care:

- All children 6-59 months with
- Bilateral pitting oedema (+++) or
- A combination of oedema and wasting or
- SAM with poor appetite (failed appetite test) or medical complications\*
- All cases with SAM under 6 months

**\*Medical complications:**

- Intractable vomiting
- Convulsions
- Very weak, apathetic, lethargic, not alert or unconscious
- Fitting, convulsions
- Hypoglycaemia
- High fever  $\geq 38.5^{\circ}\text{C}$
- Hypothermia  $< 35^{\circ}\text{C}$
- Severe dehydration based on recent history of diarrhoea/vomiting and clinical signs
- Lower respiratory tract infection:
  - >50 resp/min for infants 2 to 12 months
  - >40 resp/min for children 1 to 5 years
  - >30 resp/min for children above 5 years
  - Any chest in-drawing
- Very pale, severe anaemia
- Signs of *xerophthalmia*, corneal xerosis, ulceration, cloudiness or keratomalacia
- Skin lesion or infection

NB: if hypoglycaemia is suspected at the triage stage: 50 ml of a 10% glucose solution should be given according to the following preparation. This should be given orally.

**Decision making**

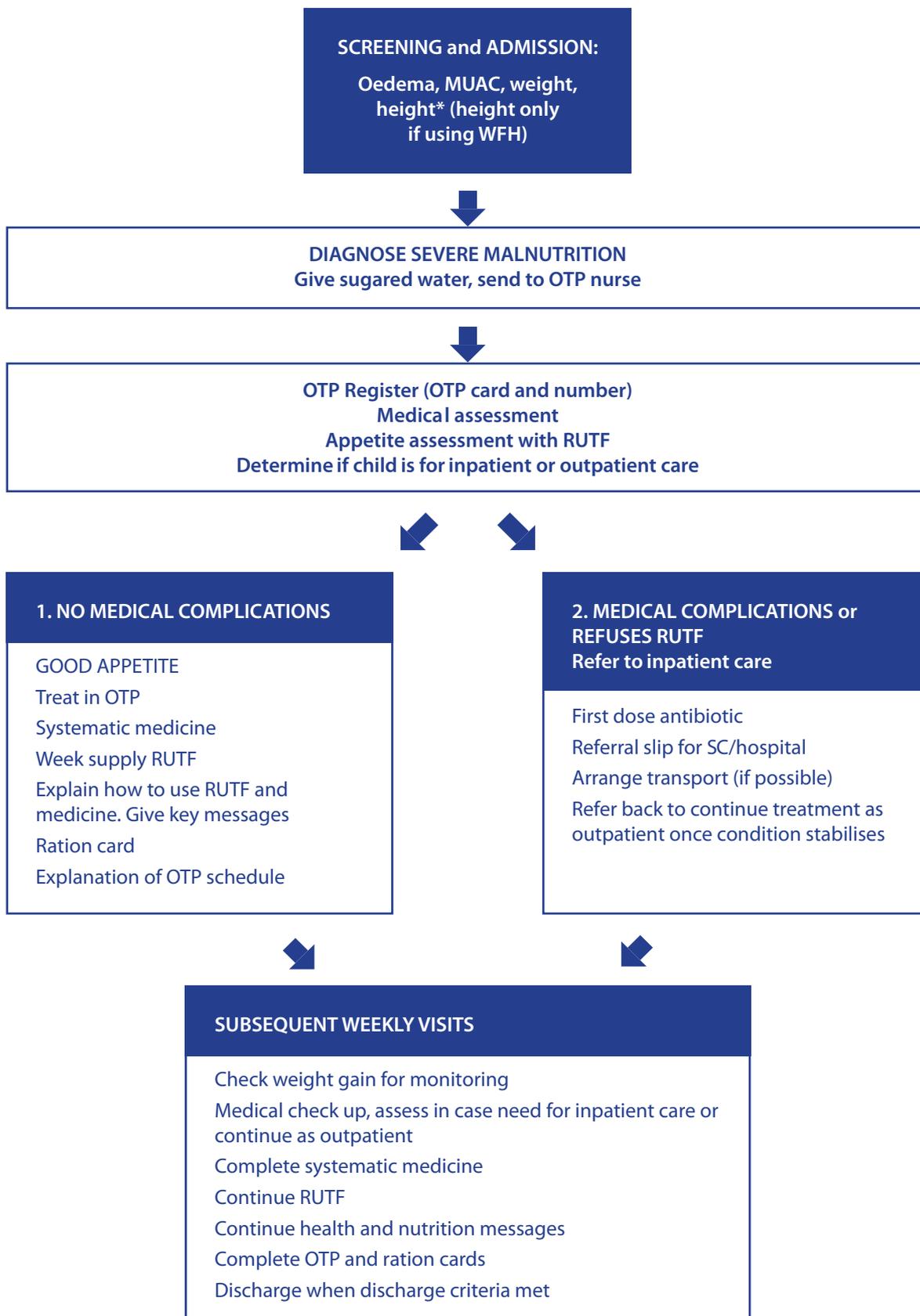
- Children 6-59 months with good appetite that pass the appetite test, and are free from medical complications can be treated as outpatients.
- Those with severe illness or with medical complications should be referred to inpatient care.

In practice in the absence of disease outbreaks (measles, cholera, malaria...) less than 15% of all cases with SAM will need hospitalisation if community mobilisation and the active case finding and referral system from the community are adequately performed so that cases present early.

**Table 2: Preparation of sugar water (10% dilution)**

Quantity of Water	Quantity of Sugar	
100 ml	10g	2 heaped teaspoons

Figure 2: Summary of screening and triage for Severe Acute Malnutrition



## 5. Outpatient Therapeutic Care for children 6-59 months with SAM

For all admissions to and treatment in Outpatient Therapeutic Care refer to national guidelines if they are in place.

### Admission to outpatient therapeutic care

Current recommendations for admission to outpatient care are:

**ALL** with appetite (as demonstrated using the appetite test) and free from medical complications (as detailed in figure 2 and section 4).

Table 3: Criteria for new admissions in outpatient care (children 6-59 months)

MUAC <11.5cm and/or
WFH <-3 z-score or
Bilateral pitting oedema (+) or (++)

Other age groups (older children and adults) identified with SAM according to agreed WFH or MUAC measurements (though there is currently a lack of international guidance on these criteria).

### Admission categories

Table 4: Categories of admission for outpatient care (Children 6-59 months)

New cases	Children 6-59 months with SAM who meet the criteria mentioned above
Old cases	<b>Children Referred from Inpatient Care:</b> Children with SAM referred from inpatient care after stabilisation to continue treatment as outpatients until full recovery
	Children with SAM already under treatment in <b>outpatient care</b> elsewhere and transferred to this health facility
	<b>Returned Defaulters:</b> Children who defaulted from treatment before recovery and return to continue treatment

Note: **Relapsed cases** are considered new cases: the child was successfully treated (Discharged as Cured) before and now has a new episode of SAM.

### Admission procedures

When a child fulfils the criteria for enrolment in outpatient care, the health worker has to:

1. Fill in the Individual monitoring, record or treatment card with the required information including the medical history and medical examination carried out at the triage stage.
2. Register the case in a Registration Book
3. Assign an admission number (see box 6 below)
4. Give explanations to the caregiver about the functioning of outpatient care and the expected evolution of the child while in treatment until he/she reaches discharge criteria, including expected length of stay in treatment
5. Prescribe and give routine medications and any other treatment the child may need with thorough explanation to the caregiver (see below)
6. Update vaccination schedule, if needed (prioritise giving of measles vaccination if required)
7. Prescribe and give RUTF and go over basic key messages with the caregiver, making sure they have been well understood (see below)
8. Link the child's family with the assigned CHW or CV for home visit and follow up
9. Give appointment for the next visit (the same day each week)
10. At subsequent appointments additional health/nutrition education (i.e. IYCF messages) can be given, and any additional vaccinations missing from the child's vaccination schedule administered.

**Box 6: Individual unique number for CMAM beneficiaries**

To ensure that cases can be tracked an individual and unique number should be allocated to each child when first enrolled into one of the CMAM services: Outpatient Therapeutic Care or Inpatient Therapeutic Care. A discharged child, who continues receiving nutrition support from a MAM service, can keep the same number.

To facilitate tracing and follow up between services or prevent double counting of cases the individual number should be used on all documents: Individual monitoring cards, Registration book, transfer/referral forms etc. Care must be taken to ensure that the number appears on transfer slips that accompany the child through the different services. The system of numbering can be developed appropriately for each programme.

Example of a registration numbering system:

Each registration number is made up of three parts, for example: **NYL/003/OTC**

**NYL** is the code that identifies the health facility that was the original point of entry for the child, either health centre or hospital.

**003** is the number allocated to the child (this runs in sequence from the previous child registered at that centre). Starts from 0 for each individual facility

**OTC** refers to the service where the child was first enrolled (i.e. OTC for outpatient therapeutic care, ITC for inpatient therapeutic care).

**Returning defaulters** retain the same number that they were first given, as they are still suffering from the same episode of malnutrition. Their treatment continues on the same monitoring card.

**Readmissions after relapse** are given a new number and a new card as they are suffering from a separate episode of malnutrition and therefore require full treatment again. Standard **individual treatment and follow up cards** provide a section where to note the relapse status of the child.

**Medical management in outpatient care****Routine medicines**

On admission, routine medicines should be given to all children attending outpatient care.

**Table 5: Summary of routine medication for outpatient care for SAM**

Medication	When
Amoxicillin	At admission
Anti malaria (According to national protocol)	Test at admission if clinical signs
Mebendazole or Albendazole	Single dose at second week
Vitamin A	Single dose at discharge
Measles vaccination	During treatment

Note: Children who have been transferred from hospital based management of SAM should not receive routine medications that have already been administered during hospital stay. However if any treatments received during inpatient care are incomplete (e.g. for clinical vitamin A deficiency), this information should be included on referral documents and the doses required to complete that treatment given during outpatient care.

**Routine antibiotics**

Should be given to all children, given the high prevalence of silent infection in severe malnutrition and **Amoxicillin** should be used as a broad spectrum antibiotic. If the patient continues to present infectious symptoms, he/she should be referred to an inpatient service.

The first dose of Amoxicillin should be taken during the admission process under the supervision of the health care provider. An explanation should be given to the caregiver on how to complete the treatment at home. The recommended dosages vary slightly between protocols mainly on the length of the treatment (from 5 to 7 or to 10 days). The table below shows dosages on the most common presentations for Amoxicillin.

Table 6: Recommended dosage for Amoxicillin

Weight of the child	Syrup 125 mg/ 5ml 7 days	Syrup 250 mg/ 5ml 7 days	Tablets 250 mg 7 days
<10 kg	125 mg or 5 ml 3x a day	125 mg or 2.5 ml 3x a day	125 mg or 1/2 tablet 3x a day
10-30 kg	250 mg or 10 ml 3x a day	250 mg or 5 ml 3x a day	250 mg or 1 tablet 3x a day
>30 kg	Give tablets	Give tablets	500 mg or 2 tablets, 3x a day

Before prescribing/administering Amoxicillin it is important to:

- Check standard dosages with National (or WHO) guidelines for SAM
- Check label on bottles for dosages and dilution of syrups as this can change between different manufacturers.

#### Anti-malaria treatment

Systematically screen all children for **malaria** in *endemic* areas on admission regardless of their body temperature. A child with SAM cannot auto-regulate his/her body temperature well and tends to adopt the temperature of the environment. If in clinical doubt, repeat the malaria test in the following weeks of the initial test.

Treat malaria according to the national treatment protocol with first line Artemisinin Combination Therapy (ACT) and in compliance with IMCI protocol. In cases of severe malaria the child is referred to inpatient care for treatment with a second line anti-malarial drug (Coartem or Quinine).

In malaria endemic areas, children with SAM should be provided with insecticide impregnated bed nets to prevent malaria.

#### De-worming

Give a single dose of **Mebendazole** (or **Albendazole**) on the second visit to outpatient therapeutic care.

Table 7: De-worming drugs dosage

Age (Weight) of the child	Albendazole 400 mg tablet	Mebendazole 100 mg or 500 mg tablet
<1 year	NO	NO
1-2 years (or <10 kg)	200 mg or 1/2 tablet	250 mg or 1/2 tablet
≥ 2 years (or ≥10 kg)	400 mg or 1 tablet	500 mg or 1 tablet

#### Vitamin A

Because of its toxicity and the considerable amounts available in the RUTF, vitamin A is only given in a single mega dose on the day of discharge unless a dose has already been received within the previous four months (except in cases of recent measles).

Table 8: Vitamin A dosages

Age of the child	Vitamin A
6-11 months	100 000 IU
≥ 12 months	200 000 IU

#### Immunisations

Infections have a negative effect on child growth and in some cases can precipitate the occurrence of SAM or provoke relapse in children during their recovery phase. Two preventable infections have a particularly negative impact on growth; measles and whooping cough. The IMCI booklet recommends checking the immunisation status of the child at each visit according to the standard immunisation schedule.

## Other medical treatments

Most of the medical conditions that affect the child with SAM without medical complications can be treated following the IMCI protocols.

### Anaemia

Children with SAM often have low iron stores as they have a reduced haemoglobin synthesis and have lost iron rich muscle. Iron supplementation however may be harmful to them as this may promote infections, severity of malaria in highly endemic areas, and lead to oxidative stress. Therefore, if the child doesn't present with any signs of anaemia there is no need to provide supplements as RUTF already contains the daily required doses.

All cases with anaemia are referred to inpatient care according to IMCI protocols where laboratory testing can be done and transfusion given where indicated (Haemoglobin <40 g/l or packed cell volume <12%).

### Vitamin A deficiency

Children with eye signs of vitamin A deficiency should be referred to inpatient care, as the condition of the eyes can deteriorate very rapidly and the risk of blindness is high. Check for specific symptoms (e.g. corneal ulceration, xerophthalmia, corneal xerosis, cloudiness, keratomalacia) at every visit and more intensively when there is a high risk of deficiency (e.g. during an outbreak of measles).

### Diarrhoea

Diarrhoea is often a precipitating cause leading to SAM. Whereas the use of oral rehydration therapy (ORT) (and zinc supplementation) is effective to prevent dehydration, it is not recommended to use ORT in children with SAM. The effect of diarrhoea on the nutrition status of children can be minimised by continued feeding, breastfeeding and administration of RUTF (note that RUTF provides a daily supplementation of Zinc) during the diarrhoea episode. Health staff should provide caregivers with information on feeding and hygiene, but also explain the danger signs of diarrhoea and advise when to return to the health facility in case the child's condition deteriorates. In case of diarrhoea (note that most children with SAM have diarrhoea) the dehydration status of the child with SAM will be carefully assessed. A recent history of diarrhoea, vomiting, fever or sweating with a recent appearance of clinical signs (sunken eyes) indicate dehydration in which case the child should be referred to inpatient care for further assessment and treatment.

## Infections

Treating common childhood infections and advising continuous feeding during illnesses following IMCI guidelines also contributes to the prevention of SAM and relapse after treatment. First-line antibiotic is provided in outpatient care at admission. If a second-line antibiotic is needed, the child with SAM is referred to inpatient care.

## Nutrition management in outpatient care

The dietary management of cases in outpatient care is based on RUTF feeds. RUTF is provided at between 150 and 220 kcal/kg/day. Commonly practiced dosing is 200 Kcal/kg/day. The following table shows the amounts of RUTF to give based on the weight of the child.

RUTF presented in biscuit form (BP100(r)) is not recommended by the manufacturer for children under 2 years (less than 7kg) as it is crumbly and the child is at risk of swallowing incorrectly. For these younger children, 6-24 months, the biscuits can be mixed with clean water to make porridge. Special orientation will be required for the caregiver on how to do this. However if the caregiver prepares porridge, anything not eaten should be immediately discarded after the meal to avoid contamination.

To ensure proper use of RUTF at home, it is important to provide detailed and clear information to the caregiver, and check that it has been understood. Box 7 presents basic messages for the caregiver of a child in outpatient care.

### Follow up during treatment in outpatient therapeutic care

During outpatient therapeutic care, the patient visits the health facility every week. Only for specific reasons (harvesting time, distances etc) and when the child is recovering well and the mother is compliant, can biweekly visits be envisaged later on during the treatment.

During the weekly visits the health worker assesses progress; monitors weight gain, and checks for associated medical complications that may require referral to inpatient care. The patient receives drugs and RUTF supplies for the week. Individual counselling and health and nutrition education in groups will also be provided during these visits.

The following table indicates the activities that should be carried out during the follow up at outpatient care.

It is important to organise a smooth flow of patients which limits waiting time and ensures that all patients are seen and properly looked after. Health and nutrition education is usually provided for all patients and caregivers while they are waiting to be seen.

Table 9: RUTF rations\* according to the weight of the child

Weight (in kg)	PlumpyNut® (92 gm per sachet)		BP100®	
	Packets/day	Packets per week	Bars/day	Bars per week
3.5-3.9	1 ½	11	Do not give	Do not give
4.0-5.4	2	14	Do not give	Do not give
5.5-6.9	2 ½	18	Do not give	Do not give
7.0-8.4	3	21	5	35
8.5-9.4	3 ½	25	6	42
9.5-10.4	4	28	7	49
10.5-11.9	4 ½	32	8	56
> = 12	5	35	9	63

\* The most widely used RUTF (as lipid-based paste) is PlumpyNut®. If imported it comes in packets of 92 gr. totalling about 500kcal per packet. Locally manufactured RUTF can be in pots containing a greater amount of the product, thus ration tables must be adapted.

#### Box 7: Taking RUTF at home: Messages for the caregiver

- RUTF is a food and a medicine for very thin or swollen children only. It should not be shared.
- RUTF is the only food the child needs in order to recover.
- Sick children often don't like to eat. Give small regular meals of RUTF and encourage the child to eat often (if possible, eight meals per day). Leave time for the child to eat. RUTF can be left for later if not finished, and be eaten during the course of the day.
- Always offer the child plenty of clean water to drink while he or she is eating the RUTF. Children will need to drink more water than normal.
- For young children, continue to put the child to the breast regularly. Offer breast milk first before every RUTF feed.
- Wash children's hands and face with soap before feeding if possible.
- Keep food clean and covered.
- Sick children get cold quickly. Always keep the child covered and warm.
- When a child has diarrhoea, never stop feeding. Give extra food and extra clean water.
- Return to the health facility whenever the child's condition deteriorates or if the child is not eating sufficiently.
- Once the child is recovering well and showing appetite for other foods, after a few weeks, other foods can be given at home after the RUTF feeds.

According to the outcomes of each visit, the health worker will need to decide whether the child is making good progress or has deteriorated to such a degree that inpatient referral is required or if deterioration is less severe but requires a home visit. The action protocol below (Table 11) indicates the different criteria to assist the health worker to decide what actions to take for the beneficiary during weekly follow up.

If the beneficiary is not within the criteria of the action protocol and is making good progress i.e. gaining weight, MUAC increasing, decreasing oedema, he/she has good appetite, no severe medical complications, is regularly attending weekly follow up visits, then the child continues as normal in outpatient care until (s)he reaches the criteria for discharge.

In areas with high HIV prevalence, the health worker should refer any child not making progress for HIV testing and treat accordingly, where possible (Refer to section 9: Management of SAM in areas with high HIV prevalence).

Table 10: Summary of activities during weekly visits to outpatient therapeutic care.

Activity	Frequency
Weight	Each week
MUAC	Each week
Check for oedema	Each week
Height/length	Once a month
Medical history	Each week
Physical examination (Including temperature and respiratory rate)	Each week
Appetite test	Each week
Routine medical treatment	According to treatment protocol
Home visit	As needed according to action protocol
Vaccinations	As needed according to immunization schedule
Evaluation of health and nutrition status progress and counselling	Each week
Health/Nutrition education	Each week
Evaluation of RUTF consumption	Each week
Provision of RUTF	Each week

### Home visits (See action protocol)

Home visits are carried out by CHW or CV (or health workers in some cases) and the following aspects should be assessed and recorded:

- Caregiver's understanding of the messages received in the centre
- Compliance with the treatment (RUTF and medications)
- Reasons for non-compliance with treatment, absence or defaulting
- Availability of water and sanitation facilities, hygiene practices
- Health and hygiene and food safety practices and general household food security

The community health worker should:

- Where possible provide support for any problem identified
- Encourage the continuation of the treatment
- Give health and nutrition education and recommend good infant feeding practices

### Tools for individual follow up

In order to ensure quality and continuity of care during the management of SAM cases, two documents (forms) should be used:

- **Individual treatment and follow up card:** Stays with the health staff and contains all information regarding the child's condition at admission and discharge and his/her evolution during treatment
- **Transfer slips:** Sent with the caregiver to allow tracking of information about the child's condition and evolution during movements between services (outpatient care to inpatient care and vice versa)

Some agencies recommend the use of a **ration card** which is kept by the caregiver and which records admission and discharge date and basic outcome for each visit. It promotes links with other health activities in the facility and helps to avoid double registration of the child in various centres. In emergency situations where the population is moving and centres are opened sequentially a small ration card is useful for the caregiver to help facilitate continuity of care if she moves area.

Examples of all forms can be found in Annexes 1, 2 and 3.

Table 11: Action protocol during follow up

Sign	Referral to Inpatient Care	Home Visit
GENERAL CONDITION	Deteriorating	Child is absent or defaulting
BILATERAL PITTING OEDEMA	Grade +++	Child is not gaining weight or losing weight on 2 consecutive follow-up visits
	Any grade of bilateral pitting oedema with severe wasting (marasmic kwashiorkor)	
	Increase in bilateral pitting oedema	Child is not losing oedema
	Bilateral pitting oedema not reducing by week 3	
ANOREXIA*	Poor appetite or unable to eat – Failed appetite test	Child has returned from inpatient care or refuses referral to inpatient care
VOMITING*	Intractable vomiting	
CONVULSIONS*	Ask mother if the child had convulsions since the previous visit	
LETHARGY, NOT ALERT*	Child is difficult to wake	
UNCONSCIOUSNESS*	Child does not respond to painful stimuli	
HYPOGLYCAEMIA	A clinical sign in a child with SAM is eye-lid retraction: Child sleeps with eyes slightly open.	
DEHYDRATION	Dehydration based primarily on recent history of diarrhoea, vomiting, fever or sweating and on recent appearance of clinical signs of dehydration as reported by the mother/caregiver	
HIGH FEVER	Axillary temperature $\geq 38.5^{\circ}\text{C}$ , rectal temperature $\geq 39^{\circ}\text{C}$	
HYPOTHERMIA	Axillary temperature $< 35^{\circ}\text{C}$ , rectal temperature $< 35.5^{\circ}\text{C}$	
RESPIRATION RATE	$\geq 60$ respirations/minute for children under 2 months	
	$\geq 50$ respirations/minute from 2-12 months	
	$\geq 40$ respirations/minute from 1-5 years	
	$\geq 30$ respirations/minute for children over 5 years	
	Any chest in-drawing	
ANAEMIA	Palmar pallor or unusual paleness of skin	
SKIN LESION	Broken skin, fissures, flaking of skin	
SUPERFICIAL INFECTION	Any infection requiring intramuscular antibiotic treatment	
WEIGHT CHANGES	Below admission weight on week 3	
	Weight loss for three consecutive visits	
	Static weight for three consecutive visits	
REQUEST	Mother/caregiver requests treatment of child in inpatient care for social reasons (decided by supervisor)	
NOT RESPONDING	Child that is not responding to treatment is referred to inpatient care or hospital for further medical investigation.	

\* Integrated Management of Childhood Illness (IMCI) danger signs

**Box 8: Failure to respond to treatment at outpatient care**

For children with SAM that are not responding to treatment, several steps should be taken. Some of the actions that can be taken (home visits and/or referral to inpatient care) have already been described and specific criteria for them have been listed. Only when all those actions have been exhausted, including referral to inpatient care, and a treatable cause has not been found, can the beneficiary after 4 months in treatment be discharged as 'non-recovered'.

Some of the causes for non response are due to the functioning and the performance of the service where the child is receiving the treatment; others are related to the individual child.

**Causes related to quality of program**

- Inappropriate selection of children with SAM to go directly to outpatient care
- Poor assessment of appetite
- Inadequate instructions given to caregivers
- Wrong amounts of RUTF dispensed
- Excessive time between distributions

**Causes related to socioeconomic and health status of child:**

- Sharing with the family: insufficient food given or food taken by siblings or caregivers, sibling rivalry (Other children taking the diet), all eating from the same plate
- Unwilling caregiver or overwhelmed with other work and responsibilities.
- HIV infection or TB
- Vitamin or mineral deficiency
- Physio-pathological reasons: malabsorption of nutrients, rumination, infections, specifically: diarrhoea, dysentery, pneumonia, tuberculosis, urinary infection, otitis media, malaria, schistosomiasis/leishmaniasis, hepatitis/cirrhosis
- Other serious underlying disease: congenital abnormalities, neurological damage, inborn errors of metabolism
- Psychological trauma

**Individual treatment and follow up card**

The health worker fills in this card when the child is identified as a SAM case.

- If the child remains in the outpatient care service, the card is completed and filed in the "active" file of the centre
- If the child requires referral to inpatient care, a transfer slip (see below) should be filled and the individual follow up card is kept to be filled in when they return to outpatient care.

The first page contains information regarding child's identification, medical history and treatment on admission; while the back has a series of columns each one summarizing the physical condition on admission and on the weekly follow-up visits until the child reaches discharge criteria.

**Transfer slip**

This is a format that facilitates the transmission of information between services when the child needs referral. The same form can be used for transfer from outpatient to inpatient (and vice versa), movements between two outpatient sites or when discharged to a management of MAM site if it exists. The caregiver is given the transfer slip together with instructions on how and where to go. In development settings the child's Road to Health card can be used.

**Ration card**

During emergencies, a 'ration card' is usually filled out with basic information about the child and updated on each visit. This card should stay with the caregivers as a record of the child's progress. Caregivers should bring the card with them to the site each week. A non-removable wristband is also sometimes given to the child marked with his or her registration number and/or name.

It is important that the child retains the same registration number throughout treatment (unique identification number), regardless of changes of facility and type of treatment.

**Discharge from outpatient care**

**Discharge criteria and categories**

Current WHO recommendations<sup>12</sup> for discharge (as cured) are as follows:

**Table 12: Criteria for discharge from outpatient care (Children 6-59 months)**

<b>Criteria of admission</b>	MUAC <11.5cm and/or WFH <-3 z-scores OR bilateral oedema
<b>Criteria of discharge</b>	
Cured	15% weight gain (from admission weight when free of oedema)‡
	No oedema for 2 consecutive weeks
	Clinically well and alert
Defaulted	Absent for three consecutive visits
Died	Died during treatment in outpatient care
Non recovered*	Did not meet the discharge criteria after four months in treatment

\* Note that a non responder is a person whose condition is not responding to treatment, is referred for further investigation and additional treatment for infections or underlying pathologies, or referred to inpatient care for closer monitoring.

‡ For admissions on low MUAC as the evidence on % weight gain is still being collected, some agencies<sup>13</sup> also promote:

- Minimum length of stay of 2 months, MUAC ≥11.5cm,
- Sustained weight gain and
- Clinically well

And others, alternatively, use MUAC ≥12.5cm for two consecutive weeks regardless of the total length of stay.

See Annex 4 for simple look-up table for % weight gain.

Movements between services include children leaving a specific health facility or level of treatment but not the treatment. They are not counted as discharged as children are still continuing their treatment for SAM. They should be recorded as follows:

Transfer to inpatient	The child fulfils criteria for referral to inpatient care according to admission criteria or action protocol.
Transfer to another outpatient service	Child with SAM in treatment in one site moves to another outpatient site to continue treatment

For these transfers a transfer slip (as detailed in the above section) should be completed and explanations given to the caregiver about the reasons for the transfer and if being transferred to inpatient care, how the child is going to be treated there.

**Discharge procedures**

When a child fulfils the criteria for discharge, the health worker should:

1. Fill in the Individual treatment and follow-up card with the required discharge information
2. For cured: Refer, if available, to a service for the management of MAM for further nutrition support to help avoid relapse.
  - a. Give explanations to the caregiver about the functioning of the MAM service and the expected evolution of the child while in there, including length of stay in treatment.
  - b. Appoint the caregiver for the first visit and fill in the reference slip
3. Give vitamin A according to protocol
4. Update immunisation schedule, if needed
5. Complete health/nutrition education (i.e. IYCF messages)

<sup>12</sup> WHO (2009). *Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children: A Joint Statement by the World Health Organisation and the United Nations Children's Fund*

<sup>13</sup> Valid International (2006) *Community-based Therapeutic Care: A Field Manual*

## 6. Inpatient therapeutic care for children 6-59 months with SAM

For all admissions to and treatment in Inpatient Therapeutic Care refer to national guidelines if they are in place.

This chapter describes inpatient therapeutic care of children 6-59 months with SAM and medical complications. Inpatient therapeutic care for the management of SAM in infants less than 6 months is described in a separate section of this module.

Children 6-59 months admitted into inpatient therapeutic care for stabilization of their condition will be referred to outpatient care as soon as their medical complications are resolving, their appetite has returned and any oedema is reducing. Average length of stay before referring to outpatient care is 7 to 10 days. Exceptionally, children will complete the full treatment in inpatient care when:

- Outpatient care is not available or too far from the family's home,
- The child is continually unable or refuses to eat RUTF
- Family refuses referral to outpatient therapeutic care

### Organisation of management of SAM in inpatient services

According to current WHO recommendations,<sup>14,15</sup> hospital-based care for SAM is organised into phases:

- **Stabilisation phase:** Treatment or prevention of hypoglycaemia, hypothermia, dehydration, treatment of infections, correction of hydro-electrolytic balance, correction of micronutrient deficiencies, commencement of cautious feeding with F75 and stimulation of emotional and sensorial development

- **Transition phase:** Appetite has returned, medical complications are under control and resolving, oedema starts reducing, the child is prepared for outpatient care. RUTF is introduced gradually, together with feeds of F100 or F75 to foster child's weight gain\*.
- **Rehabilitation phase:** Or catch up growth phase. In most cases this phase is now replaced by outpatient therapeutic care and only exceptionally children will remain as inpatients until full recovery

\* RUTF is introduced after 2-3 days in stabilisation with the aim of slowly replacing the formula feeds during transition. Once the child is able to eat at least 75% of their RUTF ration at each meal in a day, nutrition support can continue with RUTF (200kcal/kg/day) according to the RUTF protocol and if other criteria are fulfilled the child can move onto outpatient therapeutic care. If the child refuses the RUTF, the caregiver is encouraged to try to get the child to start eating. In the meantime, F100 or F75 is continued until the appetite fully returns and the child can move to outpatient therapeutic care.

### Box 9: Feeding with RUTF during inpatient care

A child 6-59 months in inpatient care who is alert should undergo the appetite test with RUTF. If he/she passes the test but needs admission to inpatient care for medical complications, then he/she should continue treatment with RUTF.

Information on F75 and F100 composition and alternative recipes for local production can be found in Annexes 5 and 6.

### Admission to inpatient therapeutic care

#### Admission criteria (see Figure 2 and Box 5)

#### Admission categories

Table 13: Categories of admission for inpatient care (Children 6-59 months)

New cases	Children 6-59 months with SAM meeting the admission criteria
Old cases	<b>Children Referred from Outpatient Care:</b> Children with SAM referred from outpatient care meeting inpatient care admission criteria or having a deteriorating condition (See action protocol)
	Children with SAM under treatment in <b>inpatient care in another site</b> moving into this site to continue treatment
	<b>Returned Defaulters:</b> Children who defaulted from treatment before recovery return to continue treatment

Note: **Relapsed cases** are considered new cases: the child was successfully treated (Discharged as Cured) before and now has a new episode of acute malnutrition.

<sup>14</sup> WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers* Geneva: WHO

<sup>15</sup> WHO (2003) *Guidelines for the inpatient treatment of severely malnourished children* Geneva: WHO

### Admission procedures

At the outpatient department level:

Screening with MUAC and testing for bilateral pitting oedema, as described in section 4, should be carried out for all children waiting at hospital or health centre outpatient departments where inpatient therapeutic care is offered. Cases identified can then be referred to the inpatient/paediatric unit for further triage and assessment. For children already identified and referred from Outpatient therapeutic sites details on transfer slips should be checked and the children moved on to triage.

Critically ill children are triaged and receive priority treatment. Sugar water (50 ml of 10% glucose solution) is made available to prevent hypoglycaemia

At paediatric ward level:

The decision to treat on an inpatient or outpatient basis according to the criteria in Figure 2 will be made based on the same procedures outlined in section 4.

When a child fulfils the criteria for enrolment in inpatient care, the health worker has to:

1. Start life-saving treatment as soon as possible including treatment of medical complications and begin feeding with F75 when the child becomes/is conscious
2. Fill in the Inpatient Multi-chart with the medical and nutrition information required

3. Assign an admission number if it is a new case. If the child has been transferred from outpatient care, keep the same number that appears on the transfer slip
4. Give explanations to the caregiver about the functioning of the inpatient care service and the expected evolution of the child while in treatment until he/she meets criteria for transfer to outpatient care, including expected length of stay
5. Provide routine treatment protocols for the management of SAM according to the national (or WHO) guidelines.
6. Give counselling to the caregiver including on the medical and dietary treatment the child will receive, the danger signs to watch out for during the child's treatment so that they can inform health staff, and on breastfeeding and good hygiene practices.
7. The caregiver should be given soap for hand-washing and general hygiene and food during his/her stay in inpatient care.

The WHO 10-steps treatment summarizes the different life saving steps that need to be considered in the treatment of SAM (box 10).

Ideally, place children and their caregivers in the stabilization phase physically separated from those children in the transition and rehabilitation phases, or from children with other diseases.

#### Box 10: The 10-steps for the treatment of severe acute malnutrition with medical complications<sup>16</sup>

1. Treat and prevent hypoglycaemia
2. Treat and prevent hypothermia
3. Treat and prevent dehydration
4. Correct electrolyte imbalance
5. Treat and prevent infection
6. Correct micronutrient deficiencies
7. Start cautious feeding
8. Achieve transition to catch-up diet
9. Provide sensory stimulation and emotional support
10. Prepare for follow up after stabilisation and transition

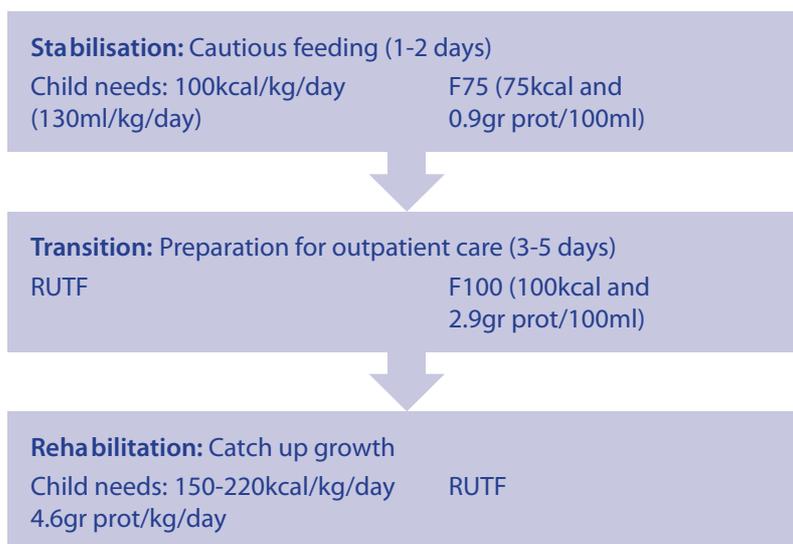
<sup>16</sup> Adapted from WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers* Geneva: WHO.

Figure 3: Schedule for the WHO 10- steps<sup>17</sup>

	Stabilisation		Rehabilitation (if no referral to outpatient care available)
	Days 1-2	Days 3-7	Weeks 2-6
1. Hypoglycaemia	→		
2. Hypothermia	→		
3. Dehydration	→		
4. Electrolytes			→
5. Infection			→
6. Micronutrients		No iron	With iron if on F100
7. Cautious feeding			→
8. Catch-up growth			→
9. Sensory stimulation			→
10. Prepare for follow-up			→

**Case management and follow up in inpatient therapeutic care**

Figure 4: Organisation of care for inpatient



**Inpatient stabilisation phase**

Feeding should begin as soon as possible, at admission, with a starter diet of F75. F75 is designed to meet the child’s needs without overwhelming the body’s metabolism at this early stage of treatment. F75 formula promotes rapid recovery of normal metabolic function and nutrition-electrolyte balance. F75 is not designed to promote weight gain, as this would be dangerous for the child at this stage of treatment. Rapid weight gain during stabilisation should be considered a sign of danger (probably fluid accumulation), and rapid action should be taken (Refer to section 12: Management of medical complications for SAM).

**F75 feeding in stabilisation**

Tables can be found in Annex 7 for the volume of F75 to give to the individual child per feed according to the child’s body-weight

- For children with low WFH or low MUAC: give 130ml of F75 (100 Kcal) per kg bodyweight per day
- For children with oedema (+++): give 100ml per kg bodyweight per day until oedema is clearly reducing and is (++)

Tables for the preparation of small quantities of F75 can also be found in Annex 7.

<sup>17</sup> Adapted from Ashworth, A, S Khanum, A Jackson, and C Schofield. 2003. *Guidelines for the inpatient treatment of severely malnourished children*. Geneva: WHO.

Although WHO recommendations are to gradually increase the volume given per feed (see table 14), in emergency situations and settings where resources or staff capacities are scarce, the use of a standard 3-hour feeding is recommended. The

larger volume of F75 that is required with a reduced number of feeds can on rare occasions provoke osmotic diarrhoea. That is why ideally 8 or more feeds should be given daily.

Table 14: WHO schedule for increasing F75 volume

Days	Frequency of feeding	Volume per feed	Total daily volume
Days 1 and 2	2-hourly feeding	11ml/kg/feed	130ml/kg/day
Days 3 to 5	3-hourly feeding	16ml/kg/feed	130ml/kg/day
From the Day 6	4-hourly feeding	22ml/kg/day	130ml/kg/day

All feeds should be controlled by a feeding assistant. The mother or caregiver must be actively involved in the feeding and the daily care of the child. They should be informed and sensitized to the importance of not introducing other foods until the child is stabilised. Breastfed children should be offered breast milk on demand before being fed F75.

to the signs of acute danger so that they can call a nurse when necessary (see section on medical complications).

Feeding is carried out with a cup (never from a bottle or with a spoon or syringe). Feeding assistants should alert caregivers

Never force-feed a malnourished child and also ensure that the mothers do not force-feed their children. This could cause distress to the child and can lead to aspiration pneumonia. Teach the mother how to sit the child in her lap, with an arm behind the child's back and the child sitting straight (vertical), and how to offer the cup with the other hand.

**Box 11: Use of Naso-Gastric tube (NGT)**

NGT should ONLY be used when:

- Child takes less than 75% of the prescribed F75 diet per 24-hours during stabilization
- Child has pneumonia (rapid respiration rate) and has difficulties swallowing
- Child has painful lesions of the mouth
- Child has cleft palate or other physical deformity
- Child shows disturbances of conscience

Try to give F75 by mouth every time before using the NGT. The use of NGT should not last more than 3 days, and should only be used in the stabilisation phase.

**Monitoring of the child in stabilisation**

Monitor and write down on the Inpatient Multi-chart daily:

- Weight
- Degree of oedema (0 to +++)
- Body temperature (twice per day, 4 times for hypothermic or febrile children)
- Key clinical signs (consciousness, colour of conjunctiva, urine, stools, vomiting, dehydration, cough, respiration, pulse, capillary refill, and liver size, skin, eyes, ear, mouth and throat).
- Feeds: volume taken at each feed, refusal, vomiting etc.

The child should be medically assessed daily or even twice a day during the first days.

**Criteria for progressing to transition**

When:

- The child has regained appetite (as demonstrated by appetite test),
- Medical complications and infections are under control and
- Oedema starts reducing

The child is ready for the transition phase.

**Inpatient transition phase**

During the transition phase, the child receives an increased amount of energy to allow catch-up growth.

### Feeding in transition phase

The transition between F75 and catch up diets (RUTF or F100) and from milk diet to solid therapeutic foods, should be progressive, but happens for most children within one day. Energy intake is increased gradually until the target minimum intake is reached (150-220 kcal/kg/day). The frequency of the feeds remains the same as in stabilisation phase.

RUTF and F100 have a similar nutrition composition per 100 kcal, with the exception of iron which is present in RUTF but not in F100. As a rule, preference is given to RUTF over F100 during the transition if the child accepts it. RUTF is offered first at every feed and is complemented with F100 or continued F75 feeds where needed.

If the child passes the appetite test, give the same quantities of RUTF as that recommended for outpatient care (refer to table 9) and explain to the caregiver the messages in box 7.

Tables can be found in Annex 8 for the volume of F100 to give to individual child per feed according to child's bodyweight. Tables for the preparation of small quantities of F100 can also be found in Annex 8.

### Monitoring of the child in transition

Monitor and write down on the Inpatient Multi-chart daily:

- Weight
- Degree of oedema (0 to +++)
- Body temperature (twice per day, 4 times for hypothermic or febrile children)
- Key clinical signs (consciousness, colour of conjunctiva, urine, stools, vomiting, dehydration, cough, respiration, pulse, capillary refill, and liver size, skin, eyes, ear, mouth and throat).
- Feeds: Volume taken at each feed, refusal, vomiting etc

The child should be medically assessed daily.

### Criteria for progressing to outpatient or to rehabilitation phase

Children can be referred to outpatient care when:

- They eat at least 75% of the daily amount of RUTF according to their bodyweight
- Oedema is back to mild or moderate (1 or 2 +).
- Medical complications are under control

This can take as little as two days, and should not take more than four.

If these conditions are not met after four days, a thorough medical examination should explore the reasons (e.g. an undetected medical complication, the child not taking meals correctly, etc.) and corrections made. If the child's condition doesn't improve during the transition phase he/she should return to the stabilisation phase.

If outpatient care is not available or there are difficulties for the child swallowing solid foods or the family refuses transfer, the child stays in inpatient care until complete recovery.

### Criteria for referral back to stabilisation

The child should be referred back to the stabilisation phase if they present any of the following warning signs:

- Too rapid gain weight (> 10 g/kg/day), indicating excessive fluid retention
- Increase of oedema, or oedema appears in a child that was admitted without
- There are other signs of fluid retention, like a rapid increase in liver size, or other signs of cardiovascular overload
- Abdominal distension or significant re-feeding diarrhoea with weight loss<sup>18</sup>
- If a complication arises that necessitates an intravenous infusion
- If a complication arises that necessitates use of a NGT

### Inpatient rehabilitation phase

Only children admitted that exceptionally need to complete the full treatment in inpatient care should go through this phase.

Children are fed preferably with RUTF and with F100 if RUTF is not available. Normal meals should be gradually introduced in addition to the therapeutic food products.

### Tools for individual follow up at inpatient care

In order to ensure quality and continuity of care during the management of SAM cases, three documents (forms) should be used:

- Inpatient Multi-chart: Contains all information regarding the child's condition at admission and discharge and his/her evolution during treatment
- Registration book: Can facilitate data collection and quick evaluation of workload
- Transfer slip: allows tracking information about the child's condition and evolution during movements between services (outpatient to inpatient and vice versa)

<sup>18</sup> When the diet is changed it is normal for the frequency and characteristics of stools to also change. This is not a problem unless it is associated with weight loss.

Table 15: Volume of F100 in rehabilitation (+/- 200 kcal/kg bodyweight/day) when no RUTF is taken

Weight of the Child (kg)	F100 ml per feed if 6 feeds per day	F100 ml per feed if 5 feeds per day
3.0-3.4	110	130
3.5-3.9	120	150
4.0-4.9	150	180
5.0-5.9	180	200
6.0-6.9	210	250
7.0-7.9	240	300
8.0-8.9	270	330
9.0-9.9	300	360
10.0-11.9	350	420
12.0-14.9	450	520
15.0-19.9	550	650
20.0-24.9	650	780
25.0-29.9	750	900
30.0-39.9	850	1,000
40.0-60.0	1,000	1,200

Only the individual follow up card (Inpatient Multi-chart) differs from the forms already described in the Outpatient section.

### Inpatient multi-chart

See the example in Annex 9.

### Medical management in inpatient care

#### Box 12: Giving medications to children with SAM and medical complications

The use of IV lines is strictly avoided except in case of septic shock or septicaemia. Special care with intramuscular injections is taken as children with SAM have reduced muscle mass and the risk of nerve damage is high.

Before prescribing/administering any drug it is important to:

- Check standard dosages with national (WHO) guidelines for SAM
- Check labels on bottles for dosages and dilution of syrups as this can change between different manufacturers

### Routine medicines for inpatient care

On admission, routine medicines should be given to the child.

Table 16: Summary of routine medication during inpatient care for SAM

Medication	When
Amoxicillin	At admission
Anti malaria (According to national protocol)	Test at admission if clinical signs
Mebendazole or Albendazole	When the child progresses from transition to rehabilitation phase OR on arrival at the outpatient service
Iron	During transition and rehabilitation phases WHEN THE CHILD IS NOT CONSUMING RUTF: One crushed tablet of Ferrous Sulphate 200 mg to each 2 litres of F100
Vitamin A	Single dose at discharge
Measles vaccination	During treatment

Note: Children who have been transferred from outpatient care should not receive routine medications that have already been administered before

### Antibiotics

Routine antibiotics are given upon admission (stabilisation) and continued for between 7 to 10 days depending on the child's clinical condition. **Amoxicillin** is generally used but if the child has a severe infection or continues to present symptoms a second line antibiotic should be added (usually **Chloramphenicol** or **Gentamycin + Ampicillin**) (see summary in table 17 below).

Table 17: Summary of antibiotics for inpatient management of SAM<sup>19</sup>

IF:	GIVE:	
<b>NO COMPLICATIONS</b>	Cotrimoxazole oral (250mg sulfamethoxazole + 5mg trimethoprim / kg) every 12 hours for 5 days	
<b>COMPLICATIONS</b> (shock, hypoglycaemia, hypothermia, dermatosis with raw skin/fissures, respiratory or urinary tract infections, or lethargic/sickly appearance)	<b>Gentamicin</b> IV or IM (7.5mg/kg) once daily, <b>PLUS:</b>	
	<b>Ampicillin</b> IV or IM (50mg/kg) every 6 hours for 2 days	Followed by <b>Amoxicillin</b> oral (15mg/kg) every 8 hours for 5 days
If child fails to improve within 48 hours, <b>ADD:</b>	<b>Chloramphenicol</b> IV or IM (25mg/kg) every 8 hours for 5 days (give every 6 hours if meningitis is suspected)	
If a specific infection requires additional antibiotic	Refer to the WHO manual (1999) <i>Management of Severe Malnutrition</i>	

### Anti-malaria treatment

This is the same as for Outpatient care, please see p.23-24.

### De-worming

Give a single dose of **Mebendazole** (or **Albendazole**) when the child progresses from transition to rehabilitation phase. If the child is referred earlier to outpatient care, de-worming drugs should be given on arrival. Refer for dosages to table 7.

### Iron

Only for children that DO NOT receive RUTF during the transition and rehabilitation phases. Iron needs to be added to the F100 milk (1 crushed tablet of **Ferrous Sulphate 200 mg** to each 2 litres of F100).

<sup>19</sup> WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers* Geneva: WHO

### Vitamin A

Because of its toxicity and the considerable amount available in RUTF, routine vitamin A is only given in a single dose on the day of discharge from the full therapeutic treatment. This usually happens in outpatient care, thus in inpatient care only children completing their full rehabilitation in inpatient care should receive **vitamin A** (unless treatment is indicated due to clinical signs of deficiency). Vitamin A should not be given if the child has already received a dose within the previous 4 months, except in case of recent measles. Refer for dosages to table 8.

### Immunisations

Check immunisation status of the child upon admission according to the standard immunisation schedule, especially immunisation for measles.

### Treatment of medical complications

Medical complications related to SAM such as shock, severe anaemia, severe dehydration should also be urgently treated. Section 12 and Annex 18 of this module provide an introduction to the main principles of the management of these medical complications. For more complete reference see existing detailed WHO guidelines.<sup>20,21</sup>

#### Box 13: Failure to respond to treatment at inpatient care

Definition of failure to respond to treatment for children treated as inpatients includes the following criteria:

- Failure to regain appetite after day 4
- Failure to start to lose oedema after day 4
- Oedema still present at day 10
- Failure to fulfil the criteria for progressing to rehabilitation
- In transition or rehabilitation phase: weight gain less than 5 g/kg/day by day 10 or for 3 successive days

Some of the causes for non response are due to the functioning and the performance of the service where the child is receiving the treatment, others relate to the individual child.

#### Causes related to quality of program

- Poor environment for treatment of children
- Failure to treat the children in separate area
- Failure to complete the child's Multi chart correctly
- Insufficient staff, inadequately trained staff
- Inaccurate weighing scales or missing drugs and equipment
- Food prepared or given incorrectly

#### Causes related to health status of the child

- Therapeutic food taken by siblings or caregivers or sharing of caregiver's food
- Vitamin or mineral deficiency
- Physio-pathological reasons: Malabsorption of nutrients, rumination, infections, specifically: Diarrhoea, dysentery, pneumonia, tuberculosis, urinary infection, otitis media, malaria, schistosomiasis/giardia, leishmaniasis, hepatitis/cirrhosis, HIV, TB
- Other serious underlying disease: congenital abnormalities, neurological damage, inborn errors of metabolism
- Psychological trauma

### Emotional and physical stimulation

Children with SAM have delayed mental and behavioural development. To address this, sensory stimulation should be provided to the children throughout the period they are in inpatient care.

As an integral part of the treatment, it is essential that the staff understand the emotional needs of these children and create a friendly supportive atmosphere. It is essential that the mother be with her child in hospital, and that she be encouraged to feed, hold, comfort and play with her child as much as possible. Caregivers must never be chastised and the staff should never shout or become angry.

<sup>20</sup> ibid

<sup>21</sup> WHO (2000) *Management of the child with a serious infection or severe malnutrition: Guidelines for care at the first-referral level in developing countries* Geneva: WHO

Inexpensive and safe toys should be available, made from cardboard boxes, plastic bottles, tin cans, old clothes and blocks of wood and similar materials.

### Discharge from inpatient care

Most of the children admitted as inpatients will be transferred to outpatient care for completing their rehabilitation. Only exceptionally will children complete the full treatment in inpatient care.

### Discharge criteria

Current recommendations<sup>22</sup> for discharge (as cured) if a child completes their rehabilitation in inpatient care are the same as for outpatient care (see table 12).

### Discharge categories

Table 18: Discharge categories from inpatient care

Category	Definition
Cured	Meet the discharge criteria
Defaulted	Absent for three consecutive days,
Died	Died during treatment at inpatient care
Non recovered	Did not recover or did not meet the discharge criteria <b>after two months in treatment</b>

Movements between services relate to children leaving a specific health facility but continuing their treatment. They are not counted as discharged since they have not yet reached the discharge criteria, but recorded as follows:

Transfer to outpatient care	The child fulfils criteria for referral to outpatient care
Transfer to another inpatient care site	Child with SAM under treatment that moves to another inpatient care site while being in treatment

For these transfers a transfer slip (as detailed in the above section) should be completed and explanations given to the caregiver about the reasons for the transfer and if being transferred to outpatient care, how the child is going to be treated there.

### Discharge procedures

When a child fulfils the criteria for discharge upon full recovery, the health worker should:

1. Fill in the Inpatient Multi-chart with the required discharge information
2. Refer, if available, to a service for the management of MAM for further nutrition support and to help avoid relapse, keeping the same admission number
3. Give explanations to the caregiver about the functioning of the MAM service and the expected evolution of the child while there, including length of stay. Give appointment to the caregiver for the first visit and fill in the reference slip
4. Give vitamin A according to protocol
5. Update immunisation schedule, if needed
6. Complete health/nutrition education (i.e. IYCF messages)

<sup>22</sup> WHO Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children: A Joint Statement by the World Health Organisation and the United Nations Children's Fund, 2009.

## 7. Inpatient care for infants under 6 months

This is an area where there are various evidence gaps. For assessment and treatment of infants less than 6 months refer to latest information on consensus and debates for the management of SAM in infants<sup>23</sup>, National Guidelines where in place, and Core Group Infant Feeding in Emergencies training modules.<sup>24</sup>

Children under 6 months should be treated as inpatients when malnourished. There are two categories:

- Infants 0-6 months with a lactating caregiver (mother, wet-nurse etc)
- Infants 0-6 months without the prospect of being breastfed

In both cases, treatment should be provided within the context of IYCF recommendations, including protection and support for early, exclusive and continued breastfeeding when possible, and reducing the risks of *artificial feeding* for those non-breast-fed infants.

### Admission criteria

Although standard anthropometric criteria (weight-for-length (WFL) <-3 z-score) also apply to infants, in most cases infants would be admitted according to their clinical condition:

- Presence of bilateral oedema.
- Too weak to suckle effectively (regardless of weight-for-length), or
- Not gaining weight at home
- Visible wasting

Table 19: Criteria for admission at inpatient care for infants less than 6 months

If there is a possibility of breastfeeding	Too weak to suckle effectively, or Not satisfactory weight gain at home, or Visible wasting (regardless of WFL), or WFL < -3 z-score, or Presence of bilateral oedema
If there is no possibility of breastfeeding	Presence of bilateral oedema, or WFL < -3 z-score, or Visible wasting (regardless of WFL)

In the absence of national guidelines, at the field level, the interpretation and application of the clinical criteria varies depending on agencies, with a general lack of standardisation and uncertainty around the clinical identification of infants at highest risk.

### Challenge 2: Clinical identification of high risk infants

Clinical identification of high risk infants is lacking. Improved clinical assessment strategies are needed to diagnose and address underlying infant or maternal disease (e.g. HIV, TB), breast-feeding problems that are primarily infant related (e.g. oro-motor dysfunction, prematurity, cleft palate), or breastfeeding problems which are primarily mother related (e.g. poor technique, depression). A number of different problems may co-exist in the same infant-caregiver dyad, or one may be dominant.

To date, tools aiding clinical identification have been mainly focused on older age groups. An “appetite test” equivalent - as used in CMAM triage - is needed for infants <6m. A validated breastfeeding assessment tool would help enable this. A priority is to identify very high risk infants with immediate risk of death and definite need for inpatient admission and intensive care/monitoring.

Source: Management of Acute Malnutrition in Infants (MAMI) Project (2009): Summary Report

<sup>23</sup> Kerac et al. *Management of acute malnutrition in infants (MAMI) project*. Technical Review: Current evidence, policies, practices & programme outcomes. January 2010. available at: <http://www.enonline.net/research/mami>

<sup>24</sup> WHO/UNICEF/Linkages/IBFAN/ENN Infant Feeding in Emergencies. Modules 1 & 2. Available at: <http://www.enonline.net/resources/tag.aspx?tagid=131>

## Medical management

### Antibiotics

Unlike for children 6-59m, do not give antibiotics routinely. Only give where there are signs of infections.

First line: Amoxycillin (from 2kg): 30mg/kg two (2) times a day (60mg/day).

Second line if required: Add Gentamicin for severe infections or prescribe the appropriate combination for the diagnosed infection (do not use Chloramphenicol on infants under two months of age).

### Vitamin A

Do not give vitamin A unless eye examinations show signs of vitamin A deficiency or if there has been a recent measles episode. In that case give 50,000IU single dose on admission (or at exit if oedema present).

### Folic Acid

Give 2.5 mg (1/2 tablet) in a single dose on admission.

### Ferrous Sulphate

When the child suckles well and starts to gain weight add iron to the *therapeutic milk*. The easiest way is to add iron to normal F100, as per instructions for older children, and then dilute it with 1/3 water to obtain the correct dilution. Alternatively, provide daily doses of iron syrup orally.

### Nutrition management and follow up

#### Breastfed infants

Infants who are malnourished are weak and do not suckle strongly enough to stimulate adequate production of breast milk. The mother often thinks that she herself has insufficient milk and is apprehensive about her ability to adequately feed her child. The objective of treatment of these infants is to return them to full exclusive breastfeeding. This is achieved through the *Supplementary Suckling Technique* (SST)

The child receives 130 ml/kg/day, distributed in 8 meals:

- For marasmic children: diluted F100<sup>25</sup>
- Infants presenting oedema: F75, changing to diluted F100 when oedema has disappeared.

**Table 20: Amounts of Diluted F100 (for severe wasting) or F75 (for bilateral pitting oedema until the oedema is resolved) to give to an individual infant per feed**

Weight of the child (In kg)	Diluted F100 or F75 ml per feed (8 feeds per day)
≥1.2 Kg	25
1.3-1.5	30
1.6-1.7	35
1.8-2.1	40
2.2-2.4	45
2.5-2.7	50
2.8-2.9	55
3.0-3.4	60
3.5-3.9	65
4.0-4.4	70

For preparation of small quantities of diluted F100 see Annex 10.

Breastfeed every three hours for at least 20 minutes (more if the child cries or demands more)

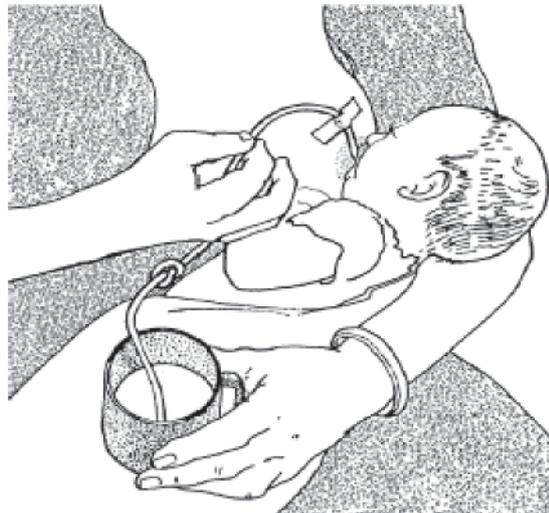
Between one and a half hours after a normal breastfeed give maintenance amounts of F100-diluted (or F75) using the SST.

### Supplementary suckling technique

The mother holds a cup with the therapeutic milk (diluted F100 or F75). The end of a NG tube (size n°8) is put in the cup, and the tip of the tube on the breast, at the nipple. The infant is offered the breast in the normal way. The cup is placed 5-10 cm below the level of the nipple for easy suckling. When the child suckles more strongly it can be lowered to up to 30 cm.

<sup>25</sup> Diluted F100 is prepared by adding a sachet of F100 to 2.7 litres of water, instead of the standard 2 litres (see preparation tables in Annex 10)

Figure 5: Supplementary Suckling Technique (SST)



The child is weighed every day with a scale graduated to 10 or 20g precision:

- When the child is gaining weight at 20 g/day the quantity of milk in the cup is reduced so that the child gets more breast milk. If after this, weight gain is maintained then stop the supplementary suckling completely.
- If the child is not gaining weight then continue with the SST, but increase the quantity of milk in the cup by 5 ml for each feed.

### Care for the mother (Or wetnurse)

Check nutrition status of the mother (MUAC and oedema). Explain the treatment and discourage self-criticism for the lack of milk. She should drink at least 2 litres of water per day, and eat about 2500 kcal/day. She should also receive Vitamin A (200 000 IU unless there is a risk of pregnancy). Micronutrient supplementation must also be given to the mother.

### Case example 1: Infants and the need for maternal psychological support: Afghanistan 2001

In several areas of Afghanistan the admissions of children under-6 months to therapeutic care represented between 25-50 per cent of all admissions following the reopening of programmes in 2001. It appeared that poor maternal milk production was the primary cause for most of these cases of infant malnutrition.

Dedicated work by psychologists focused on providing emotional stimulation for children and strengthening the mother-child relationship giving specific attention to problems affecting the mother which were often a form of post-traumatic stress complicated by pressures from other family members. Training of all therapeutic care staff in these areas and the implementation of special programmes to support mother's breastfeeding and encourage mother-to-child bonds resulted in improved recovery rates and reduced malnutrition rates.

Source: Action Contre la Faim. Afghanistan (2002)

### Infants with no prospect of being breastfed

Standard SAM inpatient protocols are followed except that F100 is given diluted in the stabilisation phase (instead of F75) for children with wasting (marasmus). Children with oedema are fed with F75.

In transition and rehabilitation phase use F100 as these children cannot take RUTF. When the child reaches WFL equal or >-1z-score, switch to a breastmilk substitute before discharge, but avoid bottle feeding.

## Discharge criteria

Table 21: Criteria for discharge from inpatient care for children less than 6 months

If the child is breastfed (there are no anthropometric criteria for discharge)	Successful <i>relactation</i> Child is gaining weight on breastmilk alone after the SST has been stopped (e.g. 20 g daily weight gain on breastmilk alone for 5 days) and There is no medical problem, and The mother has been adequately supplemented with vitamins and minerals.
If the child is not breastfed	15% weight gain AND Breastmilk substitute for the child is defined within the family's possibilities and is sustainable AND Child is used to milk substitute, gaining weight and caregiver education on preparing and dispensing the milk substitute is completed Ensure proper follow up of these children, as formula feeding is associated with higher risk of diarrhoea and other infections, and higher mortality

## 8. Management of SAM in children above 5 years, adolescents and adults

In some situations older children and adults with SAM may be identified for treatment. In these situations, though documentation of evidence is limited particularly for treatment in outpatient care, cases can potentially be managed either on an outpatient or inpatient basis. Criteria for admission for these groups and treatment protocols should be based on WHO treatment guidelines<sup>26</sup> and national protocols<sup>27</sup>.

### Admission criteria

There are three potential age groups to be admitted, each with different criteria for admission (bear in mind that evidence for these criteria is lacking):

- Children between 5 and 10 years are usually admitted based on MUAC or WFH or the presence of bilateral pitting oedema
- Adolescents between 10 and 18 years are usually admitted based on MUAC or *Body Mass Index (BMI)* for age or presence of bilateral pitting oedema.
- Adults (Over 19 years): Are usually admitted based on severe pitting oedema or severe wasting (acute weight loss) after secondary malnutrition has been excluded through medical history and clinical examination

- **± MUAC:** There is no international agreement on the MUAC cutoff for adolescents and adults. Available published data for adults (Collins et al 2000) suggests <160mm, but this is currently considered too low in non-famine contexts (including in the context of HIV/AIDS) and cut-offs of <180/<185mm are in use. Values presented in this module are those most widely used by agencies.
- **BMI for Age:** Based on the WHO 2007 growth reference for school age children and adolescents 5 to 18 years, but to be used carefully in older girls (in case of pregnancy)
- **BMI:** For adults but to be used carefully in women (In case of **pregnancy**)
- **Bilateral pitting oedema:** Non-nutritional causes of oedema in adults are common, including pre-eclampsia in pregnant women, and have to be identified by history and clinical examination before establishing a definitive diagnosis.

### Management of SAM for children between 5 and 10 years

SAM in children between 5 and 10 years is treated using the same basic protocols as described in sections 5 and 6 (inpatient and outpatient care) of this module, with close monitoring. Give drugs dosages and amounts of therapeutic milk and RUTF according to the weight of the patient.

<sup>26</sup> WHO (1999), *Management of severe malnutrition: a manual for physicians and other senior health workers*.

<sup>27</sup> E.g. Ethiopia – Federal Ministry of Health. March 2007 *Protocol for the Management of Severe Acute Malnutrition*. Available for download at: <http://motherchildnutrition.org/resources/pdf/mcn-protocol-for-the-management-of-severe-acute-malnutrition.pdf>

Table 22: Summary of suggested criteria for admission for SAM used in children 5 years or older, adolescents and adults<sup>28, 29, 30, 31</sup>

Age group	Criteria for admission
Children > = 5-9 years	MUAC <129mm, and/or BMI for age <-3 z-score, and/or Bilateral pitting oedema
Adolescents > = 10-18 years	MUAC <160mm and/or BMI for age <-3 z-score, and/or Bilateral pitting oedema
Adults >18 years	BMI <16 (kg/m) and/or MUAC <185mm‡ and/or Bilateral pitting oedema

### Management of SAM for adolescents and adults

SAM in adolescents and adults is treated in a similar way to that described in sections 5 and 6 (inpatient and outpatient care) of this module with close monitoring. Give drugs dosages and amounts of therapeutic milk and RUTF according to the weight of the person using the kcal recommendation outlined by WHO and Collins et al. for required kcals/kg bodyweight/day<sup>32,33</sup>. Note that kcals per kg body weight at least for initial stabilisation treatment are considerably lower for these age groups than for children.

### Medical management

For routine antibiotics adapt dosages according to weight

Vitamin A: Single dose of 200 000 UI at discharge (or week 4 of the treatment), except for pregnant women.

Adults and adolescents are also susceptible to hypothermia and hypoglycaemia. The latter condition is managed as described for children. Primary illnesses or medical complications are treated according to national or WHO protocols.

### Nutrition management and follow up

#### Stabilisation phase

If possible, adolescents and adults should be given therapeutic formula feeds as for children. The initial goal of treatment is to prevent further loss of tissue. The amount of therapeutic formula feed given per kg of body weight is much less than for children and decreases with increasing age, reflecting the lower energy requirements of adults. RUTF should be considered as a possibility where there is appetite.

### Rehabilitation phase or Outpatient treatment

An improving appetite indicates the beginning of rehabilitation. During rehabilitation it is usual for adolescents and adults to become very hungry, often refusing the formula feed and demanding enormous amounts of solid food. When this happens, a diet should be given that is based on traditional foods, but with added oil, and a multiple mineral and vitamin tablet or powder, RUTF or other lipid-based nutrient supplement. Provide a wide variety of foods and allow the patients to eat as much as they want. If possible, continue to give the therapeutic milk feed with the vitamin and mineral mix between meals and at night. If necessary, present the therapeutic milk feed as a medicine. They can also be treated on an outpatient basis at this stage using RUTF.

#### Discharge criteria

Adolescents and adults can be discharged when they are eating well and gaining weight (weight gain 15% is recommended), have no bilateral pitting oedema, and do not have any other health problems.

<sup>28</sup> WHO (2009), *Guidelines for an integrated approach to the nutritional care of HIV-infected children (6 months -14 years)*. Geneva, WHO.

<sup>29</sup> Collins, S., A. Duffield, and M. Myatt (2000), *Assessment of nutritional status in emergency afflicted populations- Adults*, R.s. ACC/SCN, Editor.

<sup>30</sup> WHO 2008. *New BMI tables for older children and adolescents and BMI for age standardized tools*. WHO [http://www.who.int/growthref/who2007\\_bmi\\_for\\_age/en/](http://www.who.int/growthref/who2007_bmi_for_age/en/)

<sup>31</sup> Woodruff et al. (2000) *Assessment of nutritional status in emergency-affected populations. Adolescents*. RNIS supplement. July.

<sup>32</sup> Management of severe malnutrition: a manual for physicians and other senior health workers, WHO 1999

<sup>33</sup> Collins et al. Dietary treatment of severe malnutrition in adults. *Am J Clin Nutr* July 1998 vol. 68 no. 1 193-199

## 9. Management of SAM in areas with high HIV prevalence

Provider-Initiated Counselling and Testing (PICT) for HIV in children with SAM and their parents is advised in areas with high HIV prevalence (See table 11 Action protocol).

HIV positive individuals are at higher risk of acute malnutrition and take longer to recover when they become acutely malnourished.

It is important that nutrition support is given earlier in the onset of acute malnutrition than for HIV negative individuals in order to give these individuals the best chance of recovery. In general, nutrition activities in areas with high HIV prevalence must provide a wide and comprehensive approach if they are to prevent acute malnutrition and/or improve nutrition status of infected individuals.<sup>34</sup>

### Management of SAM in HIV-Infected Children

Protocols for the management of SAM in children that are HIV-infected are similar to those for that are non HIV-infected. HIV-infected children with SAM with medical complications should be referred to inpatient care whereas those without medical complications can be managed as outpatients if they still have a good appetite, are clinically well and alert.

### Admission criteria

As for those of non HIV-infected children with SAM. However more experience and evidence is being collected on the inclusion of HIV-infected children with MAM into therapeutic programmes as a group requiring this additional nutritional support.

### Dietary management

Nutrition treatment with RUTF uses rations based on the weight of the child. Quantities are the same as for non-infected children.

### Medical management

Cotrimoxazole should be given to children when HIV is suspected, and indefinitely where Antiretroviral Therapy (ART) is not yet available. This antibiotic is added to other systematic antibiotics given at the start of treatment, and does not replace them.

Diagnosis of tuberculosis in HIV-infected children should always be considered. The signs are the same as for those in children without HIV infection.

HIV-infected children should also be assessed for other opportunistic infections such as thrush or cryptosporidiosis and considered for ART when available. Because ART is potentially toxic for a child with SAM it is safer to wait until recovery of nutrition status to start the ART.

### Discharge criteria and referral to HIV services

Children should be treated until nutrition recovery is achieved and be discharged according to the same criteria as for non HIV-infected children. HIV-infected children will present more associated infections, and therefore rates of weight gain and recovery may be lower than in non HIV-infected children.

Those not receiving nutrition support prior to the treatment for SAM should be referred to the available services or community support groups where appropriate.

### Challenge 3: Acute malnutrition and HIV

Although standard protocols are considered appropriate for HIV-infected individuals with the minor adaptations described above, extensive research is currently under way to further adapt protocols for these individuals. This research includes:

- Comparison of recovery rates of HIV-infected and non HIV-infected children with SAM treated in therapeutic care
- Efficacy studies of new nutrition products specifically designed for rehabilitation of HIV-infected individuals with SAM
- Use of micronutrient supplementation for HIV-infected individuals
- Integration of nutrition support into HIV and AIDS treatment
- Studies of the interaction between ART and nutrition status
- Assessment of severe malnutrition in HIV-infected adults
- Impact of nutrition support on HIV-infected individuals
- Integration of HIV nutrition support and care programmes with CMAM

<sup>34</sup> Refer to HTP Module 18 for further information

## 10. Monitoring and reporting of activities/programmes for the management of SAM

Routine monitoring of CMAM activities is essential for:

- Monitoring the performance of the CMAM services
- Taking decisions for quality improvement (staffing, training, resources, site locations)
- Assessing the nutrition trends in the area

It also enables health workers, supervisors and managers to ensure that appropriate treatment is given to individuals and that the services provided are effective.

Routine monitoring is done through the reporting of key indicators on a monthly basis. Supervisory support visits and meetings with key members of communities and health workers provide a broader scope of performance and effectiveness of CMAM services.

Standardized key indicators (quantitative data) collected in monthly statistical reporting, triangulated with qualitative information collected in consultation with the community, stakeholders and through supervisory visits, will identify strengths and weaknesses, and provide a basis for informed decision making for timely quality improvement. The key indicators should be plotted against time (months) to provide a picture of how the performance of the services and of the situation has evolved.

### Box 14: Periodicity of reporting of the activities

Routine monitoring of a programme is usually done on a monthly basis though data on admissions and exits is usually recorded by sites weekly. However, during emergencies and when resources allow, weekly monitoring of CMAM activities may be carried out.

Reporting is based on calendar months. Therefore one month will usually cover four weeks and occasionally five weeks. This has to be taken into consideration when interpreting changes in trends (follow epidemiological weeks as per national *standards*).

### Monthly reporting

Quantitative data are collected on the outcome of activities and allow the calculation of standard key indicators. Key indicators should only be calculated for the age-group 6-59 months and compared to international standards (Sphere Standards). If management of SAM interventions address other age-groups, they should be reported on separately. Routine data are collected on:

- Number of new admissions,
- Number of discharges by category: cured, died, defaulted, non-recovered
- Number of children in treatment (beneficiaries registered)

These three basic elements allow calculation of key indicators:

- Cure rate
- Death rate
- Default rate
- Non recovery rate

This information also allows monitoring of trends over time; helps to inform program design and a better allocation of resources.

Other additional information that may be relevant that can be derived from routine monitoring is:

- Relapse rate (number of new admissions that have relapsed among total new admissions)
- Admission per typology (proportion of marasmus, kwashiorkor and marasmic kwashiorkor)
- Average length of stay
- Average weight gain
- Causes of death
- Data on admissions disaggregated by gender

Other essential information derived from different sources and methods:

- Reasons for death and/or defaulting
- Investigation of non-recovery
- Coverage of treatment (those that need treatment against those actually receiving treatment) and barriers to access.

Quantitative data should be accompanied by some narrative description or explanation of the main events that may have influenced attendance and performance (e.g. opening or closing of facilities, outbreaks of infectious diseases, insecurity, seasonal trends in agriculture and weather, etc.).

**Box 15: Monitoring of CMAM activities when integrated into national health systems**

Monitoring should be integrated as much as possible with existing information systems; it is important to take into account that data collection will be carried out by health facility staff ideally as part of the routine health information system, and that it should not overburden their existing workload.

Reporting systems and tools need to be designed to minimise the demands placed on staff whilst providing sufficient information for essential monitoring.

There are two levels of reporting:

- Individual reporting of outpatient or inpatient care sites
- Compiled reporting from outpatient and inpatient care sites combined representing an accountable unit or area (geographical, administrative or programmatic).

**Monthly site report**

The monthly site report is completed by the responsible health worker at each CMAM site with inputs from a tally sheet that is filled on a weekly basis (see Annex 12). Outpatient care and inpatient care sites use the same tally sheet and monthly site report.

The report provides a monthly summary of quantitative information at the health facility level or CMAM site:

- Total number in treatment at the beginning of the month
- Admissions of new cases (by age-group and gender if required) for the month
- Admissions of old cases (incoming referrals and returned defaulters)
- Total admissions
- Number of children that are discharged cured, died, defaulted or non-recovered,
- Total discharges
- Total referrals (outgoing referrals)
- Total exits
- Total number in treatment at the end of the month

Some agencies and Ministries of Health add information on therapeutic food products stock management (consumption) to the same form.

**Monthly consolidated report (compilation by area or programme)**

The reports from the outpatient or inpatient sites operating within an area are examined and collated to produce a compilation report that is accountable for the unit as a whole, combining inpatient care and outpatient care outcomes.

Information on movement between sites is not captured in the consolidated report, as these individuals have remained in treatment within the specified area.

The monthly consolidated report provides a summary of quantitative information to assess performance and monitor trends at that level:

- Total number in treatment at the beginning of the month
- Admissions of new cases (by age-group and gender if required)
- Total admissions
- Total discharges (denominator for discharge rates)
- Number and proportion of children that are discharged cured, died, defaulted or non-recovered (discharge rates; used to calculate key indicators of performance)
- Total number in treatment at the end of the month

Examples for tally sheets, monthly site and consolidated reports can be found in Annexes 11, 12 and 13.

**Key Indicators (Sphere standards, 2011)**

These indicators are primarily applicable to the 6-59 month age group, although others may be part of the programme.

- More than 90% of the target population is within <1 day's return walk of the treatment site (including time for treatment)
- Coverage is >50% in rural areas, >70% in urban areas and >90% in camp situations
- The proportion of discharges from therapeutic care who have died is <10%, recovered is >75% and defaulted is <15%.

**Reporting of community mobilisation activities**

Mobilisation and outreach activities should also be reported at health facility level and consolidated by the specified accountable unit.

## TECHNICAL NOTES

Monitoring of activities (active community screening and referral for treatment and home visits) include a combination of quantitative and qualitative data provided by:

- Monthly outreach report form (in Annex 14)
- Outcomes of meetings with key community figures, caregivers and beneficiaries
- Supportive supervision visits (see below), including the revision of Individual follow up cards and Registration books, seeking information on e.g. origin of admissions, type of arrival (referral from CHW or CV, self-referral), reasons for defaulting.

Analysis of monthly routine monitoring data can also provide information on community awareness, understanding, acceptance and use of the case management activities, and allow for corrective or adaptive actions on the community mobilisation strategy.

### Supervision

Supportive supervision visits to sites are designed to improve the quality of care offered in:

- Identifying weaknesses in the performance of activities, taking immediate action and apply shared corrective solutions
- Strengthening the technical capacity of health workers and motivating staff through encouragement of good practices

Supervisors and managers ensure that the performance of activities and organisation meet quality standards.

When CMAM activities are integrated into existing services, supervisions should be carried out by MoH teams supported, when it applies, by agencies' staff and local partners. Supervisions should be carried out at least once a month for each particular facility. Supervision for CMAM activities, when integrated, should be done at the same time as the visits for other programmes and by the same personnel.

Supervision visits are carried out through direct observation of the performance at the health facilities while having structured discussions with health workers using a "supervision checklist" (see example of supervision checklist in Annex 15).

Other documents that should be periodically reviewed by supervisors are:

- Individual Follow up cards/Inpatient care Multi chart
- Registration book
- Data collection sheets (tally sheets and monthly reports)
- Stock cards

Supervision checklists should facilitate the evaluation of logistics-management and technical aspects related to the provision of services (outpatient or inpatient) in a structured manner:

- Organisation of the activities
- Structural condition and hygiene of the health facility
- Storage of products and equipment
- Reference documents and job aids
- Filling of forms
- Filing system
- Respect of criteria, protocols and procedures
- Performance of tasks: anthropometric measurements, medical examination, appetite test, medicinal treatment and provision of RUTF
- Individual counselling, health and nutrition education, and prevention activities

Prior to each visit, supervisors should examine all the available documentation for each health facility, the records of previous supervision and routine monitoring outcomes. That will allow identification of the priority areas requiring observation thus making the supervision more efficient.

During the visit gaps and discrepancies should be identified in consultation with the health workers and, as much as possible, with representatives of the community. Immediate feedback should be given to the health workers and the communities, jointly searching for solutions to the problems identified. Supervisions are also essential for improving staff capacities through the organisation of formal or informal refresher training and mentoring (on-the-job training) during the visits, mainly in less accessible areas where staff movement is difficult.

### Programme evaluations

More in-depth evaluations add elements of lesson-learning and *accountability*. For further detail see Module 20, *Monitoring and Evaluation*.

### Coverage studies

One of the most important elements behind the success of the CMAM approach is its proven capacity for achieving and sustaining high levels of treatment coverage. In the past, two-stage cluster sampled prevalence of acute malnutrition surveys were used to estimate coverage of interventions but this method suffers from important (statistical) limitations and offers little information on reasons for low coverage or barriers for service uptake.

The Centric Systematic Area Sampling<sup>35</sup> (CSAS) was specially developed to estimate coverage of CMAM interventions, providing an overall estimate and a spatial distribution map of programme coverage and a ranked list of programme-specific barriers to service access and uptake. This survey method uses a combination of stratified and systematic area sampling and active and adaptive case-finding.

However, CSAS is resource intensive and tends to be used in programme evaluation rather than in planning. The results of CSAS surveys have often been able to explain why a particular program has failed to achieve a satisfactory level of coverage but this information often arrives late in the programme cycle to provide effective corrective actions.

A new method, currently under development, is called Semi-Quantitative Evaluation of Access and Coverage<sup>36</sup> (SQUEAC). SQUEAC uses a mixture of *quantitative* (numerical) data collected from routine programme monitoring activities and small area surveys and *qualitative* (anecdotal) data collected using informal group discussions and interviews with a variety of informants to identify boosters and barriers to access and coverage and arrive at a prior estimate of coverage. This *prior* estimate is then further refined through conducting simple stratified area surveys to look for cases of SAM and determine whether they are accessing programme services or not. Using Bayesian statistical analysis, the prior and the results of the wide area survey are combined resulting in the final estimate of programme coverage.

As with CSAS, SQUEAC is able to provide an overall estimate and a spatial mapping of programme coverage and a ranked list of boosters and barriers to service access and uptake. More importantly, however, SQUEAC achieves these results more rapidly and with fewer resources as compared to CSAS, thereby allowing for its use on a more regular and frequent basis to monitor programme performance and aid in programme planning.

## 11. Implementation and management of CMAM activities

In the past treatment of acute malnutrition was almost exclusively implemented as an emergency response programme and criteria were set to orientate agencies on when to start and close nutrition interventions. Nowadays, with new, simpler, effective and more affordable protocols available, many countries are in the process of integrating CMAM into routine health care services.

Most of the current emergency response interventions led by NGOs and agencies, while seeking to make treatment immediately available for the greatest number of individuals, also aim at building or reinforcing national MoH and local partners' capacities.

This section describes some useful aspects for planning, implementation and handover of CMAM activities.

### Agencies' decision-making for setup and closing (or handover) of CMAM activities

#### Setup

The decision about whether to implement activities/programmes for the management of acute malnutrition in emergencies should be based on four main considerations:

1. A *global acute malnutrition rate* above 10% or between 5% and 9% plus the presence of aggravating factors (see table 23 below) could be considered as threshold for starting or strengthening CMAM. Some agencies consider opening outpatient therapeutic care programmes with a rate of severe acute malnutrition above 1 per cent. However, there is no international consensus for this threshold at the moment.
2. *Contextual factors* including the causes of malnutrition, the socio-economic situation, the food security situation, general ration quantity and allocation, the presence of other interventions and projected future needs that will need to be addressed.
3. *Public health priorities* or whether other priority needs are already being met (e.g., access to food, shelter, safe water, sanitation) and if there are plans for integration of management of SAM into national routine health care services.
4. Availability of qualified human, material and financial *resources*.

<sup>35</sup> Myatt Mark, Feleke Teshome, Sadler Kate, Collins Steve (2005). *A field trial of a survey method for estimating the coverage of selective feeding programmes*. Bull World Health Organ 83(1): 20-26. Available from: [http://www.scielosp.org/scielo.php?script=sci\\_arttext&pid=S0042-96862005000100010&lng=en](http://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0042-96862005000100010&lng=en)

<sup>36</sup> Mark Myatt (2008). *SQUEAC: Low resource method to evaluate access and coverage of programmes*. Field Exchange, Issue No 33, June 2008. p3. <http://fex.enonline.net/33/low.aspx>

WHO recommends the following table for decision making for the setup of activities for the management of acute malnutrition (SAM and MAM). However the use of such a system is questioned by many as too narrow and not sensitive enough to diverse contexts. Therefore the below is given only as a very rough guide and in the absence of an agreed alternative.

**Table 23: Decision-making chart for the implementation of selective feeding programmes<sup>37</sup>**

Finding	Action required
Food availability at household level <2100 kcal/person/day	Unsatisfactory situation: <ul style="list-style-type: none"> <li>– Improve general rations until local food availability and access can be made adequate</li> </ul>
Global Acute malnutrition rate (GAM) ≥15% or 10-14% with aggravating factors	Serious situation: <ul style="list-style-type: none"> <li>– General rations (unless situation is limited to vulnerable groups); plus</li> <li>– <i>Supplementary feeding</i> for all members of vulnerable groups.</li> <li>– Therapeutic feeding for severely acutely malnourished individuals</li> </ul>
GAM 10-14% or 5-9% plus aggravating factors	Risky situation: <ul style="list-style-type: none"> <li>– No general rations, but</li> <li>– Supplementary feeding targeted to individuals identified as malnourished in vulnerable groups</li> <li>– Therapeutic feeding for severely acutely malnourished individuals</li> </ul>
Malnutrition rate (GAM) under 10% with no aggravating factors	Acceptable situation: <ul style="list-style-type: none"> <li>– No need for population interventions</li> <li>– Attention to malnourished individuals through regular community services</li> </ul>

Notes:

1. This decision chart gives general indications. They should be adapted according to local circumstances.
2. Global acute malnutrition rate (GAM) is defined as the percentage of the child population (6 months to 5 years) that is wasted (weight for height below -2 z-score of the median of the WHO standards) and/or with nutritional oedema.
3. Aggravating factors:
  - Food availability at household level less than the mean energy requirement of 2100 kcal/person/day
  - Crude mortality rate more than 1 per 10 000 per day
  - Presence of epidemics or outbreaks (measles, whooping cough, diarrhoeal diseases, malaria etc.)

## Closing or exit strategy

Some criteria used by NGOs to end CMAM activities and hand-over to national or local structures include:

- Global acute malnutrition rate is below 5%
- Low number of cases in treatment in individual treatment site
- Local structures can cope with the current case load, and/or would be able to cope with the influx of new cases

Other criteria that can be considered are:

- General ration should be reliable and adequate
- Crude mortality rate should be low
- Effective health and disease control measures are in place (e.g. no disease outbreaks)
- The population is stable, and no population influx is expected

Although an exit strategy should be planned from the beginning of the project and steps taken during the whole project timeline, the final decision should always be made in coordination with the other actors involved in the emergency response, mainly local authorities and community representatives.

When possible and appropriate, a gradual process of handover and integration into local primary health care services should be undertaken. Different strategies to facilitate this transition from emergency to post-emergency and development are being implemented by agencies.

## Location and organisation of services

Deciding where to set up outpatient and inpatient care sites is critically important as this will largely determine accessibility and coverage. It is very important not to locate sites simply on the basis of ease of management, but on the basis of need. In planning it is also vital to consider the need for referrals between services and whether transport will be needed and if so, how this will be provided.

<sup>37</sup> WHO (2000) *The Management of Nutrition in Major Emergencies*, Geneva: WHO

## Setup of outpatient care

Outpatient care can be set up at health facilities or in specially designated sites. If new sites are opened, all support systems (supply, referrals, supervisions etc) must be carefully planned and in place before starting case management activities to prevent staff and the population from getting discouraged and having a negative impact on the uptake of the services.

In emergencies, outpatient care services are often organised at the same health facilities or sites as for the management of MAM cases. Where there are problems of access, or insufficient staff, mobile outpatient clinics may be planned for a limited period of time. One mobile team can visit up to five sites in a week (implementing weekly outpatient care once a week in each site).

Although little infrastructure is needed, it is always advisable to have a safe storage place, a covered waiting area and a separate area for consultations. In some cultural contexts, a naked (thin) child can't be shown to others thus if children are weighed/consulted in an open space it could generate negative feelings within the target population: it is sensible to prepare a separate space for measurements and consultations.

Outpatients attend the services once a week. The number of patients attending an outpatient care service may vary from 10-20 per session to several hundreds. When too many children are attending services on the same day a decision should be taken as to whether it would be more appropriate to open new facilities or increase the number of service days for existing facilities. More and more where CMAM is integrated into routine primary health care, children with SAM are received on a daily basis, with weekly follow-on visits at the start of the treatment, and bi-weekly visits towards the end of the treatment.

## Setup of inpatient care

Inpatient care can be established integrated into the paediatric ward, as an attachment to an existing hospital or health centre, or as an independent structure. In the latter case it is often set up as a semi-permanent structure (e.g., in refugee or displacement camps). In all cases, the inpatient care site should have a good permanent supply of clean potable water (for preparing the milk, washing and for cleaning the wards) and offer appropriate shelter.

It is usually organised as residential care (24h/24h), with the patients staying overnight.

Ideally children with SAM with medical complications are kept in a separate ward, away from other ill children. On average, children in inpatient care stay for about 5-10 days and are then referred to outpatient care to continue rehabilitation until full recovery. The few exceptional cases that need to complete treatment in inpatient care stay an average of 30 days in the facility.

Experience shows that, on average, around 15% of all children with SAM will need stabilisation at inpatient care. This figure may be much higher at the beginning of an emergency intervention, if the set up of outpatient care sites is not covering all the area of origin of beneficiaries or if early detection of cases is not yet optimal/established (late presentation).

## Staff needs and training

### Outpatient care

A trained nurse or other qualified clinical health worker (or several, depending on workload) is sufficient to carry out the admission and follow-on consultations. It is advisable to add a trained assistant or volunteer for assisting with measurements and provision of RUTF and group sessions on health and nutrition education. Health workers need to be well trained and thus able to identify danger signs applying standard protocols (IMCI) and take decisions on when and whether referral for inpatient care is necessary during admission and follow-up.

When outpatient care is delivered in existing health facilities, MOH staff may need to be reorganised, and their job descriptions amended to fulfil the new routines. To help with conducting measurements, and distributing RUTF and key messages, community health workers or other trained assistants may be used to support the health workers.

### Inpatient care

**Clinical care staff:** Includes nurses and/or physicians who have received specific training on the management of SAM with medical complications. Danger signs and treatment protocols of medical complications in children with a good nutrition status are not the same as for children with SAM. A clinician should be available at night.

**Feeding assistants:** Nutrition or health assistants are in charge of weighing the child, preparation and/or supervision of the preparation of the feeds, supervising the meals, interacting with the mothers, monitoring clinical warning signs and filling in most of the information on the patient's card. A ratio of 1 staff per 10 patients is considered appropriate. They may be in charge of the emotional and physical stimulation programme. Feeding assistants have rotating duties and cover the 3-hourly feeds day and night.

Support staff: Cleaners and kitchen staff play a key role in maintaining a tidy environment and preparing therapeutic milks and food for caregivers. In large inpatient care sites, a person in charge of the logistics and transport will be necessary. Guardians, store keepers and other ancillary staff may be needed depending on the context and size of the facility.

### Staff training

Training is an essential part of the setup and the roll out of CMAM activities for managers and supervisors as well as for health workers and should respect national guidelines and strategies.

Formal (initial training, refreshers etc) and informal (on-the-job training, supervisory visits etc) in-service training sessions should be organised and support materials prepared (job aids, training aids, training materials, guidelines, manuals etc).

### Supply of therapeutic food, medicines and equipment

Annexes 16 and 17 give examples of checklists of kits and supplies (equipment, medicines and RUTF) for setting up outpatient and inpatient services.

### Needs of RUTF for an outpatient care site<sup>38</sup>

Each child in outpatient care consumes about twenty packets of RUTF a week. Monthly consumption in an individual site can be calculated as follows

Number of OTP beneficiaries	A	A
Monthly consumption per child (@20 packets /child/week)	B	80
Monthly packet consumption for a site	C	A x B
Monthly carton consumption for a site	D	C/150
Monthly net weight (MT) (@13.8kg/carton)	E	D x 13.8/1000
Monthly gross weight (MT) (@14.9kg/carton)	F	D x 14.9/1000

### Needs for therapeutic food products at inpatient care

Assuming an average duration of treatment of 10 days, 2 kg of F75 per child can be used for planning figure. Usually less than 5 per cent of children admitted for complicated malnutrition will not be able to eat RUTF during rehabilitation phase and will require F100. For these children, a planning figure of 12 kg of F100 per child for the whole rehabilitation phase can be used.

## 12. Management of medical complications in the presence of severe acute malnutrition

The metabolism of children with SAM with medical complications is seriously disturbed, and the immune system seriously impaired. This involves large movements of electrolytes and water between the various compartments of the body. Such temporary electrolyte disequilibrium makes the patient more vulnerable to misdiagnosis and mismanagement of conditions like dehydration or severe anaemia which can in turn lead to death from heart failure. Hypoglycaemia, hypothermia, electrolyte imbalance, micronutrient deficiencies and severe infections are commonly associated with SAM, sometimes without obvious clinical manifestations. The standard treatment for conditions like dehydration and severe anaemia given to non-malnourished children can lead to death if applied to children with SAM.

Case management of children with SAM and medical complications should only be conducted by clinical staff who has received the appropriate training. See Annex 18 for an introduction to the main principles of the management of complications.

<sup>38</sup> More complex tools for forecasting needs in RUTF at national level are being developed by some agencies and will soon be available

**Annex 1: Outpatient individual follow up card**

**ADMISSION AT OUTPATIENT CARE FOR SEVERE ACUTE MALNUTRITION**

Name					Reg. No.			
Caretaker					Health Centre			
Physical address	Locality				Commune			
Age (months)	19	Sex	M	F	Date of admission	03/09/2010		
Information about admission	Referred by CHW	Self-reference		Relapse	Readmission after defaulting	Referral from Inpatient care		
<b>Admission Anthropometry</b>								
Weight (kg)		Height (cm)		WFH (or BMI)		MUAC (mm)	108	
Oedema (0), (+) or (++)		Criteria of admission		Oedema	WFH <-3ZS (BMI <16)	MUAC <115cm		
<b>Physical Examination at admission</b>								
Cough			Respiration Rate	6-12m	<50 >50	12-59m	<40 >40	
				Chest indrawing		Yes	No	
Diarrhoea (>3 liquid stools)	Yes	No		Dehydration		Yes	No	
Vomiting	Yes	No				Mid/Moderate	Severe	
Passing Urine	Yes	No						
Thirsty	Yes	No						
Extremities	Normal	Cold						
State of conscienceness	Normal	Agitated	Irritated	Passive				
Ears	Normal	Dry	Pain	Discharge				
Mouth	Normal	Sores	Candida					
Skin changes	None	Scabies	Ulcers	Abscess	Peeling			
Lymph nodes	None	Axilla	Neck	Groin				
<b>Other problems (specify):</b> Mother explains that the child has been caughing for several (unknown) weeks								
Malaria rapid test at admission (-) or (+)					HIV test result (if known)			
<b>Routine medicines (Note date and dose)</b>								
Sugared water	at admission			Mebendazole	second visit			
Amoxycillin	at admission			Measles vac.				
Anti-malaria				Vitamin A	at discharge			
<b>Other treatments</b>								
Drug	Date	Dose		Drug	Date	Dose		

Circle the right answer

**Annex 2: Transfer slip**

TRANSFER SLIP				
FROM		OTP	SC	SFP
TO		OTP	SC	SFP
	REFERRAL DATE			
	NAME OF THE CHILD			
	CARETAKER'S NAME			
	DATE OF ADMISSION			
AGE	<input style="width: 100%;" type="text"/>	SEX	<input style="width: 100%;" type="text"/>	Reg Number <input style="width: 100%;" type="text"/>
	CONDITION AT REFERRAL	TREATMENT GIVEN		
WEIGHT	<input style="width: 100%;" type="text"/>	<input style="width: 100%; height: 100%;" type="text"/>		
HEIGHT	<input style="width: 100%;" type="text"/>			
WFH	<input style="width: 100%;" type="text"/>			
MUAC	<input style="width: 100%;" type="text"/>			
OEDEMA	<input style="width: 100%;" type="text"/>			
		Name of the responsible for the referral		

TRANSFER SLIP				
FROM		OTP	SC	SFP
TO		OTP	SC	SFP
	REFERRAL DATE			
	NAME OF THE CHILD			
	CARETAKER'S NAME			
	DATE OF ADMISSION			
AGE	<input style="width: 100%;" type="text"/>	SEX	<input style="width: 100%;" type="text"/>	Reg Number <input style="width: 100%;" type="text"/>
	CONDITION AT REFERRAL	TREATMENT GIVEN		
WEIGHT	<input style="width: 100%;" type="text"/>	<input style="width: 100%; height: 100%;" type="text"/>		
HEIGHT	<input style="width: 100%;" type="text"/>			
WFH	<input style="width: 100%;" type="text"/>			
MUAC	<input style="width: 100%;" type="text"/>			
OEDEMA	<input style="width: 100%;" type="text"/>			
		Name of the responsible for the referral		



**Annex 4: Target weight for discharge at 15% of weight gain (Children 6-59m)**

Guidance table to identify the target weight for children 6-59 months

Weight on admission <sup>a,b</sup>	Target weight: 15% weight gain	Weight on admission <sup>a,b</sup>	Target weight: 15% weight gain
4.1	4.7	11.1	12.8
4.3	4.9	11.3	13.0
4.5	5.2	11.5	13.2
4.7	5.4	11.7	13.5
4.9	5.6	11.9	13.7
5.1	5.9	12.1	13.9
5.3	6.1	12.3	14.1
5.5	6.3	12.5	14.4
5.7	6.6	12.7	14.6
5.9	6.8	12.9	14.8
6.1	7.0	13.1	15.1
6.3	7.2	13.3	15.3
6.5	7.5	13.5	15.5
6.7	7.7	13.7	15.8
6.9	7.9	13.9	16.0
7.1	8.2	14.1	16.2
7.3	8.4	14.3	16.4
7.5	8.6	14.5	16.7
7.7	8.9	14.7	16.9
7.9	9.1	14.9	17.1
8.1	9.3	15.1	17.4
8.3	9.5	15.3	17.6
8.5	9.8	15.5	17.8
8.7	10.0	15.7	18.1
8.9	10.2	15.9	18.3
9.1	10.5	16.1	18.5
9.3	10.7	16.3	18.7
9.5	10.9	16.5	19.0
9.7	11.2	16.7	19.2
9.9	11.4	16.9	19.4
10.1	11.6	17.1	19.7
10.3	11.8		
10.5	12.1		
10.7	12.3		
10.9	12.5		

<sup>a</sup> Or weight free of oedema

<sup>b</sup> If weight on admission is pair, round the weight up with 0.1 kg. Example: Weight on admission is 9.2 kg. use 9.3 kg. as weight on admission.

**Annex 5: Composition of F75 and F100 formulas**

	F75 (starter)	F100 (catch-up)
Dried skimmed milk (gr)	25	80
Sugar (gr)	100	50
Vegetable oil (gr)	30 (or 35ml)	60 (or 70ml)
Electrolyte/mineral solution (ml)	20	20
Water, make up to	1,000ml	1,000ml
<b>Contents per 100ml</b>		
Energy (kcal)	75	100
Protein (gr)	0.9	2.9
Lactose (g)	1.3	4.2
Potassium (mmol)	4.0	6.3
Sodium (mmol)	0.6	1.9
Magnesium (mmol)	0.43	0.73
Zinc (mg)	2.0	2.3
Copper (mg)	0.25	0.25
% of energy from proteins	5	12
% of energy from fats	36	53
Osmolarity (mmOsmol/l)	413	419

## Annex 6: Alternative recipes for starter and catch-up formulas

### *Alternative recipes for starter and catch-up formulas*

#### **F-75 starter formulas**

- Full-cream dried milk 35 g, 100 g sugar, 20 g (Or ml) oil, 20 ml electrolyte/mineral solution, and make up to 1000 ml
- Full-cream cow's milk (Fresh or long life) 300 ml, 100 g sugar, 20 g (Or ml) oil, 20 ml electrolyte/mineral solution and make up to 1000 ml

#### **F-100 catch-up formulas**

- Full-cream dried milk 110 g, 50 g sugar, 30 g (Or ml) oil, 20 ml electrolyte/mineral solution, and make up to 1000 ml
- Full-cream cow's milk (Fresh or long life) 880 ml, 75 g sugar, 20 g (Or ml) oil, 20 ml electrolyte/mineral solution and make up to 1000 ml

#### **F-135 catch-up formulas**

This is for use in special circumstances (Poor weight gain) for children aged > 6 months

- Full-cream dried milk 130 g, 70 g sugar, 40 g (Or 45 ml) oil, 20 ml electrolyte/mineral solution, make up to 1000 ml
- Full-cream cow's milk (Fresh or long life) 880 ml, 50 g sugar, 60 g (Or 65ml) oil, 20 ml electrolyte/mineral solution (This makes 1000 ml)

#### **Isotonic and cereal based F-75**

- Cereal-based, low-osmolar F-75 (334 mOsmol/l). Replace 30 g of the sugar with 35 g cereal flour in F-75 recipes above. Cook for 4 minutes. This may be helpful for children with osmotic diarrhoea
- Isotonic versions of F-75 (280 mOsmol/l) are available commercially from Nutriset. In these, maltodextrins replace some of the sugar, and all the extra nutrients (K, Mg and micro-nutrients) are incorporated

#### **Preparation:**

- using an electric blender: place some of the warm boiled water in the blender, add the milk powder, sugar, oil and electrolyte/mineral solution. Make up to 1000 ml, and blend at high speed
- if no electric blender is available, mix the milk, sugar, oil and electrolyte/mineral solution to a paste, and then slowly add the rest of the warm boiled water and whisk vigorously with a manual whisk
- store made-up formula in refrigerator

**Annex 7: Preparation of small quantities of F75**

Volume of F75 for persons with severe wasting in stabilisation

Weight (In kg)	F75 ml per feed if 8 feeds per day	F75 ml per feed if 6 feeds per day	F75 ml per feed if 5 feeds per day
2.0-2.1	40	50	65
2.2-2.4	45	60	70
2.5-2.7	50	65	75
2.8-2.9	55	70	80
3.0-3.4	60	75	85
3.5-3.9	65	80	95
4.0-4.4	70	85	110
4.5-4.9	80	95	120
5.0-5.4	90	110	130
5.5-5.9	100	120	150
6.0-6.9	110	140	175
7.0-7.9	125	160	200
8.0-8.9	140	180	225
9.0-9.9	155	190	250
10.0-10.9	170	200	275
11.0-11.9	190	230	275
12.0-12.9	205	250	300
13.0-13.9	230	275	350
14.0-14.9	250	290	375
15.0-19.9	260	300	400
20.0-24.9	290	320	450
25.0-29.9	300	350	450
30.0-39.9	320	370	500
40.0-60.0	350	400	500

Volume of F75 for persons with bilateral pitting oedema (+++) in stabilisation

Weight (In kg)	F75 ml per feed if 8 feeds per day	F75 ml per feed if 6 feeds per day	F75 ml per feed if 5 feeds per day
<b>3.0-3.4</b>	50-60	60-75	70-85
<b>3.5-3.9</b>	50-65	65-80	75-95
<b>4.0-4.4</b>	55-70	70-85	90-110
<b>4.5-4.9</b>	65-80	70-95	95-120
<b>5.0-5.4</b>	70-90	90-110	105-130
<b>5.5-5.9</b>	80-100	95-120	120-150
<b>6.0-6.9</b>	90-110	110-140	140-175
<b>7.0-7.9</b>	100-125	130-160	160-200
<b>8.0-8.9</b>	110-140	145-180	180-225
<b>9.0-9.9</b>	125-155	150-190	200-250
<b>10.0-10.9</b>	135-170	160-200	220-275
<b>11.0-11.9</b>	150-190	185-230	220-275
<b>12.0-12.9</b>	165-205	200-250	240-300
<b>13.0-13.9</b>	185-230	220-275	280-350
<b>14.0-14.9</b>	200-250	230-290	300-375
<b>15.0-19.9</b>	210-260	240-300	320-400
<b>20.0-24.9</b>	230-290	255-320	360-450
<b>25.0-29.9</b>	240-300	280-350	360-450
<b>30.0-39.9</b>	255-320	295-370	400-500
<b>40.0-60.0</b>	280-350	320-400	400-500

## Preparation of small quantities of F75

Small red spoon F75	Water to add (In ml)	
1	20	
2	40	
3	60	
4	80	
5	100	
6	120	
7	140	
8	160	
9	180	
10	200	
F75 sachets	Water to add (In ml)	Final volume of F75
1/4 = 103 g	500	600 ml
1/2 = 205 g	1,000	1,200 ml
1 sachet	2,000	2,400 ml
2 sachets	4,000	4,800 ml

1 small red spoon = 4.1g

**Annex 8: Preparation of small quantities of F100**

Volume of F100 in transition (150 kcal/kg bodyweight/day) when no RUTF is taken

Weight (In kg)	F100 ml per feed if 8 feeds per day	F100 ml per feed if 6 feeds per day	F100 ml per feed if 5 feeds per day
3.0-3.4	60	75	85
3.5-3.9	65	80	95
4.0-4.4	70	85	110
4.5-4.9	80	95	120
5.0-5.4	90	110	130
5.5-5.9	100	120	150
6.0-6.9	110	140	175
7.0-7.9	125	160	200
8.0-8.9	140	180	225
9.0-9.9	155	190	250
10.0-10.9	170	200	275
11.0-11.9	190	230	275
12.0-12.9	205	250	300
13.0-13.9	230	275	350
14.0-14.9	250	290	375
15.0-19.9	260	300	400
20.0-24.9	290	320	450
25.0-29.9	300	350	450
30.0-39.9	320	370	500
40.0-60.0	350	400	500

## Preparation of small quantities of F100

Small red spoon F100	Water to add (In ml)	
1	18	
2	36	
3	54	
4	72	
5	90	
6	108	
7	126	
8	144	
9	162	
10	180	
F100 sachets	Water to add (In ml)	Final volume of F100
1/4 = 115 g	500	600 ml
1/2 = 230 g	1,000	1,200 ml
1 sachet	2,000	2,400 ml
2 sachets	4,000	4,800 ml

1 small red spoon = 4.1g



Therapeutic diet		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Date																							
Phase																							
Diet name																							
ml/feed																							
No/feed/day																							
ml/day																							
Iron added																							
Time	1																						
A = absent																							
V = vomit																							
R = refuse																							
NG = tube																							
IV = IV fluid																							
Amount taken																							
100%	<input type="checkbox"/>																						
3/4	<input type="checkbox"/>																						
1/2	<input type="checkbox"/>																						
1/4	<input type="checkbox"/>																						
= ml = extra																							
Porridge																							
Family meal																							
Other																							

TECHNICAL NOTES

Surveillance chart		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Date																							
Stool (III)																							
Vomit (III)																							
Dehydrated 0/+++																							
Cough 0/+++																							
Septic shock 0/+++																							
Resp rate																							
Pale conjunctives																							
Temp. AM ax/Rec																							
Temp. PM ax/Rec																							
Scabies 0/+++																							
Liver size (cm)																							

Routine medicines		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Date																							
Vit A ..... iu																							
Folicacid 5 mg (po)																							
Antibiotic 1																							
Time																							
Malaria rx																							
Worm rx in phase II																							





**Annex 10: Preparation of small quantities of diluted F100**

Small red spoon F100	Water to add (In ml)	
1	24	
2	48	
3	72	
4	96	
5	120	
6	144	
7	168	
8	192	
9	216	
10	240	
F100 sachets	Water to add (In ml)	Final volume of F100
1/4 = 115 g	670	750 ml
1/2 = 230 g	1,350	1,500 ml
1 sachet	2,700	3,150 ml
2 sachets	5,400	6,300 ml

1 small red spoon = 4.1g

### Annex 11: Tally sheet for sites

Outpatient/inpatient tally sheet

	Site				
	Wk				TOTAL
	Date				
<b>(A) Total start of week</b>					
New 6-59m SAM					
Other (Adults, adolescents, infants)					
From outpatient/inpatient care (Or returned defaulters)					
<b>(D) Total admissions</b>					
Cured					
Death					
Defaulter					
Non-recovered					
To outpatient/inpatient care					
<b>(G) Total discharges</b>					
<b>Total end of week (A+D+G)</b>					

**Annex 12: Monthly site report**

Site		Implemented by		
Region		Month/year		
District		Type of management (Circle)	Inpatient	Outpatient
		Estimated maximum capacity		
		Estimated target malnourished <5's (Based on latest survey data and admission criteria)		
		RUTF Consumption	Packets/pots	kg equivalent

Total beginning of the month (A)	New cases (B)		Old cases (C)	Total admission (D) (B+C=D)	Discharges (E)				Transfer (F)	Total discharge (G) (E+F=G)	Total end of the month (H) (A+D-G=H)
	6-59m (According to admission criteria) (B1)	Other (Adults, infants, adolescents) (B2)	From outpatient or inpatient care, or returned defaulter		Cured (E1)	Death (E2)	Defaulter (E3)	Non-recovered (E4)	To inpatient or outpatient care		
					%	%	%	%			
					Target (Sphere standards)						
					>75%	<10%	<15%				

E1: Cured = reaches discharge criteria

E3: Defaulter = absent for 3 consecutive visits

E4: Non recovered = does not reach the discharge criteria after 4 months in OTP

H: Total end of the month (H) = total beginning of the month (A) + total admissions (D) - Total discharges (G)

**Annex 13: Consolidated monthly report**

Country	<input type="text"/>		Implementing partner (s)	<input type="text"/>
Number of treatment sites	Outpatient	<input type="text"/>	Reporting period	<input type="text"/>
	Inpatient	<input type="text"/>		
Estimated maximum capacity	<input type="text"/>			
Estimated target malnourished <5's (Based on latest survey data and admission criteria)	<input type="text"/>			
Estimated coverage (From coverage survey or estimated from target and admission)	<input type="text"/>			
RUTF Consumption	<input type="text"/>	kg		

Total beginning of the month (A)	New cases (B)		Discharges (E)				Total discharge (E) (E1+E2+E3+E4=E)	Total end of the month (A+B-E=H)
	6-59m (According to admission criteria) (B1)	Other (Adults, infants, adolescents) (B2)	Cured (E1)	Death (E2)	Defaulter (E3)	Non-recovered (E4)		
			%	%	%	%		
			Target (Sphere standards)	>75%	<10%	<15%		

NB: Old cases and transfers are excluded from nation/programme reporting as they are movements within the programme rather than entries and exits

E1: Cured = reaches discharge criteria

E3: Defaulter = absent for 3 consecutive visits

E4: Non recovered = does not reach the discharge criteria after 4 months in OTP



**Annex 15: Supervision check list**

## SUPERVISION CHECKLIST FOR OUTPATIENT CARE

Health Centre:

Date:

	Quality 1 – Done correctly 2 – Done, but needs work 3 – Not done or done incorrectly	Discussed Nurse/Health Extension Worker Supervisor (Y/N)	Comments
Number of staff present			Staff:
Staff greet the mothers/caregivers and are friendly and helpful			
Registration numbers assigned correctly			
Registration numbers written on all documentation			
Grade of bilateral pitting oedema measured accurately			
MUAC measured accurately			
Weight measured accurately			
Admission is done according to correct criteria (Check WITH Individual follow up cards)			
Medical history recorded accurately			
Physical examination performed accurately			
Child's appetite assessed using RUTF (On admission and at all follow-on visits)			
Routine medications given according to protocol and recorded accurately			
Amount of RUTF needed is correctly calculated			
Appropriate education given to mothers of outpatient care beneficiaries			Note topic:
Other medical treatments are given according to protocol and recorded accurately			
Non-responders are identified according to the definition for follow-up			

## SUPERVISION CHECKLIST FOR OUTPATIENT CARE (continued)

Health Centre:

Date:

	Quality 1 – Done correctly 2 – Done, but needs work 3 – Not done or done incorrectly	Discussed Nurse/Health Extension Worker Supervisor (Y/N)	Comments
Priorities for follow-up home visits are discussed with a outreach worker if needed			
Beneficiaries discharged according to protocol			
Correct number of absentees/ defaulters passed to outreach worker for follow-up			
Outpatient care tally sheets, register and RUTF stock cards correctly completed (Spot check)			
All absentees/defaulters from previous week followed up			
Outreach follow-up form filled in correctly and information noted on ration card			
Appropriate education (According to education message sheet) given to mothers/caregivers at home			
Mother/caregiver referred for additional care or services if appropriate			
Timely and appropriate referral to the clinician made for non-responders			
Volunteer/outreach worker returns follow-up visit checklists or observations to health centre			
Volunteer/outreach worker feedback provided on a timely basis (Before the next outpatient session)			
Volunteer/outreach worker has a helpful, positive attitude with caregivers			

TECHNICAL NOTES

SUPERVISION CHECKLIST FOR OUTPATIENT CARE (continued)

Health Centre:

Date:

	<b>Quality</b> 1 – Done correctly 2 – Done, but needs work 3 – Not done or done incorrectly	<b>Discussed Supervisor (Y/N)</b>	<b>Comments</b>
All absentees/defaulters from previous week followed up			
Outreach follow-up conducted and information noted on ration card			
Appropriate education (According to education message sheet) given to mothers/caregivers at home			
Mother/caregiver referred for additional care or services if appropriate			
Timely and appropriate referral to the clinician made for non-responders			
Outreach worker returns follow-up home visit checklists or observations to health centre			
Outreach worker feedback provided on a timely basis (Before the next outpatient care session)			
Outreach worker has a helpful, positive attitude with mothers/caregivers			

## SUPERVISION CHECKLISTS FOR INPATIENT CARE

Checklist for Monitoring Food Preparation OBSERVE	Yes	No	Comments
Are ingredients for the recipe available?			
Is the correct recipe used for the ingredients that are available?			
Are ingredients stored appropriately and discarded at appropriate times?			
Are containers and utensils kept clean?			
Do kitchen staff (Or those preparing feeds) wash hands with soap before preparing food?			
Are the recipes for F75 and F100 followed exactly? (If changes are made due to lack of ingredients, are these changes appropriate?)			
Are measurements made exactly with proper measuring utensils (E.g., correct scoops)?			
Are ingredients thoroughly mixed (And cooked, if necessary)?			
Is the appropriate amount of oil remixed in (i.e., not left stuck in the measuring container)?			
Is CMV added correctly?			
Is the correct amount of water added to make up a litre of formula? (Staff should not add a litre of water, but just enough to make a litre of formula.)			
Is food served at an appropriate temperature?			
Is the food consistently mixed when served (i.e., oil is mixed in, not separated)?			
Are correct amounts put in the dish for each child?			
Is leftover prepared food discarded promptly?			
Other			

## SUPERVISION CHECKLISTS FOR INPATIENT CARE (continued)

Checklist for Monitoring Ward Procedures OBSERVE	Yes	No	Comments
<b>Feeding</b>			
Are correct feeds served in correct amounts?			
Are feeds given at the prescribed times, even on nights and weekends?			
Are children held and encouraged to eat (Never left alone to feed)?			
Are children fed with a cup (Never a bottle)?			
Is food intake (And any vomiting/diarrhoea) recorded correctly after each feed?			
Are leftovers recorded accurately?			
Are amounts of F75 kept the same throughout the initial phase, even if weight is loss?			
After transition, are amounts of F100 given freely and increased as the child gains weight?			
<b>Warming</b>			
Is the room kept between 25 and 30 degrees C (To the extent possible)?			
Are blankets provided and children kept covered at night?			
Are safe measures used for rewarming children?			
Are temperatures taken and recorded correctly?			
<b>Weighing</b>			
Are scales functioning correctly?			
Are scales standardised weekly?			
Are children weighed at about the same time each day?			
Are children weighed about one hour before a feed (To the extent possible)?			
Do staff adjust the scale to zero before weighing?			
Are children consistently weighed without clothes?			
Do staff correctly read weight to the nearest division of the scale?			
Do staff immediately record weights to the nearest division of the scale?			
Do staff immediately record weights on the child's Individual follow up card?			

## SUPERVISION CHECKLISTS FOR INPATIENT CARE (continued)

Checklist for Monitoring Ward Procedures OBSERVE	Yes	No	Comments
<b>Giving antibiotics, medications, supplements</b>			
Are antibiotics given as prescribed (Correct dose at correct time)?			
When antibiotics are given, do staff immediately make a notation on the Individual follow up card?			
Measles			
Is vitamin A given according to schedule?			
After children are on F100 for two days, is the correct dose of iron given twice daily and recorded on the CCP?			
<b>Ward environment</b>			
Are surroundings welcoming and cheerful?			
Are mothers offered a place to sit and sleep?			
Are mothers taught/encouraged to be involved in care?			
Are staff consistently courteous?			
As children recover, are they stimulated and encouraged to move and play?			

## TECHNICAL NOTES

## SUPERVISION CHECKLISTS FOR INPATIENT CARE (continued)

Checklist for Monitoring Hygiene OBSERVE	Yes	No	Comments
<b>Handwashing</b>			
Are there working handwashing facilities in the ward?			
Do staff consistently wash hands thoroughly with soap?			
Are their nails clean?			
Do they wash hands before handling food?			
Do they wash hands between each patient?			
<b>Mothers' cleanliness</b>			
Do mothers have a place to bathe, and do they use it?			
Do mothers wash hands with soap after using the toilet or changing diapers?			
Do mothers wash hands before feeding children?			
<b>Bedding and laundry</b>			
Is bedding changed every day or when soiled/wet?			
Are diapers, soiled towels and rags, etc. stored in a bag, then washed or disposed of properly?			
Is there a place for mothers to do laundry?			
Is laundry done in hot water?			
<b>General maintenance</b>			
Are floors swept?			
Is trash disposed of properly?			
Is the ward kept as free as possible of insects and rodents?			
<b>Food storage</b>			
Are ingredients and food kept covered and stored at the proper temperature?			
Are leftovers discarded?			
<b>Dishwashing</b>			
Are dishes washed after each meal?			
Are they washed in hot water with soap?			
<b>Toys</b>			
Are toys washable?			
Are toys washed regularly, and after each child uses them?			

**Annex 16: Check lists for setup of outpatient care services, one site<sup>39</sup>**

## Equipment

Item	Amount
OTP file for admission cards	1 per clinic
Marker pens (Permanent ink)	2
Clipboards	2
Stapler and box of staples	1
Pens	3
Scissors	1 pair
Notebook	1
Calculator	1
Small clock with second hand	1
Bucket with lid	2
Soap for hand washing	1 bar
Small bowl	1
Small jug	1
Hand towels/paper towels	2
Water jug (with lid)	2
Plastic cups	10
Metal spoons	2
Teaspoons or medicine cups	6
Thermometer	3
Salter scale (25kg) plus pants	1
Height board	1
MUAC tape	2
Weight for Height % table	1
Nail clippers	1

<sup>39</sup> Valid International (2006) *Community-based Therapeutic Care: A Field Manual*

## TECHNICAL NOTES

## Equipment (continued)

Minimum Stock to Keep Topped Up	Amount
OTP cards for new admissions	100
OTP ration cards for new admissions	100
ID bracelets (optional)	100
Clear plastic envelopes (For filing OTP cards)	100
Bags for carrying RUTF (If required)	100
Drinking water	1 jerry can
Sugar to make 10% sugar water solution	500g
Soap. For OTP children plus extra for children referred from the community but not fulfilling admission criteria.	500 bars
RUTF	(See separate list)
Medicines and dressings	(See separate list)

## Medicines

Routine Medicines: Per 500 children	Amount
Mebendazole 100mg	4 tins
Paracheck (Malaria rapid test)	200
Artesunate tablets*	600 tablets
Vitamin A capsules	1 tin
Measles vaccine (Where not possible to refer to an existing EPI programme)	100 doses

## Medicines (continued)

Additional Medicines: Per 500 children	Amount
Chloramphenicol syrup or tablets	100 bottles or 1 tin
Tetracycline eye ointment	50 tubes
Nystatin suspension	20 bottles
Paracetamol syrup or 100mg tablets	2 bottles or 1 tin
Benzyl benzoate 200ml	100 bottles
Whitfields ointment	50 tubes
Gentian violet – powder	1 tin
Betadine solution	2 bottles
Quinine (Or suitable 2nd line anti-malarial)	1 tin
Ferrous Folate (Or iron sulphate and folic acid) – for treatment of anaemia	1 tin
Cotton wool	5 rolls
Examination gloves – non-sterile	1 box
Medicine bags	100 bags
ReSoMal	2 packets

Notes: All medicines must be clearly labelled.

Daily stocks carried should be reviewed after the first month as requirements will vary depending on number of admissions.

Amounts carried should be kept as low as possible to facilitate storage.

Dressing Materials (Where needed):	Amount
Gauze 10x10	20 packets
Small bandage	10 pieces
Tape	2 rolls
Zinc ointment	10 tubes
Normal saline for wounds 100ml or 200ml	10 pieces
Dressing scissors	2 pairs

## Annex 17: MSF/UNICEF kits for outpatient and inpatient care for management of SAM

### MSF/UNICEF kits for outpatient and inpatient care for management of SAM

#### 1. Nutrition Kit for Inpatient Therapeutic Feeding Centre

The Nutrition Kit for Inpatient Therapeutic Feeding Centre consists of one (1) **Anthropometric Nutrition Kit (S0114050)** plus four (4) additional modules containing consumables that can be ordered separately:

Module 1: S0114051 Nut.kit,inpatient,module-registration – stationary

Module 2: S0114052 Nut.kit,inpatient,module-equipment – cooking and feeding materials

Module 3: S0114053 Nut.kit,inpatient,module-med.supplies – medical consumables

Module 4: S0114054 Nut.kit,inpatient,module-med.devices – optional medical devices

This kit is sufficient for one (1) inpatient therapeutic feeding centres intended for 50 severely acute malnourished children for a period of 3 months.

#### 2. Nutrition Kit for Outpatient Therapeutic Feeding Centre

The Nutrition Kit for Outpatient Therapeutic Feeding Centre consists of three (3) **Anthropometric Nutrition Kits (S0114050)** plus two (2) additional modules containing consumables that can be ordered separately:

Module 1: S0114055 Nut.kit,outpatient,module-registration – stationary

Module 2: S0114056 Nut.kit,outpatient,module-equipment – feeding and medical equipment

This kit is sufficient for five (5) outpatient therapeutic feeding centres intended for 500 severely acute malnourished children for a period of three (3) months. If more than five (5) sites are to be covered, supplementary anthropometric equipment should be ordered separately.

#### Contents of modules:

##### S0114050 Nutrition kit, anthropometric

2 x COUNTER, manual

2 x CALCULATOR, solar or battery-powered

1 x CHALK, box of 100

100 x FOLDER, A4, plastic, transparent, open on 2 sides

4 x ERASER, rubber, white

4 x CLIPBOARD, fold over, A4

10 x PEN, BALL POINT, black

12 x PENCIL, lead, HB

10 x MARKER, permanent, large, chisel point, black

4 x PENCIL SHARPENER, 2 sizes

4 x RULER, 30 cm, plastic, transparent

2 x SCISSORS, 17 cm, blunt ends

10 x ROPE, Ø 5 mm, POLYPROPYLENE, twisted (per meter)

50 x MUAC, child, polypropylene, red 110 cm and below, orange 112-124 cm, yellow 126-134 cm

6 x MUAC, adult, polypropylene, white, no cut-off point

2 x LENGTH-HEIGHT MEASURING SYSTEM, baby/infant, horizontal/vertical, 130cm, wood

4 x SPRING SCALE, SALTER TYPE, 0-25 kg, no trousers, graduation 100 g

10 x 1 x TROUSER for Spring scale, Salter type

1 x Rapid Nutritional & Mortality Surveys Manual. Step by step + CD-Rom

2 x BAG, RUCKSACK, nylon, light

4 x CARD, RANDOM NUMBER, A4 recto

4 x CARD, WEIGHT/LENGTH, NCHS %, English, untear/plast, A4 r/v.

4 x CARD, WEIGHT/LENGTH, NCHS %, French, untear/plast, A4 r/v.

3 x CARD, WEIGHT/LENGTH, WHO 2006 Z-score, boys/girls, plasticised, English.

3 x CARD, WEIGHT/LENGTH, WHO 2006 Z-score, boys/girls, plasticised, French.

**S0114051 Nutrition kit, inpatient, module-registration**

- 1 x CALCULATOR, solar or battery-powered
- 1 x ACCOUNT BOOK (Balzac), ref. 58-04
- 4 x NOTEBOOK, A4, squared, 180 pages, hardback
- 1 x BOX, FOR INDEX CARD, A4 size, plastic + cover
- 1 x DIVIDER, for A4 index box, A-Z, set
- 2 x ERASER, rubber, white
- 5 x PEN, BALL POINT, black
- 5 x PENCIL, lead, HB
- 2 x MARKER, permanent, large, chisel point, black
- 2 x MARKER, permanent, large, chisel point, red
- 2 x PENCIL SHARPENER, 2 sizes
- 2 x RULER, 30 cm, plastic, transparent
- 1 x SCISSOR, 17 cm, blunt ends
- 1 x STAPLER, small, with staples
- 1 x STAPLE (for small stapler), box of 1000
- 1 x MSF Clinical guidelines. English version: [http://www.refbooks.msf.org/msf\\_docs/en/Clinical\\_Guide/CG\\_en.pdf](http://www.refbooks.msf.org/msf_docs/en/Clinical_Guide/CG_en.pdf)
- 1 x MSF Clinical guidelines. French version: [http://www.refbooks.msf.org/msf\\_docs/fr/Clinical\\_Guide/CG\\_fr.pdf](http://www.refbooks.msf.org/msf_docs/fr/Clinical_Guide/CG_fr.pdf)
- 1 x Pocket book of hospital care for children. Guidelines for the management of common illnesses with limited resources. English version: <http://whqlibdoc.who.int/publications/2005/9241546700.pdf>
- 1 x Pocket book of hospital care for children. Guidelines for the management of common illnesses with limited resources. French version: [http://whqlibdoc.who.int/publications/2007/9789242546705\\_fre.pdf](http://whqlibdoc.who.int/publications/2007/9789242546705_fre.pdf)
- 1 x Guideline for the inpatient treatment of severely malnourished children (with CD). English version: <http://apps.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=545>
- 1 x Mental health and psychosocial well-being among children. WHO/MSD/ER/06.1 English version: [http://www.who.int/mental\\_health/mental\\_health\\_food\\_shortage\\_children2.pdf](http://www.who.int/mental_health/mental_health_food_shortage_children2.pdf)
- 1 x Mental health and psychosocial well-being among children. WHO/MSD/ER/06.1 French version: [http://www.who.int/mental\\_health/emergencies/mental\\_health\\_food\\_shortage\\_french.pdf](http://www.who.int/mental_health/emergencies/mental_health_food_shortage_french.pdf)
- 1 x Modern stove for all
- 150 x CARD, IN-PATIENT THER. FEEDING, English, A3 recto/verso
- 150 x CARD, IN-PATIENT THER. FEEDING, French, A3 recto/verso
- 150 x CARD, MILK, therapeutic feeding, Engl., A5 recto/vers
- 2 x CARD, WEIGHT/LENGTH, WHO 2006 Z-score, boys/girls,plast. English
- 2 x CARD, WEIGHT/LENGTH, WHO 2006 Z-score, boys/girls,plast. French
- 400 x BRACELET, IDENTIFICATION,(Ident-A-Band), feeding cent, red

**S0114052 Nutrition kit, inpatient, module-equipment**

- 10 x JERRYCAN, collapsible, 20 l, food grade plastic, screw cap
- 10 x TAP (collapsible jerrycan 20 l), screw type 5 cm
- 24 x SOAP, 200 g, bar
- 1 x SCALE (Seca 725), beam mechanical, baby, 0-15 kg, grad. 10 g
- 1 x SCALE, SALTER TYPE, 0-50 kg, no trousers, grad. 200 g
- 2 x COAT, MEDICAL, white, large
- 2 x COAT, MEDICAL, white, medium
- 2 x COAT, MEDICAL, white, small
- 6 x POTTY, pediatric, plastique, stakable
- 1 x STETHOSCOPE, one cup, nurse
- 5 x TIMER, respiratory, ARI
- 1 x THERMOMETER, MINI-MAXI, alcohol -40°C to +50°C
- 100 x BOWL, 0.5 l, plastic
- 3 x BUCKET, food proof plastic, 10l, grad, stackable + lid white
- 3 x BUCKET, food proof plastic, 10l, grad, stacking shape+lid red

## TECHNICAL NOTES

1 x COOKING POT, 10 l, alu (lathe work) + handles and lid  
 1 x COOKING POT, 20 l, alu (lathe work) + handles and lid  
 1 x COOKING POT, 50 l, alu (lathe work) + handles and lid  
 100 x CUP, 20/30 ml, plastic, for medicines  
 100 x CUP, 500 ml, plastic, graduated  
 2 x LADLE, 250 ml, aluminium  
 2 x MEASURING JUG, 1 l, graduated, non rigid, transparent  
 2 x MEASURING JUG, 2 l, graduated, non rigid, transparent  
 2 x PADDLE, SPOON, wooden, 90 cm  
 1 x SCALE, kitchen type, 0 to 5 kg, 10 g graduations  
 1 x SCOOP, aluminium, Ø 10/12 cm, 30 cm long  
 3 x SCOOP, RED (Nutriset), pack of 5  
 120 x SPOON, coffee, plastic, 5 ml  
 10 x SPOON, coffee, stainless steel, 5 ml  
 3 x WHISK, stainless steel, 78 cm  
 1 x LAMP, TORCH, manual recharge, small model  
 2 x BOWL, WASHING-UP, 10 litres, plastic  
 2 x BOWL, WASHING-UP, 20 litres, plastic  
 2 x BRUSH, SCRUBBING, for washing-up  
 2 x LAMP, KEROSENE, hurricane  
 1 x LAMP, TORCH, manual recharge, large model

**S0114053 Nutrition kit, inpatient, module-med. supplies**

100 x TEST, URINE, glucose, proteins, 1 strip  
 400 x LANCET, s.u., sterile, standard point  
 1 x SPHYGMOMANOMETER, one-hand manometer, Velcro, pediatric  
 2 x STETHOSCOPE, double cup, clinician  
 2 x TABLET CUTTER, stainless steel blade  
 30 x TUBE, GASTRIC, Luer tip, s.u., 40 cm, CH06  
 50 x TUBE, GASTRIC, Luer tip, s.u., 40 cm, CH08  
 50 x TUBE, GASTRIC, Luer tip, s.u., 60 cm, CH10  
 1 x COTTON WOOL, hydrophilic, roll, 500 g  
 4 x TAPE, ADHESIVE, ROLL, 2 cm x 5 m  
 25 x CONTAINER, needles/syringes, 5 l, cardboard for incineration  
 100 x IV CATHETER, injection port, s.u. 22 G (0.8 x 25 mm), blue  
 150 x IV CATHETER, injection port, s.u. 24 G (0.7 x 19 mm) yellow  
 300 x NEEDLE, s.u., Luer, 19 G (1.1 x 40 mm) cream, IV  
 200 x NEEDLE, s.u., Luer, 21 G (0.8 x 40 mm) green, IM  
 300 x NEEDLE, s.u., Luer, 23 G (0.6 x 30mm) blue, SC, IM child  
 100 x SCALP VEIN INFUSION SET, s.u. 25 G (0.5 x 19 mm), orange  
 50 x SET, INFUSION, pediatric, precision, sterile, s.u.  
 60 x SYRINGE, s.u., 60 ml, feeding, Luer  
 100 x SYRINGE, s.u., Luer, 1 ml, graduated 1/100  
 200 x SYRINGE, s.u., Luer, 2 ml  
 200 x SYRINGE, s.u., Luer, 5 ml  
 100 x SYRINGE, s.u., Luer, 10 ml  
 1,000 x BAG, plastic, for drugs, 6 x 8 cm  
 10 x BLANKET, SURVIVAL, 220 x 140 cm, thickness 12 microns  
 200 x DEPRESSOR, TONGUE, wooden  
 300 x GLOVES, EXAMINATION, latex, s.u. non sterile, large  
 1,000 x GLOVES, EXAMINATION, latex, s.u. non sterile, medium  
 10 x THERMOMETER, ELECTRONIC, accuracy 0.1°C + case

**S0114054 Nutrition kit, inpatient, module-med. devices**

- 1 x GLUCOMETER, blood glucose monitor + strips
- 1 x (glucometer) CONTROL SOLUTION
- 300 x (glucometer) STRIP
- 1 x HAEMOGLOBIN PHOTOMETER (HemoCue Hb 301) tropicalized
- 200 x (HemoCue Hb 301) MICROCUVETTES, s.u.
- S0114055 Nutrition kit, outpatient, module-registration
- 5 x CALCULATOR, solar or battery-powered
- 5 x FILE, LEVER-ARCH, 310 x 290 mm, 75 mm thick, black
- 10 x ACCOUNT BOOK (Balzac), ref. 58-04
- 5 x NOTEBOOK, A4, squared, 180 pages, hardback
- 5 x BOX, FOR INDEX CARD, A4 size, plastic + cover
- 5 x DIVIDER, for A4 index box, A-Z, set
- 1,000 FOLDER, A4, plastic, transparent, open on 2 sides
- 15 x PEN, BALL POINT, black
- 5 x MARKER, permanent, large, chisel point, black
- 5 x MARKER, permanent, large, chisel point, red
- 5 x RULER, 30 cm, plastic, transparent
- 5 x SCISSORS, 17 cm, blunt ends
- 5 x STAPLERS, small, with staples
- 5 x STAPLES (for small stapler), box of 1,000
- 5 x Community-based therapeutic care (CTC). A field manual. English version: [http://www.fantaproject.org/downloads/pdfs/CTC\\_Manual\\_v1\\_Oct06.pdf](http://www.fantaproject.org/downloads/pdfs/CTC_Manual_v1_Oct06.pdf)
- 1000 x AMBULATORY THERAPEUTIC FEEDING, English A4 recto/verso.
- 1000 x CARD, AMBULATORY THERAPEUTIC FEEDING, French A4 recto/verso.
- 1000 x BRACELET, IDENTIFICATION, (Ident-A-Band), feeding cent, blue

**S0114056 Nutrition kit, outpatient, module-equipment**

- 5 x CLOCK, ALARM, mechanical
- 5 x JERRYCAN, collapsible, 20 l, food grade plastic, screw cap
- 5 x TAP (collapsible jerry can 20 l), screw type 5 cm
- 15 x SOAP, 200 g, bar
- 50 x MUAC, child, polypropylene, red 110 cm and below, orange 112-124 cm, yellow 126-134 cm.
- 2 x SPRING SCALE, SALTER TYPE, 0-25 kg, no trousers, grad. 100 g
- 10 x 1 x TROUSERS for Spring scale Salter type
- 2 x COAT, MEDICAL, white, large
- 2 x COAT, MEDICAL, white, medium
- 2 x COAT, MEDICAL, white, small
- 10 x POTTY, paediatric, plastic, stackable
- 10 x STETHOSCOPE, one cup, nurse
- 2 x STETHOSCOPE, double cup, clinician
- 2 x TABLET CUTTER, stainless steel blade
- 5 x TIMER, respiratory, ARI
- 5 x MSF Clinical guidelines. English version: [http://www.refbooks.msf.org/msf\\_docs/en/Clinical\\_Guide/CG\\_en.pdf](http://www.refbooks.msf.org/msf_docs/en/Clinical_Guide/CG_en.pdf)
- 5 x MSF Clinical guidelines. French version: [http://www.refbooks.msf.org/msf\\_docs/fr/Clinical\\_Guide/CG\\_fr.pdf](http://www.refbooks.msf.org/msf_docs/fr/Clinical_Guide/CG_fr.pdf)
- 5 x BOWL, 0.5 l, plastic
- 10 x BUCKET, food proof plastic, 10l, grad, stackable + lid white
- 100 x CUP, 250 ml, plastic, red
- 10 x MEASURING JUG + LID, 1 l, graduated, transparent
- 5 x MEASURING JUG + LID, 2 l, graduated, transparent
- 10 x SPOON, soup, stainless steel, 15 ml
- 25 x SPOON, coffee, stainless steel, 5 ml

## TECHNICAL NOTES

10 x TOWEL, HAND, sponge  
1 x COTTON WOOL, hydrophilic, roll, 500 g  
10 x TAPE, ADHESIVE, ROLL, 2 cm x 5 m  
1000 x BAG, plastic, for drugs, 6 x 8 cm  
10 x BLANKET, SURVIVAL, 220 x 140 cm, thickness 12 microns  
200 x DEPRESSOR, TONGUE, wooden  
300 x GLOVES, EXAMINATION, latex, s.u. non sterile, large  
1000 x GLOVES, EXAMINATION, latex, s.u. non sterile, medium  
15 x THERMOMETER, ELECTRONIC, accuracy 0.1°C + case

## Annex 18: Management of medical complications in the presence of severe acute malnutrition

*This annex is intended for clinical health workers (Trained physicians and nurses) with responsibility for the clinical management of children with SAM with medical complications.*

The metabolism of children with SAM with medical complications is seriously disturbed, and the immune system seriously impaired. This involves large movements of electrolytes and water between the various compartments of the body. Such temporary electrolyte disequilibrium makes the patient more vulnerable to misdiagnosis and mismanagement of conditions like dehydration or severe anaemia which can in turn lead to death from heart failure. Hypoglycaemia, hypothermia, electrolyte imbalance, micronutrient deficiencies and severe infections are commonly associated with SAM, sometimes without obvious clinical manifestations. The standard treatment for conditions like dehydration and severe anaemia given to non-malnourished children can lead to death if applied to children with SAM.

Case management of children with SAM and medical complications should only be conducted by clinical staff who has received the appropriate training. This section provides an introduction to the main principles of the management of complications and should not be taken as a reference guide. There are many detailed guidelines available<sup>40,41</sup>.

### Dehydration

#### Dehydration in marasmus

Misdiagnosis and mistreatment for dehydration is the commonest cause of death in the child with SAM under treatment. In marasmus, all classical signs of dehydration are unreliable and should not be used for diagnosis of dehydration. Skin pinch (tent sign), sunken eyes and dryness are all signs of marasmus as well as of dehydration. Diagnosis of dehydration should mainly be based on the recent *history* rather than on child's examination alone.

For a diagnosis of dehydration to be considered there needs to be:

- Definite history of significant recent fluid loss (Diarrhoea looking like water, not just 'loose' stools, appearing with sudden onset in the last hours or days)
- Clear history of a recent change in the child's appearance
- The child must not have any oedema.

If in addition to the above, the child presents a weak or absent radial or femoral pulse, and cool or cold hands and feet then the patient is going into shock. If there is also loss of consciousness the shock is severe<sup>42</sup>.

The dehydrated child with SAM should be rehydrated orally. Intravenous infusions are only used when there is severe shock or loss of consciousness.

Before starting treatment, register weight, respiratory rate, and level of the liver edge. In addition, heart sounds and pulse rate can be assessed. Initially, **5 ml/kg bodyweight of ReSoMal should be administered every 30 minutes**. Monitoring of rehydration should be carried out following weight change. Every hour, reassess weight and all the other constants (respiratory and pulse rate, level of liver edge, heart sounds). Adapt rehydration with care. If weight increases and the constants increase, stop rehydration and reconsider diagnosis. During rehydration breastfeeding should not be interrupted. All other sources of fluids should be stopped.

<sup>40</sup> WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers*. Geneva: WHO

<sup>41</sup> Golden, M. And Grellety, Y. (2006) *Guidelines for the management of the severely malnourished* ACF International

<sup>42</sup> It is also important to differentiate diagnosis from toxic shock (drugs, traditional medicines or infection), septic shock, liver failure and cardiogenic shock. Treatment of such conditions on the basis that they are 'dehydrated' can easily lead to cardiac overload and death of the patient.

## TECHNICAL NOTES

In cases of dehydration shock the patient should be treated during the first hour with

- Half strength Darrow's solution, Ringer-Lactate with 5% Dextrose IV, or
- Half strength saline with 5 % Dextrose at 15 ml/kg IV

The child should then be reassessed and treatment continued if the child's weight is stable or decreasing until improvement of the child's condition.

Continue with oral rehydration (Or with a NGT) with 10 ml/kg/hour of ReSoMal when signs of shock are under control and the status of the patient improves. If the child's condition worsens during IV rehydration and weight increases, stop all fluids and reconsider diagnosis.

**Box 16: Use of ReSoMal**

There should never be free access to oral rehydration solution (ORS) or ReSoMal (Rehydration solution for the malnourished, adapted from ORS) for children in inpatient care.

The old practice of giving this product to children with loose stools or diarrhoea (In the absence of a proper diagnosis of dehydration) should be strongly discouraged. Children with persistent diarrhoea (Diarrhoea since more than 2 weeks) do not usually need rehydration. Their metabolism has adapted to the frequent diarrhoea and should not be rapidly rehydrated.

ReSoMal should never be used at outpatient care: children presenting dehydration should be referred to inpatient care.

**Dehydration in kwashiorkor**

Kwashiorkor patients are over-hydrated, but they are frequently hypovolemic due to dilation of blood vessels with low cardiac output.

If the child with kwashiorkor has definite watery diarrhoea and is deteriorating clinically, fluid loss can be replaced carefully at the rate of 30 ml of ReSoMal per watery stool.

The treatment of hypervolemia in kwashiorkor is the same as the treatment of septic shock. Monitor fluid replacement carefully in kwashiorkor, as there is a high risk of cardiac congestion.

**Septic shock**

Septic shock presents with signs of dehydration and cardiogenic shock. Differential diagnosis is difficult. Signs of hypovolemic shock are a fast weak pulse, cold peripheries, disturbed consciousness, absence of signs of heart failure.

Immediate treatment:

- Give broad-spectrum antibiotics (Second line added to first line if already in place)
- Keep warm to prevent hypothermia
- Give sugar-water by mouth or NG tube to prevent hypoglycaemia
- Avoid washing, excess examination or other investigations, to reduce stress to the child
- Do not transport if at all possible

Then:

- In patients with incipient septic shock: give standard F75 diet by NG tube
- In patients with developed septic shock (Unconscious due to poor brain perfusion): Give a slow IV infusion of one of the following: Whole blood of 10 ml/kg over at least 3 hours (no other liquids during this time) or any of the infusions recommended above for dehydration shock with 5 per cent glucose. Monitor every 10 minutes for signs of deterioration (over hydration or heart failure, expressed as an increased respiratory rate, development of grunting respiration, increasing liver size or vein engorgement). As soon as the patient improves stop all IV and continue with F75 diet.

### Heart failure

Diagnosis: Physical deterioration with weight gain, sudden increase in liver size, tenderness in liver, increased respiratory rate, grunting respiration, crepitations in lungs, prominent superficial and neck veins, engorgement of the neck veins when the abdomen is pressed, increased oedema or reappearance of oedema, among other clinical signs and symptoms. It progresses to marked respiratory distress with rapid pulse, cold hands and feet, oedema and cyanosis and sudden death from cardiac shock.

Heart failure and pneumonia may be difficult to tell apart as they can be clinically similar. When weight gain precedes or is associated with the symptoms, heart failure should be the first diagnosis. If there is loss of weight, consider pneumonia instead.

Children with oedema do not necessarily present weight gain during heart failure if the expanded circulation is due to mobilisation of oedema fluid from the tissues to vascular space.

Treatment:

- Stop all intakes of oral or IV fluids. No fluid or food should be given until heart failure has improved (Even if this takes 24 to 48 hours). Small amounts of sugar-water can be given orally to prevent hypoglycaemia.
- Give Furosemide (1 mg/kg)
- Digoxin can be given in a single dose (5 micrograms/kg, lower than the normal dose)

If heart failure is associated with severe anaemia, treatment of the heart failure takes precedence over the treatment of anaemia.

### Hypothermia

Rectal temperature below 35.5°C or under arm temperature below 35°C is usually a symptom of severe infection and needs to be treated as such. Use the kangaroo technique (place the child directly on the mother's skin and wrap mother and child together) to heat the child. Cover the head of the child.

- Give hot drinks to the mother, so her skin gets warmer
- Monitor body temperature
- Keep room warm (28°C to 32°C)
- Treat for hypoglycaemia and give second line antibiotic treatment

### Severe anaemia

Symptoms of moderate and severe anaemia may appear between day two and day 14 of treatment of SAM, due to the movement of fluids from tissues (oedema and intracellular water) to vascular space both in marasmus and kwashiorkor. This temporary excess of fluids will produce dilution anaemia (i.e. pseudo-anaemia) that should never be treated with transfusions (this risks aggravating the problem and inducing cardiac overload and death).

Pseudo-anaemia normally resolves spontaneously after 2 or 3 days when kidney function recovers and excess fluids can be eliminated. For this reasons, it is always advised to measure haemoglobin concentration on admission. If anaemia is detected in the first 24 hours of treatment (haemoglobin concentration less than 40 g/l, or packed-cell volume less than 12 per cent) the child has severe anaemia.

If the child has true severe anaemia:

- Give 10 ml/kg of packed red cells or whole blood slowly over 3 hours
- No other liquids or food should be given until 3 hours after blood transfusion
- No child should be transfused between 48 hours after start of treatment with F75 and 14 days later
- Do not give Iron during the Stabilisation phase to children with SAM with medical complications

**Hypoglycaemia**

Hypoglycaemia presents most often in children that have travelled long distances to attend the site. As a preventive measure, these children should be given sugar-water as soon as they arrive. In addition, patients that develop hypothermia or have septic shock should be given extra sugar regardless of their blood glucose levels. Main signs of hypoglycaemia are sleepiness usually accompanied by eye lid retraction.

Treatment:

- If patient is conscious and able to drink, give 50 ml (5 to 10 ml/kg) of sugar-water (Approx. 10 per cent ordinary sugar in potable water), or F75 (or F100) diet by mouth
- If patient is losing consciousness give 50 ml of sugar-water via naso-gastric tube immediately
- If patient is already unconscious, give same amount via naso-gastric tube. Also administer glucose as a single intravenous injection (Approx. 5 ml/kg of sterile 10 per cent glucose solution)
- All malnourished patients with suspected hypoglycaemia should be treated with second line antibiotics as infection is a frequent cause of hypoglycaemia
- The response to treatment is very rapid. If a very lethargic or unconscious patient does not respond consider another cause for the symptoms

# PART 3: TRAINER'S GUIDE

The trainer's guide is part three of four parts contained in this module. It is NOT a training course. Rather it provides guidance on how to design a training course by giving tips and examples of tools that the trainer can adapt. The trainer's guide should only be used by experienced trainers to help develop a training course which meets the needs of a specific audience. The trainer's guide is linked to the technical information found in part 2 of the module.

Module 13 covers current protocols for the management of Severe Acute Malnutrition (SAM). It contains information about the implementation of the Community-based Management of Acute Malnutrition (CMAM) approach, with details of its different components (community mobilisation, inpatient care, outpatient care), and on the management of individuals with SAM. All the exercises have been prepared using standard protocols and tools. When preparing for training, be sure to adapt exercises and examples to the national protocols, or the protocol that is going to be used in the field (minor modifications may be necessary). It is also important to use the tools that the trainees will be using in the field (e.g. models of monthly reports, patients' cards, etc.).

Some of the exercises gathered in this module also refer to the information provided by:

- HTP Module 6: Measuring Malnutrition
- HTP Module 12: Management of Moderate Acute Malnutrition
- HTP Module 15: Health Interventions
- HTP Module 18: HIV-AIDS and Nutrition
- HTP Module 19: Working with communities in emergencies
- HTP Module 20: Monitoring and evaluation

### Navigating your way round these materials

The trainer's guide is divided into six sections:

1. **Tips for trainers** provide pointers on how to prepare for and organise a training course.
2. **Learning objectives** provide examples of learning objectives that can be adapted for a particular participant group.
3. **Testing knowledge** contains an example of a questionnaire that can be used to test participants' knowledge about management of SAM either at the start or at the end of a training course.
4. **Classroom exercises** provide examples of practical exercises that can be carried out in a classroom context either by participants individually or in groups to reinforce learning objectives.
5. **Case studies** to get participants thinking through real-life scenarios.
6. **Field-based exercises** outline ideas for field visits that may be carried out during a longer training course.

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# 1. Tips for trainers

## Step 1: Do the reading!

- Read Parts 1 and 2 of this module.
- Familiarize yourself with the technical terms from the glossary.
- Read through the following key documents (see full references and how to access them in Part 4 of this module):
  - National Guidelines for the Management of SAM (if exists) or updated field protocols in use.
  - Valid International (2006) *Community-based Therapeutic Care (CTC). A field manual* Oxford: Valid International, First Edition.
  - WHO (2003) *Guidelines for the Inpatient Management of Severely Malnourished Children* Geneva: WHO
  - WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers*. Geneva: WHO

## Step 2: Know your audience!

- Find out about your participants in advance of the training:
  - How many participants will there be?
  - Have any of the participants already been involved on management of SAM activities in hospitals or dedicated centres?
  - Could participants with experience be involved in the sessions by preparing a case study or contribute through describing their practical experience?

## Step 3: Design the training!

- Decide how long the training will take and therefore what activities you can cover within the time available. In general the following guide can be used:
  - A **90-minute** classroom-based training can provide a basic overview of management of SAM activities and protocols in use.
  - A **half day** classroom-based training can provide a more in-depth overview of management of SAM activities and protocols including some practical exercises.
  - A **1 day** classroom-based training can provide a more in-depth understanding of management of SAM activities and include a number of practical exercises and/or one case study.
  - A **4-8 day** classroom plus field-based training can provide sufficient preparation for implementing the activities. This would include case studies and practical field exercises.
- Identify appropriate learning objectives. This will depend on your participants, their level of understanding and experience, and the aim and length of the training.
- Decide exactly which technical points to cover based on the learning objectives that you have identified. Divide the training into manageable 'chunks'. One session should generally not last longer than an hour.
- Ensure the training is a good mix of activities, i.e. mix PowerPoint presentations in plenary with more active participation through classroom-based exercises; mix individual work with group work.

**Step 4: Get prepared!**

- Prepare PowerPoint presentations with notes (if they are going to be used) in advance and do a trial run. Most NGOs and UN agencies working in nutrition have standard PowerPoint presentations that you can use for inspiration. Adapt them to your training!
- Prepare exercises and case studies. These can be based on the examples given in this trainers' guide but should be adapted to be suitable for the particular training context.
- Prepare a 'pack' of materials for each participant. These should be given out at the start of the training and should include:
  - Timetable showing break times (coffee and lunch) and individual sessions
  - Handouts including parts 1, 2 and 4 of this module plus exercises as required
  - Pens and paper

**REMEMBER**

People remember 20% of what they are told, 40% of what they are told and read, and 80% of what they find out for themselves.

People learn differently. They learn from what they read, what they hear, what they see, what they discuss with others and what they explain to others. A good training is therefore one that offers a variety of learning methods which suit the variety of individuals in any group. Such variety will also help reinforce messages and ideas so that they are more likely to be learned.

## 2. Learning objectives

Below are examples of learning objectives for different sessions on management of SAM. Trainers may wish to develop alternative learning objectives that are appropriate to the particular participant group. The number of learning objectives should be limited; up to five per day of training is appropriate. Each exercise should be related to at least one of the learning objectives.

### Examples of learning objectives

At the end of the training, participants will:

- Be aware of the principles and the components of the current approaches for the management of SAM.
- Understand the importance of the links between the different components of CMAM and the need for stressing the coordination between them
- Appreciate the importance of the external linkages between the different CMAM components and other health/ nutrition programmes in emergency and non-emergency situations.
- Understand the key elements of a community mobilisation strategy for the management of SAM and which actors should be involved in its implementation.
- Be aware of the different elements that support the diagnosis of acute malnutrition and how they are applied in the field
- Be aware of criteria for admission to treatment and discharge for each type of service (outpatient or inpatient care), including age
- Understand current protocols for the management of SAM cases as outpatients or inpatients, including who they target and where they are implemented
- Be aware of the specificities of the management of SAM in contexts with high HIV prevalence
- Understand basic concepts related to the monitoring and reporting of CMAM activities and be familiar with practical tools for it
- Be aware of the current baseline scenarios for emergency response and the different elements to be taken into account for setup, scale up or handover of activities for the management of SAM.
- (For hospital-based clinicians) Be aware of the specificities of the treatment of medical complications in SAM.

## 3. Testing knowledge

This section contains one exercise which is an example of a questionnaire that can be used to test participants' knowledge either at the start or at the end of a training session. Some agencies use the same questionnaire at the start AND at the end of the training session as means for evaluation of the immediate changes in knowledge in the participants. The questionnaire can be adapted by the trainer to include questions relevant to the specific participant group.

### Exercise 1: What do you know about management of SAM activities? Questionnaire

#### What is the learning objective?

- To test participants' knowledge about management of SAM.

#### When should this exercise be done?

- *Either* at the start of a training session to establish knowledge level.
- *Or* at the end of a training session to check how much participants' have learnt.
- *Or both:* At the start and at the end to evaluate differences

#### How long should the exercise take?

- 20 minutes

#### What materials are needed?

- **Handout 1a:** What do you know about management of SAM? Questionnaire
- **Handout 1b:** What do you know about management of SAM? Answers to questionnaire

#### What does the trainer need to prepare?

- Familiarise yourself with the questionnaire questions and answers.
- Add your own questions and answers based on your knowledge of the participants and their knowledge base.

#### Instructions

**Step 1:** Give each participant a copy of handout 1a

**Step 2:** Give participants 15 minutes to complete the questionnaire working alone

**Step 3:** Give each participant a copy of handout 1b

**Step 4:** Give participants 5 minutes to mark their own questionnaires and clarify the answers where necessary.

**Handout 1a: What do you know about management of SAM? Questionnaire***Time for completion: 15 minutes**Answer all the questions (Note that for some questions there is only ONE correct answer while for other questions there are SEVERAL correct answers)*

1. Cite three facilities or services that you know where a child with SAM can be treated

a)

b)

c)

2. List the main elements for the identification of SAM in a child 6-59 months old?

a)

b)

c)

3. With the information available, decide whether the following children with SAM should be treated at outpatient or inpatient care:

	Case	Orientation for treatment
a)	2 years old, MUAC 112 mm, no oedema, WFH between -2 and -3 Z Score, good appetite and no medical complications	
b)	4 months old, very thin and too weak for suckling	
c)	3 years old, MUAC 123 mm, no oedema, WFH <-3 Z Score, good appetite but cough, fever 39.5°C and RR >45 resp/min	
d)	2 years old, MUAC 123 mm, oedema (++), WFH between -2 and -3 Z Score, good appetite and no other complication	
e)	12 years old, BMI-for-Age <-3 Z Score, no oedema, no sick	

4. True or False (*briefly explain your choice*):

The role of the community in the management of SAM is negligible

5. Which ones of the following medicines are given to ALL patients on admission at outpatient care (*Circle the correct answer*)

a) Antibiotics

b) Vitamin A

c) ACT

d) Measles vaccination

e) Folic Acid

6. True or False (*briefly explain your choice*):  
Children at outpatient care come to the service every day to receive their treatment
7. True or False (*briefly explain your choice*):  
The appetite test should be done at each visit at outpatient care
8. Which of the following sentences referring to the dietary management at inpatient care are true (*Circle the ones you consider True*)
- A child in stabilisation phase can eat RUTF
  - F75 is the standard dietary treatment for stabilisation phase
  - RUTF should never be given at inpatient care
  - When given to infants (below 6 months) F100 is prepared with a special dilution (diluted F100)
  - At discharge from inpatient care, F100 can be distributed for home consumption
9. Which of the following sentences referring to the monitoring and reporting of the activities are True (*Circle the ones you consider True*)
- Children referred from outpatient care to an inpatient service are considered as çNon respondenté
  - Monthly reports should contain a lot of variables to be able to better monitor the impact of the activities
  - Routine monitoring should include qualitative and quantitative information
  - Coverage surveys are run every month
  - Routine monitoring is done by the health workers at each facility and compiled at district level
10. Which of the following sentences referring to management of medical complication in a hospital setting are True (*Circle the ones you consider True*)
- The main reason why anaemia is associated with high mortality during treatment of SAM is the inappropriate use of transfusions.
  - ReSoMal is given to all children with diarrhoea.
  - The typical signs of dehydration are not reliable in a marasmic child.
  - The treatment of hypothermia in the malnourished child includes, among other things, giving sugared water and broad-spectrum antibiotics.
  - The treatment of heart failure in the severely malnourished child includes stopping all fluid intakes until the main signs are resolved.

## Handout 1b: What do you know about management of SAM? Answers to the questionnaire

- Possible answers are: Health Centre, Hospital, Therapeutic Feeding Centre, Outpatient Care service, Inpatient Care service, Paediatric unit...
- Answers should be: MUAC measurement, presence of oedema and WFH index.
- With the information available, decide whether the following children with SAM should be treated at outpatient or inpatient care:

	Case	Orientation for treatment
a)	2 years old, MUAC 112 mm, no oedema, WFH between -2 and -3 Z Score, good appetite and no medical complications	Outpatient
b)	4 months old, very thin and too weak for suckling	Inpatient
c)	3 years old, MUAC 123 mm, no oedema, WFH <-3 Z Score, good appetite but cough, fever 39.5°C and RR >45 resp/min	Inpatient
d)	2 years old, MUAC 123 mm, oedema (++), WFH between -2 and -3 Z Score, good appetite and no other complication	Outpatient
e)	12 years old, BMI-for-Age <-3 Z Score, no oedema, no sick	Inpatient

- True** or False

The role of the community in the management of SAM is negligible

The community plays an essential role in the management of SAM cases and, in general, in all the nutrition activities carried out by the health system. Community awareness is essential for participation in active case finding and follow up of cases.

- Which ones of the following medicines are given to ALL patients on admission at outpatient care?

**a) Antibiotics**

- Vitamin A
- ACT

**d) Measles vaccination**

- Folic Acid

- True or **False**

Children at outpatient care come to the service every day to receive their treatment

Children attending an outpatient care service visit the centre once a week.

- True** or False

The appetite test should be done at each visit at outpatient care

At each visit, the health worker should evaluate the appetite of the child by giving him/her a ration of RUTF and checking how he/she eats it.

8. Which of the following sentences referring to the dietary management at inpatient care are true
- a) A child in stabilisation phase can eat RUTF
  - b) F75 is the standard dietary treatment for stabilisation phase**
  - c) RUTF should never be given at inpatient care
  - d) When given to infants (below 6 months) F100 is prepared with a special dilution**
  - e) At discharge from inpatient care, F100 can be distributed for home consumption.
9. Which of the following sentences referring to the monitoring and reporting of the activities are True  
(Circle the ones you consider True)
- a) Children referred from outpatient care to an inpatient service are considered as "Non respondent"
  - b) Monthly reports should contain a lot of variables to be able to better monitor the impact of the activities
  - c) Routine monitoring should include qualitative and quantitative information**
  - d) Coverage surveys are run every month
  - e) Routine monitoring is done by the health workers at each facility and compiled at district level**
10. Which of the following sentences referring to management of medical complication in a hospital setting are True  
(Circle the ones you consider True)
- a) The main reason why anaemia is associated with high mortality during treatment of SAM is the inappropriate use of transfusions.**
  - b) ReSoMal is given to all children with diarrhoea.
  - c) The typical signs of dehydration are not reliable in a marasmic child.**
  - d) The treatment of hypothermia in the malnourished child includes, among other things, giving sugared water and broad-spectrum antibiotics.**
  - e) The treatment of heart failure in the severely malnourished child includes stopping all fluid intakes until the main signs are resolved.**

## 4. Classroom exercises

This section provides examples of practical exercises that can be carried out in a classroom context either by participants individually or in groups.

Practical exercises are useful to break up plenary sessions where the trainer has done most of the talking as they provide an opportunity for participants to engage actively in the session. The choice of classroom exercises will depend upon the learning objectives and the time available.

Trainers should adapt the exercises presented in this section to make them appropriate to the particular participant group. Preferably, trainers should use case examples with which they are familiar.

### Exercise 2: Identifying barriers to access: Role play

Adapted from Training Guide for CMAM: Valid International, FANTA, UNICEF and Concern; 2008

#### What is the learning objective?

- Be able to identify barriers to access to CMAM services

#### When should this exercise be done?

- After the Community Mobilisation section has been presented

#### How long should the exercise take?

- 60 minutes

#### What materials are needed?

- **Handout 2a:** Identifying barriers to access.
- **Handout 2b:** Identifying barriers to access (Model answer)

Room setup, flip charts, markers, masking tape

#### What does the trainer need to prepare?

The evening before the training or earlier, select six players to take part in a role-play and distribute role-play cards to the selected participants **IN ADVANCE**

**Exercise 2: Identifying barriers to access: Role play** (continued)**Instructions**

**Step 1:** Confirm that the players have read the role-play cards (Handout 2a) distributed in advance.

**Step 2:** Explain that the role-play should unfold as a series of scenes between the mother and the other players.

**Step 3:** Spend 5 minutes with the players to answer questions they may have and suggest ways to make their performance more realistic. The audience (those not acting out the role-play) should not be present when you explain the roles to the players. They may, however, be asked to participate in the final scene, where they may collectively act as a crowd of curious onlookers and care-seekers at the outpatient care site.

**Step 4:** Allow 40 minutes for the role-playing

**Discussion points for feedback in plenary (See handout 2b: Model answers)**

After the players have carried out the play, all participants should list the obstacles and analyse the scenario (write responses on the flip chart and fill in gaps):

- ➔ Which of these barriers are likely to be an issue in their own community?
- ➔ What other factors hinder participation?
- ➔ What measures would help eliminate these barriers?
- ➔ Which factors could be 'facilitating' elements for services uptake?

## Handout 2a: Identifying barriers to access

### Community Mother:

You are a mother of five children, living in a community that is a two-hour walk from the nearest government health post. Your 2-year-old daughter has been sick since her younger sister's birth six months ago. You have tried many local remedies but nothing seems to make her better. She is now very thin and has almost no energy. You are very worried. You have heard that there are people going house to house to measure children's arms, but you are not sure why. You are sceptical of these volunteers because some of the same people were appointed as health messengers last year and have a reputation for harassing people about building latrines. There are even rumours that some families in a nearby community were fined for not building latrines and your husband (who is out) forbade you from allowing the messengers into the family compound. When a messenger arrives and asks to see your children, you have mixed feelings: You want to obey your husband, but you do not wish to anger the community chairman by refusing his emissaries. When the messenger assures you that s/he is not here to look at your latrine, you reluctantly agree to admit him/her. At first, you are not planning to show him/her your sick child.

### Nutrition Volunteer (Male or female):

You are trained to perform MUAC measurements on children by going house to house. Your work area covers four communities, including your own. You have limited formal schooling, but you are clever and are respected by people in your community who know you, even though you are young. While you are fairly confident of your ability to measure MUAC, you have not yet attended an outpatient care day because of the distance to the health post, so you are uncertain about what happens to the children you refer there. In this encounter, you are starting at a disadvantage: several months ago, you asked mothers/caregivers from your communities to gather their children in one spot for vaccination, but the vaccines did not arrive on time, leaving the mothers/caregivers waiting. You had to make a second appointment, and some mothers/caregivers are still resentful about having wasted their morning. This mother seems a little anxious, but you sense she might be persuaded to let you examine her children. After she finally allows you into her compound, you cannot answer all her questions. You therefore try to emphasise two important points to her and her husband (who has returned): 1) you are trying to save the lives of the sickest children, and 2) there is a new treatment for the most malnourished cases that can be given at home so that mothers/caregivers no longer have to spend weeks in the town hospital with their children.

### First Neighbour (In community):

You are spending the morning in the compound of your friend (community mother) when she is visited by the health messenger. You recognise him/her as the person who wasted your time on immunisation day and are openly antagonistic to him/her. Why should your friend waste her time with his/her new services? And aren't his colleagues causing people to be fined over latrines? When your friend finally shows her sick child to him/her, you recognise this as a problem created not by malnutrition but by "spoiled" breast milk. You counsel your friend to get roots from a community healer, boil them and bathe the child with the water. However, your friend eventually decides to accept referral to outpatient care, so you try to help by watching her other children for the day and cooking for her husband.

**Husband:**

You come home to find your wife talking with the health messenger and are initially annoyed that she has let him/her into the compound. However, when it becomes clear he/she is not trying to make you build a latrine, you relax. You have to choose between the traditional remedy suggested by your neighbour and the messenger's advice to let your wife go to the health post where your child will receive a new treatment that can be brought home. You would not mind your wife's going to the health post, but in the past, you have seen that children in this condition have been moved from the health post to the district hospital with their mothers/caregivers where they spent weeks under care. You love your daughter and want her to recover, but you are also afraid of how this would affect your family. How would your family eat? Furthermore, it is the weeding season, and the time your wife spends at the health post-away from home-will reduce your harvest. You want assurances that she will be able to return from the health post promptly.

**Second Neighbour (Returning on the road):**

You are on your way back from the outpatient care site and are very annoyed. Yesterday you were called to attend a screening in your community. You waited all morning in the sun while children were measured. Your child was selected to attend outpatient care. But today, after walking over an hour to the health post, the outpatient care staff re-measured your child and refused to admit him. You and several other mothers/caregivers waited to speak to the head health worker because you thought the measurers were cheating you. After all, you were referred from the community with a note! However, the programme seemed to be taking all day, the staff was overworked and short-tempered, and the crowding was stressful. Therefore, you left without presenting your grievance. Why, you wonder, are people forced to waste their time like this during the harvest? As you walk home, you meet a woman from a neighbouring community (community mother) who says she was referred to the same programme. You tell her your story and bitterly advise her not to waste her time.

**Outpatient Care Nurse:**

You have been busy all morning examining children as part of these new services. You are glad there is finally an effective treatment for very malnourished children, but things cannot go on as they are in the same disorganised fashion. People are everywhere in the clinic, asking for food and assistance. This is not a general store! You are a clinician, but increasingly you are being asked to manage a relief operation. The stress has been making you irritable, especially with mothers/caregivers who have been deliberately returning to the screening queue after being rejected just minutes earlier. Now here comes a mother (community mother) trying to get into the outpatient care line without even going to the screening queue first! The irritation is too much for you. You angrily tell her to go away. Now the crowd is getting involved. As you turn your attention back to the child in front of you, the last thing you see is the mother surrounded by people loudly offering contradictory advice.

## Handout 2b: Identifying barriers to access (Answers)

There is not a unique answer to this exercise. **Areas of investigation** might include:

- **Local disease classification** for severe forms of acute malnutrition; health problems might be treated as something other than a nutritional or food-related problem, requiring special communication
- **Attitudes toward formal health services**, which involves identifying what other services are offered through the existing government health services and how they are perceived by the population; a perception of poor service could affect uptake of CMAM
- **Other paths to treatment**, (e.g., pharmacies, traditional healers) might have a role equal to or greater than MOH health services
- **Community homogeneity/heterogeneity**: various identity designators (e.g. language, ethnicity, religion, politics) can divide communities, making it necessary to provide information and services in an even-handed manner or to make special efforts to reach excluded or marginalised groups

The list below shows some of the common obstacles faced in a community that might impede participation in CMAM or attending CMAM services:

- **Poor awareness** of the services within the community being served or **community mobilisation has been overly broad**, resulting in too many ineligible cases arriving and being rejected
- People might be aware that there is a new nutrition service, but **local medico-cultural traditions do not connect advanced wasting or swelling with malnutrition** and awareness of traditional medicines might be stronger
- Community mobilisation or site selection may have overlooked **important community gatekeepers or opinion-makers** or there might be stigma **in the community or the influence of peers or family members** might serve as disincentives
- **Referral and admission** criteria are not aligned (e.g. MUAC is used for community screenings but final admission at site is based on WFH), leading to rejection of referred individuals at the site and damage to the programme's reputation
- **Other services at the primary health care (PHC) facility are poorly regarded** by the community (e.g. because medicines are not available, because hours are irregular, because staff are overworked, because access to treatment requires long waits) which projects a negative view on CMAM simply by association when it is established at the PHC facility
- The **location of outpatient care sites** might require an unreasonable amount of travel time for target communities or make the sites inaccessible due to barriers like seasonal flooding
- Participation may be **interrupted by seasonal labour patterns** beyond the control of the service, such as temporary relocation of families from homes to more remote farms during the weeding or harvesting seasons

**Exercise 3: Using the Outpatient care Individual follow up card****What is the learning objective?**

- To familiarise participants with the contents of the outpatient care Individual follow up card
- To be able to use the outpatient care follow up card as a tool for supervision and training

**When should this exercise be done?**

- After the content (Criteria, protocols and procedures) of the outpatient care section have been introduced

**How long should the exercise take?**

- 60 minutes

**What materials are needed?**

- **Handout 3a:** Using the Outpatient care Individual follow up card.
- **Handout 3b:** Using the Outpatient care Individual follow up card. (Model answer)
- WFH WHO reference tables for boys
- Part 2 of the Module or National Guidelines if existing

**What does the trainer need to prepare?**

- Prepare a case study using outpatient cards of your programme based on the example in handout 3a.

**Instructions**

**Step 1:** Give each participant a copy of handout 3a and the rest of the necessary materials

**Step 2:** Give participants (in pairs) 40 minutes to read the card and write down the answers

**Step 3:** Allow 20 minutes for discussion in plenary.

**Discussion points for feedback in plenary (See handout 3b: Model answers)**

- ➔ How to use cards for patient management
- ➔ How to use cards during supervisions and on-the-job training

Alternatives to this exercise:

- Modify the card to highlight problems frequently seen in your programme (usual mistakes, typical presentation of cases, etc.).
- Use real cards with actual mistakes. Select them carefully before the start of the exercise. Make sure that this does not appear to be an exercise in blaming the team in the centre!
- Give blank cards to participants and asking them to fill in the information themselves as it is being dictated, or ask them to reproduce a typical card of a child showing poor progress (with re-feeding oedema, failure to respond to treatment, etc.) if the participants are already familiar with outpatient care.
- A similar exercise, focussing more on clinical management of patients, can be developed with inpatient care cards.

## Handout 3a: Using the Outpatient care Individual follow up card (Questions)

*Time for completion: 40 minutes*

**Read the outpatient card on the following page carefully,** start with the **Admission** part and go through the different sections:

- Identification
- Anthropometry (Including criteria of admission)
- Medical history and clinical examination, including appetite test
- Routine medicines and other treatments

**Follow up** part: each column represents a weekly visit and has to be filled by the health worker during the consultation

- Identification
  - Anthropometry during follow up
  - Medical history for the week between the two appointments
  - Clinical examination, including appetite test
  - Actions required
  - Identification of the examiner
  - Result of the visit
1. Identify and write down (At least) 10 mistakes (Missing information, errors...).
  2. Complete the card with the missing information and correct the identified mistakes.
  3. Describe in a paragraph the evolution (Anthropometrical, clinical) of the child during the treatment and explain the decisions taken by the health worker.
  4. Answer the following questions:
    - a. What was the criterion used for admission?
    - b. Is MUAC for week 4 (21st September) correct?
    - c. What would be the target weight for that child if criterion of discharge is "15% weight gain (From admission weight)"?

ADMISSION AT OUTPATIENT CARE FOR SEVERE ACUTE MALNUTRITION

Name	Xxxxxx Yyyyyy			Reg. No.	XXX/098/OTP		
Caretaker	XXXXXXXXXXXXXXXXXXXXXXXXXXXX			Health Centre	XXXXX XX		
Physical address	Locality xxxxxxxxxxxxxxxxxxxxxxxxxxxx			Commune Yyyyyyyyyyyyyyyyyyyyyy			
Age (months)	19	Sex	M	F	Date of admission	03/09/2010	
Information about admission	Referred by CHW	Self-reference		Relapse	Readmission after defaulting	Referral from Inpatient care	
<b>Admission Anthropometry</b>							
Weight (kg)	8.4	Height (cm)	83.0	WFH (or BMI)	<-3ZS	MUAC (mm)	108
Oedema (0), (+) or (++)	NO	Criteria of admission		Oedema	WFH <-3ZS (BMI <16)	MUAC <115cm	
<b>Physical Examination at admission</b>							
Cough	Yes	No	Respiration Rate	6-12m	<50 >50	12-59m	<40 >40
				Chest indrawing		Yes	No
Diarrhoea (>3 liquid stools)	Yes	No	Dehydration		Yes		No
Vomiting	Yes	No			Mid/Moderate		Severe
Passing Urine	Yes	No					
Thirsty	Yes	No					
Extremities	Normal	Cold					
State of conscienceness	Normal	Agitated	Irritated	Passive			
Ears	Normal	Dry	Pain	Discharge			
Mouth	Normal	Sores	Candida				
Skin changes	None	Scabies	Ulcers	Abscess	Peeling		
Lymph nodes	None	Axilla	Neck	Groin			
<b>Other problems (specify):</b> Mother explains that the child has been caughing for several (unknown) weeks							
Malaria rapid test at admission (-) or (+)	positive		HIV test result (if known)				
<b>Routine medicines (Note date and dose)</b>							
Sugared water	at admission		Mebendazole	second visit			
Amoxycillin	at admission		Measles vac.				
Anti-malaria			Vitamin A	at discharge			
<b>Other treatments</b>							
Drug	Date	Dose		Drug	Date	Dose	

Circle the right answer

## Handout 3b: Using the Outpatient care Individual follow up card (Answers)

### Answers and comments

1. Identify and write down (At least) 10 mistakes (Missing information, errors...).
2. Complete the card with the missing information and correct the identified mistakes.
3. Describe in a paragraph the evolution (Anthropometrical, clinical) of the child during the treatment and explain the decisions taken by the health worker.
4. Answer the following questions:
  - a. What was the criterion used for admission?

Only one criterion for admission should be reported here. Individual follow up cards are used to assess typology of admissions and monthly reports. If more than one criterion has been circled the health worker collecting data for reports can report the case twice.

When more than one of the admission criteria is present, priority for reporting is given as follows: (1) oedema, (2) WFH and (3) MUAC. All of them are independent criteria. Cases presenting low MUAC or WFH and bilateral pitting oedema should be referred to inpatient care
  - b. Is MUAC for week 4 (21st September) correct?

MUAC at week 4 is 123mm which is much bigger than in the previous and following weeks (112 and 116 respectively). This difference can be measurement error or transcription error but should have been detected and the measure repeated and corrected.
  - c. What would be the target weight for that child if criterion of discharge is "15% weight gain (From admission weight)"?

The target weight if a criterion for discharge is 15% of weight gain is 9.8kg

**Exercise 4: Data collection and analysis: Consolidating monthly reports****What is the learning objective?**

- To understand basic concepts related to the monitoring and reporting of CMAM activities and be familiar with practical tools for it

**When should this exercise be done?**

- After the main concepts on inpatient and outpatient care have been introduced and the tools for monitoring of programmes have been explained.

**How long should the exercise take?**

- 60 minutes

**What materials are needed?**

- **Handout 4a:** Data collection and analysis
- **Handout 4b:** Data collection and analysis (Model answer)
- Calculators
- Paper for preparing graphs
- Filled forms for site monthly report
- Empty forms for consolidated monthly report
- District consolidated monthly reports (Two months)
- Part 2 of the Module or National Guidelines if existing

**What does the trainer need to prepare?**

- Prepare a case study using statistics from several centres based on the template seen in handout 4a.

**Instructions**

**Step 1:** Give each participant a copy of handout 4a with the question and a copy of the five site monthly reports

**Step 2:** Give participants 40 minutes to read the information, complete the calculations required in each site monthly report, produce the consolidated monthly report and answer the questions in handout 4a (This can be done individually or in groups of 3 or 4 participants).

**Step 3:** Allow 20 minutes for discussion in plenary.

**Discussion points for feedback in plenary (See handout 4b: Model answers)**

- ➔ What is the importance of consolidating reports from different sites?
- ➔ Why is it important to have separate reports from each site?
- ➔ How to use monthly reports during supervisions

Note to trainers: as with previous exercises, a large number of questions have been suggested for this exercise. You can select those that are most relevant to the participants, or introduce others based on this template.

## Handout 4a: Data collection and analysis: Consolidating monthly reports (Questions)

**Time for completion:** 40 minutes

You are the acting supervisor for nutrition in the district of Malanemie. You have just received monthly data<sup>1</sup> from the 5 outpatient care sites and the inpatient care service (in the district hospital). This data is summarised in the table on the following page. You are asked by your District Health Officer to produce the consolidated monthly report for CMAM and to analyse the information provided by each centre and trends for the District for the last three months. Prepare a short report for the district supervisors' team visiting the different sites for supervision.

1. Calculate the (Consolidated) total number of patients at the beginning of the month and the total at the end.
  - a. Compare both figures and describe changes in the total patient load
  - b. Do the same for each individual site and explain findings
2. Calculate the (Consolidated) total number of new admissions and calculate the percentage of cases that were admitted through the outpatient care services and the percentage that started treatment in the inpatient care centre.
3. Calculate the (Consolidated) total number of discharges and the percentage for each category, do the same calculations for each individual site
  - a. Describe your findings for the district against international standards (Sphere)
  - b. Which site has the best recovery rate?
  - c. Which site has the greatest mortality rate? Justify your findings
  - d. Which site has the greatest defaulting rate?
4. Look at the number and percentage of non-recovered per site and for the district and at the number of cases transferred from each outpatient care site to the inpatient unit
  - a. Which site has the greatest non-recovering rate?
  - b. What are the main reasons for non-recovering?
  - c. Which outpatient site has the lowest number of cases transferred to inpatient?
  - d. What can you conclude about site (A) taking into account the rates abovementioned (In this question and in previous)? Which questions arise from the comparison between discharge rates, non-recovery rates and the number of cases transferred from outpatient care to inpatients?
5. Look at the consolidated reports from the two previous months and prepare hand-made graphs for: admissions (New cases), discharges and number of cases in charge at the end of the month. Describe your findings and analyse trends for exit indicators. Briefly explain what would be your next action if you were the manager of that programme.

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<sup>1</sup> To make the exercise simpler, only data for children 6-59 months are presented here. In reality, when all age groups (infants, adolescents, adults etc.) are present in the programme most of the calculations still have to be done ONLY for the age group 6-59 months.

Outpatient care site data for use in exercise 4

Site	Total beginning of the month (A)	New cases (B)		Old cases (C)	Total admission (D) (B+C=D)	Discharges (E)				Transfer (F)		Total end of the month (H) (A+D-G=H)
		6-59m (B1)	Other (B2)			Cured (E1)	Death (E2)	Defaulter (E3)	Non-recovered (E4)	To inpatient or outpatient care (F)	Total discharge (G) (E+F=G)	
Makumba (A)	50	48	0	5	53	32	6	9	9	0	56	47
Kapio (B)	78	54	0	9	63	32	2	15	7	6	62	79
Anamio (C)	43	59	0	7	66	40	0	4	6	4	54	55
Bontemi (D)	32	12	0	2	14	14	1	11	2	5	33	28
Herreros (E)	87	23	0	6	29	40	0	4	6	4	54	62
Ilonge (F)	12	19	0	9	28	3	6	2	1	17	29	11
DISTRICT	302	215	0		215	161	15	45	31		252	265
						64.0%	6.0%	18.0%	12.0%			

**Handout 4b: Data collection and analysis: Consolidating monthly reports (Answers)**

- Calculate the (consolidated) total number of patients at the beginning of the month and the total at the end.
  - Compare both figures and describe changes in the total patient load  
The total number of cases in charge for the whole district has slightly decreased: From 302 cases at the beginning of the month to 265 at the end.
  - Do the same for each individual site and explain findings  
Sites (A) (D) and (E) have a smaller number of patients in charge at the end of the month than at the beginning  
Sites (B) (C) and (F, inpatient) have increased their numbers
- Calculate the (consolidated) total number of new admissions and calculate the percentage of cases that were admitted through the outpatient care services and the percentage that started treatment in the inpatient care centre.
  - Total number of admissions for the district and for the month: 215
  - Number of new admissions at outpatient care: 196 (91% of the total)
  - Number of new admissions (directly) at inpatient care: 19 (9% of the total)
- Calculate the (consolidated) total number of discharges and the percentage for each category. Do the same calculations for each individual site

	CURED	DEATH	DEFAULTER	NON-RECOVERED
Makumba (A)	32	6	9	9
	57%	11%	16%	16%
Kapiro (B)	32	2	15	7
	57%	3.5%	27%	12.5%
Anamio (C)	40	0	4	6
	80%	0.0%	8%	12%
Bontemi (D)	14	1	11	2
	50%	3.5%	39.5%	7%
Herreros (E)	40	0	4	6
	80%	0.0%	8.0%	12%
Ilonge (F) (inpatient care)	3	6	2	1
	25%	50%	16.7%	8.3%
DISTRICT	161	15	45	31
	64%	6%	18%	12%

- Describe your findings for the district against international standards (Sphere<sup>2</sup>)  
Recovery rate for the district is low due to a high defaulting rate and an important percentage of non-recovered cases.
- Which site has the best recovery rate?  
Both (C) and (D) are at 80% of cured, which is above standards. The rest are much lower, with only half of the exits being cured in (D).

<sup>2</sup> Sphere standards are: recovery rate >75%, death rate <10%, defaulting rate <15%

- c. Which site has the greatest mortality rate? Justify your findings

The site with the highest mortality rate is (A) with 11% of exits being deaths. The rest of outpatient care sites show lower rates, except the inpatient unit (F) where mortality reaches 50%.

- d. Which site has the greatest defaulting rate?

All sites show high defaulting rates but the one with the greatest percentage is (D) with almost 40% of cases abandoning treatment before complete recovery.

**Note:**

When analysed individually, outcomes from inpatient care services have to be carefully interpreted.

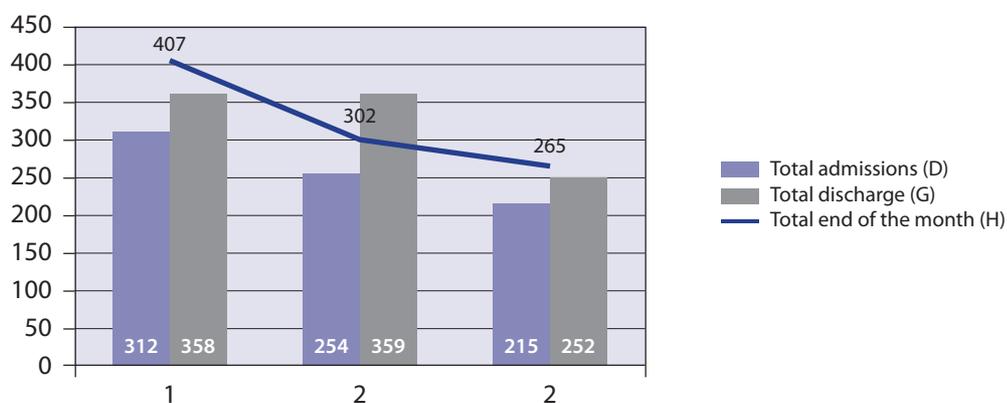
- If access to outpatient care is adequate, most of the cases going to inpatient care go back to an outpatient service when their clinical condition has been stabilised to complete recovery there. Thus, recovery rates in the inpatient services should be low
  - Only children with SAM and critical clinical condition go to inpatient care, thus they are the most at risk of mortality. Causes and other related aspects (time of the death...) should be assessed regularly in order to prevent excess mortality in the unit.
4. Look at the number and percentage of non-recovered per site and for the district and at the number of cases transferred from each outpatient care site to the inpatient unit
- a. Which site has the greatest non-recovering rate?  
Site (A) has the biggest proportion of non-recovered cases.
- b. What are the main reasons for non-recovery?  
Reason for non-recovery could vary from place to place. The following are possible reasons for non-recovery:
- Sharing of RUTF with other siblings
  - Not attending the programme consistently, and hence not getting appropriate treatment and RUTF supply
  - Underlying chronic medical conditions such as HIV/AIDS, TB
  - Repeated acute infections such as diarrhoea, pneumonia
  - Poor quality of care provided: health worker not closely monitoring child response to treatment and taking appropriate and timely action.
- c. Which outpatient site has the lowest number of cases transferred to inpatient?  
The site with the lowest number of children transferred to inpatient care is (A) with no cases referred.

**Note:**

Although there are no standard objectives for that indicator, it is assumed not to be high. Non-recovered cases can be the result of the interaction between individual (chronic illnesses, food insecurity, social – environmental...) and programmatic (insufficient quality/weak performance of the activities) factors that in most cases should be avoided.

- d. What can you conclude about site (A) taking into account the rates abovementioned (in this question and in previous)? Which questions arise from the comparison between discharge rates, non-recovery rates and the number of cases transferred from outpatient care to inpatients?  
Site (A) presents the highest mortality and non-recovered rates and has no transfers to the inpatient care service. Reasons that can explain that are:
- Access to the inpatient facility, in terms of distance or cost or the perception of the families that inpatient care at the hospital would not benefit the child's condition
  - Outpatient care service performance: staff not sufficiently trained on the detection of cases that need inpatient care
5. Look at the consolidated reports from the two previous months and prepare handmade graphs for: admissions (new cases), discharges and number of cases in charge at the end of the month. Describe your findings and analyse trends for exit indicators. Briefly explain what would be your next action if you were the manager of that programme

Month	Total cases at the beginning of the month	Total admissions	Discharges				Total discharges	Total cases at the end of the month
			Cured	Death	Defaulter	Non-recovered		
June	453	312	222	54	45	37	358	407
			62%	15%	13%	10%		
July	407	254	238	35	54	32	359	302
			66%	10%	15%	9%		
August	302	215	161	15	45	31	252	265
			64%	6%	18%	12%		



- The number of monthly new admissions has been slightly decreasing for three consecutive months (June, July, and August), as the caseload at the end of each month: from 407 at the end of June to 265 at the end of August.
- Regarding exit indicators:
  - The proportion of cured remains stable but always below standards
  - Mortality rates were high (above standards) at the beginning of the period but have been decreasing and in August are almost within objectives.
  - The defaulting rates were correct in June but have been slightly increasing, being in August above standards

## 5. Case studies

Two case studies are presented in this section: Case studies are useful for getting participants to think through real-life scenarios. They also provide an opportunity for participants to work in a group and develop their analytical and decision-making skills. Trainers should develop their own case studies which are contextually appropriate to the particular participant group. Preferably trainers should use scenarios with which they are familiar.

### Exercise 5: Case Study on setting up an emergency therapeutic care programme

#### What is the learning objective?

- To be aware of the current baseline scenarios for emergency response and the different elements to be taken into account for setup, scale up or handover of activities for the management of SAM.

#### When should this exercise be done?

- As part of a longer in-depth training

#### How long should the exercise take?

- 2 to 3 hours

#### What materials are needed?

- **Handout 5a:** Case Study on setting up an emergency therapeutic care programme.
- **Handout 5b:** Case Study on setting up an emergency therapeutic care programme. Model answers.

#### What does the trainer need to prepare?

- Prepare a case study from a context familiar to the participants based on the template handouts 5a and b.

#### Instructions

**Step 1:** Give each participant a copy of handout 5a.

**Step 2:** Divide the participants into groups of (maximum) 5 people.

**Step 3:** The case study is divided into 6 sets of questions. Give the participants 20 minutes for the sets of questions that need calculations and 15 minutes for those that don't.

**Step 4:** Give each group 5 minutes for feedback in plenary. Then allow for 10 minutes for discussion of results and for reading the suggested answer.

**Step 5:** At the end a 30 minute debate should allow the participants to consolidate and summarise the main conclusions and lessons learnt from the exercise.

Note: Information presented in this case-study is adapted from reports from SC-UK, World Vision, Valid International, FANTA, Action Contre la Faim and MSF. Although data from several sources has been used to prepare this case-study, the results are not based on the actual results of any specific programme.

## Handout 5a: Case Study on setting up an emergency therapeutic care programme

X is a country of more than 12 million people of whom more than 2.4 million are children under five years of age. It is among the poorest countries in the world with great scarcity of resources and infrastructure. Eighty percent of its inhabitants live in rural areas and 63 percent are classified as living below the poverty line. Levels of child mortality and malnutrition are high, even in normal (i.e., non-emergency) years. According to recent surveys, life expectancy is 42 years (female) and 41 years (male), infant mortality 100 per 1000 live births, under-five mortality 198 per 1000, and fertility rates 7.1 children born per woman. The rate of HIV infection amongst 15 to 49 year olds is 0.7 per cent. It is estimated that only half of the population in the country have access to health care and no more than 60 per cent to safe drinking water. Fourteen percent of children below 6 months are exclusively breastfed and vaccination coverage of DPT3 in children between one and two years is only 29 per cent.

In 2000, the rate of Global Acute Malnutrition (GAM) was estimated to be 14.1 per cent and the rate of severe acute malnutrition (SAM) 3.2 per cent. Stunting was estimated to be 39.8 per cent but there was consensus that this had increased since the 2000 survey.

The health system in X follows a pyramidal primary health care structure with rural health centres in every district, some of which are supported by health posts, and hospitals at district, regional and national level. The system is undermined by lack of funding, effective human resources and mismanagement in most districts.

X is subject to recurrent droughts, frequent food insecurity, high incidence of communicable diseases, and high population pressure, particularly in the south. The country has suffered major food crises in the past (on average once every decade). The consequences included excess malnutrition and death, destitution and large-scale migration to neighbouring countries.

### Current situation

A humanitarian emergency was declared in 2005. The causes for the emergency was multi-factorial and included food production failure and market disruption in rural areas overlaying endemic inadequate care and feeding practices, high prevalence of communicable diseases, and poor health access. Nutrition surveys from several provinces started showing alarming results including an earlier than expected seasonal increase in malnutrition cases detected at health facilities. By August, some NGOs published statistics showing GAM rates of 22.3 per cent and SAM rates of 4.1 per cent in the province of Alpha, inhabited by approximately 230 000 people.

Food distributions to the general population started in August 2005, and international NGOs established programs addressing acute malnutrition and food insecurity. There were no reported outbreaks of infectious diseases.

### Questions:

1. Using the information provided estimate the number of severely malnourished children in the province.
2. Do you think a therapeutic care programme would be necessary in this setting?
3. If yes, list other information that you would need to design a therapeutic care programme.

### Programme planning: Location of centres<sup>3</sup>

With the information from above you are asked by your agency to submit an intervention plan to provide therapeutic care in the region. You collect further information on the demography of the province and its characteristics. The province is divided in 6 districts, as follows:

	Hospitals	Health centres and Health posts	Population	Distance from Head of district to capital
Province capital	1 (Provincial)	4 (Urban)	32 000	0
District A	1 (District)	3 (Rural)	28 700	50 km S
District B	1 (District)	4 (Rural)	34 600	10 km SW
District C	1 (District)	3 (Rural)	26 700	75 km SE
District D	1 (District)	4 (Rural)	34 200	125 km NW
District E	1 (District)	4 (Rural)	33 500	145 km NE
District F	1 (District)	5 (Rural)	40 300	115 km N

You know from the data that population size varies considerably between districts. The districts in the south (Districts A to C including the capital which is in District A) are much smaller in size and therefore have a much higher population density. In contrast, Districts D to F which are further north are larger and have a very dispersed population.

Following the primary health structure of the health system in country X your initial plan is to establish outpatient services close to each health centre or health post (22 in total) and one inpatient facility (stabilisation centre) at each of the 7 hospitals. However, after checking with your manager you realise that this may not be feasible in the short-term. You are told that with the available resources you may only plan for 1 or 2 inpatient facilities and a maximum of 15 outpatient facilities. Furthermore, these will have to be opened progressively (a first wave immediately and a second wave in the following 2 or 3 weeks).

#### Questions:

- Discuss what criteria you could use to decide where to set up the facilities.
- Discuss with your working group any implications of the decision taken and what can be done to limit any adverse consequences or limitations of this approach.

### Programme planning: Forecasting needs for staff and food

After discussion with your donors and agency it has been decided that your agency will concentrate programming in districts A, B and C. One inpatient facility will be set up in the capital to take advantage of the extra services provided by the provincial hospital. The need for a second inpatient facility will be re-evaluated later. A first wave of 6 outpatient facilities will be opened immediately and the others will follow in two weeks.

#### Questions

- What is the number of children in need in the selected 3 districts (plus the provincial capital)?
- Assuming coverage of 80 per cent, what is the number of children expected in the centres during the next three months? How many would you expect to see in each type of facility?
- What are the staffing needs for the stabilisation centre and the 6 outpatient facilities?
- Calculate the required amount of food items for a period of three months (F75, F100, and RUTF).
- What other activities need to be planned at this stage?

<sup>3</sup> This part of the exercise could be done with a map of the area of intervention where participants are expected to work.

## Community mobilisation

In conjunction with establishing the mobile teams for outpatient care you send out teams for screening patients in the communities around each site (case-finding). This team works intensively during the first two weeks. You also appoint 2 volunteers for each outpatient site.

The main components of your programme therefore comprise:

- 1 inpatient care facility at provincial hospital
- 6 mobile outpatient care facilities served by one team (1 in the capital, 2 districts with 2 sites and 1 district with 1 site)
- One screening team
- One or two volunteers per outpatient care site.

### Questions

11. Do you think that these programme components are sufficient to meet your objectives? Comment.
12. Describe the main features of community mobilisation.

## Two months later

You have just received information from the second monthly report. Among other things you observe that;

- The total number of children admitted to the programme so far is 984.
- 45 per cent of these children were admitted to inpatient care.

### Questions

13. Comment on these two statistics. Estimate programme coverage.

With this information at hand you decide to check the centre register and discover that:

1. 20 per cent of the children come from neighbouring districts, and
2. There are no children from the villages further away from the centres.

### Question

14. Comment on these findings and whether they would lead you to take any actions

## Conclusion

*List the main conclusions you draw from this exercise.*

## Handout 5b: Case Study on setting up an emergency therapeutic care programme. Model answers.

*There are no definitive answers for the questions posed in this case study. The answers and calculations below are only suggestions and a range of answers and calculations could be explored as part of this exercise.*

*Do not distribute all the answers at once. The trainer can present the answers after each question has been completed by participants. The full handout with all the answers can be given out at the end of the exercise while wrapping up and drawing conclusions in plenary.*

1. Estimation of numbers of malnourished children in the province can be made using the nutrition survey data (prevalence). However, note that this information does not take account of the new cases that will develop malnutrition in the coming months. These cases need to be taken into account in the planning process as well!  
  
Assuming that 20 per cent of the population in the region are children below 5 years old then there are 46 000 children in the region. If 4.1 per cent are severely malnourished, the total number of severely malnourished children in the province at the time of the survey is around 1886.  
  
Note that the need for therapeutic care was already justified on the basis of the survey data from 2000!
2. Yes, a Therapeutic programme is certainly necessary. GAM is above 15 per cent while the trend shows an increase compared to previous years. Furthermore, the food security situation provides corroborating evidence that severe malnutrition is to be expected.
3. Other information needed at this stage might include:
  - a. Mortality rates (probably available from the nutrition surveys),
  - b. Specific causes of malnutrition identified in the region (if a specific survey of this type has been undertaken),
  - c. Available resources in country (nutrition capacities, more information on the health system, etc.),
  - d. Presence of other public health priorities,
  - e. Characteristics of the general food distribution already in place (composition of the ration distributed, type of targeting, who are the beneficiaries, etc.)
  - f. Existing plans for implementing SFPs or therapeutic care,
  - g. Presence of other agencies in the area or in the country that could participate in nutrition programming,
- 4) and 5) There is no single answer to these questions and each situation is different. However, the following considerations should be taken into account:
  - The distribution of malnutrition in the region. This information is often unavailable as nutrition surveys provide a single prevalence figure for all the area. Other surveys, or rapid assessments, can be undertaken but this would be time consuming and delay an intervention which needs to be started urgently.
  - The coverage of the programmes. Is your agency aiming to cover the whole region with the risk of only achieving limited coverage in each of the districts, or achieving a higher coverage in some of the districts than in others<sup>3</sup>?

Possible approaches to resolve this dilemma include:

1. Lobbying for extra resources,
2. Concentrating on part of the region and lobbying for another agency to take responsibility for therapeutic care in the remaining areas of the region.

<sup>3</sup> An alternative way of approaching this question is to divide the groups into two and ask each group to defend one of the two options in the question. A negotiated process could lead to a consensus. Any decision taken needs to be justified.

6. The numbers in need for the three districts and the capital are:

	Total Population	Pop Under 5 (20%)	SAM population (4.1%)
Region capital	32 000	6 400	262
District A	28 700	5 740	235
District B	34 600	6 920	284
District C	26 700	5 340	219
Total			1,000

Note that the figure of 1,000 children does not include children below 6 months of age. Such estimation may be good enough, but further information could be needed if there was a suspicion that this age group is particularly at risk.

7. There is no standard method to forecast the number of patients that may present with severe malnutrition in the following three months. This will depend on the dynamics of the emergency e.g. whether severity of conditions is expected to increase or not and on the relative distribution between oedematous malnutrition (which develops rapidly – in one or two weeks) and marasmus (which develops over 4 to 6 weeks). For the purpose of this exercise, let's assume that we expect twice the number of children observed in the survey will need therapeutic care, i.e. 2000 children. Given an anticipated coverage of 80 per cent we need to plan for 1600 cases.

In normal circumstances, 20 to 30 per cent of these cases will need inpatient treatment, at least for the first phase of treatment, while the others will go straight into outpatient care. This translates into a rounded up figure of 400 children in inpatient care and 1200 in outpatient care.

8. The decision to open 6 outpatient care facilities was partly taken on the basis that this would allow for a mobile team to serve 6 locations – one each day of the week. This would help establish the programme rapidly. Staffing needs would be fairly minimal, e.g. one nurse, one or two assistants for measuring the children and distributing the foods and one driver would be adequate. If the decision was taken to establish fixed outpatient sites, the number of staff in each centre would comprise two persons (one nurse and one assistant) with each centre dividing its workload into several days per week.
9. Using the figures from Annex 7 and 8 and Section 11 of Part 2 of this module:

Facility/Product	Cumulative number expected	Need per patient	Total need for 3 months
<b>Inpatient care</b>			
F75	400	2 kg	800 kg
F100	20*	12 kg	240 kg
<b>Outpatient care</b>			
RUTF	1 200	12 to 15 kg	14 400 to 18 000 kg

\* (5% of total inpatients). See Part 2 of the module for assumptions underpinning these calculations.

10. Other things that need to be planned:

- a. Contacts with the local authorities and community representatives,
- b. Coordination with other agencies working in the area,
- c. Recruitment and training of staff. A two day initial training for the outpatient care staff is sufficient if accompanied by on the job training during the first weeks,
- d. Transport of patients (for referrals) – consideration whether this will be necessary
- e. Set up of the inpatient facility: Does this require new buildings or are there potential locations within the existing hospital? Recruitment and training of staff in the centre.
- f. Community mobilisation (see next).

11. The number of outpatient and inpatient care sites may be insufficient. This should be re-evaluated after several weeks of activity. The community mobilisation component is incomplete while the number of volunteers may prove insufficient.

12. Main community mobilisation activities should include:

1. Mobilisation and sensitisation on programme activities and principles.
2. Active case finding (screening) within communities
3. Follow up of outpatient cases and absentees (defaulters)
4. Health education.

13. At the time of the survey just before the programme began there were 1000 malnourished children. In order to estimate the number of patients expected in the first three months (to account for new cases of children who were not malnourished at the time of the survey), this figure was doubled. Most admissions should have taken place in the first month, with the remaining 1000 distributed between months 2 and 3. If the coverage reached the target of 80 per cent by the end of the second month the programme should have admitted 1200 children. Coverage is therefore certainly below the target. However, it is not possible to be precise about achieved coverage with the information provided.

The fact that 45 per cent of children were admitted to inpatient care while only 55 per cent went directly into outpatient care may mean two things:

1. That the protocols are not correctly applied (e.g. staff overestimating the severity of malnutrition in patients). This, in turn, could be due to lack of training, or lack of confidence in outpatient care to rehabilitate children who are very thin (perhaps partly as a result of pressure from mothers who lack confidence in outpatient care).
2. That most children present with complicated severe malnutrition.

In both cases it may be necessary to reinforce training and boost community mobilisation in order to detect cases earlier and sensitise / educate the community on the potential benefits of outpatient care (see below).

14. As coverage is below expected levels several actions will need to be implemented. The following are some examples:

1. Contact agencies in neighbouring districts and determine whether they are implementing a therapeutic care programme component. If not, lobby these agencies to implement therapeutic care programmes.
2. Increase the number of outpatient care facilities to make the programme more accessible (at least 90 per cent of patients should be able to travel back and forth to the centre within one day).
3. Boost community mobilisation including; sensitisation on programme activities and principles and case finding. This will need many more volunteers. A rule of thumb can be applied, i.e. that a volunteer should not be in charge of more than one or two villages (this depends on the size of the villages and how far apart they are). With only 2 to 4 volunteers per district in this example, it was highly unlikely that good mobilisation and coverage would be achieved. In order to plan and design a more detailed community mobilisation programme, you will need a list of; villages, community structures and leaders and also have identified potential opportunities for screening and sensitisation (e.g. market days),
4. Undertake a coverage survey to estimate the coverage in each of the areas of the target districts and reconsider the set up of community mobilisation based on the results.

**Exercise 6: Survival exercise: management of a patient with complications in inpatient care****What is the learning objective?**

- To be aware of the specificities of the treatment of medical complications for SAM

**When should this exercise be done?**

- As part of a longer in-depth training

**How long should the exercise take?**

- 30 minutes

**What materials are needed?**

- **Handout 6a:** Survival exercise: Management of a patient with complications in inpatient care (Trainer instructions)
- **Handout 6b:** Survival exercise: Management of a patient with complications in inpatient care (Model answers)

**What does the trainer need to prepare?**

- See text to prepare coloured cards.

**Instructions**

**Step 1:** Give each participant a copy of handout 6a.

**Step 2:** Divide the participants into groups of (Maximum) 5 people

**Step 3:** Give the groups 30 minutes to answer the questions and prepare a presentation of their answers

**Step 4:** Give each group 5 minutes for feedback in plenary

**Discussion points for feedback in plenary**

- ➔ See handouts

## Handout 6a: Survival exercise: Management of a patient with complications in Inpatient care.

### Instructions for the trainer

A number of problems are written out on coloured cards with the options for treatment.

The coloured cards are numbered.

The consequences (answers) are on equivalent coloured cards kept by the facilitator.

Divide the class into groups of 2-3 participants.

Ask one participant to read out the scenario above. Explain that the groups have to work together to ensure Wangani's survival.

The first group is asked to take card number 1 and read out the problem and options. The group has one minute to choose an option.

If the option is correct, a point is scored, if it is wrong, no point is scored.

The second group then chooses a problem card, etc.

Scoring: The total score is added at the end

Score = 0-3 Wangani probably dies.

Score = 3-6 Wangani remains longer in therapeutic care than she needs to.

Score = 6 Wangani survives and receives the recommended treatment.

### Text for participants:

You are working in an inpatient care centre which has been set up by an NGO. Facilities are basic but the centre is up and running with enough staff to meet Sphere minimum standards. A little girl called 'Wangani' is brought in by her grandmother. Her height is 68cm but she weighs only 5.8 kg. She is clearly very sick and has no appetite. You are put in charge of her treatment. The decisions that you take with respect to her treatment will either ensure her survival or may hasten her death.

## Handout 6b: Survival exercise: Management of a patient with complications in Inpatient care (Model answers)

Problem 1: Wangani is clearly suffering from anaemia. What should you do?

<b>Option 1:</b> Give iron immediately.	<b>Consequence 1:</b> INCORRECT Iron has toxic effects in the initial phase of treatment and reduces resistance to infection
<b>Option 2:</b> Withhold iron until the second phase.	<b>Consequence 2:</b> CORRECT Iron should never be given during Phase I and should only be given orally after 14 days during rehabilitation.

**Discussion points: What are the signs of anaemia? What should you do when a child needs a blood transfusion because of severe anaemia?**

**Answers:** The clinical signs of anaemia are: pale conjunctivae (inner eyelid), nails, gums, tongue, lips and skin; breathlessness; headaches; tiredness (but difficult to recognise). Blood test: severe anaemia Hb<4g/l.

Never give transfusions between day 2 of treatment in the stabilisation phase and day 14 in rehabilitation. Outside this range, only give a blood transfusion where facilities are available, including testing for HIV and hepatitis, and under strict supervision (follow up of vital signs and weight change). Special forms for following up rehydration (or transfusion) are used.

Problem 2: Wangani has watery diarrhoea and is showing signs of dehydration (thirst, sunken eyes, weak pulse, cold hands and feet, and no urine flow – developed in the last hours). What should you do?

<b>Option 1:</b> Give ordinary ORS.	<b>Consequence 1:</b> INCORRECT ORS has too much sodium and too little potassium for severely malnourished children.
<b>Option 2:</b> Give ReSoMal.	<b>Consequence 2:</b> CORRECT This is the correct ORS solution for severely malnourished children to be used in Phase I only.
<b>Option 3:</b> Don't give anything.	<b>Consequence 3:</b> INCORRECT A dehydrated child requires urgent treatment.

**Discussion points: How can you make the differential diagnosis of dehydration in the malnourished child? What should you do when a child requires oral or IV rehydration?**

**Answers:** All classical signs of dehydration are unreliable in the malnourished child. The diagnosis needs to be made on the basis of: i) a definite history of recent fluid loss (watery diarrhoea, not just loose stools – appearing suddenly in the last hours or day); ii) a recent change in child's appearance; and iii) the child has no oedema.

Rehydration with ReSoMal or IV fluids should only be administered to children with a definite diagnosis of dehydration. IV fluids are only given when the child presents dehydration shock (fast weak pulse, loss of consciousness, coldness of extremities). In all cases, ensure strict supervision (vital signs and weight change). Special forms for following up rehydration are used for this.

**Problem 3: Wangani's grandmother reports that she has been feeding Wangani on diluted porridge. The grandmother would like to continue with the porridge. What do you do?**

<b>Option 1:</b> Explain to the grandmother that Wangani needs a special milk. Immediately start Wangani on F-75 milk and encourage her to feed every 2 hours.	<b>Consequence 2:</b> CORRECT Wangani needs a specially balanced milk introduced in a controlled manner.
<b>Option 2:</b> Explain to the grandmother that Wangani needs a special milk. Immediately start Wangani on F-100 and encourage her to feed every 2 hours.	<b>Consequence 2:</b> INCORRECT F-100 is for Phase II as the protein and energy content are too high. Wangani risks heart failure.
<b>Option 3:</b> Allow the grandmother to continue feeding Wangani on the porridge.	<b>Consequence 3:</b> INCORRECT The porridge will not have the finely balanced nutrient mix which is necessary for severely malnourished children.

**Discussion point: What would an effective method be for explaining to the grandmother that it is important to use milk?**

**Answer:** A good way to get over information is to ask another woman in the centre (whose child has recovered well with treatment) to explain the treatment methods and be encouraging.

**Problem 4: Wangani's grandmother says that Wangani has had difficulty seeing in the dark and, after clinical examination, you suspect vitamin A deficiency. What do you do?**

<b>Option 1:</b> Delay treating with vitamin A until Wangani enters Phase II.	<b>Consequence 1:</b> INCORRECT Wangani should receive vitamin A immediately.
<b>Option 2:</b> Start giving vitamin A supplements immediately.	<b>Consequence 2:</b> CORRECT

**Discussion point: Are there any potential problems with giving children therapeutic doses of vitamin A?**

**Answer:** Yes. Vitamin A is toxic in large doses. Current guidelines advise that it should only be given to children with clinical signs of vitamin A deficiency, if there is a high prevalence of vitamin A deficiency in the area or if measles and vitamin A supplementation coverage in the area are low. It is important to check the child's health card (if (s)he has one) or speak with the carer to establish whether previous doses have been given.

**Problem 5: Wangani's grandmother has been feeding Wangani using a bottle and teat as Wangani has no appetite and isn't feeding well. The grandmother would like to continue with the bottle. What do you do?**

<b>Option 1:</b> Teach the grandmother how to feed Wangani using a cup. If Wangani is unable to retain her milk (vomiting) set up a naso-gastric tube.	<b>Consequence 1:</b> CORRECT Bottles and teats should never be used in Therapeutic care programmes.
<b>Option 2:</b> Ensure that the bottle and teat are well sterilised and ask the grandmother to continue bottle-feeding Wangani as this is what she is used to.	<b>Consequence 2:</b> INCORRECT The risk of infection is high using bottles and teats and in her vulnerable state Wangani is very open to infection.

**Discussion point: In what circumstances should a nasogastric tube be used?**

**Answer:** Nasogastric tubes should be used as a last resort and should be inserted by a qualified health person. These are used only in circumstances where young children are unable to keep food down or if the child is unconscious. Nasogastric tubes are invasive and may frighten the carer.

**Problem 6:** After 3 days in the inpatient centre, Wangani's grandmother reports an enormous improvement in Wangani. She appears to be more alert. The grandmother is keen to get back home as she has other members of the family to care for. She asks if she can leave Wangani's 6-year-old sister in charge. What do you do?

<p><b>Option 1:</b> Allow the grandmother to go home leaving the sister in charge of Wangani.</p>	<p><b>Consequence 1:</b> INCORRECT Wangani needs very careful supervision and a 6 year old should not be left with that responsibility.</p>
<p><b>Option 2:</b> Persuade the grandmother to stay a little longer – at least until Wangani moves to Phase II.</p>	<p><b>Consequence 2:</b> CORRECT Wangani requires time to stabilise and careful supervision of feeding from an adult.</p>

**Discussion point: What do you do if a carer can't stay with the child?**

**Answer:** In some circumstances, the carer may not be able to stay and his/her wishes must be respected. It is then important to find a substitute carer. Remind the carer that after some extra days (total of 10 days on average) they will be able to move to outpatient care and continue treatment from home.

## 6. Field based exercises

This section outlines ideas for exercises that can be carried out as part of a field visit. Field visits require a lot of preparation. An organisation that is actively involved in programming has to be identified to 'host' the visit. This could be a government agency, an international NGO or a UN agency. The agency needs to identify an area that can be easily and safely visited by participants. Permission has to be sought from all the relevant authorities and care taken not to disrupt or take time away from programme activities. Despite these caveats, field-based learning is probably the best way of getting over information that will be remembered by participants.

### Exercise 7: Field activities in an outpatient care facility

#### What is the learning objective?

- To appreciate what goes on in the real life implementation of CMAM service. Assess strength and challenges of the service based on the skills and knowledge you have acquired in the training.

#### When should this exercise be done?

- At the end of an in-depth course on therapeutic care.

#### How long should the exercise take?

- A morning at the outpatient facility. The days before and after for preparation and discussion (Plenary).

#### What materials are needed?

- **Handout 7a:** Field activities in an outpatient care facility

#### What does the trainer need to prepare?

- On day 1, the trainer needs to work with the participants to develop their action plans. The field visit takes place on day 2. The trainer will need to identify a suitable organisation and area for the field visit and organise all logistics (transport, fuel, meals etc.) for the visit. It is essential that the trainer visits the field site in advance of the visit in order to coordinate with the team at the outpatient facility, and identify potential problems. Discussion of the exercise should take place back in the classroom on day 3 (or the afternoon of day 2).

#### Instructions

**Step 1:** Decide which activities to implement from the list in handout 7a.

**Step 2:** Divide participants into groups and give each one or two activities.

**Step 3:** On day 1, groups prepare an action plan for the following day, with background materials and examples of questions.

**Step 4:** On day 2, groups implement their action plans

**Step 5:** On day 3, groups return to the classroom for discussion

#### Discussion points for feedback in plenary

- ➔ See handouts

## Handout 7a: Field activities in an outpatient care facility (Examples)

You may divide the participants into several groups. Smaller groups may cause less disruption at the centres. Rotate the groups so that each can complete different activities during the same visit. This handout gives some examples of learning activities that can be undertaken during a field visit. Organisation and timing will depend on the number of participants and the activities in the centre. In each case, decide which activity or activities are going to be undertaken by each group before hand.

On the day before the visit, each group should prepare a list of questions to ask about a particular activity. On the day of the visit collect and summarize all the information. On the day after (or the afternoon of the visit), each group reports to the plenary group their findings and observations. Use this to start a debate or discussion, and to link the observations to the material taught during the course.

### *Three activity areas are described:*

#### Working with the registration book, statistics and patient's cards:

This should be undertaken before patients arrive, or at the end of the day when they have left the centre. Get familiar with the registration book of the centre, if one is being used. Take 10 minutes looking at the entries for the last months. What impressions do you get? Can you roughly estimate from the book how the centre has performed in terms of recovery, defaulters, etc? Compare the data in the book with the monthly reports! Summarize observations and report to the plenary group.

Ask for the cards of 10 patients that have been discharged during the previous month. Identify the card of those patients in the Registration book and check that all information is correctly copied. Do you find any discrepancy? Summarize and report to the group.

Identify cards of 5 patients that were referred back to inpatient care after having started treatment in outpatient care. Carefully read the card and identify:

1. The criteria for sending the patient back to inpatient
2. When were they referred back
3. When did the patient arrive in inpatient care?
4. What was done there?
5. How long did it take for the patient to be referred again to outpatient care?
6. Was the problem solved?
7. Is the patient progressing better now (or if the patient has already been discharged, did he/she recover)?

Summarize the information and report to the group.

Identify cards of 10 patients that have been discharged as non-responders or died. Look for the details of weight gain, presence of complications (clinical evolution), appetite, treatment given and result observed, etc. Summarize the information and report to the group.

Ask for the monthly statistical reports of the centre (and daily tally sheets if they are used) for the last four months. Describe evolution of the centre (data trends over time) and the main constraint faced during this period. Summarize the information and report to the group.

Look at the registration book or patient's card. Note the origin of the patients (and number of patients from each origin) admitted during the last month. Plot the number of patients coming from each surrounding village on a map. Present the map and your comments to the group. (If this activity can be done with several outpatient centres, make a map of the whole programme. Compare the number of beneficiaries during the last month with the results of the last nutrition survey (and coverage survey, if there is one).

## Observation

To be carried out before and during consultation with the patients.

- Visit the facilities of the centre. Observe and report on the means for storing drugs and food. What methods are being used to control these stocks?
- Identify the main source of water in the centre, and how sugar-water is prepared for patients waiting for admission. Report to the group.

Draw a plan of the centre with its waiting area, consultation facilities, etc. Consider the flow of patients and estimate the time each patient stays in each station. Present the map and your comments to the group.

Once the patients arrive observe the activities in the centre. In particular, describe where and how:

- Patients wait to be seen
- Patients are weighed and measured
- Registration books and cards are filled in
- Health and nutrition education is conducted
- The medical consultation takes place
- The appetite is assessed
- Drugs and food are distributed.

Prepare a brief presentation of the activities for someone who has never visited an outpatient centre (to be done on day 3 and presented to the rest of the group).

## Interviews

Conduct discussions with those responsible for the centre and their team. Ask them to explain the position of their centre in the larger therapeutic care programme. What is their relationship with other outpatient centres, with the inpatient facilities, with hospital or health centre? How do these relationships function and what, if any, issues arise?

Summarize comments and report to the group.

If there are some outreach workers participating in the outpatient session, ask them to stay some minutes after the patients have gone. Make it clear that you are there to learn from them, and not to assess the quality of their work, or to introduce any changes or respond to any demand. Let them explain their activities and the main constraints they face in their work. Ask questions about distance walked to visit their community, number of families they can visit per day, etc. Ask about particular situations like: patients that refused treatment, patients that could not be found, follow up of defaulters. Ask about their relationship with local authorities and community leaders. Let them describe individual stories where they believe their work made a difference to save a child. Summarize comments and report to the group.

Conduct a small focus group discussion with the mothers and carers of patients waiting to be seen. Ask about the following:

- What is the problem with the child?
- How did they know about the programme?
- How were they recruited into the programme (through an outreach worker, or did they come spontaneously)?
- How long does it take them to come to the centre?
- How do they get organised to come to the centre?
- Do they leave other activities in order to come here?
- Do they have anyone to take care of other children or cover for other responsibilities/activities on the day of their visit to the centre?
- What have they learnt about the child's feeding since they have been in the programme?

What other questions can you suggest? Summarize the results and report to the group.

There are no standard answers to any of the questions above.

The most delicate part of these field exercises is to implement them without giving the impression to the staff in the centre that they are being inspected or supervised. It is key, therefore, that they play a major role during the visit. It is best therefore that the facilitator takes a back seat and allows those running the centre to explain "how things are". On day three there will be time for comments, criticism, etc. Never criticise those working in the centre in front of participants, beneficiaries or other staff!

## Handout 8a: Field activities in an inpatient care facility (Examples)

This field-based exercise is similar to exercise 7. Most of the activities in exercise 7 can be adapted for an inpatient centre.

When conducting field visits to inpatient care centres, remember that only small groups should be allowed into the facility. Remember that the most severely malnourished patients should be disrupted as little as possible. Minimize contact with these patients.

In addition to the activities described in exercise 7, you may add:

- Use the Registration book, patient's cards and monthly reports to identify the main causes of transfer to hospital or death. Ideally, identify examples of cases with dehydration, severe anaemia, shock, heart failure or respiratory infection. Analyse a number of patient cards where these conditions arose and complete a full description for each case (nutritional status of the child, clinical condition, when the problem presented, treatment given, actions taken and the results observed). Report to the group.
- Ask the medical person in charge of the facility to present 2 or 3 patients where complications were observed (use the same list as above if possible). Summarise the case history using additional information from the patient's card and report to the group.
- Identify the cards of patients below 6 months of age who are being treated with special protocols. If there is an infant less than 6 months in the centre observe how the supplementary suckling technique is implemented. Summarize the case and report to the group, explaining this technique.
- If a patient is known to be HIV-infected, analyse his / her card and identify the adaptations to the protocol that have been made. Summarize and present to the group explaining the reasons for the adaptations.

These activities in exercises 7 and 8 are only suitable for medical personnel following training. It is important that the training and the exercise are led by a medical person (physician or nurse) with experience in the management of patients with complicated severe acute malnutrition.

# PART 4: TRAINING RESOURCE LIST

The training resource list is part four of four parts contained in this module. It provides a comprehensive list of reference material relevant to this module including guidelines, training courses and reference manuals. Part four provides background documents for trainers who are preparing training material.

### What can you expect to find here?

1. An inventory of existing **guidelines** and **manuals** listed alphabetically by agency name with details about their availability.
2. A list of known **training resources** listed in order of relevance with details about:
  - Overall content
  - Intended use
  - Target audience
  - Length of time the source session has been designed for

### Guidelines and manuals

The two most widely used guidelines for inpatient and outpatient care (respectively) are:

1. **WHO (1999) *Management of severe malnutrition: a manual for physicians and other senior health workers*. Geneva: WHO.**  
Availability: Book or electronic copies, <http://whqlibdoc.who.int/hq/1999/a57361.pdf>  
Contact: [www.who.int](http://www.who.int)  
Guidelines for medical and inpatient nutritional management of SAM. Extensive information on management of complications in SAM. Suitable for health workers.
2. **Valid International (2006) *Community-based Therapeutic Care. A Field Manual*. Oxford: Valid International**  
Availability: Book or electronic copies available at: <http://www.fantaproject.org/ctc/manual2006.shtml>  
Contact: [www.validinternational.org](http://www.validinternational.org)  
Field manual with extensive information on outpatient care and many aspects of community-based therapeutic care programme set up and management. Suitable for managers and health workers.  
Other guidelines and manuals, including updates, reviews and extensive description of therapeutic care:
3. **Ashworth, A. (2001) *Treatment of severe malnutrition J Pediatr Gastroenterol Nutr*, vol. 32, no. 5, pp. 516-8.**  
Availability: Electronic copies available at: [http://journals.lww.com/jpgn/Fulltext/2001/05000/Treatment\\_of\\_Severe\\_Malnutrition.3.aspx](http://journals.lww.com/jpgn/Fulltext/2001/05000/Treatment_of_Severe_Malnutrition.3.aspx)  
Contact: [www.jpgn.org](http://www.jpgn.org)  
A review article with a summary of physiopathology of SAM and its main complications. Suitable for health workers with an interest in physiopathology.

## TRAINING RESOURCE LIST

4. **Ethiopia Federal Ministry of Health (2007) *Protocol for the management of Severe Acute Malnutrition*. Addis Ababa.**  
Availability: Papers copies distributed in Ethiopia. Electronic copies available via UNICEF  
Contact: [www.unicef.org](http://www.unicef.org)  
With training materials and a summary wall chart. Suitable for managers and health workers. Check for similar protocols in your country. Many have developed guidelines and training materials in recent years or are doing it now!
  5. **Golden, M and Grellety, Y. (2006) *Guidelines for the management of the severely malnourished*. ACF International**  
Availability: Paper or electronic copies  
Contact: [www.actionagainsthunger.org](http://www.actionagainsthunger.org)  
Standard field guidelines with extensive information on the standard protocols and treatment of complications. Suitable for managers and health workers.
  6. **Golden, M. H. (1996) *Severe Malnutrition in Oxford Textbook of Medicine*, 3rd edition. Oxford University Press, Oxford, U.K., pp. 1278-1296.**  
Note that later editions of Oxford Textbook of Medicine do not include this chapter.  
The most comprehensive explanation of acute malnutrition physiopathology. Suitable for health workers with an interest in physiopathology.
  7. **MSF (1999) *Nutrition guidelines*. MSF**  
Availability: updates regularly issued and distributed as internal MSF documents (but not published)  
Field guidelines for set up and running of programmes. Suitable for managers and health workers.  
Available to purchase at: [www.msf.org.uk/books.aspx](http://www.msf.org.uk/books.aspx)
  8. **Eddleston et al. (2005) *Oxford Handbook of Tropical Medicine*. 2nd ed. Oxford: Oxford University Press**  
Availability: Book  
Contact: [www.us.oup.com/us/catalog/general/series/OxfordHandbooksSeries/](http://www.us.oup.com/us/catalog/general/series/OxfordHandbooksSeries/) (\$49.5)  
Clinical guidelines, based on WHO 1999 manual. Suitable for health workers.
  9. **WHO (2000) *Management of the child with a serious infection or severe malnutrition*. Geneva: WHO**  
Availability: Book or electronic copies available at: [http://whqlibdoc.who.int/hq/2000/WHO\\_FCH\\_CAH\\_00.1.pdf](http://whqlibdoc.who.int/hq/2000/WHO_FCH_CAH_00.1.pdf)  
Contact: [www.who.int](http://www.who.int)  
Guidelines for medical and nutritional management of SAM, and IMCI programmes. Suitable for health workers.
  10. **WHO and LSHTM (2003) *Guidelines for the Inpatient treatment of severely malnourished children*. Geneva: WHO**  
Availability: Book or electronic copies available at: [http://www.who.int/nutrition/publications/guide\\_inpatient\\_text.pdf](http://www.who.int/nutrition/publications/guide_inpatient_text.pdf)  
Contact: [www.who.int](http://www.who.int)  
Guidelines for medical and nutritional management of SAM. Suitable for health workers.
- Other agency-specific protocols:** Many international agencies maintain their own protocols, updated regularly and used in the field.

## Training Courses

11. **FANTA (2008) CMAM training materials.**  
Availability: Not yet published. Website: [www.fantaproject.org](http://www.fantaproject.org)  
Extensive training course on all aspects of setting up and running community based therapeutic care programmes with practical cases and exercises. Suitable for managers and health workers.
12. **National training programmes.**  
An example of those supported by WHO, adapted to different countries can be seen here: [www.who.int/nutrition/topics/training\\_courses/en/index.html](http://www.who.int/nutrition/topics/training_courses/en/index.html)  
Good examples for trainers. Many countries are currently developing their own training materials (e.g. Ethiopia, Malawi, Ghana)

13. **UNICEF, University of Aberdeen. UNICAL (2000) Severe Malnutrition. A model patient application.**  
Contact: [www.capgan.org/unical](http://www.capgan.org/unical)  
An interactive tutorial (Cd-Rom or Internet) on Physiopathology and management of severe malnutrition.  
Suitable for health workers.
14. **The Sphere Project (2004) Nutrition Training Modules. Session 5 – Severe Malnutrition.**  
Contact: [www.sphereproject.org/training/hnmodules.htm](http://www.sphereproject.org/training/hnmodules.htm)  
Handouts and visual materials (slides) on basic concepts of running Therapeutic care. Suitable for managers and health workers. The sphere manual is under revision and more recent version will soon be available.
15. **Wellcome Trust (2000) Topics in International Health. Nutrition. London.**  
Contact: [www.talcuk.org/cd-roms/topics-in-international-health-nutrition.htm](http://www.talcuk.org/cd-roms/topics-in-international-health-nutrition.htm) (£10).  
Interactive CD-Rom with tutorials and exercises on the physiopathology and the medical and nutritional management of SAM. Suitable for health workers.
16. **WHO (2002) Training course on the management of severe malnutrition. Geneva: WHO**  
Contact: [www.who.int](http://www.who.int)  
Seven modules for participants, with one clinical instructor guide, one facilitator guide and one course director guide.  
Handouts and visuals (slides, video/DVD) on medical and nutritional management of SAM. Answer sheets.  
Suitable for health workers.
17. **WHO. Community-based management of Severe Acute Malnutrition.**  
Availability: Not yet published. Contact: [www.who.int](http://www.who.int)  
Focused on integrating Therapeutic care in Primary Health programmes.

ISBN: 978-1-908182-00-5

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