

Jordan Guidelines for Management of Acute Malnutrition

2013

These Guidelines are based on international standards. However, some changes have been introduced to adapt them to Jordanian specific working conditions and environment.

Protocols for the management of acute malnutrition followed in these guidelines have been endorsed by the Jordanian Ministry of Health in 2013.

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List of Field Cards

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Using these guidelines

Components of the package:

The Package of the Jordan Guidelines for Management of Acute Malnutrition is formed of two components:

- these Guidelines
- the Field Cards (FC)

The guidelines present the main body of the recommendations for the management of acute malnutrition, with explanations and following a logical order. In the relevant sections of the guideline, a “field card” (FC) is inserted with the explanation of a particular procedure, treatment or protocol. These “field cards” will be detached and presented as a stand-alone document, the field guide.

Several field guides are prepared, selecting different “field cards”, so that the relevant material is available for each level of care. In this way, the field guide for OTPs does not need to include the field cards for SFP and vice-versa. Some field cards are relevant for all levels of care.

The field cards are intended as a reference to be used in daily activities in the field. For this reason, they are printed in resistant materials, so that they can be checked while consulting the patient. They can take the form of figures, to remind the field staff of the correct way of taking anthropometry measurements; tables for checking the correct dosage of a food product or drug; summaries of the messages that need to be transmitted to the carers; check lists of steps to follow when consulting each patient; and many others.

Distribution of chapters:

After the Introduction on the specificities of managing malnutrition in Jordan, these guidelines present an overview of malnutrition and of the different programmes. These sections are intended for all readers, including non-technical readers that want to have a general understanding of programmes to manage acute malnutrition.

Subsequent chapters present the management of Moderate Acute Malnutrition (MAM) in Supplementary Feeding Programmes (SFP), and uncomplicated Severe Acute Malnutrition (SAM) in Outpatient Therapeutic Programmes (OTP).

Complicated Acute Malnutrition in Stabilization Centers (SC) has been excluded from these guidelines and will be presented in a separate guideline.

Each of these chapters follows the same logic:

- overview
- recall of admission and discharge criteria
- dietary treatment
- routine medicines
- surveillance / follow up of the patient

Each of these chapters is completed with additional materials, as required for each service. Each of these chapters is intended for staff working in those facilities, as well as for their supervisors.

The last chapters address how to organise community mobilisation, and gives some practical suggestions.

This is completed by advice on how to organise nutrition information, education and communication, with a summary of the main health and nutrition messages. This can be used, not only during community mobilisation, but as well in education and counselling sessions at the SFP and OTP. Finally, advice is given on how to organise the routine work at the centres, and the annexes presents the standard cards for the patients and reporting materials.

Introduction

Malnutrition is an important public health issue particularly for children under five years old who have a significantly higher risk of mortality and morbidity than well-nourished children. Maternal and child under-nutrition is prevalent in low and middle income countries. New research estimates that the risks related to stunting, severe wasting and intrauterine growth retardation are linked to 2.2 million deaths and 21% of disability-adjusted life years worldwide for children under five years. Deficiencies in Vitamin A and zinc are estimated to be responsible for 600,000 and 400,000 childhood deaths respectively¹. Sub-optimum breast feeding, particularly for infants under-six months, is also a leading factor in childhood morbidity and mortality.

1.1 Nutrition Situation in Jordan

The Syrian crisis, starting with the popular uprising in March 2011 and over time developing into a full blown civil war, has forced hundred thousands of Syrian families to flee their homes. Amounting to a total of 2,258,476 registered refugees and individuals awaiting registration, neighbouring countries are struggling to keep up with the number of refugees flooding across the borders (UNHCR, Nov 2013).

In Jordan alone, the influx of Syrian refugees has increased by almost ten times since July 2012, totalling 563,706 registered refugees (UNHCR, December 2013). Two-thirds of the refugees in Jordan reside outside the refugee camps; renting their own apartments, staying with host families or even camping on available land. Due to the financial burden the unexpected influx of refugees is placing on an already frail economy, and lack of available funding, many basic needs of the Syrian refugees remain unmet. Those living outside of the camps are currently the most vulnerable due to lack of access to basic services, especially health care.

Previous health and nutrition indicators within Syria show that acute malnutrition has been an issue with a GAM of 12% (UNICEF, 2010). 28% of children under five were stunted and 10% of children under five were classified as underweight (UNICEF, 2010). According to FAO (2011), early initiation of breast feeding amongst mothers was very low at 32% while reports on the national level indicate 46% (UNICEF, 2010). Only 37% of the children 6-9 months of age were fed with complementary foods (International Baby Food Action Network, 2011).

Interestingly, early initiation of breast feeding as well as exclusive breastfeeding at the age of 6 months is significantly lower in Jordan with 39 and 22% respectively (UNICEF, 2010). These findings suggest inadequate pre-existing health and nutrition preventive behaviours, especially poor infant and young child feeding practices. In emergency situations, appropriate infant and young child feeding practices are even less likely than under stable conditions. Breast feeding practices especially need to be protected during emergencies as it is well known, that infants not breast fed are at a manifold higher risk of morbidity and mortality than breastfed children (Bahi R, et al. Bull of WHO 2005;83 (6):418-426).

Up till now screening, identifying and treating acute malnutrition has not been a public health priority nor included in health services in Jordan. However with the influx of Syrian refugees more acute malnutrition is being observed in clinics and the ability to identify and treat those at risk as well as monitor the situation

¹ Black RE et al "Maternal and Child Under-Nutrition: Global and Regional Exposures and Health Consequences",

over time is needed.

The prevalence of global acute malnutrition (GAM), among children 6-59 months, in the multi-agency SMART survey carried out in October/November 2012² was more than 5% but less than 10% (5.1% in the refugees in the host communities and 5.8% in Za'atri camp) and is defined as a poor nutritional status of public health concern as per WHO classification. The prevalence of severe acute malnutrition (SAM) found in the assessment was 1% for refugees in Za'atri camp and 1.1% for refugees in the host communities. Prevalence rates of acute malnutrition in women 15-49 years of age were 6.3% in the Urban refugee community and in Za'atri camp 6.1%. The situation of children aged 6-59 months with acute malnutrition has to be monitored in both communities and children with either severe or moderate acute malnutrition should be screened and treated.

It is anticipated that with the refugee influx and more acutely malnourished children presenting to clinics combined with increasing refugee concerns about future food availability, without intervention it is likely the refugee nutrition situation will worsen.

² Inter-Agency Nutrition Assessment Syrian Refugees In Jordan Host Communities And Za'atri Camp, October to November 2012

1 – Malnutrition: an overview.

Components of Nutrition

People eat foods that contain the nutrients necessary for life. Nutrients may be divided into categories:

Macronutrients

Protein, fat and carbohydrates are macronutrients that make up the bulk of a diet and supply the body's energy.

In resource-poor populations, carbohydrates (i.e. starches and sugars) are often a large part of the diet (80%) and the main source of energy. Fats are also important in cell formation. Proteins are required to build new tissue and are derived mostly from animal origin such as milk, meat and eggs, and from cereals and pulses. Animal by-products contain essential amino acids that cannot be produced by the body but must be eaten to promote growth and good health.

Micronutrients

There are around forty different micronutrients that are essential for good health. From a functional point of view, micronutrients can be divided into two classes: Type I and Type II.

Type I micronutrients, or functional nutrients, include nutrients that are required for the hormonal, immunological, biochemical and other processes of the body. They include iodine, iron, vitamins A and C among others. Deficiencies in Type I micronutrients do not affect growth directly (i.e. the individual can have normal growth with appropriate weight and still be deficient in micronutrients) and thus a deficiency in Type I micronutrients cannot be identified by anthropometric measurements. Deficiencies in Type I micronutrients will cause major illness such as anaemia, scurvy and impaired immunity.

Type II micronutrients, or growth nutrients, include magnesium, sulphur, nitrogen, essential amino-acids, phosphorus, zinc, potassium, sodium and chloride. They are essential for growth and tissue repair. Type II micronutrients are required only in small quantities by every cell and system, but the correct balance is essential for good health. A deficiency in any of the Type II micronutrients will lead to growth failure, measured by stunting and/or wasting. Replenishment of all these nutrients, in the correct balance, is essential for recovery from malnutrition and convalescence from acute illness.

Water

Most of the body is water. Water is necessary for good nutrition as well as for maintaining hydration. Only half of the body's water is obtained through drinks, the rest being absorbed from foods and produced by the body. Water often needs to accompany foods in order to provide good dilution and absorption of nutrients.

Causes of Malnutrition

Malnutrition, whether acute or chronic, has multiple causes that usually work in conjunction, reinforcing each other to the point that no single action or intervention can prevent it. Only exceptionally, a single cause can be found. Managing acute malnutrition implies having an understanding of the causes of malnutrition and how they interact. The immediate causes are usually easier to observe, but they cannot be addressed unless their underlying causes are understood and addressed. Sustainable eradication of malnutrition can only be based in the elimination of its basic causes.

The division of the causes of malnutrition into different levels facilitates understanding and analysis of a given context, and can be used for planning of programmes.

Immediate Causes of Malnutrition

Inadequate dietary intake and disease are immediate causes of malnutrition and create a vicious cycle in which disease and malnutrition exacerbate each other. Thus, food intake and disease must both be addressed to support recovery from malnutrition.

Underlying Causes of Malnutrition

Three major underlying causes of malnutrition include:

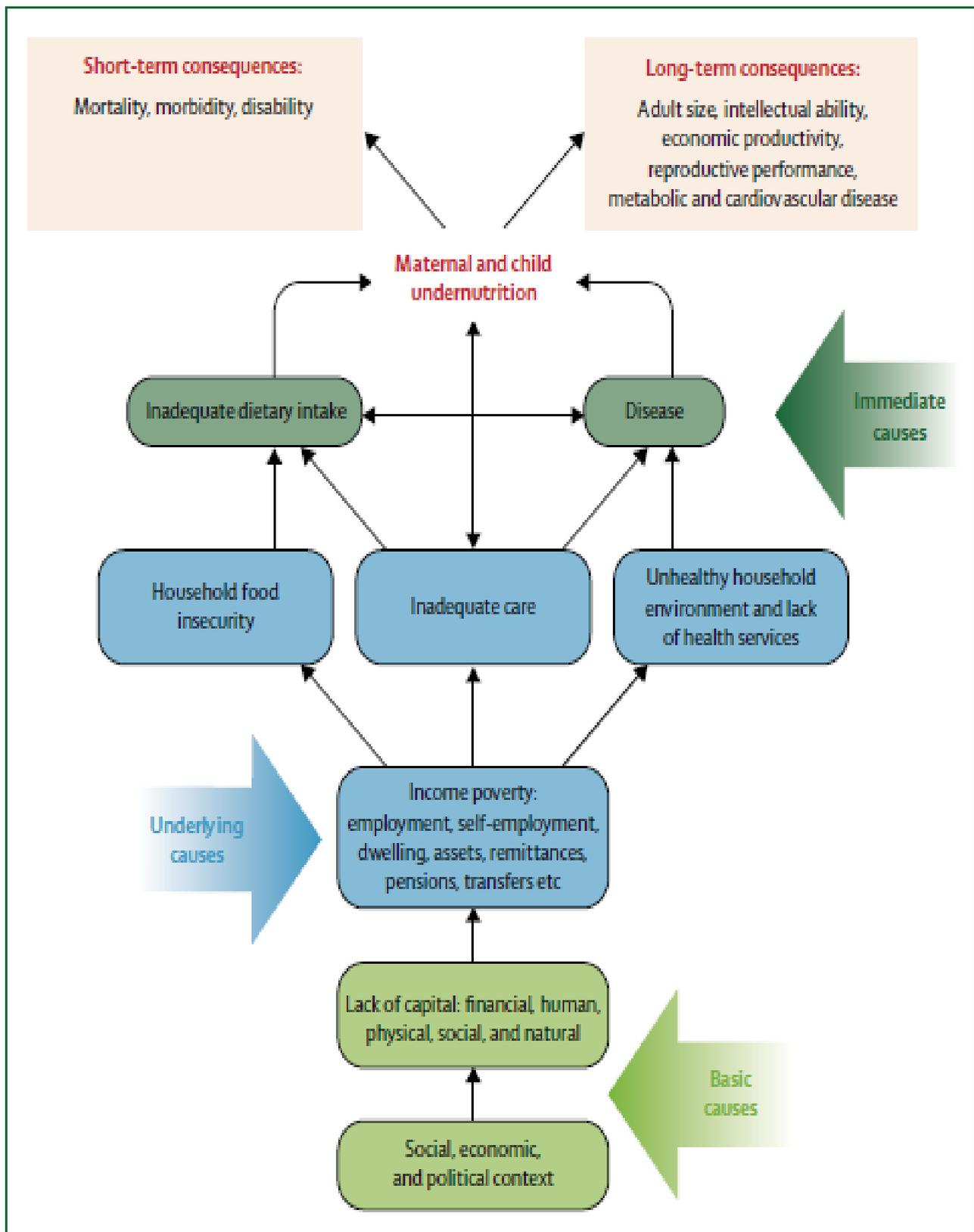
- Food: Inadequate household food security (limited access or availability of food).
- Care: Inadequate social and care environment in the household and local community, especially with regard to women and children.
- Health: Limited access to adequate health services and/or inadequate environmental health conditions (including access to safe water and sanitation facilities).

All underlying causes of malnutrition are usually the consequence of poverty.

Basic Causes of Malnutrition

The basic causes of malnutrition in a community originate at the regional and national level, where strategies and policies that affect the allocation of resources (human, economic, political and cultural) influence what happens at community level. Geographical isolation and lack of access to markets or services due to poor infrastructure, displacement or conflict can have a huge negative impact on food security and health.

CAUSES OF MALNUTRITION: UNICEF CONCEPTUAL FRAMEWORK.



Types of Malnutrition: Definitions

Malnutrition refers to all deviations from adequate nutrition, including under nutrition and over nutrition, resulting from inadequacy of food relative to need and/or disease. Malnutrition also encompasses specific deficiencies (or excesses) of essential nutrients such as vitamins and minerals. In the context of these guidelines, the term malnutrition always makes reference to under nutrition, and more particularly to the syndrome called Acute Malnutrition.

Under nutrition is caused primarily by an inadequate intake of dietary or food energy, whether or not that is deficiency of any specific nutrient present. It encompasses stunting, wasting, nutritional oedema and deficiencies of essential vitamins and minerals (micronutrient deficiencies). Different forms of under nutrition may co-exist within the same individual.

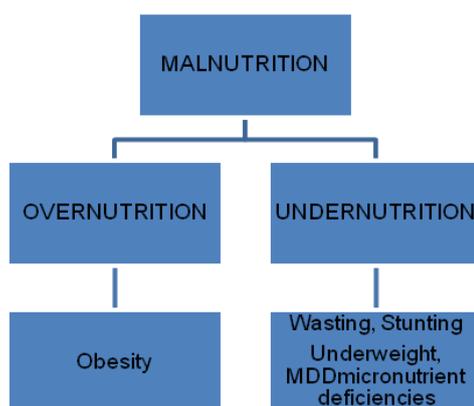
Stunting / Chronic malnutrition: Stunting is a retardation of linear growth and is indicated by a low height-for-age. It can occur when a child suffers from chronic (long-term) nutrient deficiencies, and/or if the child suffers from repeated episodes of disease or acute malnutrition.

Acute Malnutrition occurs when a person suffers from a severe nutritional restriction. It can present in the form of wasting or kwashiorkor. Acute malnutrition is measured as either moderate (MAM) or severe (SAM)³.

Wasting as a clinical sign means visible loss of subcutaneous fat and skeletal muscles (severe thinness). It is also known as Marasmus. Anthropometric wasting refers strictly to low weight-for-height, which is usually observed in cases of clinical wasting.

Kwashiorkor is a form of severe acute malnutrition characterized by the accumulation of liquid (swelling or oedema) in the legs and sometimes arms and face. It may be accompanied by wasting, in which cases it is called Marasmic Kwashiorkor.

Underweight refers to a child who has a low weight-for-age. This concept does not distinguish between wasting and stunting as it does not indicate if the deficit is in weight (with normal height) or in height itself. Weight-for-age is used in health programmes for growth monitoring.



³ The term “protein-energy malnutrition” is no longer used as it is not thought anymore that protein or energy deficiency are causes of acute malnutrition.

Acute malnutrition: types and classification

The term **acute malnutrition** makes reference to two different medical entities with different clinical and pathological characteristics: **Marasmus** (or wasting) and **Kwashiorkor**. Each of them is the consequence of different metabolic disturbances. Despite these differences, the standard protocols to treat them are similar, with small – but important – differences.

Acute malnutrition is also categorised into **Moderate acute malnutrition (MAM)** and **Severe acute malnutrition (SAM)**, depending on the patient's degree of wasting and/or the presence of kwashiorkor. Severe acute malnutrition is often the result of Moderate acute malnutrition that has not been treated. All cases of kwashiorkor are categorized as SAM. Moderate acute malnutrition and severe acute malnutrition are treated in different programmes, reflecting their different level of severity and their different nutritional and medical needs. These programmes are most often based in the community.

The metabolism of individuals with **complicated severe acute malnutrition** is seriously disturbed, and the immune system seriously impaired. The patient develops severe complications (i.e. hypoglycaemia, hypothermia, electrolyte imbalance, micronutrient deficiencies and severe infections) that are difficult to diagnose for the untrained doctor (i.e. often the only sign present may be anorexia). In order to survive and recover, these patients need more advanced treatment in specific hospital units called Stabilisation Centres (SC).

2 – Programme Overview

Components of Management of Acute Malnutrition programmes:

The objectives of programmes for the Management of Acute Malnutrition are:

- to save the lives of individuals that have developed severe acute malnutrition
- to prevent the development of severe acute malnutrition.

Well run programmes can obtain this through the combination of their different components, particularly when they are well coordinated and integrated.

Community mobilisation:

Objective: To sensitize the population to the problem of malnutrition and how to identify it, in order to reach more children and at an earlier stage in their development of acute malnutrition, therefore increasing programme coverage and recovery.

Intervention: Screening of children through assessment of MUAC and nutritional oedema; mobilisation of key leaders and associations; education and sensitization; promotion of acceptance of the programme by the community; follow up of patients in programmes that default or present a problem.

Targeted Supplementary Feeding Programme - SFP:

Objective: To treat patients with Moderate Acute Malnutrition (MAM) and prevent the development of Severe Acute Malnutrition (SAM).

Intervention: Weekly, biweekly, or monthly distributions of take home rations in the form of Fortified Blended Flours (Super cereal Plus) or Ready to Use Supplementary Foods (RUSFs - PlumpyNut) and routine

medicines; nutritional monitoring of the patient; programmes implemented as standalone by fixed or mobile teams, or from Health Centres.

Blanket Supplementary Feeding Program (BSFP)

Blanket supplementary feeding program is set so as to provide a food supplement to all members of a particular group like all children under 2 years old.

Usually Blanket Supplementary program can be started when **15% or more** of children are malnourished or assessment results show **GAM levels of 15% or more** or **10 to 14% with aggravating factors** and sufficient resources including food, personnel, and logistics are available. In addition, when:

- General food distribution systems are not adequately in place and/or not covering the needs of certain vulnerable groups
- There are problems in delivering/distributing the general ration
- There are large numbers of mild and moderately malnourished individuals and likely to become severe due to aggravating factors
- There is anticipated increase in rates of malnutrition due to seasonally induced epidemics
- There are reported cases of micronutrient deficiency outbreaks, to provide micronutrient-rich food to the target population

Outpatient Therapeutic Programme (Outpatient care) - OTP:

Objective: To treat patients with SAM who have a good appetite and no medical complications.

Intervention: Weekly or biweekly distributions of Ready to Use Therapeutic Foods (RUTFs) and routine medicines; medical and nutritional monitoring of the patient; programmes implemented as standalone by fix or mobile teams, or in Health Centres. After recovery and discharge he/she can be admitted in SFP to prevent relapse through supplementary food.

Stabilisation Centre (In patient care) - SC:

Objective: To treat patients with SAM who have poor appetite or medical complications.

Intervention: Daily therapeutic milk and medical treatment in inpatient care centre (Hospital or standalone centre, run as day-care or as a 24h care centre). A child with complicated SAM will start treatment at SC (inpatient), when the child improves he/she can continue treatment as an outpatient at the OTP. After recovery and discharge he/she can be admitted in SFP to prevent relapse through supplementary food.

A referral system must be in place to transfer patients from one component to the next (when the patient condition worsens), or to return to the previous one if the evolution of treatment is satisfactory. Refer to respective chapters for more information on each of the programme components presented here.

Programme set-up in Jordan:

Ideally, all programmes for the management of acute malnutrition should implement the four components, presented in the previous page, in an integrated way.

OTP and SC services available

The SC will be integrated into a selected Hospital that can receive children with SAM and medical complications from several OTPs. Patients starting treatment in the SC can complete it at the OTP as soon as they recover from complications (usually after one week).

Patients presenting SAM without complications can follow treatment at the OTP from the start. In Jordan, OTP are integrated into medical services at the designated health centres.

SFP for moderate malnutrition

In Jordan, SFP are integrated into the same health facilities as OTP. In Jordan, blanket supplementary feeding will be provided to all children 6-24 months of age in the camp settings⁴.

The need for additional OTP/SFP sites will be regularly reviewed and discussed within the National Nutrition Working Group.

Key elements for programme quality:

The implementation of programmes to manage acute malnutrition requires a series of elements to ensure their quality and success. Each of them needs to be given careful attention and dedication during the duration of the programme. The main elements are:

Integration of the different components of the programme. Integration consists of referral of patients from one level of care to the next level, as needed and without interruption in the continuity of treatment. It also includes coordination and exchange of information to monitor and improve programme results.

Community mobilisation, Supplementary Feeding, Outpatient care and Inpatient care need to be understood as the components of the same programme, rather than different programmes. This needs to be particularly stressed when each of the facilities is managed by a different organisation. In this case, regular meetings and exchange of information are mandatory.

Training of all staff involved in the management of acute malnutrition is of radical importance. This includes all levels of staff, from the community volunteers to the doctors in hospitals. The modern protocols for the management of acute malnutrition were developed in the last 10 years. Most health staff currently working in the health system have not been trained on the protocols. Therefore, continuous training should be in place in all programmes in order to train new staff, incorporate new developments, and to learn from experiences.

Supervision is key to maintaining and improving the quality of the programmes. It also allows for quick reaction to specific problems and for adapting to changing circumstances. Supervision should be implemented in a systematic way and be an opportunity for learning from your own work, rather than just an inspection of duties.

Training and supervision are often difficult or challenging. Innovative ways of training and supervising staff need to be developed for this purpose. Some ideas may include:

- E-mailing of weekly/monthly statistics, reports, supplies requests, etc.
- scan-and-email or faxing of centre register books and/or patient's cards (including, for example, some randomly selected cards, or those of patients that presented a specific problem or died),
- telephone or Skype conferences to discuss a specific issue or to update on a protocol,
- taking pictures of a particular case and sharing with colleagues for discussion,

Community mobilisation and early diagnosis. Regardless of the set-up of the programme, community mobilisation and early diagnosis are *the most important* components. When properly implemented, they

⁴ WFP Jordan Programme decision for camp settings only, 2013

will contribute to increased coverage of the programme, and will identify children at an early stage of malnutrition *before* the development of complications that can result in the death of the patient. Community mobilisation will help as well to develop good relationships and understanding with the local community.

All programmes should have dedicated staff and resources for community mobilisation, and develop a proper strategy for its implementation. It should never be left as an additional activity to be done “when times allows” or be left only in the hands of volunteers or community leaders, however committed they are.

3 – Diagnosis of Acute Malnutrition and Admission criteria

Diagnosis of acute malnutrition

The diagnosis of acute malnutrition can be done in different ways:

- **Weight for height (W/H):** Calculated from patient's weight, height and sex, using WHO Growth Standards (Z-scores). The weight and the height of the child are compared to those of a standard population of the same sex.
- **Middle Upper Arm Circumference (MUAC):** Using a band around the mid-point of the upper left arm of the patient.
- **Bilateral Oedema:** bilateral pitting oedema, for identification of Kwashiorkor and Marasmic kwashiorkor.
- Severe Wasting and other **clinical signs of SAM and its complications.**

The raw measurements (weight, height, MUAC and oedema) are of radical importance. Mistakes in these measurements will result in a wrong diagnosis and unnecessary treatment or, worst, in a malnourished child not being treated.

The role of each of this possible diagnosis is different:

- MUAC and oedema are used for screening of malnutrition **at the community.**
- W/H, MUAC and oedema are used for screening of malnutrition **at the centre** and to classify the patient as normal, MAM or SAM, in order **to decide on the admission** of the patient to the programmes. Depending on the level of severity of these indicators, the patient will be admitted to a different type of programme (TSFP, OTP or SC).
- A series of clinical signs, and above all the lack of appetite (anorexia), are used **to identify complicated SAM**, which requires treatment at the SC.
- Weight, oedema and presence of clinical signs (ex. appetite) are used **to monitor the evolution of the patient** under treatment.

An individual is malnourished when he/she meets AT LEAST one diagnostic criteria of malnutrition (W/H, MUAC or oedema). For this reason, the patient cannot be declared cured after treatment until he/she has recovered for ALL the criteria).

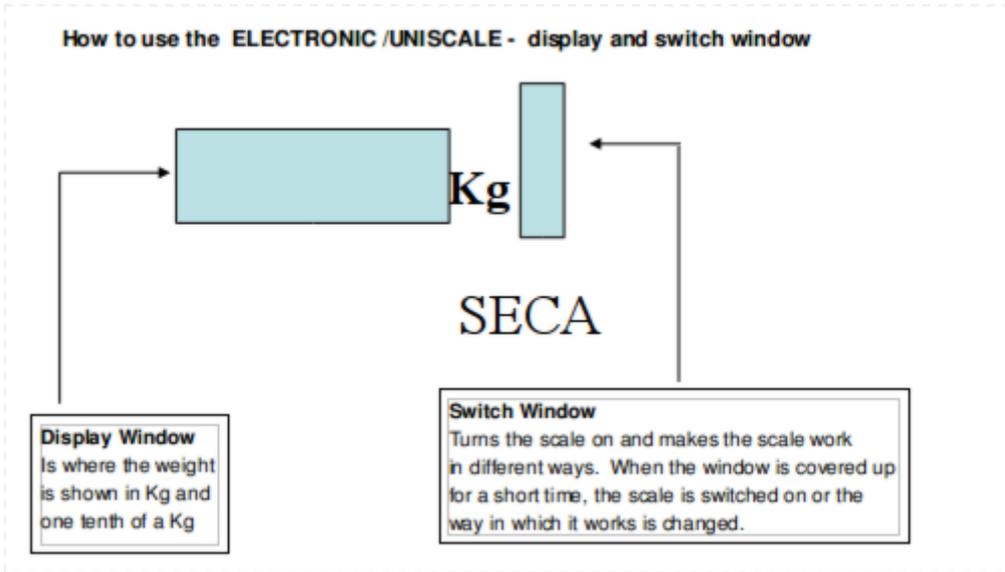
The process of diagnosis has, therefore, three steps:

1. Measure the child's oedema, MUAC, weight and height, and calculate W/H.
2. Decide if the child presents acute malnutrition, and if it is moderate (MAM) or severe (SAM).
3. If the child has SAM, run an appetite test and observe presence of complications, to decide if the child needs treatment at the SC.

See FC-7 for criteria of admission in the programme and FC 13 and FC 20 for discharge criteria

FIELD CARD 1: TAKING MEASUREMENTS

Using the electronic scale.



Using the switch window



The best way to cover the switch window is to use your foot:

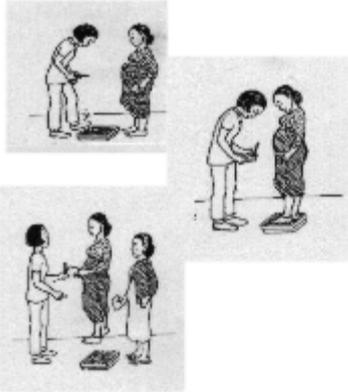
- Pass one foot close over the top of the switch window from one side to the other.
- DO NOT step on or touch the window. It is not a push button switch.



1. Put the scale on the floor. Choose the flattest, most level surface you have. Do not stand on the scale yet.
2. Look at the display window. It should be blank.
3. Move your foot quickly across the switch. The scale will switch on and you will see:
4. In 5 seconds, the scale will adjust itself to zero. You are ready to weigh a person.
5. Stand on the scale. Stand still. Make sure that feet or clothes do not cover the switch window. You should see:

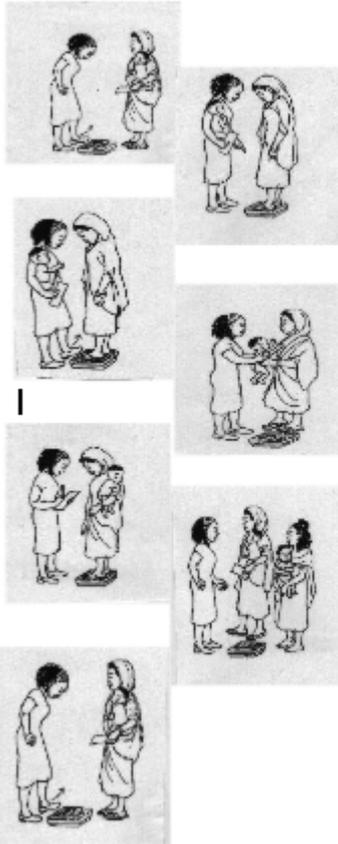
and then and then
6. The 1 will move back and forth from side to side to show you the scale is working. The you should see the weight in the display , for example:

Weighing adults and children who can stand on their own



1. Turn on the scale
2. Ask the person to step on the scale. Wait until the display shows weight.
3. Ask the person to get off the scale. Wait until the display shows 0.0 before weighing the next person.

Weighing children who are held by their mothers



1. Turn on the scale. Move your foot across switch window.

2. Ask the mother to step on the scale by herself. She can give her child to you or another person to hold.

Make sure her feet or clothes do not cover the switch window. You will see the mother's weight in the display, for example:

58.3

3. With the mother on the scale pass your foot slowly across the switch window. Then wait a couple seconds.

00.0

4. Ask the mother to step off the scale. You should see:

--.

5. Ask the mother to step back on the scale with her child. You should see the child's weight.

5.4

6. Ask the mother to step off the scale. You should see:

--.

7. Pass your foot across the switch window to reset the scale before weighing the next other. You should see:

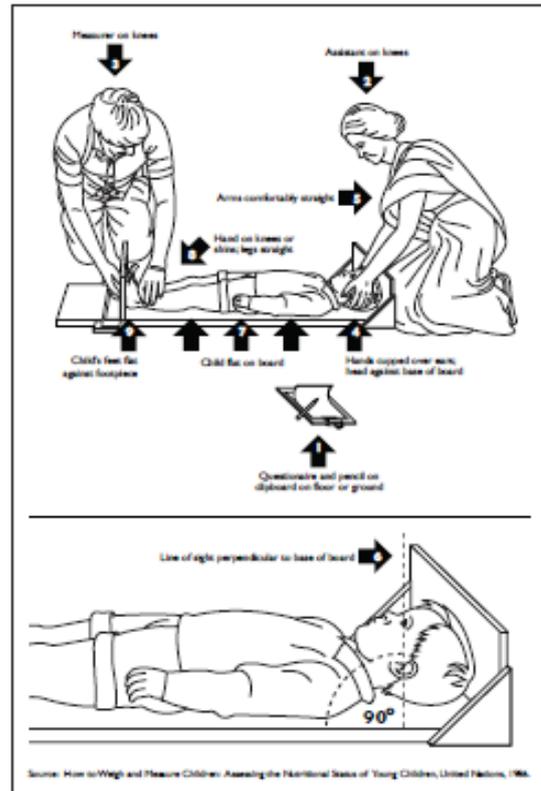
0.0

3. Taking a Child's Length or Height

Taking a child's length

For children less than 87 cm the measuring board is placed on the ground.

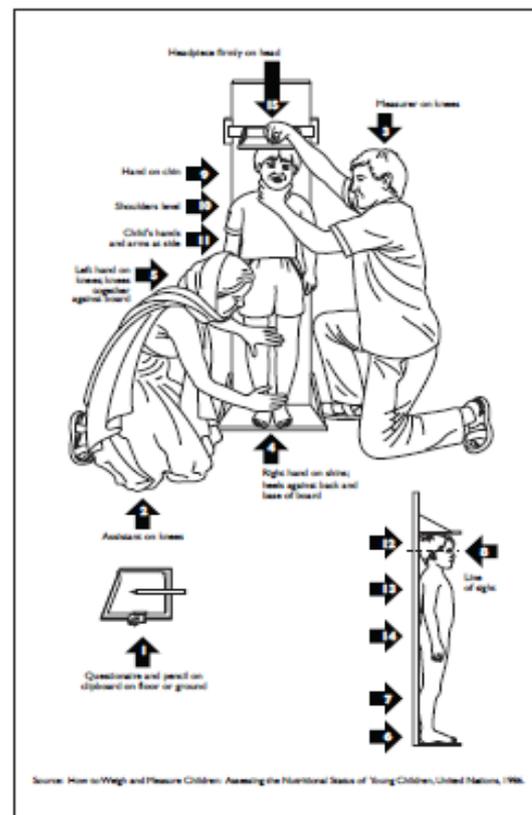
- You will need two people to take a good measurement. If there is no assistant, the mother may help by holding the head straight.
- The child is placed lying down along the middle of the board.
- The assistant holds the sides of the child's head and positions the head until it firmly touches the fixed headboard with the hair compressed.
- The measurer places her hands on the child's legs, gently stretches the child and then keeps one hand on the thighs to prevent flexion.
- While positioning the child's legs, the sliding foot-plate is pushed firmly against the bottom of the child's feet.
- To read the length measurement, the foot-plate must be perpendicular to the axis of the board and vertical.
- The length is read to the nearest 0.1cm



Taking a child's height

For children taller than 87 cm the measuring board is fixed upright on level ground.

- The child stands, upright against the middle of the measuring board.
- The child's head, shoulders, buttocks, knees, and heels are held against the board by the assistant.
- The measurer positions the head and the cursor.
- The height is read to the nearest 0.1 cm
- Measurement is recorded immediately

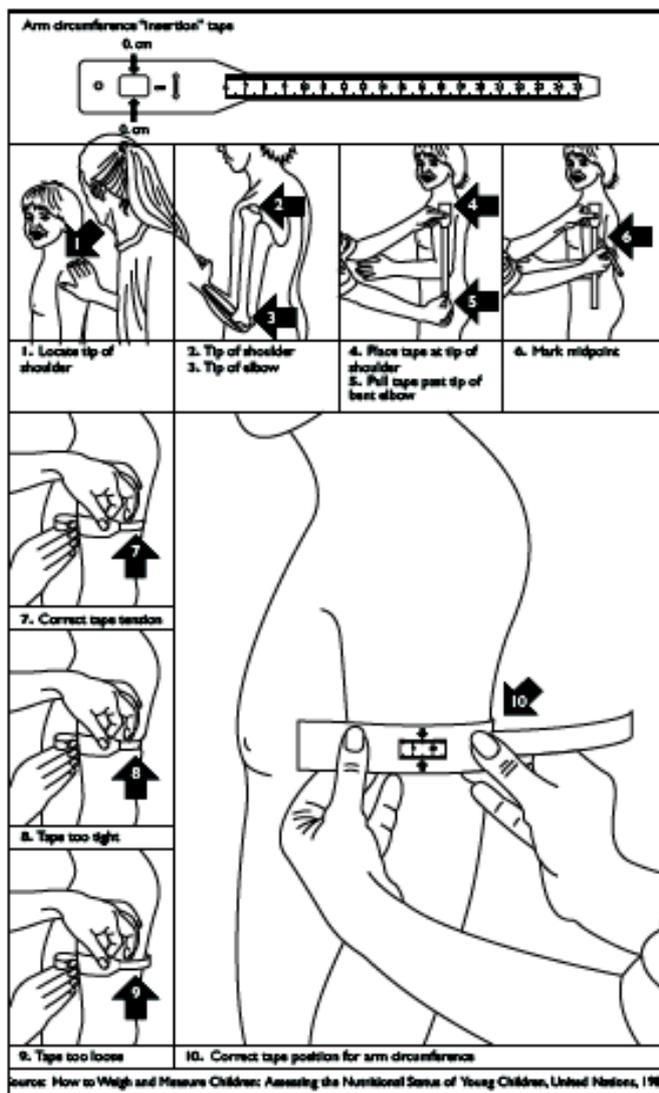


4. Taking a Child's Middle Upper Arm Circumference (MUAC)

MUAC is especially used for children six months old to five years old to measure thinness.

How to Measure MUAC

- Ask the mother to remove any clothing covering the child's left arm.
- Calculate the midpoint of the child's left upper arm: first locate the tip of the child's shoulder with your finger tips.
- Bend the child's elbow to make the right angle.
- Place the tape at zero, which is indicated by two arrows, on the tip of the shoulder and pull the tape straight down past the tip of the elbow.
- Read the number at the tip of the elbow to the nearest centimetre. Divide this number by two to estimate the midpoint. As an alternative, bend the tape up to the middle length to estimate the midpoint.
- Mark the midpoint with a pen on the arm.
- Straighten the child's arm and wrap the tape around the arm at the midpoint. Make sure the numbers are right side up. Make sure the tape is flat around the skin.
- Inspect the tension of the tape on the child's arm. Make sure the tape has the proper tension and is not too tight or too loose. Ensure that there is no bulging (the tape sits well on the skin and cannot be moved).
- Repeat any step as necessary
- When the tape is in the correct position on the arm with correct tension, read and call out the measurement to the nearest 0.1cm.
- Immediately record the measurement.



For MUAC measurements, note the number of mm and follow the guidelines:

- < 115 mm : Severe acute malnutrition
- ≥ 115 and < 125 mm : Moderate acute malnutrition
- > 125 mm: No acute malnutrition

5. Diagnosing Bilateral Oedema:

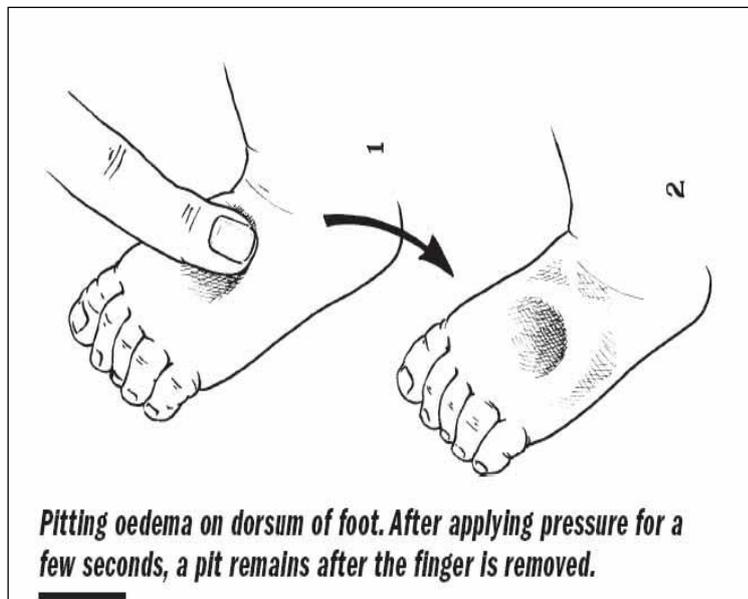
- Oedema is the swelling of the body or one of its parts.
- Oedema is an indication of Kwashiorkor.
- Kwashiorkor oedema should be in both feet (bilateral). It is noticed when the bilateral oedema is pitting on both feet after pressing for a few seconds. "Pitting" means that when you press on the top of the feet or the leg the finger leaves a pit in the skin for some seconds.
- Any oedemas which appear only in one foot or leg are not Kwashiorkor. Oedema that is not pitting is not Kwashiorkor either. However these patients still need to be seen by a medical person, in order to do a proper diagnosis.

Steps of diagnosing oedema:

- Oedema is evaluated first on the top of the feet.
- Press gently with your thumbs on each foot, while you count: 121, 122, 123 (approx 3 seconds).
- After removing the thumb, there is kwashiorkor oedema if a pit stays for some seconds.
- Do the same thing for the leg (above the knee) and for the back of the hands and the face (around the eyes).

Oedema is coded in the following way:

Oedema in both feet:	+
Oedema in both feet plus legs:	++
Oedema in both feet, legs and hands or face:	+++



FIELD CARD 2: Determining Weight-for-height (W/H)

Most children who are healthy have weight in a normal range. When children weight less than the normal, they are malnourished. This can be measured and classified into Z-scores. Z-scores are used to see if the children are moderately or severely malnourished and admit then in the different programmes.

Use the charts in the following two pages of this Field Card to understand how they work.

This is the process to follow for each patient:

1. Write down the weight, height and sex of the child.
2. Select the chart that corresponds to the child's sex (there is one for boys and one for girls).
3. Select the column to use:
 1. Length: If the child was measured lying down (less than 87 cm), use the chart in the left.
 2. Height: If the child was measured standing (more than or equal to 87 cm), use the chart in the right.
4. Follow the column to the left of the chart you just selected. Scroll down through the numbers until you reach a number higher than the height of the child. Select the height value that is closest to the height of the child:
 1. Example: If the height of the child was 55.7, choose 55.5;
 2. Example 2: If the height of the child was 55.8, choose 56.
5. Now you have selected the *line* that is going to be used to check the child's weight.
6. Follow this line to the right (it is recommended to use a ruler, to be sure that you do not move to a different line). When you reach a weight that is above the weight of the child, stop.
7. Check the colour of the column where you have stopped, or the heading of the column, to obtain the W/H group of the patient.
8. Write the result.
9. Using the W/H, MUAC and oedema findings, decide if the child needs admission, and to which programme.

The groups of weight for height are:

- < -3 -----> Severe acute malnutrition.
- < -2 -----> Moderate acute malnutrition.
- 0 -----> Normal

For interpretation,

- < - 3 means that the patient's W/H is below -3 Z-scores.
- < - 2 means that the patient's W/H is between -3 and - 2 Z-scores.
- 0 means that the patient's W/H is between -2 and 0 Z-scores.

ANNEX 1

Weight-for-Length Reference Card (below 87 cm)

Boys' weight (kg)					Length	Girls' weight (kg)				
-4 SD	-3 SD	-2 SD	-1 SD	Médian	(cm)	Médian	-1 SD	-2 SD	-3 SD	-4 SD
1.7	1.9	2.0	2.2	2.4	45	2.5	2.3	2.1	1.9	1.7
1.8	2.0	2.2	2.4	2.6	46	2.6	2.4	2.2	2.0	1.9
2.0	2.1	2.3	2.5	2.8	47	2.8	2.6	2.4	2.2	2.0
2.1	2.3	2.5	2.7	2.9	48	3.0	2.7	2.5	2.3	2.1
2.2	2.4	2.6	2.9	3.1	49	3.2	2.9	2.6	2.4	2.2
2.4	2.6	2.8	3.0	3.3	50	3.4	3.1	2.8	2.6	2.4
2.5	2.7	3.0	3.2	3.5	51	3.6	3.3	3.0	2.8	2.5
2.7	2.9	3.2	3.5	3.8	52	3.8	3.5	3.2	2.9	2.7
2.9	3.1	3.4	3.7	4.0	53	4.0	3.7	3.4	3.1	2.8
3.1	3.3	3.6	3.9	4.3	54	4.3	3.9	3.6	3.3	3.0
3.3	3.6	3.8	4.2	4.5	55	4.5	4.2	3.8	3.5	3.2
3.5	3.8	4.1	4.4	4.8	56	4.8	4.4	4.0	3.7	3.4
3.7	4.0	4.3	4.7	5.1	57	5.1	4.6	4.3	3.9	3.6
3.9	4.3	4.6	5.0	5.4	58	5.4	4.9	4.5	4.1	3.8
4.1	4.5	4.8	5.3	5.7	59	5.6	5.1	4.7	4.3	3.9
4.3	4.7	5.1	5.5	6.0	60	5.9	5.4	4.9	4.5	4.1
4.5	4.9	5.3	5.8	6.3	61	6.1	5.6	5.1	4.7	4.3
4.7	5.1	5.6	6.0	6.5	62	6.4	5.8	5.3	4.9	4.5
4.9	5.3	5.8	6.2	6.8	63	6.6	6.0	5.5	5.1	4.7
5.1	5.5	6.0	6.5	7.0	64	6.9	6.3	5.7	5.3	4.8
5.3	5.7	6.2	6.7	7.3	65	7.1	6.5	5.9	5.5	5.0
5.5	5.9	6.4	6.9	7.5	66	7.3	6.7	6.1	5.6	5.1
5.6	6.1	6.6	7.1	7.7	67	7.5	6.9	6.3	5.8	5.3
5.8	6.3	6.8	7.3	8.0	68	7.7	7.1	6.5	6.0	5.5
6.0	6.5	7.0	7.6	8.2	69	8.0	7.3	6.7	6.1	5.6
6.1	6.6	7.2	7.8	8.4	70	8.2	7.5	6.9	6.3	5.8
6.3	6.8	7.4	8.0	8.6	71	8.4	7.7	7.0	6.5	5.9
6.4	7.0	7.6	8.2	8.9	72	8.6	7.8	7.2	6.6	6.0
6.6	7.2	7.7	8.4	9.1	73	8.8	8.0	7.4	6.8	6.2
6.7	7.3	7.9	8.6	9.3	74	9.0	8.2	7.5	6.9	6.3
6.9	7.5	8.1	8.8	9.5	75	9.1	8.4	7.7	7.1	6.5
7.0	7.6	8.3	8.9	9.7	76	9.3	8.5	7.8	7.2	6.6
7.2	7.8	8.4	9.1	9.9	77	9.5	8.7	8.0	7.4	6.7
7.3	7.9	8.6	9.3	10.1	78	9.7	8.9	8.2	7.5	6.9
7.4	8.1	8.7	9.5	10.3	79	9.9	9.1	8.3	7.7	7.0
7.6	8.2	8.9	9.6	10.4	80	10.1	9.2	8.5	7.8	7.1
7.7	8.4	9.1	9.8	10.6	81	10.3	9.4	8.7	8.0	7.3
7.9	8.5	9.2	10.0	10.8	82	10.5	9.6	8.8	8.1	7.5
8.0	8.7	9.4	10.2	11.0	83	10.7	9.8	9.0	8.3	7.6
8.2	8.9	9.6	10.4	11.3	84	11.0	10.1	9.2	8.5	7.8
8.4	9.1	9.8	10.6	11.5	85	11.2	10.3	9.4	8.7	8.0
8.6	9.3	10.0	10.8	11.7	86	11.5	10.5	9.7	8.9	8.1

Weight-for-Height Reference Card (87 cm and above)

Boys' weight (kg)					Height (cm)	Girls' weight (kg)				
-4 SD	-3 SD	-2 SD	-1 SD	Médian		Médian	-1 SD	-2 SD	-3 SD	-4 SD
8.9	9.6	10.4	11.2	12.2	87	11.9	10.9	10.0	9.2	8.4
9.1	9.8	10.6	11.5	12.4	88	12.1	11.1	10.2	9.4	8.6
9.3	10.0	10.8	11.7	12.6	89	12.4	11.4	10.4	9.6	8.8
9.4	10.2	11.0	11.9	12.9	90	12.6	11.6	10.6	9.8	9.0
9.6	10.4	11.2	12.1	13.1	91	12.9	11.8	10.9	10.0	9.1
9.8	10.6	11.4	12.3	13.4	92	13.1	12.0	11.1	10.2	9.3
9.9	10.8	11.6	12.6	13.6	93	13.4	12.3	11.3	10.4	9.5
10.1	11.0	11.8	12.8	13.8	94	13.6	12.5	11.5	10.6	9.7
10.3	11.1	12.0	13.0	14.1	95	13.9	12.7	11.7	10.8	9.8
10.4	11.3	12.2	13.2	14.3	96	14.1	12.9	11.9	10.9	10.0
10.6	11.5	12.4	13.4	14.6	97	14.4	13.2	12.1	11.1	10.2
10.8	11.7	12.6	13.7	14.8	98	14.7	13.4	12.3	11.3	10.4
11.0	11.9	12.9	13.9	15.1	99	14.9	13.7	12.5	11.5	10.5
11.2	12.1	13.1	14.2	15.4	100	15.2	13.9	12.8	11.7	10.7
11.3	12.3	13.3	14.4	15.6	101	15.5	14.2	13.0	12.0	10.9
11.5	12.5	13.6	14.7	15.9	102	15.8	14.5	13.3	12.2	11.1
11.7	12.8	13.8	14.9	16.2	103	16.1	14.7	13.5	12.4	11.3
11.9	13.0	14.0	15.2	16.5	104	16.4	15.0	13.8	12.6	11.5
12.1	13.2	14.3	15.5	16.8	105	16.8	15.3	14.0	12.9	11.8
12.3	13.4	14.5	15.8	17.2	106	17.1	15.6	14.3	13.1	12.0
12.5	13.7	14.8	16.1	17.5	107	17.5	15.9	14.6	13.4	12.2
12.7	13.9	15.1	16.4	17.8	108	17.8	16.3	14.9	13.7	12.4
12.9	14.1	15.3	16.7	18.2	109	18.2	16.6	15.2	13.9	12.7
13.2	14.4	15.6	17.0	18.5	110	18.6	17.0	15.5	14.2	12.9
13.4	14.6	15.9	17.3	18.9	111	19.0	17.3	15.8	14.5	13.2
13.6	14.9	16.2	17.6	19.2	112	19.4	17.7	16.2	14.8	13.5
13.8	15.2	16.5	18.0	19.6	113	19.8	18.0	16.5	15.1	13.7
14.1	15.4	16.8	18.3	20.0	114	20.2	18.4	16.8	15.4	14.0
14.3	15.7	17.1	18.6	20.4	115	20.7	18.8	17.2	15.7	14.3
14.6	16.0	17.4	19.0	20.8	116	21.1	19.2	17.5	16.0	14.5
14.8	16.2	17.7	19.3	21.2	117	21.5	19.6	17.8	16.3	14.8
15.0	16.5	18.0	19.7	21.6	118	22.0	19.9	18.2	16.6	15.1
15.3	16.8	18.3	20.0	22.0	119	22.4	20.3	18.5	16.9	15.4
15.5	17.1	18.6	20.4	22.4	120	22.8	20.7	18.9	17.3	15.6

FIELD CARD 3: The appetite test

Once the child has been diagnosed as presenting SAM, you need to decide if the patient can be treated at the OTP or if he/she needs to be transferred to the SC. This is done by looking for the presence of complications and through the appetite test.

Why do we do the appetite test?

The appetite test is the most important step to decide if a child has complicated malnutrition and should go to the SC. A poor appetite means that the child is ill and requires treatment in a SC or hospital.

A poor appetite means that the child has a significant infection or a major metabolic abnormality such as liver dysfunction, electrolyte imbalance, and cell membrane damage or damaged biochemical pathways. These are the patients at immediate risk of death. Often, the child with SAM does not present any other signs of these complications.

Furthermore, a child with a poor appetite will not take the diet at home and will continue to deteriorate or die. As the patient does not eat the special therapeutic food (RUTF) the family may take the surplus and become habituated to sharing.

How to do the appetite test

1. The appetite test should be conducted in a separate quiet area.
2. Explain to the carer the purpose of the appetite test and how it will be carried out.
3. The carer should wash her hands and the child's hands.
4. The carer should sit comfortably with the child on her lap and either offer the RUTF from the packet or put a small amount on her finger and gives it to the child.
5. The carer should offer the child the RUTF gently, encouraging the child all the time. If the child refuses then the carer should continue to quietly encourage the child and take time with the test. The test usually takes a short time but may take up to one hour. The child **must not** be forced to take the RUTF.
6. The child needs to be offered plenty of safe water to drink from a cup as he/she is taking the RUTF.

The test can be done with a table spoon (if the size of the sachet is not practical). Take the amount of one spoon and put it in a plate or cup, and let the child eat it with the fingers. When the child has completed one spoon, add a second one – until he/she does not eat any more. Count the number of spoons to see the result of the test.

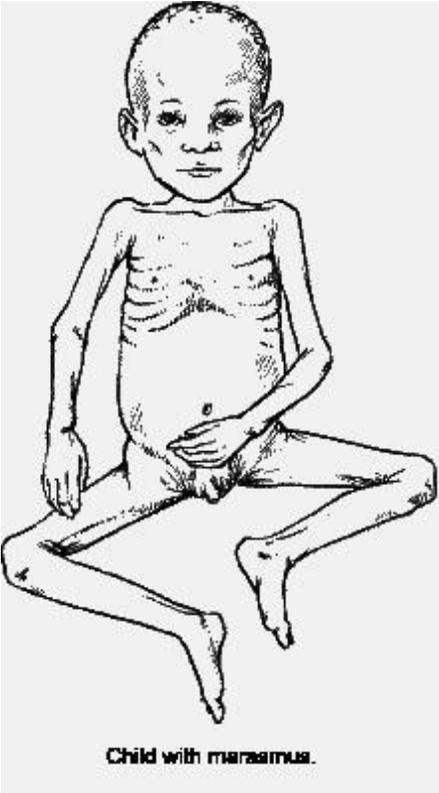
This is the **minimum** amount that malnourished patients should take to pass the appetite test. If the child does not take **at least** the amount in the table, in sachets or in spoons, then he/she should be sent to the nearest SC.

RUTF (Plumpy'nut)		
Body weight (Kg)	Sachets	Spoons
Less than 4 kg	1/8 th	1/3 rd
4 – 6.9	1/4 th	2/3 rd
7 – 9.9	1/3 rd	1
10 – 14.9	1/2 th	1 1/2 th
15 – 29	3/4 th	2
Over 30 kg	1	3

If you think that the child did not pass the test because he/she was frightened or didn't like the product, try repeating it in a calmer environment. This test can be done with other products other than Plumpy'nut, following the amounts in spoons.

FIELD CARD 4: Clinical presentation of SAM

These are the main clinical characteristics of Marasmus and Kwashiorkor, the two manifestations of SAM.

Marasmus	Kwashiorkor
 <p>Child with marasmus.</p>	
<ul style="list-style-type: none">• Severe weight loss and wasting• Ribs prominent• Limbs emaciated• Muscle wasting• May have good appetite• With correct treatment, good prognosis	<ul style="list-style-type: none">• Bilateral pitting oedema• Loss of appetite• Brittle thinning hair• Hair colour change• Apathetic and irritable• Face may seem swollen• High risk of death

FIELD CARD 5: SAM History and examination

The usual signs and symptoms that are recorded on these patients are the following (see OTP card and SC card):

History: Ask the carer if the child presented any of the following in the last few days:

Diarrhoea	(Yes, No)	If yes, ask for more details
Stools per day	(1-3, 4-5, >5)	Diarrhoea is only when there are more than 3 watery stools/day
Vomiting	(Yes, No)	If yes, ask for more details
Cough	(Yes, No)	If yes, ask for more details. Consider respiratory distress
Appetite	(Good, Poor, None)	Ask the mother. Do not report the appetite test here!
If oedema, how long swollen	(number of days)	Longer duration of oedema implies severity
Breastfeeding	(Yes, No)	If the child is less than 1 year and not breastfeed, ask why, and give counseling

Physical examination: Explore the patient for any of the following:

Respirations per minute	(<30, 30-39, 40-49, 50-59, 60+)	Respiratory distress if: >60 (children <2mths); >50 (2 – 12 mths); >40 (1-5 yrs); >30 (over 5 yrs).
Chest retractions	(Yes, No)	This is always a sign of respiratory distress
Temperature	(number in °C)	Remember, SAM children may not have fever
Conjunctiva/palms	(Normal, Pale)	If pale, consider anaemia. Check chapter 8 to decide if it is real anaemia or hemodilution
Eyes	(Normal, Sunken, Discharge)	If eyes sunken, consider dehydration. Check chapter 8. If discharge, treat for conjunctivitis
Dehydration	(None, Moderate, Severe)	Always check Chapter 8 for diagnosis of dehydration. Malnutrition and dehydration are very similar and can be confused!
Ears	(Normal, Discharge)	If discharge, treat for otitis
Mouth	(Normal, Sores, Candida)	If sores or candida, treat as in FC 18
Lymph nodes	(None, Neck, Axilla, Groin)	If lymph nodes are swollen consider local infections
Disability	(Yes, No)	Consider what special help the child may need.
Skin changes	(None, Scabies, Peeling, Ulcers/Abscesses)	Treat according to findings, check FC 18
Hands/feet	(Normal, Cold)	If cold, consider dehydration and septic shock. Check chapter 8.

FIELD CARD 6: Pathophysiology of Severe Acute Malnutrition

This section has been specifically written for doctors attending patients with complicated SAM at the Stabilisation Centre or in the Paediatric Ward of a Hospital. It is important to understand as the characteristics of children with SAM are so different from other sick children.

Severe acute malnutrition can result in profound metabolic, physiological and anatomical changes. Virtually all physiological processes are altered due to severe acute malnutrition. Every organ and system is involved in reductive adaptation.

Reductive adaptation is the physiological response of the body to undernutrition i.e. systems slowing down to survive on limited macro and micro-nutrient intake. The system *reduces* activity, to *adapt* to the lack of nutrients and energy.

Reductive adaptation results in profound **physiological and metabolic changes**, some of which can be observed by the clinician and others which are not. The initial reductions will not alter normal functioning of the body BUT will affect its capacity to adapt to any other new situation (an infection, cold, or even to an IV infusion or excessive oral liquids). For example, the circulatory system may still be working correctly, with no signs or symptoms of presence of a problem... BUT it may not be able to adapt to a sudden increase of circulatory volume (after an infusion or a transfusion, for example). Since the adaptive mechanisms to increased volume cannot be mobilised, a simple infusion may result in cardiac overload and lethal pulmonary oedema. Similar situations occur with: digestive system, and the amount of proteins and other nutrients that can be absorbed in one meal; immune system, and its ability to respond to infection; the liver's ability to detoxify; and the kidney's ability to excrete, etc.

In addition, some of the changes mentioned result in unusual signs and symptoms. For example, a child with severe acute malnutrition may not be able to present fever in face of an infection. In fact, very often the infection will present with hypothermia! You can see other examples in the following page.

These are the reasons why it is so important to follow standard protocols for the treatment of severe acute malnutrition and its complications (like this one). The changes in metabolic and physiological responses in the malnourished child are so important that therapeutic decisions which are lifesaving in a well nourished child can be potentially deadly in a malnourished child.

The following page presents some of the main alterations in each of the body systems. Knowing them can help understand the evolution and therapy of severe acute malnutrition and its complications.

Cardiovascular system:	Gastro-intestinal system
<ul style="list-style-type: none"> • Cardiac output and stroke volume are reduced. • Infusion of saline may cause an increase in venous pressure. • Any increase in blood volume can easily produce acute heart failure. • Any decrease will further compromise tissue perfusion. • Blood pressure is low. • Renal perfusion and circulation time are reduced. • Plasma volume is usually normal and red cell volume is reduced. 	<ul style="list-style-type: none"> • Production of gastric acid is reduced. • Intestinal motility is reduced. • Pancreas is atrophied and production of digestive enzymes is reduced. • Small intestinal mucosa is atrophied; secretion of digestive enzymes is reduced. • Absorption of nutrients is reduced.
Liver function:	Genitourinary system
<ul style="list-style-type: none"> • Synthesis of all proteins is reduced. • Abnormal metabolites of amino acids are produced. • Capacity of liver to take up, metabolize and excrete toxins is severely reduced. • Energy production from galactose and fructose is much slower than normal. • Gluconeogenesis is reduced, with high risk of hypoglycemia during infection. • Bile secretion is reduced. 	<ul style="list-style-type: none"> • Glomerular filtration is reduced. • Capacity of kidney to excrete excess acid or a water load is greatly reduced. • Urinary phosphate output is low. • Sodium excretion is reduced. • Urinary tract infection is common.
Circulatory system	Endocrine system
<ul style="list-style-type: none"> • Basic metabolic rate is reduced by about 30%. • Energy expenditure due to activity is very low. • Both heat generation and heat loss are impaired. • The child becomes hypothermic in a cold environment and hyperthermic in a hot environment. 	<ul style="list-style-type: none"> • Insulin levels are reduced and the child has glucose intolerance. • Insulin growth factor 1 (IGF-1) levels are reduced. • Growth hormone levels are increased. • Cortisol levels are usually increased.
Immune system	
<ul style="list-style-type: none"> • All aspects of immunity are diminished. • Lymph glands, tonsils and thymus are atrophied • Ig-A levels in secretions are reduced. • Complement components are low. • Phagocytes do not kill ingested bacteria efficiently. • Tissue damage does not result in inflammation or migration of white cells to the affected area. • Acute phase immune response is diminished and cell-mediated immunity is severely depressed. • Typical signs of infection, such as an increased white cell count and fever, are frequently absent. • Hypoglycaemia and hypothermia are signs of severe infection usually associated with septic shock 	

FIELD CARD 7: Admission criteria for children 6 to 59 months

This table summarizes the criteria for admission for SC, OTP and TSFP.

Admission criteria. Children 6 to 59 months.				
		SC	OTP	TSFP
		SAM with complications	SAM no-complications	MAM
New admissions	W/H (Z-score)	< - 3	< - 3	< - 2
	MUAC (mm)	< 115	< 115	< 125
	Oedema	Bilateral oedema +++ Marasmus with any oedema	No oedema, or Bilateral oedema + , ++	No oedema
	Appetite	NO APPETITE	Pass appetite test	N/A
	Complications	Uncontrollable vomiting	No complications	No complications
		Fever > 39 °C		
		Hypothermia < 35 °C		
		Lower respiratory tract infection		
		Severe anaemia		
		Extensive skin infection		
Very weak, apathetic unconscious, convulsions				
Other admissions	Upgrades		Transfer back from SC after recovery	OTP Follow up: Child referred from OTP after recovery
	Relapse		Previously discharged as cured but again SAM	Previously discharged as cured but again MAM
	Return		Return after defaulting	Return after defaulting
	Other		Second twin Mother refuses SC	Second twin

See FC-1 and FC-2 for calculation of W/H, MUAC and oedema.

See FC-3 for implementation of appetite test. See FC-8 for how to identify complicated SAM.

The criteria for admission of children less than 6 months and adults can be found in Chapter 8.

FIELD CARD 8: Complicated and non-complicated malnutrition

A child with severe acute malnutrition will be treated in the OTP if he/she has good appetite and no complications, but will be admitted to the SC if there are complications or appetite is poor.

It is important to be familiar with the complications of malnutrition in order to identify them and refer the child when necessary. Ask your supervisor for advice if you are not sure that you can identify each of these complications.

On admission:

Severe complication	How to identify it
Oedema +++	Bilateral pitting oedema. See FC-1
Anorexia (lack of appetite)	Perform appetite test
Intractable (uncontrolled) vomiting	The child presents sudden vomiting, and he cannot retain it (ex. He can't wait to do it outside)
Fever > 39 °C or hypothermia < 35 °C	Use thermometer and measure for at least 1 minute.
Lower respiratory tract infection	Always count respirations for at least 1 minute. 60 resp/min for under 2 months 50 resp/min for 2 – 12 months 40 resp/min for 1 – 5 years OR any chest in-drawing.
Severe anaemia	Check palms are very pale– compare with a healthy child. If unclear, check conjunctiva or nail beds.
Extensive skin infection	Examine the child without clothes for skin infection or lesions and ask the mother for any other severe infection.
Very weak, apathetic, unconscious, convulsions	Observe child's attitude. Ask the mother about convulsions (fitting – absences).

On children that are already under treatment:

Hydration status	Recent history of diarrhoea or vomiting, and RECENT appearance of clinical signs of dehydration reported by the carer
Failure to gain weight	Weight loss for 3 consecutive visits Static weight for 5 consecutive visits
Increase or new oedema	Increase of oedema, or new oedema in a child that did not have it on admission.

This table is used for deciding who needs to be sent to SC, but as well to identify failure to respond to treatment. It should be present in ALL consultations, and each item in the list should ALWAYS be checked.

FIELD CARD 9: Admission criteria for other age groups:

This table summarizes the criteria for admission for MAM (STFP) and SAM (OTP, and SC if severe complications).

To decide if the patient needs to be transferred to the SC, use the same criteria as for children (FC8).

ALL infants with SAM should be treated in the SC. These children cannot take RUTF (see Chapter 7).

	Pregnant women	Lactating women
MUAC (mm)	< 230	< 230
	In second and third trimester	With infants < 6 months

4 – Supplementary Feeding: Management of MAM

Overview

The main objective of Supplementary Feeding Centres (SFPs) is to treat Moderate Acute Malnutrition (MAM) and prevent individuals with MAM from becoming severely malnourished (SAM).

Blanket Supplementary Feeding: Blanket supplementary feeding should be targeted at groups with the highest risk of being acutely malnourished. In Jordan, this group is between 6 and 24 months of age. They are also the critical groups to prevent chronic malnutrition.

Blanket Supplementary Feeding in Jordan only applies to Camp settings.

- Blanket feeding should be implemented in an area near TFC/SC/OTP or a referral system for treatment of severe acute malnutrition exists.
- Blanket Feeding should be a program for a specific time period with delineated entry and exit criteria usually not more than 4 months. An extension of Blanket Feeding should be justified by a specific technical review of the situation.

Targeted SFP: Targeted feeding is addressed only to those that present MAM. In Jordan, these are children 6 to 59 months of age and pregnant and lactating women. Targeted feeding is offered as well to children discharged from OTP or SC, after recovering from SAM.

Targeted feeding can be implemented weekly, bi-weekly or even less often. Patients are followed up at each visit, and discharged when they recover from malnutrition.

SFPs are related to other services, as follows:

Community mobilisation: Patients with MAM are identified at the community level and referred to SFP. Patients that are already following treatment in the SFP and that are absent for one or two weeks can be followed up at their homes by the community mobilisation teams, to ensure that they return to the programme before they become defaulters (in the third week of absence).

OTP/SC: Patients that do not recover or deteriorate while in treatment in SFP are referred to OTP for evaluation and treatment. Patients screened at the SFP that present SAM are sent directly to the OTP. When a patient recovers in OTP/SC he is sent to SFP in order to consolidate his nutritional status and prevent relapses.

Take home rations:

The ideal dry ration supplementary food provides, per day, 1000 to 1200Kcal; 35g to 45g of protein; and fat supplying 30% of required energy.

In Jordan, Supercereal Plus will be used for SFP programmes. The following rations are used:

Target Group	Daily Ration	Commodity
PLW Treatment	250 grams	SuperCereal Plus
CU5 Treatment	200 grams	SuperCereal Plus

No matter what product is given, ALWAYS recommended that the child breast-feeds before taking it, if the child is still breastfeeding.

Admission criteria to targeted SFP

See Chapter 3 for information on how to diagnose Severe Acute Malnutrition (check Field Cards 1 to 9).

Admission criteria to targeted SFP are in yellow (far right column) of this table (FC -7). The criteria for other services are presented as well in order to properly refer the children presenting with SAM.

Admission criteria. Children 6 to 59 months.				
		SC	OTP	TSFP
		SAM with complications	SAM no-complications	MAM
New admissions	W/H (Z-score)	< - 3	< - 3	< - 2
	MUAC (mm)	< 115	< 115	< 125
	Oedema	Bilateral oedema +++ Marasmus with any oedema	No oedema, or Bilateral oedema + , ++	No oedema
	Appetite	NO APPETITE	Pass appetite test	N/A
	Complications	Uncontrollable vomiting	No complications	No complications
		Fever > 39 °C		
		Hypothermia < 35 °C		
		Lower respiratory tract infection		
		Severe anaemia		
Extensive skin infection				
Very weak, apathetic unconscious, convulsions				

Other admissions	Upgrades		Transfer back from SC after recovery	OTP Follow up: Child referred from OTP after recovery
	Relapse		Previously discharged as cured but again SAM	Previously discharged as cured but again MAM
	Return		Return after defaulting	Return after defaulting
	Other		Second twin Mother refuses SC	Second twin

The patient is discharged cured from SFP when W/H and MUAC are above the admission criteria for two consecutive visits. See FC 13 for more details on discharge criteria.

Non-food items

Non- food items such as soap can also be distributed depending on availability and the needs of the beneficiaries. Most non- food items are distributed on admission, except for consumable items such soaps that can be provided to beneficiary at each visit.

Storage and handling of food items

Food items must be stored and handled following strict guidelines.

- Record any food item entering or leaving the store with stock control cards and report monthly,
- Maintain store security (lock, guards).
- Check for damaged or expired food items and separate them.

FIELD CARD 10: How to prepare Super Cereal *Plus* at home



Mix 4 table spoons Super Cereal *Plus*



With 2 small cups of water (250 ml)

- Ensure that the water being used for cooking is safe before starting to cook
- Wash your hands with soap before you start to prepare the porridge.
- Mix Super Cereal *Plus* with part of the cold water to make a paste
- Add the rest of the water and bring to boil for no longer than 10 minutes
- Serve on a clean plate or bowl
- Wash the child's face and hands with water and soap before they eat
- Use a separate plate for the child

Storage of CSB at home:

- Keep the open Super Cereal *Plus* inside the plastic bag with zip you have received
- Keep Super Cereal *Plus* covered to prevent flies and other dirt getting into it
- Keep Super Cereal *Plus* in the coolest part of the house

FIELD CARD 11: Routine medication in SFP

In the SFP, a nurse should check medical conditions, immunization status, anaemia and common infections then record the information on the beneficiary card.

All beneficiaries must receive systematic treatment to cure any current infection, as well as to minimize chance of catching others. Record all treatment in the register and beneficiary card.

For details on usage of each of the drugs in this list, refer to FC 17 in the OTP chapter.

Systematic Medicine for Moderate Malnutrition in SFP

Name of Product	When	Age / Weight	Prescription	Dose
VITAMIN A*	AT ADMISSION	6 months to < 1 year	100 000 IU	Single dose on admission
		≥ 1 year	200 000 IU	
		DO NOT GIVE TO CHILDREN WITH OEDEMA		
MEASLES VACCINATION	AT ADMISSION	From 9 months	<i>(standard)</i>	Single dose on admission
MEBENDAZOLE	AT ADMISSION	< 1 year	DO NOT GIVE	NONE
		12 - 23 months	250 mg	Single dose on second visit
		≥ 2 years	500 mg	
IRON FOLATE	Children with Anaemia should be treated according to WHO and IMCI guidelines. Children with severe Anaemia should be referred to a hospital for treatment.			

* VITAMIN A: do not give if child has already received within last 4 months or health campaigns have ensured good coverage

Special medication:

Treatment of sick moderately malnourished patients should be in line with the WHO/IMCI protocols.

FIELD CARD 12: Surveillance / Follow up of patients in SFP

Patients may attend the SFP every week, every other week, or monthly. Check with your supervisor for the modality implemented in your centre.

Follow up at the Targeted SFP:

At each visit:

- Measurement of oedema.
- Measurement of weight.
- Measurement of MUAC.
- Medical checks and treatment if necessary.
- Give routine medicines if necessary.
- Assess evolution of the patient: organise home visit or refer if no evolution.
- Distribute food items.
- Update ration card and SFP card.
- Give health education.

Monthly:

- Measure height/length.
- Recalculate W/H.

When necessary:

- Refer to medical facility for health problems that cannot be treated at the SFP.

FIELD CARD 13: Discharge criteria from SFP

There are several ways of discharging a beneficiary from a targeted SFP program, these are;

DISCHARGE CRITERIA for SFP	
Cured	<u>W/H admission:</u> Minimum 2 months treatment W/H > -2 Z-score for 2 consecutive weeks <u>MUAC admission:</u> Minimum 2 months treatment MUAC > 125 mm or 2 consecutive visits
Default	Absent for 3 consecutive visits
Death	Died during time registered in SFP
Non-cured	Has not reached target weight within 4 months
Transfer to OTP/SC	Condition has deteriorated and requires transfer to OTP or SC

A child that is sent to a different SFP to continue treatment is not discharged from the programme. He/she should take the card with him/her.

These children need to be taken into account in the statistics in order to calculate the number of children in charge in the centre at the end of the month (to calculate food needs for the centre).

FIELD CARD 14: Failure to respond to treatment in SFP

A child that does not gain weight or develops complications is defined as a failure to respond to treatment. A special procedure should be implemented to identify these children and provide appropriate action (improvement of treatment follow up or transfer). This should be always done before the child reaches the 4 months of treatment and is discharged as “non-cured”.

Criteria for failure to respond to treatment

- Failure to reach discharge criteria after 4 months in the program
- No weight gain after 6 weeks in the program
- Weight loss over 4 weeks in the program
- Weight loss exceeding 5% of body weight at any time.

The reasons for failure to respond can be classified as:

- Problems with the application of the protocol (when many children are not recovering)
- Nutritional deficiencies that are not being corrected by the diet supplied in the SFP
- Home/ Social circumstances of the patient (ex. Sharing or selling of the food)
- An underlying physical condition/ illness (to be examined by an experienced nurse)
- other causes.

Transfer to OTP/SC:

All children that meet the criteria of Severe Acute Malnutrition should be transferred to the OTP or SC depending on their condition. Additionally, those that present a failure to respond to treatment that cannot be corrected in the SFP (after having checked through the list above and tried all options) should also be transferred for further investigation.

5 – Outpatient Therapeutic Programme (OTP): Management of Uncomplicated SAM

Overview

Patients with severe acute malnutrition (SAM) present with appetite and no medical complications can be treated as outpatients, through OTPs. The patient attends the OTP once per week, or once every two weeks, to assess treatment evolution and to receive therapeutic foods and drugs until the next visit. The carer provides the treatment for the patient every day at home, following indications from OTP staff.

The objective of outpatient management of severe acute malnutrition is to increase access to treatment, establishing the appropriate facilities within or closer to more communities. A system of community mobilisation must always be organised in order to screen, monitor and follow-up malnourished children in the community. A good community mobilization programme will help identify children at an early stage in their progression towards malnutrition and will reduce the number requiring transfer to SC.

The intervention in the OTP is not limited to distributing RUTF. Other parts are as important, including the education to the carer on how to follow the treatment, the follow up, and the identification of medical conditions and their treatment.

Working in a OTP is not reduced either to visiting patients. The duties of the staff at the OTP include monitoring the number of admissions and their evolution, keeping and sending statistics, keeping the stores of foods and drugs, and preparing requests of foods and drugs, etc.

Integrated OTP sites:

The OTP should ideally be organised as part of MCH activities in a Health Centre. The team of the OTP may be fixed (they always work in the same centre) or mobile.

Weekly or Bi-weekly visits:

In most centres the child is seen weekly, while in others they are seen every other week. Weekly centres have the advantage that the child's follow up is better.

Where visits are biweekly this allows a single mobile team to cover a wider area and reduces the amount of displacement for mothers and children. In general, both systems can obtain good recovery rates in a similar amount of time.

OTP centres do not operate in isolation in the management of acute malnutrition. They have relationships with the other services, as follows:

- **Targeted SFP (SFP):**
 - The OTP receives patients whose nutrition status deteriorates in SFP.
 - Children that recover in OTP are sent to the TSFP for 3 months, to consolidate nutrition status and prevent relapses.

- **SC:**
 - The OTP can refer to the SC those patients that present on admission with anorexia or medical complications, as well as those that present them after having started treatment and those that present failure to respond to treatment in the OTP.

- Once the children treated in the SC regain appetite and their medical complications are under control, the OTP receives them to complete the treatment in the community.
- **Community mobilisation:**
 - As all programmes, the key for success consists of a good community mobilisation programme that will ensure early diagnosis of cases before they develop the complications that would require treatment at the SC, and to increase coverage of the programme.
 - Community mobilisation activities help to identify and refer patients to the OTP for assessment of their status and the need of treatment (early case finding).
 - The patients that do not evolve correctly in the OTP, or who default from treatment are visited at their homes by the community mobilisation teams. The first visit is done after 2 visits of absence, without waiting for the child to be declared defaulter (which is done after 3 absences)

Admission Criteria

See Chapter 3 for information on how to diagnose Severe Acute Malnutrition (check Field Cards 1 to 9). In particular, check Field Card 7 for the criteria of admission for OTP.

Criteria of admission for OTP and SC:

		SC	OTP
		SAM with complications	SAM no-complications
New admissions	W/H (Z-score)	< - 3	< - 3
	MUAC (mm)	< 115	< 115
	Oedema	Bilateral oedema +++ Marasmus with any oedema	No oedema, or Bilateral oedema + , ++
	Appetite	NO APPETITE	Pass appetite test
	Complications	Uncontrollable vomiting	No complications
		Fever > 39 °C	
		Hypothermia < 35 °C	
		Lower respiratory tract infection	
Severe anaemia			
Extensive skin infection			
Other admissions	Upgrades		Transfer back from SC after recovery
	Relapse		Previously discharged as cured but again SAM
	Return		Return after defaulting
	Other		Second twin

Nutrition Support: Diet and Frequency

In Jordan, nutrition rehabilitation in OTP will be done with take home Ready-to-Use Therapeutic Food (RUTF). This is a specialized food developed specifically for the recovery of severe malnutrition at home. It is an energy-dense, mineral/vitamin-enriched product that is equivalent to F100 with added iron. It contains the required energy and micronutrients to meet the nutritional needs of the severely malnourished child. RUTF is an oil-based, ready-to-use product that has a low risk of contamination.

The RUTF most commonly used is Plumpy'nut. This product is presented as a peanut paste in metallic sachets that contain 500 kcal (92 g). The child can easily eat the product directly from the sachet (after tearing one corner). The child can eat it with the fingers only if enough hygiene has been ensured (i.e. hands and face washing).

It is of radical importance to provide the correct amounts of RUTF and ensure that the carer understands how and when it has to be given to the child. During monitoring visits medical staff will check that the RUTF is being taken correctly, and will explore with the mother any potential problems with following the recommendations at home.

Information on RUTF for health professionals.

- RUTF (Plumpy'nut) is made from groundnuts, oil, sugar, milk powder and vitamin and minerals. It requires no further cooking or preparation and can be eaten directly from the packet.
- It provides approximately 530Kcal per 100g. The ration given to a severely malnourished child is based on the intake requirement of between 150-200 kcal/kg/day.
- Due to its low moisture (water) content it is safe for home use – a packet can be opened and folded over and reused – the contents do not have to be finished all at one time.
- RUTF should always be given with safe drinking water, to improve absorption.
- The amount prescribed to a child is based on their weight and should be adjusted at subsequent OTP visits when there is weight gain (see FC 15).
- For the first week encourage the child to take mainly RUTF, afterwards other family foods can be introduced as long as the entire RUTF ration per day has been consumed.
- Breastfeeding should be continued during treatment, and given always before the RUTF, to avoid filling the child with RUTF so that he/she will not be hungry for breastfeeding.
- The carer should be advised to provide clean water with the RUTF.
- RUTF should never be used in children below 6 months (i.e. they can't suckle well, which may produce choking, and their digestive system cannot process RUTF correctly).

Preparation of RUTF

RUTF is pre-cooked thus does not require preparation. It can be eaten directly from the container or packet.

FIELD CARD 15: Amounts of RUTF to distribute

The child is usually given a week or a two week supply of RUTF at each visit to the OTP. The carer is informed on how much to give daily and how to do it (see FC 16). Learn carefully the instructions to give to the mother, and repeat them at each occasion. In particular, remember the importance of recommending to continue breastfeeding if the mother was doing so.

This card presents the amounts of RTUF to give, depending on the body weight of the child.

Plumpy'nut dosage			
(average of 200 kcal/kg/day)			
Weight of the child (kg)	Packets per day	Packets per 1 week	Packets per 2 weeks
3.5 – 3.9	1.5	11	22
4.0 – 5.4	2	14	28
5.5 – 6.9	2.5	18	36
7.0 – 8.4	3	21	42
8.5 – 9.4	3.5	25	50
9.5 – 10.4	4	28	56
10.5 – 11.9	4.5	32	64
>= 12	5	35	70

This table refers specifically to Plumpy'nut.

FIELD CARD 16: Taking RUTF at home - messages for the carer.

When delivering these messages, replace the name RUTF for the local name of the product you use.

You should know these messages by heart.

Always check this Field Card to be sure that you didn't forget anything.

- **Breastfeeding is best – and first.** For infants and young children, continue to put the child to the breast regularly.
- **RUTF should not be shared.** It is a food and a medicine for the malnourished child only.
- **Give small amounts and often.** Sick children often do not like to eat. Give small regular meals of RUTF and encourage the child to eat often (if possible 8 meals a day). RUTF can be left for later if not finished, and be eaten during the course of the day.
- **Give RUTF before other foods** (except for breast-milk). RUTF is the only food the child needs in order to recover. Other foods should only be offered after RUTF.
- **Offer safe water.** Always offer plenty of clean water to drink while he or she is eating the RUTF.
- **Wash before eating.** Use soap for children's hands and face before feeding if possible.
- **Keep food clean** and covered.
- **Give RUTF even if child is ill or has diarrhoea.** When taking RUTF, the stools of the child may change. This is normal. When a child has diarrhoea, never stop feeding. Give extra food and extra clean water and breast milk.
- **Come to the OTP.** Continue coming to the OTP even if the child has problems, or if he/she starts participating in another programme.

Repeat the same messages at each visit, and ask the mother to repeat them as well, in order to check that she has understood them. If the child is having problems gaining weight, you can use this list to ask the mother to explain to you how she used the RUTF at home. Check one point at a time and don't forget any of them.

In addition to these recommendations, it is important to train carers on how to feed their child with available local foods. Each programme and centre should know what the availability of local foods is, and how they can be used to improve the child's diet – and transmit this information to the carers.

FIELD CARD 17: Routine Medication for OTP and SC admissions

The next page presents a summary of the routine medication to be given to ALL children admitted directly into OTP, even if they do not present clinical signs of infection. Children transferred from one centre to another while undergoing treatment have already received their routine medications, and do not need to receive them again.

Medications are given as a single-dose treatment so that the health worker can observe administration and avoid problems with compliance. The one exception is the first-line antibiotic (Amoxycillin): the first dose should be given in front of the health worker who explains to the carer how to continue treatment at home.

Vitamin A: Give ONLY to wasted patients. DO NOT give on admission to patients with oedema.

Check if the child has already received Vit. A during a vaccination campaign or a health day in the last 4 months. In this case, do not give Vit. A again, to avoid overdose.

Vit. A can be given as well at the 4th week of treatment, including those that have been transferred from inpatient care and those that did not receive it on admission because they had oedema.

Antibiotic: Most severely malnourished children have several infections, but they cannot be diagnosed due to diminished inflammatory response (which hides the signs of infection). Treat all children admitted to the OTP.

First line choice is Amoxycillin for 7 days, as it is effective against small bowel overgrowth, usually associated with malnutrition. See below for dosages based on child's weight.

If a child is receiving Cotrimoxazole prophylaxis due to a chronic disease, this should continue at the same dose throughout the duration of treatment. You still need to give the Amoxycillin to these children.

Measles vaccination: Standard treatment includes measles vaccination to all children admitted to OTP.

Measles vaccination is provided in MoH health centres. Send each caretaker with a child admitted to OTP and SFP to receive measles vaccines at the nearest MoH health centre.

De-worming: Albendazole is the only routine medicine that is given only on the second visit of the child and only for children above 1 year. In case of doubt on age, give only to children who can walk. In some programmes, Albendazole can be replaced with Mebendazole (but check dosages: they are different).

Iron and Folic Acid: Not to be given routinely, since there is enough in RUTF. Where anaemia is identified, treatment should begin after 14 days of care and NEVER before, following standard guidelines. For severe anaemia, refer to inpatient care.

Other nutrients: RUTF already contains all the other nutrients required to treat the malnourished child. Additional potassium, magnesium or zinc should not be given – even if they present diarrhoea! (as far as the child takes the RUTF, as an additional micronutrients may cause excesses).

ROUTINE MEDICINES FOR SAM IN OTP and SC

Systematic Medicine for Severe Acute Malnutrition in OTP

Name of Product	When	Age / Weight	Prescription	Dose
VITAMIN A*	AT DISCHARGE	6 months to < 1 year	100 000 IU	Single dose on discharge
		≥ 1 year	200 000 IU	
DO NOT GIVE TO CHILDREN WITH OEDEMA				
AMOXICILLIN	AT ADMISSION	All beneficiaries	See protocol	3 times a day for 7 days
MEASLES VACCINATION	On week 4	From 6 months	(standard)	Single dose on week 4
MEBENDAZOLE	SECOND VISIT	< 1 year	DO NOT GIVE	NONE
		12 - 23 months	250 mg	Single dose on second visit
		≥ 2 years	500 mg	

* VITAMIN A: do not give if child has already received within last 4 months

AMOXYCILLIN DOSAGES

Dosage of Amoxicillin in OTP

Systematic treatment for all children except for children under 2 kg

Weight range	Amoxicillin (50 – 100 mg/kg/d) Dosage – three times per day
Kg	in mg
< 10 kg	125 mg * 3
10 – 30	250 mg * 3
> 30	500 mg * 3 (Give Tablets)

*3 implies that the dosage needs to be taken three times per day

NOTE: Always check label on bottles for dosages and dilution of syrups!

FIELD CARD 18: Specific Medication

Additional medication may be prescribed to treat other medical problems as required, following the indications in this table.

Name of Product	When to give	Prescription	Special Instructions
CHLORAMPHENICOL	To be given as second-line antibiotic for children not responding to amoxicillin, e.g. with continued fever that is not due to malaria	See separate protocol	Continue for 7 days
TETRACYCLINE EYE OINTMENT	For treatment of eye infection	Apply 3 times a day, morning, afternoon and at night before sleep	Wash hands before and after use; Wash eyes before application; Continue for 2 days after infection is gone
NYSTATIN		afternoon and at night before sleep	after use; Wash eyes before application;
PARACETAMOL	For children with fever over 39°C		
BENZYL BENZOATE	For treatment of scabies	Apply over whole body; Repeat without bathing on following day; Wash off 24 hours later	Continue for 2 days
WHITFIELDS	For treatment of ringworm or other fungal infections of the skin	Apply twice a day	after infection is gone
GENTIAN VIOLET	For treatment of minor abrasions or fungal infections of the skin	Apply on lesion	Can be repeated at next session and continued until condition resolved
FERROUS SULPHATE/ FOLATE	Treatment of anaemia identified according to Integrated Management of Childhood Illness (IMCI) guidelines	According to World Health Organization (WHO) protocols (INACG 1998 and Donnen et al. 1998)	To be given ONLY after 14 days in CMAM service

CHLORAMPHENICOL DOSAGES

Use for second line antibiotic for those children who have not responded to amoxicillin e.g. with continued fever that is not due to Malaria. Review need for inpatient care if not responding to first line antibiotic treatment.

Give 3 times a day for 7 days

SYRUP 125 mg / 5 ml	
Weight	Dose
2.0 - 6.0 kg	62.5 mg (2.5 ml) <i>three time per day</i>
6.0 - 10.0 kg	125 mg (5 ml) <i>three time per day</i>
10.0 - 30.0 kg	250 mg (10 ml) <i>three time per day</i>

CAPSULES 250 mg	
Weight	Dose
2.0 - 6.0 kg	give syrup
6.0 - 10.0 kg	125 mg (1/2 capsule) <i>three time per day</i>
10.0 - 30.0 kg	250 mg (1 capsule) <i>three time per day</i>

NOTE: Always check label on bottles for dosages and dilution of syrups as this can change between different manufacturers

PARACETAMOL DOSAGES

SYRUP – 125 mg/ 5 ml	
Weight of Child (kg)	Dose
< 4.0	25 mg (1 ml) single dose
4.0 – 7.9	60 mg (2.5 ml) single dose
8.0 – 14.9	120 mg (5 ml) single dose
> 15.0	240 mg (10 ml) single dose
TABLETS – 100 mg	
Weight of Child (kg)	Dose
< 4.0	25 mg (1/4 tablet) single dose
4.0 – 7.9	50 mg (1/2 tablet) single dose
8.0 – 14.9	100 mg (1 tablet) single dose
> 15.0	200 mg (2 tablets) single dose

Warning on Paracetamol -

Paracetamol can be dangerous in malnourished children because of poor liver function. It should be given only when there is high fever (39°C or higher). Combine always with natural methods to reduce fever (damp clothes, tepid sponge) and start as soon as possible antibiotics or antimalarials. Refer the child to SC if possible. Monitor the child carefully. Never give Paracetamol for use at home.

FIELD CARD 19: Surveillance / Follow up of patients in OTP

Patients attend the OTP each week or every other week.

The frequency of follow up of the main variables are:

At each visit:

- Measurement of oedema.
- Measurement of weight.
- Measurement of MUAC.
- Repeat appetite test in the second and third visits, and again later if the child is not gaining weight.
- Check of vital signs (temperature, respiratory rate, etc.)
- Medical check and history (stools, vomiting, etc. See FC 5).
- Assess evolution of the patient: organise home visit or refer if no evolution.
- Receives RUTF.
- Update of ration card and OTP card.
- Give health education.

Monthly:

- Measurement of height / length.
- Recalculate W/H.

When necessary:

- Measurement of height / length (if you suspect that the child has been substituted for a different child).
- An appetite test (unless it is done for every visit). Do a complete medical evaluation and consider transfer to Inpatient if the patient fails the appetite test and weight is not increasing. Consider a home visit if the child is not gaining weight but his appetite is normal (it could be the consequence of family sharing of RUTF).
- A complete medical examination, if the child presents a condition that requires further investigation. The objective will be: 1) to evaluate if the condition can be treated at the OTP, 2) to evaluate if the child needs transfer to the SC.

The best way not to forget any measurements is to follow the OTP card point by point, from the beginning to the end, at every visit.

FIELD CARD 20: Discharge Criteria from OTP

A child is discharged when he/she reaches the criteria to be declared cured (well nourished), or when the treatment is interrupted for other reasons.

DISCHARGE CRITERIA for OTP	
Cured	<ul style="list-style-type: none"> * W/H > -2 Z-score for two consecutive weeks * No bilateral pitting oedema for 2 consecutive visits * 15% weight gain (from admission weight when free of oedema) * Child clinically well and alert with sustained weight gain * Minimum 2 months treatment <p>Children are discharged to supplementary feeding.</p>
Default	Absent for 3 consecutive visits
Death	Died during time registered in OTP
Non-cured	Has not reached target weight within 3 months
Transfer to Stabilization Centre*	Condition has deteriorated and requires Stabilization Centre/hospital care

** this child is not discharged from the OTP; his card is kept at OTP but the transfer noted on the tallysheet*

In order to identify the patients that become defaulters or non-cured, you need to check the information in the register and the OTP card.

Most children who die while in OTP treatment, do so at home. As a consequence, they may appear in the statistics as “Defaulters”. If the defaulter tracing finds out that the child had died, you need to correct the reason for discharge in the OTP card and the register book, so that this will be taken into account when calculating statistics.

When the only criteria of admission is MUAC, some agencies impose a minimum of 2 months of treatment before discharge.

Children discharged from OTP should be sent to TSFP for consolidation of their nutrition status and to avoid relapse. When no TSFP is available, advise the mother to bring the child back to the OTP if his/her status deteriorates.

FIELD CARD 21: Failure to respond to OTP treatment. Definition.

Failure to respond to treatment necessitates either further investigation or transfer to SC.

See FC-8 for the full list of complications that represent **failure to respond to treatment** (the list is the same as for the criteria to be sent directly to SC, plus the addition of the following:

- Failure to gain any weight or weight loss during 3 consecutive weeks of treatment
- No improvement in clinical condition.
- Increase of oedema and/or no resolution of oedema by 3 weeks. Development of oedema in a child who previously did not have any.
- Child has not reached discharge criteria by month 3.
- Development of complicated SAM (Loss of appetite or development of complications in the list)

Do not wait until the end of the third month to take action. Failure to properly respond to treatment should be investigated and dealt with as soon as the child shows any sign of not progressing.

Recovery syndrome

As the immune and inflammatory systems recover, the child may present symptoms of infection or other pathology. This happens when the illness was asymptomatic, and the child only expresses symptoms after nutritional start of recovery. The child may present fever, increased respirations and increased pulse rate. The majority of these conditions can be diagnosed and treated at the OTP. Otherwise refer to Inpatient care. As a general rule, the rehabilitation syndrome presents accompanied with weight gain. It is, in fact, a sign of recovery – rather than a symptom of failure of treatment!

FIELD CARD 22: Failure to respond. Causes and actions.

Problems with the OTP:

Consider this issue when many children present failure to respond at the same time or when there is a low recovery rate.

- Inappropriate selection of patients to go directly to Outpatient care,
- Poor assessment of presence of appetite
- Inadequate instructions given to mother/carer.
- Wrong amounts of RUTF dispensed to children (not enough)
- Excessive time between distributions
- Poor follow up of evolution of patients – to address problems early enough -

Actions: Review all procedures of the OTP and organise a supervision visit. Reconsider protocols. Re-calibrate scales and measuring boards. Reassess knowledge of health staff and organise training.

Problems with the individual child:

Social problems:

- Sharing with the family (siblings, parents/carer,..).
- Child eating too much of family food instead of the RUTF.
- Sibling rivalry (other children taking the diet).
- Unwilling carer.
- Carer overwhelmed with other work and responsibilities.
- Important change in home circumstances.
- Administration of traditional medicine.

Actions: In depth interview with the carer to investigate possible causes.

If necessary, complete with a home visit.

Education at the centre and during the home visit.

Feed back to nurse on the possible cause of failure to respond.

Medical problems:

- Specific vitamin or mineral deficiency.
- Malabsorption of nutrients.
- Psychological trauma / Deficient mother-child bonding.
- Infections, especially: diarrhoea, dysentery, pneumonia, tuberculosis, urinary infection, otitis media, malaria, schistosomiasis / leishmaniasis, hepatitis / cirrhosis.

Actions: Complete medical history and detailed examination.

Treat possible causes.

Refer to Inpatient care. This will be necessary for most patients with medical failure to respond.

While investigating the causes for failure to respond, ask the carer to explain in detail how she gives the RUTF to the child at home, or ask her to do it in front of you. An appetite test may orient you to the type of problem: if the child who is not responding to treatment has appetite, it is more likely that the problem is social; if the child has no appetite, consider first medical causes. Always be polite and respectful of the carer's response.

FIELD CARD 23: Transfer to SC. Criteria and procedure.

A child presenting failure to respond to treatment, or any complication in Field Card – 8, should be transferred to the SC.

When transferring the child, always do the following:

- Write a transfer form (Chapter 12), with details of the evolution of the child, medication given and reason for transfer,
- Give the child sugared water, and
- Discuss with the carer how they are going to proceed to the SC – assess if it is realistic that they will arrive to the SC, taking into account the severity and urgency of the condition of the child. In some instances, the only option for you may be to arrange transport for the transfer.

Dehydration

Diagnosis of Dehydration with the Marasmic Patient

For the patient with marasmus, all the classical signs of dehydration are unreliable and should not be used to make the diagnosis of dehydration:

- Do NOT use the skin pinch test to diagnose dehydration in malnourished children. Marasmic skin often lies in folds and is inelastic, thus the “skin pinch” test is generally positive regardless of if the patient is hydrated or not.
- Do NOT assume that patients with marasmus who have sunken eyes are dehydrated. Marasmic eyes are normally sunken regardless of hydration status. In marasmus, the fat and lachrymal gland atrophy so that the eyes sink. In dehydration there is contraction of the venous plexus forcing blood out of the orbit so that the eyes sink.
- Do not make a definitive diagnosis of dehydration. If the child seems to be dehydrated, make a provisional diagnosis and observe the response to treatment before confirming the diagnosis.

The diagnosis is determined by the patient’s history rather than by examination.

There needs to be:

- A definite history of significant and recent fluid loss. Usually this is a watery diarrhoea (not just soft or mucus), frequent, and with a sudden onset within the past few hours or days.
- There should also be a history of a recent change in the child’s appearance.
- If the eyes are sunken, the carer must be able to report that the eyes have become sunken since the diarrhoea started.
- The child must not have any oedema.

Children with persistent or chronic diarrhoea (without an acute watery exacerbation) are not considered dehydrated.

Dehydration in the OTP

At the OTP, only GPs and well trained nurses will be able to differentiate true dehydration from marasmus. Those not trained, should not recommend SAM children for transfer just because they appear dehydrated. A full history and assessment should take place first.

If dehydration is confirmed and the child is conscious, start treating as in these guidelines: NEVER use ORS! If ReSoMal is not available, use normal safe drinking water (water is less dangerous for the malnourished child than ORS). The treatment may last for several hours, but it may work. Transfer the child as soon as possible.

If the child is unconscious, then transfer as an emergency. Mobilise local resources (transport, etc.) to get to the SC as fast as possible. Unfortunately, OTPs cannot be equipped with the material for the treatment of rehydration, due to the complexities of its treatment and the risks of complications of treatment that can only be addressed at the Hospital.

Septic (or Toxic) Shock for All Malnourished Patients

Septic shock is a serious medical condition. It is caused by decreased tissue perfusion and oxygen delivery as a result of infection and sepsis. It can cause multiple organ failure and death. Children, immunocompromised individuals, and the elderly are most susceptible as their immune systems cannot cope with infection as well as healthy adults do. The mortality rate from septic shock can be as high as 50%.

Septic shock presents with some of the signs of true dehydration and also of cardiogenic shock. The differential diagnosis is often very difficult. Children who appear very ill may have septic shock, cardiogenic shock, liver failure, poisoning with traditional medicines, acute viral infection or other severe conditions. All “very ill” children should not be automatically diagnosed as having septic shock; the true reason for the condition should be sought.

If septic shock develops after admission, treatment must be carefully reviewed to determine if the treatment is the cause of the clinical deterioration. Any unnecessary drugs should be stopped.

Diagnosis of Septic Shock

To diagnose septic shock, signs of hypovolaemic shock are present. There is a fast, weak pulse with all three of the following:

- Cold peripheries
- Disturbed consciousness
- Absence of signs of heart failure

Treatment of Septic Shock

All patients with signs of early or developed septic shock should immediately:

- Be given broad-spectrum antibiotics – therefore continue first-line antibiotic and add a second-line antibiotic.

Those patients need to be treated in Inpatient care (SC)!

9 – Community involvement in Management of Acute Malnutrition

Overview

Community involvement is a multi-functional approach that highly contributes to successful implementation of nutrition programmes in both emergency and development contexts. This means placing the affected population at the centre of decision making for how protection and assistance will be provided when setting up the response programme.

Community involvement and mobilisation is of radical importance, for the following reasons:

- The need to provide early diagnosis.
- The need to obtain maximum programme coverage, through identification of the children at their homes.
- The need to develop good relationships with community leaders and authorities, to ensure that the purpose and objectives of the programme are well understood, and to prevent potential misunderstandings or problems.
- The need to have good relationships with all partners and local leaders to ensure security and continuity of the programmes.

There is no easy way to do community mobilisation. Each area and organisation will require its own techniques and approaches. The following pages summarize a number of steps to be taken into account, which may be helpful.

In ALL CASES, it is fundamental that ALL PROGRAMMES take community mobilisation very seriously. Community mobilisation is a MAJOR part of the programme and not just an extra activity that is implemented “when time allows” or only through volunteers without proper supervision or training.

To have a successful programme, community members must understand the objectives and structure of the feeding programmes. In addition, the local community must be involved in the early stages of programme implementation to avoid common problems such as absenteeism, misuse of rations (like selling or sharing), mishandling of routine medications and defaulting.

Effective links between health facilities and the community are essential to ensure that malnourished children are appropriately identified, referred and followed up. Community providers are on the front line and are well placed to explore and address some of the reasons why children become malnourished.

Purpose of community mobilization is to:

- Promote understanding and ownership of the program
- Increase program coverage
- Strengthen active case finding, referral and follow up
- Understand reasons why people do not access services (barriers to access) and reasons for absence and default so that they can be addressed)
- Link prevention of malnutrition and treatment of malnutrition at the community level, so that while children are being effectively treated, the underlying causes can also be addressed.

It is important to directly engage the community from the outset. This can be done initially through meetings with community and religious leaders. Other key community members should also be included.

Mothers of young children should be included so that there is full representation of all those concerned with the health of young children.

- Engage in discussion with the community to talk about the problem of malnutrition, causes and possible solutions
- Discuss the program and how it works
- Agree on relevant groups, organizations, structures to be involved in the program. This may include the recruitment of volunteers to help with case finding and follow up
- Develop clear roles and responsibilities

The agency can decide to work with individual community outreach workers and/or with existing community based organisations (CBOs).

Individual outreach workers may require training and skills to assist with programme activities whereas the CBOs may need some bit of technical support and additional resources to implement programme. Both options need close monitoring in the initial stages of involvement. It is important that the rest of the community members understand the criteria used for selecting specific individuals or CBOs to avoid misunderstandings that can lead to conflicts.

Elements of partnership vary and depend on the type of nutrition interventions being implemented. When setting up feeding programmes that involve the community, the following factors should be taken into consideration;

Recruit and train individual community members – have some kind of an agreement between the individual and implementing agency. During recruitment it is very important that the community members understand their duties, programme objectives, target groups, and type of remuneration (if any) or motivational elements.

Identify additional resources needed to support participation e.g. incentives for community members.

Design an outreach system by mapping out areas where services are most needed and can be provided through collaboration. Allocate health workers, community workers and resources accordingly.

Establish links with CBOs and agree on the role of each partner, levels of collaboration, resources needed (who will provide what), time frame, entry and exit criteria of each partner and sign a memorandum of understanding to formalize the agreement.

Formulate health and nutrition educational messages that can be used for counselling target groups.

Mobilize the community members and involve them in actual programme activities. Mobilization is the process of bringing men and women together to discuss common problems and establishing community responses with the support of humanitarian workers.

Keep a continual dialogue with target population to build trust and confidence and to ensure active participation in planning, implementation and monitoring of service delivery.

Actual partnership in program implementation happens at two levels, at programme level and community level. In these two levels, the outreach workers team up with the technical staff to perform various activities:

At programme level-

- Assist in taking anthropometric measurement of beneficiaries
- Communicate or interpret education messages into local languages during community education

sessions.

At community level -

Community sensitization;

The technical staff with the help of the outreach workers will formulate appropriate messages and where possible translate to the local language e.g. define malnutrition and describe characteristics of a malnourished individual as perceived by community members.

Identify best channel to pass messages to local leaders and target group

Plan and have sessions with community leaders and announce schedule of trainings and programme activities to community members.

The outreach worker identifies barriers to the work and provides timely solutions, as well as enhances dialogue between the community and the implementing agency.

Case-finding

A team of outreach workers may actively be involved in screening children at community level in order to find the malnourished individuals and refer them to the most appropriate programme. If a child is found to be severely malnourished without any medical complications, then they should be referred to the nearest OTP site. If a pregnant or lactating mother or a child 6 -59 months is moderately malnourished, they should be referred to nearest SFP site. Sometimes, community sensitization alone may stimulate self-referrals by families and communities to selective feeding programme sites. Case finding is very essential to increase programme coverage and treat children before they develop life threatening complications.

Follow-up visits

Sometimes beneficiaries are absent or default from the programme. In such instances, the community outreach worker should follow-up the individual cases to investigate reasons for absence or defaulting and encourage return to programme. A follow-up can also be done for those individuals that do not respond to treatment; the outreach worker investigates the potential causes and provides information to the implementing agency for additional support and care. In short term emergencies, specific outreach workers can be hired to work together with the implementing agency staff. For longer term activities, trained community volunteers (supported through a health facility or with some incentives) can assist in follow-up activities.

Community sensitization is an on-going process. Community members, by attending meetings, can regularly voice their views and suggest alternative courses for action. The volunteers/outreach workers and other community workers maintain regular contact with the community to identify problems and work together to provide timely solutions. A regular means of maintaining contact with the community should be established as soon as the programme becomes operational. During design stage, information collected on appropriate channels, individuals and forums in which to conduct this dialogue can be useful to the process.

FIELD CARD 24: Active Screening of Acute Malnutrition

Active screening is a tool to rapidly estimate the general health and nutritional status of a child. It is part of the community mobilisation activities.

The objectives of active screening are:

- to identify all children in the community that have malnutrition, and
- to diagnose malnutrition before the child develop complications.

Good active screening should therefore lead to better coverage and to less children needing inpatient care at SC, which should translate in turn into better recovery rates and programme statistics.

Identify children to be screened (case finding):

Use the techniques presented in Chapter 9 (Community involvement) to organise activities.

There are many ways of organising case-finding. In general, it consists of sending volunteers/outreach workers to their communities in order to visit families door to door, or to gather all children in a central place (door to door is usually preferred to ensure that no child is missed) for screening.

Children identified as malnourished may be referred directly to the programme with a referral slip (SFP, OTP or SC), or be told to present themselves at the next distribution site (health clinic). The outreach workers and the communities should have a good understanding of the target groups for the different programmes, in order to reduce in appropriate referrals and rejections at the distribution site.

Screening method at the community:

- Measure child's MUAC
- Assess presence of bilateral oedema.
- Clinical status (wasting and weakness, particularly in children below 6 months)

Use criteria of admission as the threshold to decide if the child needs transferring.

W/H will be assessed at the centre, but the child may be admitted to the centre because of W/H, MUAC or bilateral oedema.

Follow up of activity:

Volunteers and/or outreach workers should meet regularly with programme staff (from the SFP or OTP) and provide a report of their activities (places visited, number of children screened, number of children referred, etc.). They should report as well, on their activities to sensitize community leaders, local organisations, etc.

This meeting can be used to help evaluate outreach activities, and make plans of areas to visit in the following weeks.

FIELD CARD 25: Home Visit Check-list

The following are some issues to focus on during a home visit. The questions selected depend on the child's individual circumstances.

Feeding

- Is the Super cereal Plus/RUTF eaten only by the sick child?
- Is food other than Super cereal Plus/RUTF given to the sick child? If yes, what food?
- Is Super cereal Plus/RUTF finished before other food is given? What about breastmilk?
- How is the child given the Super cereal Plus/RUTF? (eg. mixed with other food, with water)
- How much Super cereal Plus/RUTF does the child eat each day?
- How many times per day is the sick child given food/RUTF to eat?
- Does anyone encourage/help the sick child to eat?
- What does the parent/caregiver do if the sick child does not want to eat?
- Observe child eating one meal of Super cereal Plus/RUTF.

Caring

- Does the parent/caregiver feel that their child is improving? If not, why?
- Who cares for the sick child during the day?
- Is the sick child clean?
- Is anyone in the household sick or has recently died? How does this affect the caring of the child?
- Any other household circumstances that affect how the child is cared for?

Health

- What is the household's main source of water?
- Do they use soap in the household?
- Does the parent or caregiver and the sick child wash hands and face before feeding?
- Is Super cereal Plus/RUTF, other food and water covered and free from flies?
- Does the parent or caregiver know what causes diarrhoea?
- What action does the parent or caregiver take when the sick child suffers from diarrhoea? (Include any action involving foods, medicines, fluids)
- If any medicines have been prescribed, are they being given correctly?
- If there is a particular medical problem that has been identified by the outpatient care team, how is the child progressing? Is there a need for an extra clinic visit?
- Observation of diarrhoea or vomiting.

Food Security

- What is the most important source of food for the household?
- What is the most important source of income for the household?
- Is the family currently receiving General Food Rations? And if so, for how many people?

10 – Nutrition information, education and communication

One way of managing acute malnutrition is through addressing the improper behaviours and practices of community members that contribute to malnutrition. It is imperative to educate members of the community on causes of malnutrition and best practices to manage and prevent malnutrition at household level. Involvement of the community in designing and developing education materials is essential and contributes largely towards behaviour change. Distribution sites and demonstration sessions are good opportunities to deliver appropriate messages focusing on proper child care practices, household and personal hygiene, use of safe drinking water, hygienic preparation and protection of foods, and use of nutritious local ingredients for complementary feeding.

Nutrition **information** refers to knowledge, such as information about new foods that are being introduced in an emergency situation. Nutrition **education** refers to training or orientation for a particular purpose such as support for breastfeeding. Nutrition **communication** refers to the method by which information is imparted.

Steps for conducting effective community nutrition education sessions:

Step 1: At the community level, identify the problems affecting the target population. The problem is best identified through conducting a needs assessment.

Step 2: List down the problems and prioritize them. The most pressing problems should take up the first position and the least important ones should come last.

Step 3: Identify the target group. The target group is defined as that group that is most affected by the problems.

Step 4: Build consensus about the problem with the community. The involvement of the community in this step is crucial and will assist in providing relevant information for the next steps.

Step 5: Based on the problems agreed upon in step 4, select relevant nutrition topics e.g. if the problem is poor child care practices- select topics such as optimal breastfeeding and complementary feeding.

Step 6: Identify possible factors that may impede communicating the nutritional messages e.g. language barriers and beliefs, and seek for the most appropriate ways of addressing the identified barriers

Step 7: Assess and select appropriate communication channels such as demonstrations, songs, drama, poems, and counselling sessions

Step 8: Conduct the education session: Prepare educational materials, agree on appropriate dates, time and venue and inform the target group accordingly.

Step 9: After conducting the education sessions, inform individuals or target group of next sessions and evaluate your work. The educator must know what was useful, what channels were most effective, how was the message received by the audience? And adapt accordingly.

Step 10: Write a training report and submit to supervisor.

Counselling sessions

Carers and family members need to understand the need for proper care and nutritional support of malnourished children or individuals discharged from a nutrition program. The counsellor, in this case the nurse or nutrition educator, has the responsibility of giving appropriate information to the caregiver. Below is the process of conducting a counselling session. All counsellors must be adequately trained on the processes of conducting counselling sessions and ethical matters. The GATHER approach is currently being used by counsellors for conducting effective counselling sessions.

This involves:

- **G**reet the patient and offer them a seat, make introductions and assess their well being
- **A**sk their feeling about their nutritional status, symptoms, nutritional problems and concerns.
- **T**ell patient of different options that can be used to address the nutritional problems- communicate key messages
- **H**elp patient make informed choices and together develop an action plan / approaches to address the problem
- **E**xplain fully the choices and actions and possible barriers
- **R**eassure and give the **R**eturn date for the next visit

General guidance in counselling sessions

1. The individuals to be counselled include; acutely malnourished patients (especially if pregnant and lactating mothers), caregivers (parents or guardian) of children.
2. Counselling can be undertaken by nutritionists, nurses, clinicians, Community Health Workers.
3. Counselling can be conducted during actual management, discharge, and follow-up of malnourished individuals.
4. The kind of materials to be used will depend on problems identified and topics selected. In the absence of national guidelines, counsellors can use other available materials such as nutrition and health guidelines, integrated management of child hood illnesses, guidelines on IYCF, Nutrition.

Nutritional education topics

Nutrition counselling and education is crucial for management of moderate malnutrition and prevention of severe malnutrition, because knowledge on the causes of malnutrition enables a patient or carer to be able to control and prevent further deterioration in nutritional status.

It is also recommended that whenever such sessions are conducted, they should be considered as opportunities and as such should be well utilized in order to deliver key messages about the health of women and children.

Focus of such messages depends on context but often includes the following:

- proper child care practices
- household and personal hygiene
- use of safe drinking water
- hygienic preparation of food
- protection of foods,
- use of nutritious local ingredients for complementary feeding
- Utilization of ready-to-use food commodities.

Nutritional topics and key messages

Topic	Target audience	Key messages/ action points
Optimal breastfeeding	1. Breastfeeding women 2. Pregnant mothers in the 3 rd trimester	<ul style="list-style-type: none"> ❖ Timely initiation of BF (within 1 hr of delivery) and giving of colostrums ❖ Importance of continuing to breastfeed for at least 2 years ❖ Importance of ensuring proper hygiene in food preparation and feeding ❖ Give appropriate information to mothers to support exclusive and continued breastfeeding. ❖ Children 0-6 months should be exclusively breastfed: No feeds (including water) other than breast milk. ❖ Breastfeeding should be on demand (as long as the infant wants). ❖ Encourage breastfeeding during illness. If child is not able to breast feed, encourage expression of breast milk and feed by cup.
Optimal complementary feeding	Mothers with children 6 months and above	<ul style="list-style-type: none"> ❖ Encourage continued breastfeeding beyond 6 months together with appropriate complementary feeding. ❖ Explain body building, energy giving, and protective foods. Body building foods responsible for building and repairing our body (e.g. Meat, beans, milk eggs). ❖ Explain energy giving foods, they provide energy to our body to enable us to carry out daily activities like, working, thinking, running, playing etc (sorghum, maize, oil,). ❖ Explain protective foods that enable the body to protect against infection and fight diseases (e.g. Green vegetables, Mangoes, Carrots). ❖ Encourage increased fluid intake, including breastfeeding, day and night for children with diarrhoea or vomiting. ❖ Discourage withholding of feeds during illness and instead encourage intake of small frequent enriched feeds or give an extra meal above child 's usual daily feeds. ❖ Encourage mothers to bring all their children below 5 years old to the nearest health facility for regular monitoring as well as for vitamin A supplementation every 6 months.
Feeding of the sick and or malnourished children	Carers/mothers with sick children that are malnourished	<ul style="list-style-type: none"> ❖ If the child is still breastfeeding, encouraged mother to continue. ❖ The child at this stage requires: 1. High energy intake (150 -200 kcal/kg body weight) 2. Sufficient protein 4-5g/kg body weight/day 3. Micronutrients especially potassium, iron, zinc and vitamins ❖ The feeds must be easy to eat and digest. – ❖ To achieve high energy intakes: 1. Feed the child frequently, at least six times a day 2. Add oil, honey, margarine, butter, sugar 3. Use fat-rich foods like groundnuts, avocado, animal milk – ❖ To achieve high protein intakes: Use milk, or locally available staple mixed with legumes, meat or fish
Maternal nutrition	1. Pregnant and lactating mothers	<ul style="list-style-type: none"> ❖ Take the weight (in kg) of all pregnant women and record it on the maternal clinic card. ❖ Counsel mothers on appropriate diet for pregnant women using locally available foods. ❖ Encourage consumption of a balanced diet rich in vitamins and minerals. ❖ Counsel mothers on diet during lactation as well as consuming enough water (2L per day). Emphasize the importance of extra food while lactating using the list of locally affordable foods.

Vitamin A supplementation	1. Carers of children 6-59 months 2. Lactating mothers	<p>Children</p> <ul style="list-style-type: none"> ❖ All children aged 6 to 59 months need a vitamin A capsule every 6 months. ❖ Vitamin A supplementation is safe for children and protects them from diseases such as diarrhoea, acute respiratory infections and also reduces deaths. ❖ Children should be fed as often as possible with vitamin A rich foods (mangoes, green leafy vegetables, wild red and orange fruits, egg yolk, liver, milk, etc.) ❖ Children sick with measles, certain eye problems, severe diarrhoea or severe malnutrition should visit health centres because they may need additional Vitamin A according to the treatment schedule. <p>Mothers</p> <ul style="list-style-type: none"> ❖ Give mothers a dose of 200,000 IU of vitamin A if baby is 8 weeks old or less. ❖ Ensure that the capsule is swallowed on site. ❖ Encourage the mother to consume a balanced diet using locally available foods and a variety of foods rich in vitamin A such as liver, eggs, oranges, yellow sweet potatoes, pumpkins, dark green leafy vegetables. ❖ Record in register mother who have received high dose vitamin A supplementation. Also indicate in Child Card that mother has been supplemented with vitamin A.
Iron and folate	1. Carers of children 6-59 months 2. Pregnant and Lactating mothers	<p>Children</p> <ul style="list-style-type: none"> ❖ Give one dose at 6 mg/kg of iron daily for 14 days. <p>Mothers</p> <ul style="list-style-type: none"> ❖ Give all pregnant women a standard dose of 200mg iron (Feso4) tablets three times a day + 5 mg folate once daily OR offer multiple micronutrients ❖ Provide advice on food items and medicines that should not be taken together with iron supplements since they may inhibit absorption such as milk, antacids, tea, and coffee. ❖ Treat anaemia with treatment doses of iron for 3 months. ❖ Refer severe cases of anaemia to the nearest higher level of care if they are in the last month of pregnancy, have signs of respiratory distress or cardiac abnormalities such as oedema. ❖ Provide advice on a balanced diet and emphasize on consumption of iron rich foods such as liver, red meats, eggs, fish, whole-grain bread, legumes and iron fortified foods. ❖ Promote consumption of vitamin C rich foods such as oranges, green vegetables, as they enhance the absorption of iron.
Hygiene and sanitation	1. Carers of children under five years. 2. general Community members 3. Household members	<ul style="list-style-type: none"> ❖ Store uncooked food in a safe dry place ❖ Protect food from insects, rodents and other animals ❖ Avoid contact between raw food stuffs and cooked food ❖ Keep areas where children are fed, or play, free from human and animal faeces ❖ Keep all food preparation premises clean ❖ Wash hands before preparing food for feeding children ❖ Wash cooking utensils and wash fruits and vegetables ❖ Use clean water ❖ Cook food thoroughly ❖ Avoid storing cooked food, instead, prepare food often. If cooked food is saved, keep it as cool as possible. If previously cooked food is to be eaten, reheat it thoroughly before eating ❖ Wash the child's hands before feeding

		<ul style="list-style-type: none"> ❖ Use open feeding cups ❖ Feed actively, that is supervise the child and continue offering food until the child has enough
De-worming	Carers of children	<ul style="list-style-type: none"> ❖ Outline the hygiene and sanitation above to patients with worm infestation ❖ Give 500mg Mebendazole or 400mg Albendazole as a single dose if the child is 2 years of age or older and if the child has not had any in the previous 6 months
Growth monitoring	Carers of children under five years	<ul style="list-style-type: none"> ❖ Children aged 0-2 years need to be weighed every month. ❖ Children 0-59 months need to be weighed often enough to determine if they are growing adequately. ❖ When children come for weighing , also check for their immunization and vitamin A supplementation status ❖ Children whose growths are faltering are at high risk and should be monitored closely by health facility staff.
Diarrhoea	Carers of children under five years	<ul style="list-style-type: none"> ❖ Replace lost water by giving the child extra fluids. Give small amounts, after each loose stool, as much as the child will drink, in a clean cup till the diarrhoea has passed. ❖ Give fluid after every loose stool (children <2yr – ¼ to ½ cup, children >2yr ½ to 1 cup) ❖ Give breast milk as often as possible- it is the best food and liquid for a child with diarrhoea – it is clean and can reduce the frequency and severity of diarrhoea. ❖ Give extra fluid in between breast feeds ❖ Continue to give frequent meals to the child ❖ The child needs extra food once the diarrhoea has finished (one extra meal/day for 2 weeks) to recover properly ❖ If diarrhoea is very frequent – several loose stools in an hour, continues without improvement for more than 1 week, or contains blood the child is in danger and needs medical help. Zinc supplements can lessen the severity of a current diarrhoea episode as well as prevent occurrence of future episodes for a few months.
Vomiting	Carers of children under five years	<ul style="list-style-type: none"> ❖ Replace lost water by giving the child extra fluids slowly. Give small amounts after each episode of vomiting, in a clean cup till the vomiting has passed. ❖ Continue breast feeding ❖ If the child vomits after taking fluids, wait and then try and give very small amounts slowly ❖ Stop giving food for ½ day but continue with fluids ❖ If the child hasn't vomited for ½ day try giving small amounts of food and increase the quantities of both ORS and food slowly. ❖ Continue giving extra fluids till child has recovered ❖ If vomiting continues without improvement, is accompanied by other symptoms, or is very severe the child may become dehydrated and needs to be taken to the clinic.
Dehydration	Carers of children under five years	<p><i>What causes dehydration?</i></p> <ul style="list-style-type: none"> – Dehydration may be as a result of excessive vomiting and/or diarrhoea <p><i>How is dehydration diagnosed?</i></p> <ul style="list-style-type: none"> – Child becomes lethargic (tired), thirsty, miserable, refuses to eat, eyes may become sunken <p><i>What are appropriate drinks for children with diarrhoea or vomiting?</i></p> <ul style="list-style-type: none"> – Breast milk – the best fluid for the treatment of diarrhoea – Clean water (or boiled)

		<ul style="list-style-type: none"> – Oral Rehydration Salts from the clinic (made up with clean water) – helps to replace lost salts – Homemade ORS (4 tsp sugar, ½ tsp salt, squeeze of lemon – in 1 litre of water) <p><i>How to prepare and give ORS?</i></p> <ul style="list-style-type: none"> – Add 1 sachet to 1litre clean (boiled and cooled) water (do not add to milk or other fluids) – prepare in a clean bottle – give with a clean cup – children <2yr – ¼ to ½ cup, children >2yr ½ to 1 cup after each loose stool – continue until diarrhoea stops – Keep ORS cool and covered and use within 24hrs.
Community Sensitization	Community members Community health workers, Community Volunteers	<ul style="list-style-type: none"> ❖ What are the different terms used to describe malnutrition? ❖ Is there a perceived difference between malnutrition and general sickness? ❖ What are the perceived signs of malnutrition? These may include skinny legs/arms and loose skin. Remember to include swollen children as oedema is not always associated with malnutrition. ❖ What are the perceived causes of malnutrition? Is it food related? ❖ How has the community traditionally dealt with malnutrition? Is knowledge of treatment available to all? Are there specific people in charge of it? ❖ Are there many cases of malnutrition in the community? How can these be identified? <p>Services and Other outreach activities</p> <ul style="list-style-type: none"> • Explain what services are available for malnutrition (Outpatient Therapeutic Program/OTP) for uncomplicated severe cases and inpatient hospital care for complicated cases of severe malnutrition and supplementary feeding for moderate cases • Talk about the other outreach activities that are being carried out – immunisation, preventative services, health education, curative services as sickness can lead to weight loss and weight loss/malnutrition makes it more likely for the child to get an infection and to link with services for malnutrition
Utilization of Ready-to-eat foods (RUFs)	Carers of 6-59 months children	<ul style="list-style-type: none"> ❖ RUFs are a food and medicine for very thin children (under 5 years) only. ❖ RUFs should NOT be shared ❖ RUFs are for children 6 – 59 months only ❖ Give the child the RUF amount prescribed by the health worker ❖ Always offer the child plenty of clean water or breast milk to drink while he or she is eating the RUF ❖ Wash children’s hands and face before feeding ❖ Use soap for washing children’s hands and face ❖ Keep the open sachet of RUF clean and covered and give to the child whenever he/she demands for it. ❖ Breastfeeding the child should continue when they are on RUF ❖ CHILDREN BELOW SIX MONTHS SHOULD ONLY BE EXCLUSIVELY BREASTFED and should not be given RUFs or any other foods or liquids ❖ Before giving to the child to eat, knead the unopened sachet gently (do not apply too much force) to allow for flow of the content. ❖ Open the sachet using a clean device and then give to the child to eat. ❖ RUFs should not be shared with other members of the family

11 – Management of centres and routine work

Management of the centre (SFP and OTP)

The protocols for treatment in the centres have been developed in order to be able to provide an adequate level of care, even in times of large influx of new admissions. By implementing the protocols correctly, the number of children who recover is very high and the number of those who die is generally low.

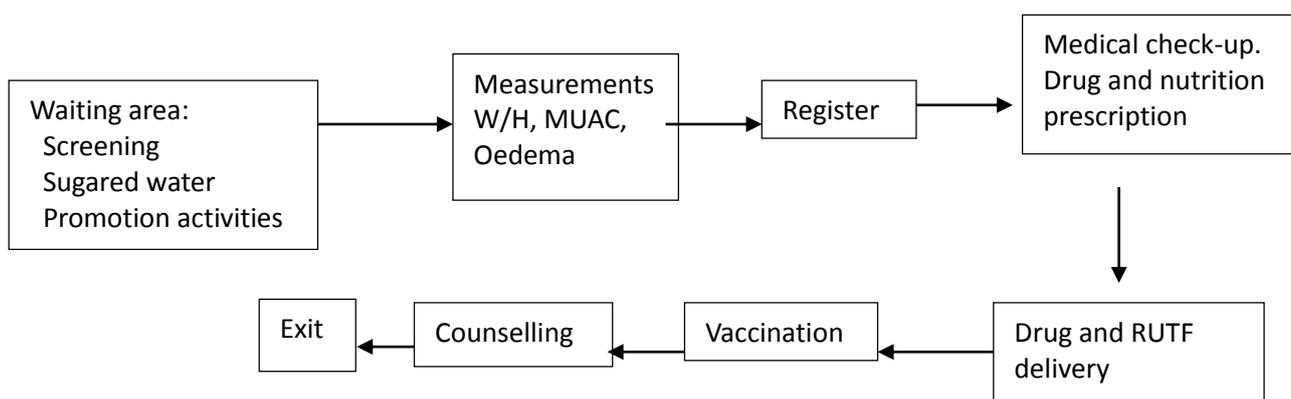
Individual care is important, but a good organization of the activities in the centre is key for the success of the programme. This includes having a good relation with patients, taking time and care to talk to the mothers, promoting a fluid flow of patients in the centre, and as well a good control of stock of drugs and food commodities and a good relationships with the community.

The minimum responsibilities of the CMAM Supervisor/Nutrition Officer are:

- Ensuring correct weight and height measurement by measurement team
- Ensuring correct registration in the registration book
- Ensuring all cards are filled in completely and correctly
- Ensuring correct weekly statistical update on admissions and discharges (tally sheets)
- Ensuring adequate medical check-up for all patients.
- Ensure correct follow up of treatment protocols, using Field Cards; these ranges from provision of the correct drugs to the provision of adequate amounts of food and correct delivery of information to mothers on how to use the drugs or food.
- Providing specific care for those who do not gain weight and/or develop medical complications.
- Adequate additional care and advice need to be given.
- Ensuring adequate implementation of admission and discharge criteria
- Ensuring adequate stock management of drugs and food provided.
- Ensuring adherence to hygienic standards and make suggestions for improvements where needed
- Ensuring early identification of new malnourished children in the community and inclusion of these children in the program
- Ensuring follow-up home visits during the week for those children requiring extra attention
- Ensuring all absentees and defaulters are followed up by outreach workers, and are accounted for
- Ensuring community involvement in all centre facilities

Flow of patients (SFP, OTP):

The basic flow of patients is standard (see schema) but you can adapt it to the situation in your clinic. This is an example of patient and activity flow in an OTP. Each of them is explained in more detail in this section:



Organising each of the steps of the flow:

1. The waiting area:

These recommendations are valid for any type of facility (SFP, OTP, SC).

- The waiting area should be a comfortable place for the children and their carers. It should always be shaded.
- Ensure that water is available for those waiting.
- Provide sugared water to patients that look tired (see section on Hypoglycaemia for preparation).
- Inform them of the waiting time before they will be seen.
- Make water and soap available for mothers to wash their hands and child's hands.

- Visit the waiting area regularly, and identify those children that are ill or very weak. Examine them first!
- Avoid accumulation of people next to the measurement or the examination areas.
- In OTP and SC, you can start the appetite test of those patients that do not look very ill while they wait.

It is important that the parent or caregiver who attends the health facility with a child is acknowledged for the visit. This is particularly important when the child is not considered malnourished by the weight and height anthropometry taken at the health centre. Otherwise, the community can become disgruntled with the service, particularly if mothers travel a long distance. It can seriously affect uptake of the services and negatively impact on coverage. Every mother should be congratulated for taking good care of her child.

2. Measurement area:

- Always ensure that there is enough room to work, and people waiting to be measured are at a reasonable distance.
- Ask the mother of the child and/or a volunteer to help with measurements (remember: height and weight measurements need two people to be done correctly!).
- Check every day that the measurement equipment is in good shape, and order replacements with enough time if you think that something is not working correctly.
- Keep the measurement area tidy. Always write the measurements in the right form – do not write them on just any piece of paper, as these may be lost and create confusion!

3. Registration and admission:

Admit the child according to the admission criteria, issue with an identification wrist-band.

Fill in the Register book. Fill in the OTP chart for new admissions. Take the card from the file for the follow ups!

Give explanations concerning the functioning of the OTP to the caregiver:

Ensure that the carer understands:

- * Why the child is admitted
- * What the treatment will consist of (medication and therapeutic food)
- * Frequency and duration of visits (weekly, expected length of stay in the program etc).
- * Hygiene rules
- * Discuss any problem the carer might have concerning the treatment so that a solution can be found
- * Importance of continued breastfeeding
- * Feed the child at regular intervals during the day and also at night, especially if they do not finish their prescribed daily ration

Some of these explanations will be repeated to the mother when they receive the food. It is important that they understand everything and that all questions are answered before they leave the centre.

Children who are not admitted:

- Explain carefully to the mother that the child is not malnourished.
- Make it clear that there are no other reasons why the child is not admitted (for example: show them that other people from their same clan have been admitted, to avoid misinterpretation).
- Check if there is any medical complaint that needs treatment in the clinic.
- Tell the carer to come back if the child has any problems in the future.
- Vaccinate the child (if feasible).
- If possible, give in addition a piece of soap or other products supplied by your organisation.

4. Medical consultation (check other parts of this protocol for detail):

Check other sections of these guidelines for details on how to run a medical consultation (FC 5).

- ALWAYS examine every child (new admissions and follow-ups) for nutrition and medical history.
- Information should be recorded in the card. In OTP, follow the patient's card as a guide for the information that needs to be collected, and write the answer to every box.

- ALWAYS ask the mother for any complaints that the child may have, even if not related to malnutrition.
- In OTP, CHECK APPETITE on the day of admission and for the next few distributions. Thereafter, appetite need only be checked if the child presents a problem (see FC 3)
- ALWAYS ask how the child is taking the food at home, ask the carer to explain how she/he organises the feeds.
- Ask for treatments that the child may be taking for other conditions.

- ALWAYS make a judgement about the evolution of the child: is the child's health and nutritional status improving? Is it not evolving or is it deteriorating? What actions should be taken? TAKE A DECISION!
- Evaluate if the child needs to be discharged, if the child presents signs of failure to respond (FC 14 and FC 21), if the child needs transfer to other centre, etc.

5. Distribution of drugs and foods

Check appropriate sections of the guidelines for amounts of foods to be distributed and routine medication.

At the start of the day, and before starting the visits:

- Be sure to have all the forms with the dosage for the drugs and foods in the table
- Prepare all the drugs, water, foods, cards, etc.

- Start systematic treatment for new admissions (Vitamin A, Amoxicillin, etc.)
- Supervise how the child takes the treatments that need to be taken in the OTP (Vitamin A, Albendazole, first dose of antibiotics,)
- Give Albendazole for children on the second visit (OTP).
- Send caretaker with child (new admissions) for Measles vaccinations (unless they have been already vaccinated).
- Check in the card if the child has been prescribed other drugs and give them.

- Collect empty sachets from the previous week and count them (OTP and SFP).
- Ask the mother if she had any problem when giving the RUTF/Super Cereal Plus to the child, or with the drugs.
- Give the appropriate amount of RUTF/ Super Cereal Plus sachets to the mother.

- Explain the mother how to prepare Super Cereal Plus or how to take RUTF at home (FC 10 and FC 16)
- Explain the mother how to give the drugs at home (antibiotics).

Check that the mother has understood everything by asking her to repeat the messages that you have given to her. Respond any question of doubts from the mother before letting her go.

CHECK that the patient card is correctly filled.

CHECK the OTP card. If it is not complete, ask your colleagues to complete it.

File the OTP card for the next session!

Organising the cards:

At the beginning of the session, all the OTP cards of the children in treatment should be in the Registration area – classified by registration number. After the child has been seen, the card is filed again.

At the end of the session, check the OTP cards that have not been used. These are those for the children that did not come. Write "Absent" in the column corresponding to that day. If a child is in the third week "Absent", discharge the child and file the OTP card with the other discharges. File the cards of the children that have been discharged, to be used in supervision.

FIELD CARD 26: Routine work at the OTP – check list

This card summarizes the main actions to take for each patient during OTP activities. Use it as a check list, to be sure that everything has been done correctly.

Routine work for new admissions (first visit):**Assessment:**

1. Give priority to cases that look bad and urgent cases.
2. Welcome the child and the carer and explain that you need to measure the child to know if he can be in the programme.
3. Check for oedema
4. Measure and record MUAC.
5. Take the patient's weight and height, and calculate weight-for-height (Z-scores).
6. DECIDE if the patient is malnourished or not. If MAM, send to TSFP.
 1. If not malnourished, congratulate for taking care of the child, explain why the child was not admitted, and encourage them to come if the situation changed.
7. Do the Appetite test. Write down the results.
 1. If the child could have complications, send the patient to the nurse for assessment.
8. DECIDE if the patient should be admitted at OTP or SC.
9. Explain the diagnosis to the carer. Tell him/her the consequences of the diagnosis.
 - If admitted to OTP, explain what will be the following steps of the visit for today and for the following visits.
 - If the child needs SC, explore with the carer the possibility of transfer. Explain the situation to the carer, and if transfer not possible, follow instructions about complicated SAM in OTP.

Registration:

1. Assign registration number and prepare a card.
2. Register the child in the registration book, including all necessary information to identify the patient's residence. Write down in the registry the information provided by the assessment.
3. Write all the necessary information in the patient's OTP card.

Medical consultation and distribution of drugs/RUTF:

1. Welcome the mother and resolve any questions that she has at this point.
2. Do the consultation following the steps in the OTP card:
3. Check that all the identification information and the anthropometry section are complete. If not, ask the registration to provide the details.
4. Complete History section by asking the mother.
5. Examine the patient and complete the Physical examination section.
6. Go through the list of complications that require SC treatment. If the child presents complicated SAM, consider transfer to SC with the mother.

7. Prescribe Routine medicines.
8. Calculate the amounts of RUTF to be given to the carer until the next visit.
9. Fill in the Ration card that the carer will take home.
10. Explain to the mother what are your conclusions and the treatment that you are going to give.
11. Send the patient to the assistant, to give the single dose of each drug, and first dose of antibiotics. Give the RUTF.
12. Provide explanations on how to take the drugs and the RUTF, using Field Card 16.
13. Check that the carer understands well all the instructions, and that she knows the date of next visit.
14. Ask the mother if she has questions, and resolve them. Assure her that the child will get better soon.

Routine work for all patients (in following visits):

Assessment and Registration:

1. Welcome the child and the carer and explain that you need to measure the child to see what is his/her evolution.
2. Check for oedema
3. Measure and record MUAC.
4. Take the patient's weight and height, and calculate weight-for-height (Z-scores).
5. Do the Appetite test if needed (necessary for visits 1 and 2, and afterwards if the patient is not gaining weight or presents with another problem). Write down the results.
6. Write down all the information in the Register book and in the patient's card.

Medical consultation:

1. Welcome the mother and resolve any questions that she has at this point.
2. Do the consultation following the steps in the OTP card:
3. Check that all the identification information and the anthropometry section are complete. If not, ask the registration to provide the details.
4. Complete History section by asking the mother.
5. Explore the patient and complete the Physical examination section.
6. Prescribe Routine medicines if still needed (week 2).
7. Check the evolution of weight, oedema and the clinical status of the patient.
8. If child is not gaining weight, do the Appetite test, and explore what may be reasons with carer.
9. Go through the list of complications that require SC treatment. If the child presents complicated SAM or failure to respond to treatment, consider transfer to SC with the mother.
10. Calculate the amounts of RUTF to be given to the carer until the next visit.
11. Fill in the Ration card that the carer will take home.
12. DECIDE if the patient needs to be classified as Cured or Non-response, or continue treatment.
13. Explain to the mother what are your conclusions and the treatment that you are going to give.
14. Send the patient to the assistant to give the RUTF.
15. Collect the empty sachets from previous week. If they don't have them, explain the importance of bringing them every week, but do not threaten the mother if she can't do it.
16. Remind the explanations on how to take the drugs and the RUTF, using Field Card 16.
17. Check that the carer understands well all the instructions, and that she knows the date of next visit.
18. Ask the mother if she has any questions, and resolve any doubts. Reassure her that the child will get better soon.

Organisation of work in the SFP / OTP

Here are some basic tips on how to organise the work on the SFP or OTP, and the main tasks that need to be accomplished. Each centre and organisation may have a different way of organising these.

Flow of patients:

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. This chapter presents a suggestion of flow of patients and routine activities for each of the stations.

Health and nutrition education:

Health and nutrition education is usually provided for all patients and carers while waiting to be seen.

Reporting statistics – Monitoring:

Reviewing the activity is part of daily activity. It is usually done when all patients have left the centre. It includes: checking the register book to check if all information is written correctly for patients (for example, that no patients are left without an exit criteria, and there is no missing information from the admission day), checking the cards of the patients that were absent that day, to see which of them needs to be classified as defaulter and those absent who require a home visit. See chapter 9 for more information.

Stock control:

The stocks of RUTF and routine drugs need to be checked weekly in order to avoid running out of any key item and to ensure accountability for these expensive items. This needs to be done as well for stocks of cards and other essential material. Each centre should **designate a working day** to check supplies and to make reports, as well as to prepare the next stock request according to actual figures of the week.

Home visiting and monitoring:

Some patients may need to be monitored through visits by outreach workers at their homes. This may be necessary when there is an unexplained lack of weight gain. The outreach worker can discuss issues with the carer, assess home environment and adapt messages to improve treatment.

Defaulter tracing:

All absences from outpatients should be followed up at their homes by outreach workers, volunteers, key community figures or other carers. It is important to gain an understanding of the reason for absence and to encourage return, without reprimanding the absentee. Information on the reasons for absence can be used to improve the organisation of the programme and make it more accessible and appropriate. When resources for community outreach are limited, the nurse may decide which patients need to be traced back to their homes, based on their absence or on their lack of evolution under treatment.

FIELD CARD 27: Discharge Procedures

It is important to complete the discharge procedures, both for patients that have completed the treatment as cured and for those that are discharged as non-respondents or transferred to a different centre.

- Give feedback to the parent/caregiver on the patient's final outcome. Make sure that the carer understands why the child is being discharged.
- Refer the patient to the appropriate centre (from SC to OTP and from OTP to SFP). Ensure the parent/caregiver understands the importance of continuing treatment at the other centre, and knows when and where they need to attend it.
- In OTP, give a final ration of seven (7) packets as a weaning off ration.
- Fill in date and reason of discharge on the register.
- Store the patient's card with the other exits, for future reference (monthly reports or supervision).
- Advise parent/caregiver to return to the centre if child becomes sick or is losing weight again.

If the child was cured: Congratulate the carer. Some carers will receive the discharge as bad news, because they appreciated receiving the food distributions. Explain that the child is cured and needs to return to eating normal food – or continue treatment in the other centre. Let them know that they are not being “expelled” from the programme for a bad reason, and that they are very welcome to come back if the child needs it.

If the child was non-response: Do not be judgemental with the carer. Explain that the child was not evolving correctly, and that the centre has made the necessary medical and social investigations but could not find a reason for the lack of weight gain. Encourage them to come back if the state of the child deteriorates again, or to go to an Inpatient centre.

12 – Patient's cards and reporting system

Will be attached to this document as Annexes.