
TRAINING GUIDE FOR COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION (CMAM)

PARTICIPANT HANDOUTS

NOVEMBER 2008

These training materials are made possible by the generous support of the American people through the support of the Office of Health, Infectious Disease, and Nutrition of the Bureau for Global Health and the Office of Foreign Disaster Assistance of the Bureau for Democracy, Conflict and Humanitarian Assistance, United States Agency for International Development (USAID), under terms of Cooperative Agreement No. HRN-A-00-98-00046-00, through the FANTA Project, managed by the Academy for Educational Development (AED). The contents are the responsibility of AED and do not necessarily reflect the views of USAID or the United States Government.



COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE ONE

Overview of Community-Based Management of Acute Malnutrition (CMAM)

LEARNING OBJECTIVES

HANDOUTS AND EXERCISES

<p>Introduce Participants, Training Course, Modules, and Course Objectives</p>	<p>Handout 1.1 Abbreviations and Acronyms Handout 1.2 Terminology for CMAM Handout 1.3 References and Further Reading PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>1. Discuss Acute Malnutrition and the Need for a Response</p>	<p>Handout 1.4 Key Information on Undernutrition PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>2. Identify the Principles of CMAM</p>	<p>Handout 1.5 CMAM Principles PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>3. Describe Recent Innovations and Evidence Making CMAM Possible</p>	<p>Handout 1.6 Classification of Acute Malnutrition for CMAM Handout 1.7 Screening and Admission Using MUAC PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM) RUTF packets Coloured MUAC tapes (designed for use in community-based programmes)</p>
<p>4. Identify the Components of CMAM and How They Work Together</p>	<p>Handout 1.8 CMAM Components and How They Work Together PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>5. Explore How CMAM Can Be Implemented in Different Contexts</p>	<p>Handout 1.9 Case Studies Handout 1.10 Implementing CMAM in Different Contexts Handout 1.11 Factors to Consider in Seeking to Provide Services for the Management of SAM Handout 1.12 Integrating CMAM into Routine Health Services at the District Level PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>6. Identify Key National and Global Developments and Commitments Relating to CMAM</p>	<p>WHO, WFP, the UN/SCN and UNICEF. 2007. Community-based management of severe acute malnutrition: A joint statement. Video 1. Concern Worldwide Ethiopia Video PowerPoint: Overview of Community-Based Management of Acute Malnutrition (CMAM)</p>
<p>Wrap-up and Module Evaluation</p>	<p>Handout 1.13 Essentials of CMAM</p>
<p>Field Visit to Outpatient Care Site</p>	<p>Handout 1.14 Field Visit Checklist</p>

HANDOUT 1.1

ABBREVIATIONS AND ACRONYMS

ACF	Action Contre La Faim
ACT	artemisinin-based combination therapy
AED	Academy for Educational Development
ARI	acute respiratory infection
ART	antiretroviral therapy
ARV	antiretroviral
AWG	average daily weight gain
BCC	behaviour change communication
CBO	community based organisation
CCC	Community Care Coalition
CDC	Centers for Disease Control
CHC	child health card
CHP	community health promoter
CHPS	Community-Based Health Planning and Services Initiative
CHPS-TA	Community-Based Health Planning and Services Initiative – Technical Assistance
CHW	community health worker
CMAM	Community-Based Management of Acute Malnutrition
CMV	combined mineral and vitamin mix
CRS	Catholic Relief Services
CSAS	centric systematic area sampling
CSB	corn-soy blend
CTC	community-based therapeutic care
DHMT	district health management team
DHS	Demographic Health Survey
DSM	dry skim milk
EBF	exclusive breastfeeding
EDL	Essential Drug List
ENA	Essential Nutrition Actions
ENN	Emergency Nutrition Network
EPI	expanded programme of immunisation
FANTA	Food and Nutrition Technical Assistance Project
FAO	Food and Agriculture Organisation of the United Nations
FBF	fortified blended food
GAM	global acute malnutrition
GHS	Ghana Health Services

GI	gastrointestinal
GMP	growth monitoring and promotion
GSHP	Ghana Sustainable Health Project
HBC	home-based care
HEW	health extension worker
HFA	height-for-age
HIRD	High Impact and Rapid Delivery
HIV	human immunodeficiency virus
HMIS	health management information system
IEC	information, education and communication
IFE	Infant Feeding in Emergencies
IMCI	integrated management of childhood illness
INAAM	Integrated Nutrition Action Against Malnutrition
ITN	insecticide treated net
IU	international units
IYCF	infant and young children feeding
KCAL	kilocalories
LNS	lipid-based nutrient supplement
LOS	average length of stay
LRTI	lower respiratory tract infection
M&E	monitoring and evaluation
MAM	moderate acute malnutrition
MAMI	Management of Acute Malnutrition in Infants Project of the Institute of Child Health
MCH	maternal and child health
MCHN	maternal and child health and nutrition
MDG	Millenium Development Goal
MICS	Multiple Indicator Clause Survey
MOH	Ministry of Health
MSF	Médecins Sans Frontières
MUAC	mid-upper arm circumference
NCHS	National Centre for Health Statistics
NFDM	non-fat dry milk
NGO	nongovernmental organisation
NRC	nutrition rehabilitation centre
NRU	nutrition rehabilitation unit
OI	opportunistic infection
OICI	Opportunities Industrialization Centers International
OPD	outpatient department
OTP	outpatient therapeutic programme

OVC	orphans and vulnerable children
PD	Positive Deviance
PHC	primary health care
PLHIV	people living with HIV
PMTCT	prevention of mother-to-child transmission of HIV
PRA	Participatory Rural Appraisal
QHP	Quality Health Partners
ReSoMal	Rehydration Solution for Malnutrition
RRA	Rapid Rural Appraisal
RUSF	ready-to-use supplementary food
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SC	stabilisation centre
SC-USA	Save the Children USA
SD	standard deviation
SFP	supplementary feeding programme
SMART	Standardised Monitoring and Assessment for Relief and Transition
SNNPR	Southern Nations, Nationalities, and People's Region
SQUEAC	semi-quantitative evaluation of access and coverage
SST	supplementary suckling technique
SWOT	strengths, weaknesses, opportunities and threats
TB	tuberculosis
TF	task force
TFC	therapeutic feeding centre
UN	United Nations
UNICEF	United Nations Children's Fund
UN/SCN	United Nations System Standing Committee on Nutrition
USAID	United States Agency for International Development
VCT	voluntary counselling and testing
WFA	weight-for-age
WFH	weight-for-height
WFP	World Food Programme
WHO	World Health Organization
WSB	wheat-soy-blend

HANDOUT 1.2

TERMINOLOGY FOR CMAM

<p>Acute Malnutrition</p>	<p>Acute malnutrition is a form of undernutrition. It is caused by a decrease in food consumption and/or illness resulting in bilateral pitting oedema or sudden weight loss. It is defined by the presence of bilateral pitting oedema or wasting (low mid-upper arm circumference [MUAC] or low weight-for-height [WFH]).</p> <p>Note: The MUAC indicator cutoffs are being debated (see “Mid-Upper Arm Circumference [MUAC] Indicator” below). The WFH indicator is expressed as a z-score below two standard deviations (SDs) of the median (or WFH z-score < -2) of the World Health Organization (WHO) child growth standards (WHO standards), or as a percentage of the median < 80% of the National Centre for Health Statistics (NCHS) child growth references (NCHS references).</p>
<p>Anthropometry</p>	<p>Anthropometry is the study and technique of human body measurement. It is used to measure and monitor the nutritional status of an individual or population group.</p>
<p>Appetite</p>	<p>Appetite is the decisive criteria for participation in outpatient care. The test is done at admission and at all outpatient care follow-on sessions to ensure that the child can eat ready-to-use therapeutic food (RUTF). If the child has no appetite, s/he must receive inpatient care.</p>
<p>Bilateral Pitting Oedema</p>	<p>Bilateral pitting oedema, also known as nutritional oedema, kwashiorkor or oedematous malnutrition, is a sign of severe acute malnutrition (SAM). It is defined by bilateral pitting oedema of the feet and verified when thumb pressure applied on top of both feet for three seconds leaves a pit (indentation) in the foot after the thumb is lifted. It is an abnormal infiltration and excess accumulation of serous fluid in connective tissue or in a serous cavity.</p> <p>The categories of bilateral pitting oedema are:</p> <p>Mild : Both feet (can include ankles), Grade +</p> <p>Moderate: Both feet, lower legs, hands or lower arms, Grade + +</p> <p>Severe: Generalized bilateral pitting oedema including both feet, legs, hands, arms and face, Grade + + +</p>
<p>Centre-Based Care for SAM</p>	<p>Centre-based care for SAM refers to the management of SAM with or without medical complications in inpatient care until weight recovery is achieved.</p> <p>Before the development of CMAM or in the absence of the CMAM approach, children with SAM were exclusively managed as inpatients receiving medical treatment and nutrition rehabilitation until weight recovery is achieved.</p>
<p>Community-Based Management of Acute Malnutrition (CMAM)</p>	<p>CMAM refers to the management of acute malnutrition through: 1) inpatient care for children with SAM with medical complications and all infants under 6 months old with SAM; 2) outpatient care for children with SAM without medical complications; 3) community outreach; and 4) services or programmes for children with moderate acute malnutrition (MAM) that may be provided depending on the context.</p> <p>CMAM evolved from Community-Based Therapeutic Care (CTC), which is a community-based approach for the management of acute malnutrition in emergency settings, and comprises the key components of community outreach, supplementary feeding programmes (SFPs), outpatient care programmes (OCPs) and stabilisation centres (SCs).</p> <p>Other variants of CMAM include ambulatory care or home-based care (HBC) for SAM.</p>

CMAM Programmes versus CMAM Services	Implementing agencies manage CMAM programmes. The Ministry of Health (MOH) or private health care providers at health facilities (or in the communities) provide CMAM services.
Community Outreach	Community outreach for CMAM includes community assessment, community mobilisation, active case-finding and referral, and case follow-up.
Community Referral	Community referral is the process of identifying children with acute malnutrition in the community and sending them to the health facility for CMAM services.
Community Volunteer	A community volunteer is a person who conducts outreach for community mobilisation, screening, referral and follow-up in the community. He or she can receive an incentive but no remuneration.
Coverage	<p>Geographical coverage refers to the availability of CMAM services (i.e. geographical access) through the decentralisation and scale-up of CMAM services. Service or programme coverage refers to the uptake of CMAM services (service access and use).</p> <p>Geographical coverage can be defined by the ratio of health facilities with CMAM services to health facilities per district, or by the ratio of children with SAM in treatment to children with SAM in the community (estimated with direct methods or indirect methods).</p> <p>Geographical coverage, defined by the ratio of children with SAM in treatment to the total number of children with SAM identified in the community at a particular time, is measured by a population survey in the study population (i.e., cluster survey; the study population is living in an area that can be larger than the catchment area of the health facilities with CMAM services).</p> <p>Service or program coverage, defined by the ratio of children with SAM in treatment to the total number of children with SAM identified in the community at a particular time, is measured by a population survey (e.g., centric systematic area sampling [CSAS] method, semi-quantitative evaluation of access and coverage [SQUEAC] method, the study population is living within the catchment area of the health facilities with CMAM services).</p>
Coverage Ratio	Coverage ratio is expressed as the ratio of children with SAM under treatment (a) to the total number of children with SAM identified in the community at a particular time (a+b). Children with SAM identified in the community are calculated as children with SAM under treatment (a) plus children with SAM who are not under treatment (b). [Coverage ratio = $a/(a+b)$].
Essential Health Care Package	Essential health care package refers to the set of services provided at health facilities, as mandated by the national health policy. The package varies based on the health facility type (e.g., health centre versus health post).
F75	Formula 75 (75 kcal/100ml) is the milk-based diet recommended by WHO for the stabilisation of children with SAM in inpatient care.
F100	<p>Formula 100 (100 kcal/100ml) is the milk-based diet recommended by WHO for the nutrition rehabilitation of children with SAM after stabilisation in inpatient care and was used in this context before RUTF was available. Its current principal use in CMAM services is for children with SAM who have severe mouth lesions and cannot swallow RUTF, and who are being treated in inpatient care.</p> <p>Diluted F100 is used for the stabilisation and rehabilitation of infants under 6 months of age in inpatient care.</p>
Global Acute Malnutrition (GAM)	GAM is a population-level indicator referring to overall acute malnutrition defined by the presence of bilateral pitting oedema or wasting defined by WFH < -2 z-score (WHO standards or NCHS references). GAM is divided into moderate and severe acute malnutrition (GAM = SAM + MAM).

Hand-Over of CMAM	Hand-over refers to the actual transfer of roles and responsibility for CMAM services from the nongovernmental organisation (NGO) to the MOH. While the NGO or other partner may continue to provide some financial or technical support following the hand-over (e.g., purchase and transport of supplies, provision of training), MOH staff conducts CMAM planning and provides CMAM services.
Health Care	Health care is the prevention, treatment and management of illness and the preservation of mental and physical well-being through the services offered by health care providers. Health care embraces all the goods and services designed to promote health, including preventive, curative and palliative interventions, whether directed to individuals or to populations.
Health Care Provider	Health care provider refers to the medical, nursing and allied health professionals, including community health workers (CHWs).
Health Care System	A health care system refers to the organised delivery of health care.
Health System	A health system consists of all structures, resources, policies, personnel, services and programmes involved in the promotion, restoration and maintenance of health.
Height-for-Age Index (HFA)	The HFA index is used to assess stunting. It shows how a child's height compares to the height of a child of the same age and sex in the WHO standards. This index reflects a child's past nutritional status.
Inpatient Care for the Management of SAM with Medical Complications	Inpatient care is a CMAM service treating children with SAM with medical complications until their medical condition is stabilised and the complication is resolved (usually four to seven days). Treatment then continues in outpatient care until weight recovery is achieved. Inpatient care for SAM with medical complications is provided in a hospital or health facility with 24-hour care capacity.
In-Service Training	In-service training prepares health professionals to provide CMAM services by developing specific knowledge and skills according to their job qualifications while accounting for prior learning and work experience. It includes theoretical and practical training (e.g., on-the-job training, tutoring or mentoring, refresher training sessions).
Integration of CMAM or CMAM Services	Integration of CMAM refers to the incorporation of CMAM into the national health system. Integration of CMAM services refers to the incorporation of the CMAM services of inpatient care, outpatient care and community outreach into the national health care system. It assumes that the health care system has the capacity and competence for providing, strengthening, adapting, and maintaining quality and effective CMAM services with minimal external support. Minimal external support refers to financial and technical support to the MOH for capacity strengthening and access to supplies.
Kwashiorkor	See Bilateral Pitting Oedema .
Management of Illness	Management of a specific illness is the prevention, detection, referral for treatment, treatment, follow-up, and prevention of relapse of the illness.
Marasmic Kwashiorkor	Marasmic kwashiorkor is the simultaneous condition of severe wasting (marasmus) and bilateral pitting oedema (kwashiorkor).
Marasmus	See Severe Wasting .

Medical Complications in the Presence of SAM	<p>The major medical complications in the presence of SAM that indicate the need for referral of a child to inpatient care are: anorexia or no appetite, convulsions, high fever, hypoglycaemia or hypothermia, intractable vomiting, lethargy or not alert, lower respiratory tract infection (LRTI), severe anaemia, severe dehydration, unconsciousness.</p> <p>(Other cases needing inpatient care besides severe bilateral pitting oedema, marasmic kwashiorkor, SAM with medical complications and infants under 6 months with SAM include: infants 6 months or older with SAM and a weight below 4 kg, children with SAM in outpatient care and weight loss for three weeks or with static weight for five weeks, or upon mother/caregiver's request.)</p>
Micronutrient Deficiencies	<p>Micronutrient deficiencies are a consequence of reduced or excess micronutrient intake and/or absorption in the body. The most common forms of micronutrient deficiencies are related to iron, vitamin A and iodine deficiency.</p>
Mid-Upper Arm Circumference (MUAC) Indicator	<p>Low MUAC is an indicator for wasting, used for a child that is 6 to 59 months old. MUAC < 110 mm indicates severe wasting or SAM. MUAC ≥ 110 mm and < 125 mm indicates moderate wasting or MAM. MUAC cutoffs are being debated; for example, new suggestions could be MUAC < 115 mm for SAM and ≥ 115 and <125 for MAM.</p> <p>MUAC is a better indicator of mortality risk associated with acute malnutrition than WFH.</p>
Moderate Acute Malnutrition (MAM)	<p>MAM, or moderate wasting, is defined by a MUAC ≥ 110 mm and < 125 mm (the cutoff is being debated) or a WFH ≥ -3 z-score and < -2 z-score of the median (WHO standards) or WFH as a percentage of the median ≥ 70% and < 80% (NCHS references).</p>
Moderate Wasting	<p>MAM can also be used as a population-level indicator defined by WFH ≥ -3 z-score and < -2 z-score (WHO standards or NCHS references).</p>
Nutritional Oedema	<p>See Bilateral Pitting Oedema.</p>
Oedematous Malnutrition	<p>See Bilateral Pitting Oedema.</p>
Outpatient Care for the Management of SAM Without Medical Complications	<p>Outpatient care is a CMAM service treating children with SAM without medical complications through the provision of routine medical treatment and nutrition rehabilitation with RUTF. Children attend outpatient care at regular intervals (usually once a week) until weight recovery is achieved (usually two months).</p>
Outreach Worker for CMAM	<p>An outreach worker is a CHW, health extension worker (HEW) or community volunteer who identifies and refers children with acute malnutrition from the community to the CMAM services and follows up with the children in their homes when required.</p>
Pre-Service Training	<p>Pre-service training is conducted at a teaching institution as part of the curriculum for a professional qualification. It can be at the pre-graduate, post-graduate or diploma level (e.g., in medical or nursing schools). It includes theoretical and practical training. Practical training sessions can be simulations, demonstrations, on-the-job training, mentoring, etc.</p>
Ready-to-Use Therapeutic Food (RUTF)	<p>RUTF is an energy-dense, mineral- and vitamin-enriched food specifically designed to treat SAM. RUTF has a similar nutrient composition to F100. RUTF is soft, crushable food that can be consumed easily by children from the age of 6 months without adding water. Unlike F100, RUTF is not water-based, meaning that bacteria cannot grow in it and that it can be used safely at home without refrigeration and in areas where hygiene conditions are not optimal. It does not require preparation before consumption. Plumpy'nut® is an example of a commonly known lipid-based RUTF.</p>

Referral	A referral is a child who is moved to a different component of CMAM (e.g., from outpatient care to inpatient care for medical reasons) but has not left the program.
Routine Health Services	Routine health services refer to those services provided at health facilities depending on staff capacity and facility resources. These services include the essential health care package and other services.
Scale-Up	Scale-up involves the expansion of services (e.g., from the pilot phase to the program phase, as part of a strategy to expand geographical coverage to the targeted area or nationally).
Self-Referral	Self-referral occurs when mothers/caregivers bring children to the outpatient care or inpatient care site without a referral from outreach workers (e.g., CHWs, volunteers).
Severe Acute Malnutrition (SAM)	SAM is defined by the presence of bilateral pitting oedema or severe wasting (MUAC < 110 mm [cutoff being debated] or a WFH < -3 z-score [WHO standards] or WFH < 70% of the median [NCHS references]). A child with SAM is highly vulnerable and has a high mortality risk. SAM can also be used as a population-based indicator defined by the presence of bilateral pitting oedema or severe wasting (WFH < -3 z-score [WHO standards or NCHS references]).
Severe Wasting	Severe wasting is a sign of SAM. It is defined by a MUAC < 110 mm (cutoff being debated) or a WFH < -3 z-score (WHO standards) or WFH < 70% of the median (NCHS references). Severe wasting is also called marasmus. The child with severe wasting has lost fat and muscle and appears very thin (e.g., signs of “old man face” or “baggy pants” [folds of skin over the buttocks]).
Sphere Project or Sphere Standards	The Sphere Project Humanitarian Charter and Minimum Standards in Disaster Response is a voluntary effort to improve the quality of assistance provided to people affected by disaster and to enhance the accountability of the humanitarian agencies in disaster response. Sphere has established Minimum Standards in Disaster Response (often referred to as Sphere Standards) and indicators to describe the level of disaster assistance to which all people have a right. www.sphereproject.org
Stunting	Stunting, or chronic undernutrition, is a form of undernutrition. It is defined by a height-for-age (HFA) z-score below two SDs of the median (WHO standards). Stunting is a result of prolonged or repeated episodes of undernutrition starting before birth. This type of undernutrition is best addressed through preventive maternal health programmes aimed at pregnant women, infants, and children under age 2. Programme responses to stunting require longer-term planning and policy development.
Transition of Programmes	Transition refers to the process leading up to hand-over, including planning and preparation for the gradual transfer of roles and responsibilities for CMAM services from the NGO to the MOH, until hand-over is complete.
Undernutrition	Undernutrition is a consequence of a deficiency in nutrient intake and/or absorption in the body. The different forms of undernutrition that can appear isolated or in combination are acute malnutrition (bilateral pitting oedema and/or wasting), stunting, underweight (combined form of wasting and stunting), and micronutrient deficiencies.
Underweight	Underweight is a composite form of undernutrition including elements of stunting and wasting and is defined by a weight-for-age (WFA) z-score below 2 SDs of the median (WHO standards). This indicator is commonly used in growth monitoring and promotion (GMP) and child health and nutrition programmes aimed at the prevention and treatment of undernutrition.

Wasting	Wasting is a form of acute malnutrition. It is defined by a MUAC < 125 mm (cutoff being debated) or a WFH < -2 z-score (WHO standards) or WFH < 80% of the median (NCHS references).
Weight-for-Age Index (WFA)	The WFA index is used to assess underweight. It shows how a child's weight compares to the weight of a child of the same age and sex in the WHO standards. The index reflects a child's combined current and past nutritional status.
Weight-for-Height Index (WFH)	The WFH index is used to assess wasting. It shows how a child's weight compares to the weight of a child of the same length/height and sex in the WHO standards or NCHS references. The index reflects a child's current nutritional status.

HANDOUT 1.3

REFERENCES AND FURTHER READING

MODULE ONE: OVERVIEW OF COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

1.3

- Caulfield, L., M. de Onis, M. Blössner and R. Black. 2004. "Undernutrition as an underlying cause of child deaths associated with diarrhea, pneumonia, malaria, and measles," *American Journal of Clinical Nutrition* 80:193-8.
- Collins, S. 2004. "Community-based therapeutic care: A new paradigm for selective feeding in nutritional crisis," *Humanitarian Practice Network Paper 48*, ODA. www.validinternational.org.
- Collins, S. et al. 2006. "Management of severe acute malnutrition in children," *Lancet* 368: 1992-2000. www.validinternational.org.
- Collins, S. and Yates, R. 2003. "The need to update the classification of acute malnutrition," *Lancet* 362: 249.
- Diop, E. et al. 2003. "Comparison of the efficacy of a solid ready to use food and liquid milk based diet for the rehabilitation of severely malnourished children: a randomized trial," *American Journal of Clinical Nutrition* 78: 302-7.
- Emergency Nutrition Network (ENN) et al. 2004. Module 2 in *Infant Feeding in Emergencies* (December). www.ennonline.net.
- Gatchell, V., V. Forsythe and P. Rees Thomas. *The sustainability of Community-based Therapeutic Care (CTC) in non-acute emergency contexts*. WHO Technical Background Paper.
- http://www.who.int/child-adolescent-health/New_Publications/NUTRITION/CBSM/tbp_5.pdf
- Gross, R. and P. Webb. 2006. "Wasted time for wasted children: severe child undernutrition must be resolved in non-emergency settings," *Lancet* 367: 1209-1211. www.thelancet.com.
- Save the Children US, Concern Worldwide and FANTA/AED. 2005. *Inter-agency meeting Feb 28-March 2. Presentations and ENN report on the meeting*. www.fantaproject.org/focus/emergency.
- WHO, WFP, UN/SCN and UNICEF. 2006. "Informal consultation on the community-based management of severe malnutrition in children," *Food and Nutrition Bulletin*, Vol. 27, No. 3 (supplement). www.fantaproject.org.
- WHO, WFP, the UN/SCN and UNICEF. 2007. *Community-based management of severe acute malnutrition: A joint statement*.

MODULE TWO: DEFINING AND MEASURING ACUTE MALNUTRITION

- WHO Department of Health and Development. 2002. *Training Course on the Management of Severe Malnutrition*. Geneva: WHO.
- WHO. 1983. *Measuring Change in Nutritional Status*. Geneva: WHO.
- WHO. 2000. *Management of Nutrition in Major Emergencies*. Geneva: WHO.

- Young, Helen and Susanne Jaspars. 2006. "The meaning and measurement of acute malnutrition in emergencies. A primer for decision-makers," ODI, Humanitarian Practice Network Paper No. 56, November.
- Reference material on weight and height equipment, where to purchase equipment and available kits: http://www.fantaproject.org/downloads/pdfs/anthro_4.pdf
- WHO Child Growth Standards. <http://www.who.int/childgrowth/standards/>

MODULE THREE: COMMUNITY OUTREACH

- Valid International. 2006. *Community-based Therapeutic Care (CTC) A Field Manual*. Oxford: Valid International. www.validinternational.org
- Emergency Nutrition Network (ENN). 2005. *Operational Challenges of Implementing Community Therapeutic Care, ENN Report on an Interagency Workshop* (Washington: February 28-March 2).
- Saul Guerrero. 2007. "Impact of non-admission on CTC program coverage," *Field Exchange* 31: 28-30, September.

MODULE FOUR: OUTPATIENT CARE AND THE MANAGEMENT OF SAM WITHOUT MEDICAL COMPLICATIONS

- Valid International. 2006. *Community-based Therapeutic Care (CTC): A Field Manual*. Oxford: Valid International.
- WHO. 2008. Draft guidelines for health managers (not yet released).
- National guidelines for CMAM
- WHO or national guidelines for Integrated Management of Childhood Illness (IMCI)

MODULE FIVE: INPATIENT CARE FOR THE MANAGEMENT OF SAM WITH MEDICAL COMPLICATIONS IN THE CONTEXT OF CMAM

- Collins, S, A. Duffield and M. Myatt. 2000. Adults: "Assessment of nutritional status in emergency affected populations," *RNIS Supplement, ACC/SCN* (July).
- ENN, IBFAN, Terre des Hommes, UNHCR, UNICEF, WFP, WHO. 2004. The Young Severely Malnourished Infant (chapter 8) in *Infant Feeding in Emergencies*, Module 2, version 1.0 for health and nutrition workers in emergency situations. www.ennonline.net
- The Sphere Project, *Humanitarian Charter and Minimum Standards in Disaster Response*. 2004 edition. www.sphereproject.org
- WHO. 2003. *Guidelines for the inpatient treatment of severely malnourished children*. Geneva.
- WHO/UNICEF. 2000. *Management of the Child with Serious Infection or Severe Malnutrition: Guidelines for Care at the First-Referral Level in Developing Countries*. www.who.int/child-adolescent-health/publications/CHILD_HEALTH/WHO_FCH_CAH_00.1.htm
- WHO. 1999. *Management of Severe Malnutrition: A Manual for Physicians and Other Senior Health Workers*. Geneva. www.who.int/nut/publications
- WHO. 2004. *Report on a consultation to review current literature on severe malnutrition*. Geneva.

- WHO. 2002. *Training Course on the Management of Severe Malnutrition*. Geneva.
- Woodruff, B. and A. Duffield. 2000. "Adolescents: Assessment of nutritional status in emergency affected populations." *RNIS Supplement, ACC/SCN* (July). www.unsystem.org/SCN/publications
- Indicates document is included in the Supplemental Reference Packet

MODULE SIX: SERVICES OR PROGRAMMES FOR THE MANAGEMENT OF MODERATE ACUTE MALNUTRITION (MAM) IN THE CONTEXT OF CMAM

1.3

- WHO. 2000. *The Management of Nutrition in Major Emergencies*. Geneva.
- Médecins Sans Frontières (MSF). 2004. Nutrition Guidelines (revised), draft.
- WFP/UNHCR. 1999. *Guidelines for Selective Feeding in Emergencies*.
- The Sphere Project. 2004. *Humanitarian Charter and Minimum Standards in Disaster Response*. www.sphereproject.org
- WFP/UNHCR. 2000. *Food and Nutrition Needs in Emergencies*.
- USAID, *Commodities Reference Guide*. www.usaid.gov/our_work/humanitarian_assistance/ffp/grg
- WHO/UNICEF. 2000. *Management of the Child with Serious Infection or Severe Malnutrition: Guidelines for Care at the First-Referral Level in Developing Countries*. www.who.int/child-adolescent-health/publications/CHILD_HEALTH/WHO_FCH_CAH_00.1.htm

MODULE SEVEN: PLANNING CMAM SERVICES AT THE DISTRICT LEVEL

- Valid International. 2006. *Community-based Therapeutic Care (CTC): A Field Manual*. Oxford: Valid International. www.validinternational.org.
- Standardised monitoring and assessments for relief and transition (SMART), "Measuring mortality, nutritional status and food security in crisis situations (interpretation)." www.smartindicators.org.
- The Sphere Project. 2004. *Humanitarian Charter and Minimum Standards in Disaster Response*. www.sphereproject.org.
- UNICEF. 1990. *Strategy for Improved Nutrition of Children and Women in Developing Countries*. New York: UNICEF Program Division.
- WHO. 2007. *Reference manual for policy makers and programme managers*. Draft, December.

MODULE EIGHT: MONITORING AND EVALUATION OF CMAM

- Valid International. 2006. *Community-based Therapeutic Care: A Field Manual*. Oxford: Valid International. Chapters 9 & 10.

HANDOUT 1.4

KEY INFORMATION ON UNDERNUTRITION

WHAT IS UNDERNUTRITION?

Undernutrition is a consequence of a deficiency in nutrient intake and/or absorption in the body and can take the form of:

- Acute malnutrition (bilateral pitting oedema and/or wasting)
- Stunting
- Underweight
- Micronutrient deficiencies

Note: Malnutrition comprises both overnutrition (obesity) and undernutrition, but the term malnutrition is often used for forms of undernutrition (e.g., acute malnutrition).

Undernutrition in all its forms is a significant public health concern and an underlying factor in over 50 percent of the 10 million deaths from preventable causes among children under 5 each year.¹ All four types of undernutrition can overlap in the same child.

Undernutrition Indicators

	Acute Malnutrition	Stunting	Underweight	Micronutrient Deficiencies
Indicators	Low mid-upper arm circumference (MUAC) or low weight-for-height (WFH, wasting) or Presence of bilateral pitting oedema	Low height-for-age (HFA)	Low weight-for-age (WFA), combining wasting and stunting	Clinical signs and biochemical markers

WHAT IS ACUTE MALNUTRITION?

- **Acute malnutrition** is caused by a decrease in food consumption and/or illness resulting in bilateral pitting oedema or sudden weight loss. It is defined by the presence of **bilateral pitting oedema** or **wasting** (low MUAC or low WFH).
- Acute malnutrition comprises both severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) and can have the following indicators (with cutoffs):

¹ Caulfield, L., M. de Onis, M. Blössner and R. Black. 2004. "Undernutrition as an underlying cause of child deaths associated with diarrhea, pneumonia, malaria, and measles," *American Journal of Clinical Nutrition* 80:193-8.

	Bilateral Pitting Oedema	MUAC*	WFH z-score (WHO standards or NCHS references)	WFH as a percentage of the median (NCHS references)
SAM:	Present	< 110 mm*	< -3	< 70%
MAM:	Not present	> 110 mm* and < 125 mm*	≥ -3 and < -2	≥ 70% and < 80%

*cutoffs being debated

WHY FOCUS ON ACUTE MALNUTRITION?

- The World Health Organization (WHO), the World Food Programme (WFP), the UN Standing Committee on Nutrition (UN/SCN), and the United Nations Children’s Fund (UNICEF) estimate that nearly 20 million children suffer from SAM worldwide and that SAM contributes to more than one million deaths of children under 5 every year.
- The importance of underweight (low WFA) and stunting (low HFA) in contributing to child illness and mortality is well accepted. As such, development programmes (e.g., growth monitoring and promotion [GMP], integrated management of childhood illnesses [IMCI]) and child survival interventions have focused on these forms of undernutrition in health and nutrition prevention and treatment programmes. Until recently, acute malnutrition has not been given much recognition beyond humanitarian emergency interventions.
- Since the 1990s a very effective SAM treatment protocol with low case fatality has been developed and made available. The availability of ready-to-use therapeutic food (RUTF) and the CMAM approach in the early 2000s made large-scale management of SAM possible with improved access and coverage.
- A larger number of children are affected by underweight and stunting than are by acute malnutrition, which demonstrates that a higher mortality risk is associated with acute malnutrition. Addressing acute malnutrition with an effective treatment at large scale will have a significant impact on mortality at the population level (see the Lancet's 2008 "Maternal and Child Undernutrition" series for further information).
- Acute malnutrition occurs in both emergency and non-emergency settings, but it is sometimes difficult to draw the line between the two:
 - Many countries experience protracted emergencies (e.g., South Sudan, Democratic Republic of Congo).
 - Some non-conflict settings like India have high general acute malnutrition (GAM) because of poverty.
 - The SAM/MAM case load in a country is determined by both prevalence and total population. Both are high in Pakistan and India. Therefore, a large concentration of cases can occur outside high-profile emergencies.
- Children have a right to treatment for acute malnutrition, as they do for other illnesses (e.g., malaria, pneumonia), regardless of where they live. It is vital to find ways to reach them over the short, medium and long term.
- Other factors, like HIV, can lead to high SAM levels even when GAM is low (e.g., Malawi).

HANDOUT 1.5

CMAM PRINCIPLES

1. MAXIMUM ACCESS AND COVERAGE

Goal: Bring treatment close to where people live and make it less costly to access by having many decentralised sites and regular (weekly or biweekly) outpatient services.

- Outpatient care can be managed by health care providers with a variety of expertise. This reduces the need for highly trained clinical staff.
- Bringing care into the home reduces opportunity costs and disruption to the family.

2. TIMELINESS

Goal: Start treatment before the onset of life-threatening illnesses.

- Strong community outreach allows for early detection of severe acute malnutrition (SAM), ensuring that children are found, referred and treated on a timely basis.
- Decentralized services allow for early presentation because families can be referred to health facilities with outpatient care close to home.

3. APPROPRIATE MEDICAL CARE AND NUTRITION REHABILITATION

Goal: Provide the right treatment to children in need.

- CMAM recognises that the severity of illness in children with SAM can range widely. Those with medical complications or no appetite are referred to inpatient care. Those with no medical complications and an appetite are referred to outpatient care.
- Once children are identified with acute malnutrition, they must be seen by a health care provider with the skills to assess them.

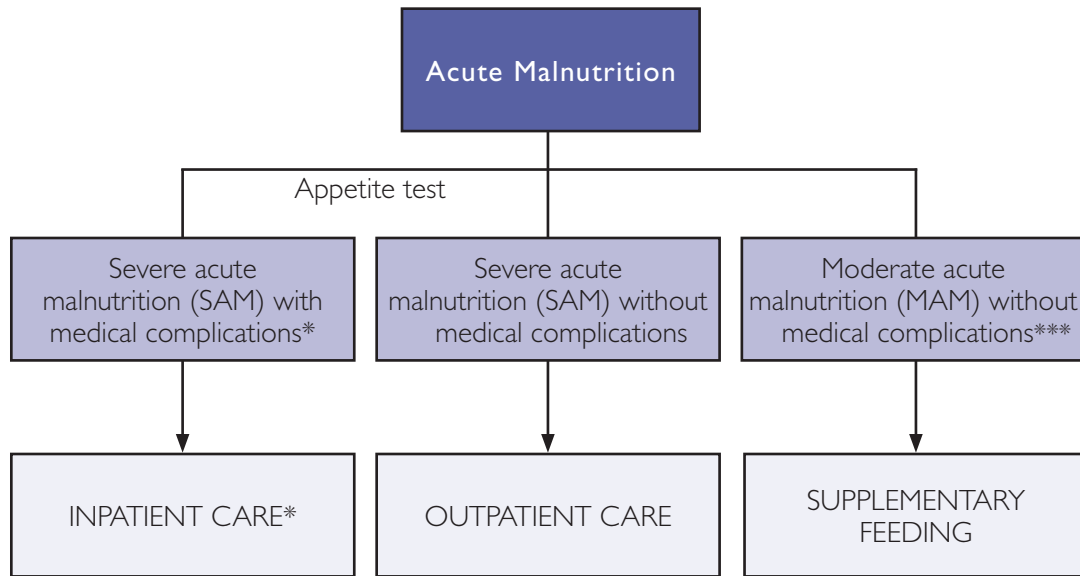
4. CARE AS LONG AS IT IS NEEDED

Goal: Reduce barriers to access and prevent relapse.

- Programmes are designed to minimise default to ensure that children stay in the programme until they recover.
- Strong community outreach helps to identify and reduce barriers to access.
- Strong health service capacity ensures that treatment can be offered on an ongoing basis and is available as long as there is a need and supplies are present.

HANDOUT 1.6

CLASSIFICATION OF ACUTE MALNUTRITION FOR CMAM



*Medical complications include severe bilateral pitting oedema, marasmic kwashiorkor, anorexia, intractable vomiting, convulsions, lethargy or not alert, unconsciousness, lower respiratory tract infection (LRTI), high fever, severe dehydration, severe anaemia, hypoglycaemia, and hypothermia.

**Others admitted to inpatient care are: infants less than 6 months with SAM (bilateral pitting oedema or visible wasting), children over 6 months of age who weigh less than 4 kg, and children with SAM in outpatient care who are losing weight or have static weight for five weeks.

*** Children with MAM and medical complications are admitted to supplementary feeding services or programmes (known as SFPs in the emergency context) and receive supplementary food rations, but are referred for medical treatment and return to supplementary feeding when medical complications are resolved.

HANDOUT 1.7

SCREENING AND ADMISSION USING MUAC

MID-UPPER ARM CIRCUMFERENCE (MUAC) TAPE



MUAC ONLY FOR REFERRAL AND ADMISSION

For children 6-59 months:

RED	SAM	MUAC < 110 mm and/or bilateral pitting oedema
YELLOW	MAM	MUAC \geq 110 mm and < 125 mm
GREEN	Normal	MUAC \geq 125 mm

- MUAC is recommended as the best tool for effective CMAM services. The World Health Organization (WHO, 2005) has endorsed MUAC as an independent criterion for referral and admission to treatment services for severe acute malnutrition (SAM). However, national guidelines may also require the use of weight-for-height (WFH) in addition to MUAC.
- MUAC < 110 mm indicates severe wasting in children age 6-59 months. MUAC \geq 110 mm and < 125 mm indicates moderate wasting (cutoffs being debated).
- Children age 6-59 months who are referred from the community with a red MUAC (<110 mm) are automatically admitted to outpatient care if they have an appetite and no medical complications.
- In some situations, cutoffs may be adjusted to accommodate available resources. For example, several countries, such as Ethiopia, use MUAC < 120 mm as the cutoff for admission to services to manage moderate acute malnutrition (MAM).

SCREENING AND ADMISSION USING MUAC

- MUAC is simple, quick, accurate and inexpensive, and colour-coded tapes are suitable to be used by people who are illiterate/innumerate but trained.
- Identifying SAM with MUAC tapes can help people in the community better recognize which children need treatment: those who are very thin (a red MUAC).
- MUAC automatically selects younger children, those who are most at risk.

- MUAC is a better indicator of mortality risk associated with undernutrition than WFH.¹
- MUAC involves only one measurement, while WFH requires two measurements and one calculation. As a result, there are fewer chances for error with MUAC and the process takes less time.
- MUAC-only admission reduces the chance that children will be rejected at an outpatient care site because a referral based on MUAC is an automatic entitlement for admission.

CONSIDERATIONS IN USING MUAC

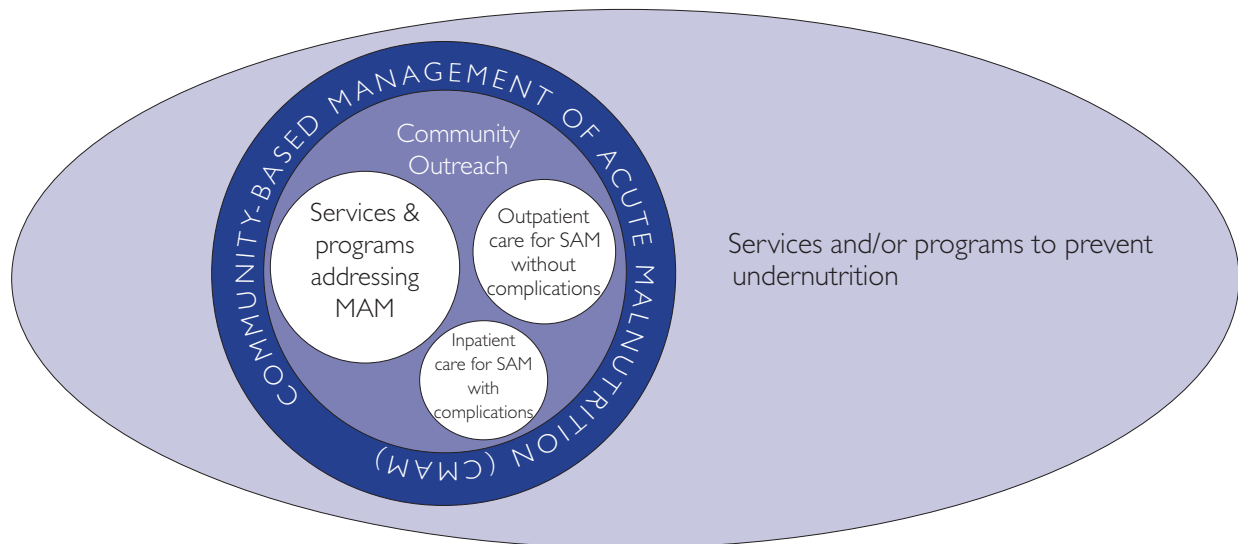
- MUAC and WFH will identify slightly different groups of children as having SAM. Some children with MUAC < 110 mm can have a WFH z-score > -3 (WHO standards) or WFH > 70% of the median (National Centre for Health Statistics [NCHS] references) and vice versa. Therefore, different discharge criteria are applicable depending on the means of admission, which also includes bilateral pitting oedema.
- If a young infant's age is unknown, the age is estimated by the mother/caregiver. If this is not possible, the ready-to-use therapeutic food (RUTF) appetite test can be used. If the infant can swallow the RUTF, then s/he can be safely treated in outpatient care if identified with SAM. No lower cutoff proxy based on length is applicable, neither for the use of MUAC nor for admission to outpatient care for SAM without medical complications.
- Health care providers must be trained and regularly monitored for the standardisation of MUAC measurements.

¹ See Myatt et al (2007), FNB or www.who.int/child_adolescent_health/New_Publications/nutrition/CBSM/tbp_1.pdf.

HANDOUT 1.8

CMAM COMPONENTS AND HOW THEY WORK TOGETHER

CORE COMPONENTS: COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

**1. Community Outreach** involves:

- Community assessment and mobilisation
- Active case-finding to ensure early detection, early presentation and referral
- Education and sensitisation of the community so that they know how and where to bring their children for screening and treatment
- Case follow-up

To establish the most effective outreach, CMAM makes it a priority to:

- Understand local barriers to access and service uptake
- Explain acute malnutrition and the objectives of the services in readily understandable local terms
- Engage a broad array of local institutions and community outreach systems and initiatives

2. Outpatient Care is provided to children 6-59 months with severe acute malnutrition (SAM) and appetite but no medical complications. The following services are provided through outpatient care follow-on sessions to the health centre:

- Medical assessment and anthropometric monitoring
- Nutrition rehabilitation with ready-to-use therapeutic food (RUTF)
- Basic medical treatment

Medical assessment, anthropometric monitoring and treatment are based on simple protocols.

3. **Inpatient Care** is provided to infants below 6 months of age with SAM and to children 6-59 months with SAM and medical complications and/or no appetite.

- Medical treatment and nutrition rehabilitation is provided according to World Health Organization (WHO) and/or national protocols
- Children 6-59 months return to outpatient care when the medical complication is resolved and appetite returns
- Infants receive specialised treatment until full recovery

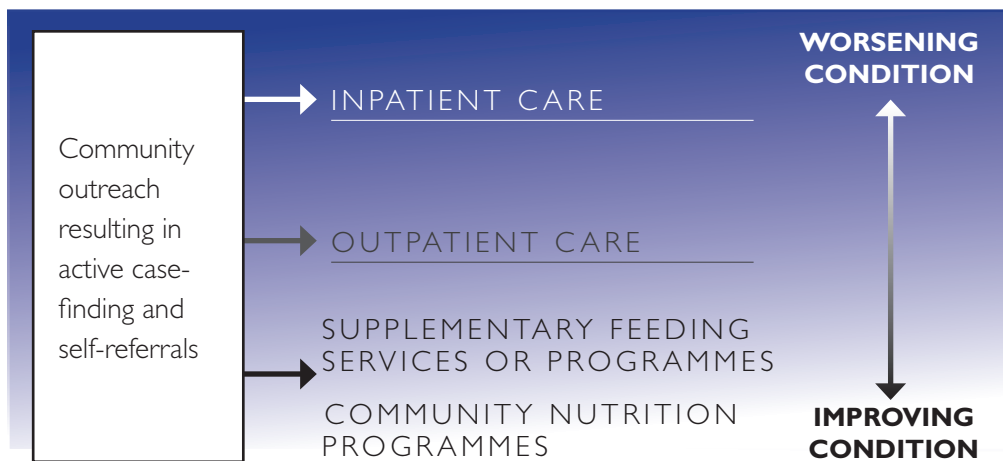
4. **Management of Moderate Acute Malnutrition (MAM)** can occur through supplementary feeding services or programmes. Where such services do not exist, linkages can be created with other prevention and treatment programmes, such as community nutrition programmes, aimed at moderately malnourished children.

REFERRALS TO AND BETWEEN CMAM COMPONENTS

Referrals to CMAM services are fuelled by strong community outreach resulting in active case-finding and self-referrals by community members. Admission criteria determine which service component a child is admitted to initially.

Referrals between CMAM service components follow established criteria. Children initially admitted to inpatient care will move to outpatient care as soon as their medical complication is resolved and their appetite returns. After discharge from outpatient care, the children are referred to nutrition programmes in the community (e.g., PD Hearth, GMP) or, in emergency contexts, to SFPs.

REFERRALS TO AND BETWEEN CMAM SERVICE COMPONENTS



Effective and smooth referrals between the components are essential. This is facilitated by:

- The action protocol
- The use of referral slips, which ensure that full information on the child including reason for referral is available
- Good communication between staff in inpatient care and outpatient care

HANDOUT 1.9

CASE STUDIES

CASE STUDY 1: LIFE-SAVING INTERVENTION IN NIGER (NGO-implemented, sustainability not a stated goal)

In 2005, working at a scale unthinkable five years ago, Médecins Sans Frontières (MSF) reached over 60,000 children with acute malnutrition in Niger through a mobile outpatient care programme and use of ready-to-use therapeutic food (RUTF). Children requiring inpatient care were transported to the inpatient care site. The intervention achieved good results (mortality < 5 percent) in six to 12 months. This intervention saved many lives, but was focused on the emergency response rather than the capacity to treat severe acute malnutrition (SAM) in the long term, as it was not integrated into the health system. In addition, the programme did not incorporate active case-finding; the service was promoted by reputation. MSF's CMAM approach is referred to as "ambulatory care" and is a component within MSF's emergency health and nutrition response model.

CASE STUDY 2: CMAM INTEGRATION IN ZAMBIA

In 2005, based on experiences in Ethiopia and Malawi, Valid International worked with the district Ministry of Health (MOH) in Lusaka, Zambia, to design and develop an integrated programme for management of SAM. The MOH implemented the programme directly from the outset, with Valid providing technical and managerial support. MOH health facility staff were trained to provide outpatient care alongside other primary health care (PHC) activities at health facilities. Hospital staff were trained to discharge children to outpatient care after they stabilised and regained appetite. Community volunteers were recruited for outreach activities and assistance with outpatient care days.

At the time of setup, some nongovernmental organisations (NGOs) were running supplementary feeding programmes (SFPs) in some health centres. The outpatient care linked directly with the SFPs in these centres, referring discharged cases to the SFP, while the SFP referred severe cases to outpatient care. The programme opened in a phased approach, slowly expanding from 5 to 13 health centres across Lusaka. The district MOH's commitment to the programme was crucial to its implementation and integration. The MOH created a position on its district staff for leading CMAM activities. This person is involved in daily implementation, supervision and planning, with technical support from Valid International.

While the programme is running in the health centres, there have been and continue to be challenges in programme development and implementation, including:

- Establishing low-cost local production of RUTF (now in operation)
- Ensuring links between hospitals with inpatient care and health facilities with outpatient care
- Keeping community volunteers motivated when the programme does not offer monetary incentives (other "volunteer" activities in the health system offer per-diem pay)
- Distributing RUTF (currently, Valid International transports it to the MOH central stores and sometimes to health centres directly)
- Limited nursing and nutrition staff availability on outpatient care days due to overall staff shortages
- Inpatient care situated in a national hospital: many people treated there do not live near an outpatient care programme, so they stay in inpatient care at the hospital until weight recovery is achieved; if there were an outpatient care programme near their homes, they could be discharged to it as soon as they were stabilised and regained their appetite
- Funding for the programme, currently from an external donor, must be integrated into national plans

Note: It is recognised that integration from the onset is a much more sustainable way to develop a CMAM programme. However, experience demonstrates that the process of integration and the provision of technical, logistical and, in some cases, managerial support to strengthen capacity for sustainable long-term service provision takes years; this must be considered during the planning stage.

CASE STUDY 3: EMERGENCY AND TRANSITION IN ETHIOPIA

(NGO start-up with plan to transfer most responsibility to MOH and integrate into health system)

Concern Worldwide's community-based therapeutic care (CTC) programme in Wollo, Ethiopia, began in 2003 as a high-input response to emergency levels of general acute malnutrition (GAM) and SAM. The programme was established in health clinics and hospitals with existing staff. The MOH began assuming responsibility for certain activities in 2004. Concern Worldwide and the MOH established a plan in which Concern Worldwide would continue its support but in a more supervisory and mentoring role, and would facilitate supply of RUTF, when necessary, over time. Recognising the need to strengthen the MOH's health services in Wollo so that it could take on the outpatient care programme, Concern Worldwide opened a PHC programme and now indirectly supports the outpatient and inpatient care programmes through that. Published data through May 2005 indicate that recovery and coverage rates have remained high. Similar results were achieved in Malawi, where the MOH had taken on many activities and programme outcomes still exceeded Sphere Standards two years after the peak of the emergency. Concern Worldwide still assists with financial and logistical support for the procurement and delivery of RUTF, training, and low-level supervision/mentoring.

The experience in Ethiopia showed that the MOH's post-emergency takeover of programme activities will be smoother if the MOH is involved in initial planning and activities, and supervision and monitoring systems are integrated into the MOH system from the beginning. The experience also showed that the hand-over is a gradual process that requires an effective, functioning health system in which to integrate activities and a reliable source of RUTF.

HANDOUT 1.10

IMPLEMENTING CMAM IN DIFFERENT CONTEXTS

EMERGENCY AND POST-EMERGENCY SETTINGS

1.10

- CMAM services have been implemented in emergency settings since 2001. More recently, outpatient care for the management of acute malnutrition has occurred in non-emergency and high HIV prevalence settings.
- For CMAM programmes that were started by nongovernmental organisations (NGOs) in an emergency context and handed over to the Ministry of Health (MOH), initial performance results after hand-over are encouraging. Longitudinal data on outcome indicators are necessary to better judge the performance and sustainability of quality of the integrated CMAM services over time.
- In an emergency, CMAM interventions follow a **hierarchy of interventions**. The needs of the greatest number should be a priority. In practice, this means that securing a general ration for the whole population takes priority over setting up services for target groups within the population.
- In an emergency, large numbers of children can be reached through decentralised and/or mobile outpatient care sites.
- To date, there are three scenarios for emergency CMAM interventions:
 - Short-term, life-saving intervention with little or no attempt to hand over CMAM services to the MOH or integrate them into routine health services (**Handout 1.9 Case Study 1**)
 - Integrated CMAM services in a development context (**Handout 1.9 Case Study 2**)
 - Emergency CMAM intervention that evolves into post-emergency services that are handed over to the MOH and integrated into routine health services (**Handout 1.9 Case Study 3**)
- External agencies often start their involvement during a crisis but ideally will continue to support the health system during the post-crisis transition to establish basic CMAM capacity. This will prepare the local health services for future seasonal or sudden increases in severe acute malnutrition (SAM), and if another crisis occurs, the country will require fewer external resources because local capacity will have been maintained.

HANDOUT 1.11

FACTORS TO CONSIDER IN SEEKING TO PROVIDE SERVICES FOR THE MANAGEMENT OF SAM

ENABLING ENVIRONMENT

- Effective Ministry of Health (MOH) leadership and coordination mechanisms are essential to ensure that various agencies, including government and nongovernmental organisations (NGOs) running programmes for children with acute malnutrition, collaborate. Technical task forces and/or coordination meetings at various levels should be put in place.
- Prevention of undernutrition should be the first policy priority, but treatment is needed for children with SAM because they have a high mortality risk.
- National guidelines must be in place to standardise treatment protocols and monitoring tools. The guidelines should describe the community-based approach to manage SAM that builds upon and links with existing inpatient care, nutrition programmes and primary health care (PHC).
- Free treatment for malnourished children must be ensured.
- District health managers should develop a contingency plan to meet and manage additional needs if the number of children requiring CMAM services exceeds capacity.

ACCESS TO SERVICES

- Centralised inpatient care for SAM with medical complications should be provided in a health facility with 24-hour care.
- Decentralised outpatient care for SAM without medical complications should be provided in health facilities. One health care provider can manage 10-15 children a day in outpatient care as part of routine health services. In emergencies, services could be further decentralised in the community and provided by mobile teams. Outpatient care sites should be set up within a day's walk from and back to a settlement.
- Adequate referral mechanisms must be ensured so that once children with SAM are identified, they can access appropriate care.
- Qualified health care providers (i.e. qualified to perform a medical assessment, refer or treat children with SAM) must be available in adequate numbers.
- Community outreach for community assessment, community mobilisation and active case-finding and referral should be in line with existing formal and informal health and community outreach systems and initiatives.
- Management of SAM as a routine health service means that a child presented at the health facility at any time should be assessed and treated for SAM, receive health and nutrition education for prevention of undernutrition, and be referred to other health services and initiatives as needed (e.g., integrated management of childhood illness [IMCI], growth monitoring and promotion [GMP], voluntary counselling and testing [VCT]). IMCI diagnostic tools and GMP programmes should include the use of MUAC so that SAM can be identified and appropriate referral to CMAM can occur.

- Links with other community services and programmes should be made as necessary (e.g., with food security, agriculture and livelihood programmes to ensure increased access to high-quality foods).

SUPPLIES

- Adequate resources and supplies for effective management of SAM must be provided to all health facilities providing inpatient care and outpatient care for the management of SAM. This includes ready-to-use therapeutic food (RUTF), F75, F100, ReSoMal, essential drugs, mid-upper arm circumference (MUAC) tapes, scales and height boards, treatment cards, and monitoring cards.
- Regular transportation of supplies should be secured.

QUALITY OF SERVICES

- Having national CMAM guidelines with standardised treatment protocols fosters adherence.
- Support and supervision on clinical case management and organisation of services improve performance.
- Standardised monitoring and evaluation (M&E) systems and tools compatible with the national health information system enhance quality of services and reporting.

COMPETENCIES

- Opportunities to integrate pre-service and in-service training for CMAM should be maximised.
- Internships at learning sites and learning visits provide real-time learning and rapid transfer of skills.
- In-service training for improved management of SAM must be provided to health care providers at all levels (i.e. district health managers, health care providers at health facilities, community outreach workers) so there is an effective integrated approach that links management and supervision, inpatient care, outpatient care, and other health services with one another.
- In-service training and support must be provided to community outreach workers (e.g., community health workers [CHWs], volunteers) who identify and refer children with SAM in the communities.
- Capacity development strategies should account for high staff turnover.
- A positive work and learning environment empowers and motivates health care providers (control workload).
- CMAM should become part of health care providers' roles, responsibilities and job descriptions, and health care providers should be accountable for meeting those responsibilities.
- Sharing information and experiences with peers and experts is essential for continually learning good practices.
- Formative research is critical for improving the effectiveness of services, promoting good practices, learning lessons and fostering programme integration and scale-up.

HANDOUT 1.12

INTEGRATING CMAM INTO ROUTINE HEALTH SERVICES AT THE DISTRICT LEVEL

- Existing health services and initiatives should be mapped and the programme planned with the relevant authorities and agencies to prevent duplication, build upon and strengthen existing structures and systems, and ensure that referral pathways, roles and responsibilities are clear.
- Health facilities with existing inpatient care for severe acute malnutrition (SAM) (e.g., therapeutic feeding centre [TFC], nutrition rehabilitation unit [NRU], hospital ward) can be adapted to also establish outpatient care for the management of SAM without medical complications in their outpatient department (OPD). This takes the burden off the inpatient care staff, which will continue to treat children with SAM and medical complications until they are stabilised and can be referred to outpatient care.
- Good communication between health care providers managing inpatient care and outpatient care is important for strong links and referral between those services.
- Existing community outreach networks can provide a platform for the community outreach work required for successful CMAM implementation. Assessing what is already in place and identifying potential links to those services are key to making the best use of resources available.
- CMAM can be integrated into child health and nutrition services at first-level health facilities. Bilateral pitting oedema and mid-upper arm circumference (MUAC) checks can be added to IMCI diagnostic tools so that children with SAM can be identified at any contact point within the health care system and be referred for appropriate treatment.
- CMAM can also be linked with other health services such as malaria prevention, voluntary counselling and testing (VCT), family planning, and provision of relevant information, education and communication (IEC) materials.

HANDOUT 1.13

ESSENTIALS OF CMAM

ESSENTIALS OF CMAM

1.13

1. Acute malnutrition is a significant public health concern. It is estimated that 20 million children around the world suffer from severe acute malnutrition (SAM). Children suffering from SAM have an increased mortality risk. Current estimates suggest that SAM contributes to about 1 million deaths of children under 5 every year.
2. CMAM is a new approach to treating SAM. The principles of CMAM are maximum coverage and access (reaching as many children with acute malnutrition as possible), timeliness (early identification and referral before medical complications develop) and appropriate care (outpatient care for children with SAM without medical complications as long as needed and inpatient care only for those with SAM and medical complications). Evidence from emergency contexts has shown that about 80 percent of children with SAM can be treated as outpatients.
3. To reach the maximum number of children with acute malnutrition, trained health care providers must be able to reach the majority of these children in their communities, where they can access health facilities as outpatients and continue treatment in their homes. Coverage and access are achieved by providing CMAM outpatient care in decentralised health facilities or by establishing mobile outpatient care sites (in the case of emergencies). This differs from the centre-based approach, where all children with SAM are treated as inpatients for both stabilisation and rehabilitation until weight recovery is achieved.
4. Recent innovations have made CMAM possible:
 - Ready-to-use therapeutic food (RUTF), which can be used safely at home without refrigeration and in areas where hygiene conditions are not optimal, meaning children can be treated at home
 - Using an acute malnutrition classification that divides SAM into two categories--SAM with medical complications and SAM without medical complications--to determine treatment (see below)
 - Screening and admission using mid-upper arm circumference (MUAC) which is simple, accurate and inexpensive, and makes active case-finding, referral and admission transparent
5. Treatment for SAM differentiates between SAM with medical complications and SAM without medical complications:
 - Children with SAM without appetite or with medical complications are treated in inpatient care
 - Children with SAM and appetite and no medical complications are treated in outpatient care
 - Infants under 6 months with SAM are treated in inpatient care

Children with moderate acute malnutrition (MAM) with appetite and no medical complications are treated in services or programmes that manage MAM, such as supplementary feeding), if available.

6. CMAM has four essential components: community outreach, outpatient care for children with SAM without medical complications, inpatient care for children with SAM with medical complications and for infants under 6 months with SAM, and supplementary feeding for children with MAM (depending on the context). In some cases, supplementary feeding may not be available. Effective and smooth referral among the components is essential. Using an action protocol helps health care providers determine which children require inpatient care and follow-up at home. To date, the protocols used in outpatient care are aimed at children 6 to 59 months old.

7. Evidence from emergency programmes has demonstrated that the community-based approach works very well. Recovery rates, mortality rates and default rates are all within Sphere Standards. Coverage ratios are much higher than those seen in centre-based services.
8. CMAM can be implemented in a variety of contexts (e.g., emergency, non-emergency, high HIV prevalence). The CMAM components should complement existing services.
9. CMAM should be integrated into existing health facilities and run as a component of primary health care (PHC) where possible. Linkages can be made to other child health services (e.g., integrated management of childhood illness [IMCI], HIV services, prevention services).
10. In recent years, there have been several key developments and commitments at the global level regarding the acceptance of CMAM.

HANDOUT 1.14

FIELD VISIT CHECKLIST

Complete the following activities during the CMAM field visit.

1.14

OBSERVE THE FOLLOWING ACTIVITIES, IF POSSIBLE:	
	Admission of children with severe acute malnutrition (SAM)
	Discharge of children with SAM
	Outpatient care follow-on sessions <ul style="list-style-type: none"> -Anthropometric measurement -Medical assessment -Supply of ready-to-use therapeutic food (RUTF)
DISCUSS WITH STAFF THE FOLLOWING:	
	What do they like and dislike about the CMAM service?
	How does this programme affect their overall workload?
	What shortcomings or problems do they see with the service?
	How do they work with volunteers?
	How do they link with other health services (e.g., expanded programme of immunisation [EPI], voluntary counselling and testing [VCT])?
	What type of support is provided to the child's family after the child is discharged (e.g., micro-credit support, agricultural support, IYCF counselling)?
DISCUSS WITH MOTHERS/CAREGIVERS THE FOLLOWING:	
	How did they find out about the service?
	What do they like and dislike about the service?

HANDOUT 1.15

POWERPOINT PRESENTATION SLIDE IMAGES

Overview of Community-Based Management of Acute Malnutrition (CMAM)

1

Module 1. Learning Objectives

- Discuss acute malnutrition and the need for a response.
- Describe the principles of CMAM.
- Describe recent innovations and evidence making CMAM possible.
- Identify the components of CMAM and how they work together.
- Explore how CMAM can be implemented in different contexts.
- Identify global commitments related to CMAM.

2

What is undernutrition?

- A consequence of a deficiency in nutrients in the body
- Types of undernutrition?
 - Acute malnutrition (wasting and bilateral pitting oedema)
 - Stunting
 - Underweight (combined measurement of stunting and wasting)
 - Micronutrient deficiencies
- Why focus on acute malnutrition?

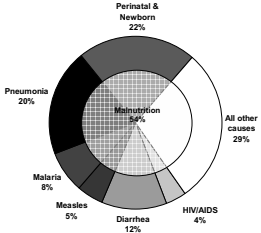
3

What is undernutrition?



Photo credit: Mike Golden

Undernutrition and Child Mortality



- 54% of child mortality is associated with underweight
- Severe wasting is an important cause of these deaths (it is difficult to estimate)
- Proportion associated with acute malnutrition often grows dramatically in emergency contexts

Caulfield, LE, M de Onis, M Blossner, and R Black, 2004

5

Magnitude of 'Wasting' Around the World – not only in emergencies

	Total population of under-5s (2010)	Moderate and severe wasting (% under-5s)	Severe wasting (% score < -3)	Under-5 mortality rate (2010)	Severely wasted children (2010)	Ranking
Tuvalu	119566	16	3	87	3857.0	1
Palau	23219	13	3	803	795.8	2
Democratic Republic of Congo	110220	13	3	285	295.5	3
Myanmar	10403	12	1	153	184.1	4
Maldives	2954	14	5	136	257.7	5
Ethiopia	12453	11	1	959	1245.6	6
Guinea	2197	15	4	148	14.3	7
Afghanistan	4183	25	2	257	83.7	8
Somalia	2030	17	4	255	99.8	9
Burkina Faso	2560	12	3	297	74.8	10
Niger	2549	14	3	242	74.5	11
Mali	2581	11	2	229	54.6	12
Madagascar	2668	10	1	87	36.9	13
Qatar	1648	11	2	200	32.9	14
Yemen	2492	16	1	86	74.8	15
Lebanon	807	15	3	91	20.0	16
Sierra Leone	993	10	2	284	18.1	17
Togo	811	12	2	148	16.2	18
Mauritania	490	13	3	183	15.0	19
Burkina Faso	717	12	2	85	14.3	20
Total (10)					5683.6	

*All values from 2002 except columns 2 and 3 which refer to 1995-2010. % probability of dying between birth and 5 years of age expressed per 1000 live births.

†Total number and rates of wasted children in countries with high under-5 mortality.

Source: Webb and Gross, Wasted time for wasted children, *The Lancet* April 8, 2006

6

Recent History in the Management of Severe Acute Malnutrition (SAM)

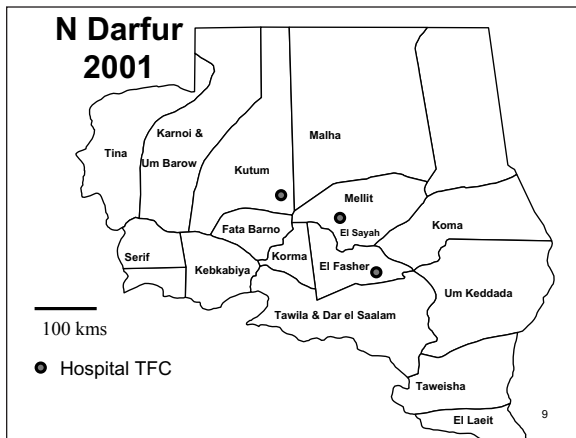
- Traditionally, children with SAM are treated in centre-based care: paediatric ward, therapeutic feeding centre (TFC), nutrition rehabilitation unit (NRU), other inpatient care sites.
- The centre-based care model follows the World Health Organization (WHO) Guidelines for Management of Severe Malnutrition.

7

Centre-Based Care for Children with SAM: Example of a Therapeutic Feeding Centre (TFC)

- What is a TFC?
- What are the advantages and disadvantages of a TFC?
- What could be changed about the TFC model to address these challenges?

8



9



10



Centre-Based Care for Children with SAM: Challenges

- Low coverage leading to late presentation
- Overcrowding
- Heavy staff work loads
- Cross infection
- High default rates due to need for long stay
- Potential for mothers to engage in high risk behaviours to cover meals

12

What is Community-Based Management of Acute Malnutrition (CMAM)?



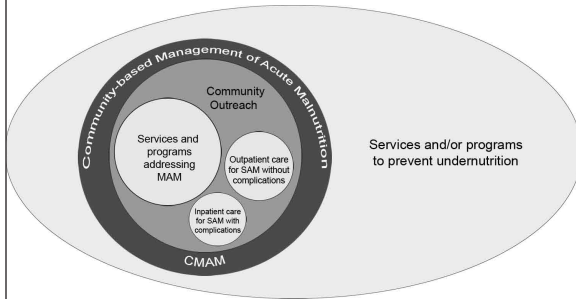
13

CMAM

- A community-based approach to treating SAM
 - Most children with SAM without medical complications can be treated as outpatients at accessible, decentralised sites
 - Children with SAM and medical complications are treated as inpatients
 - Community outreach for community involvement and early detection and referral of cases
- Also known as community-based therapeutic care (CTC), ambulatory care, home-based care (HBC) for the management of SAM

14

Core Components of CMAM (1)



15

Core Components of CMAM (2)

1. Community Outreach:

- Community assessment
- Community mobilisation and involvement
- Community outreach workers:
 - Early identification and referral of children with SAM before the onset of serious complications
 - Follow-up home visits for problem cases
- Community outreach to increase access and coverage

16

Core Components of CMAM (3)

2. Outpatient care for children with SAM without medical complications at decentralised health facilities and at home
 - Initial medical and anthropometry assessment with the start of medical treatment and nutrition rehabilitation with take home ready-to-use therapeutic food (RUTF)
 - Weekly or bi-weekly medical and anthropometry assessments monitoring treatment progress
 - Continued nutrition rehabilitation with RUTF at home

ESSENTIAL: a good referral system to inpatient care, based on Action Protocol

17

Core Components of CMAM (4)

3. Inpatient care for children with SAM with medical complications or no appetite
 - Child is treated in a hospital for stabilisation of the medical complication
 - Child resumes outpatient care when complications are resolved

ESSENTIAL: good referral system to outpatient care

18

Core Components of CMAM (5)

- 4. Services or programmes for the management of moderate acute malnutrition (MAM)
 - Supplementary Feeding

19

Recent History of CMAM

- Response to challenges of centre-based care for the management of SAM
- 2000: 1st pilot programme in Ethiopia
- 2002: pilot programme in Malawi
- Scale up of programmes in Ethiopia (2003-4 Emergency), Malawi (2005-6 Emergency), Niger (2005-6 Emergency)
- Many agencies and governments now involved in CMAM programming in emergencies and non-emergencies
 - E.g., Malawi, Ethiopia, Niger, Democratic Republic of Congo, Sudan, Kenya, Somalia, Sri Lanka
- Over 25,000 children with SAM treated in CMAM programmes since 2001 (Lancet 2006)

20

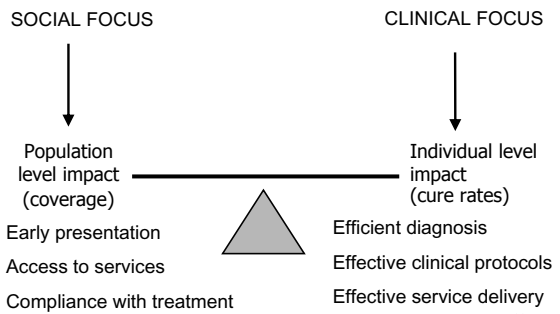
Principles of CMAM

- Maximum access and coverage
- Timeliness
- Appropriate medical and nutrition care
- Care for as long as needed

Following these steps ensure maximum public health impact!

21

Maximise Impact by Focussing on Public Health

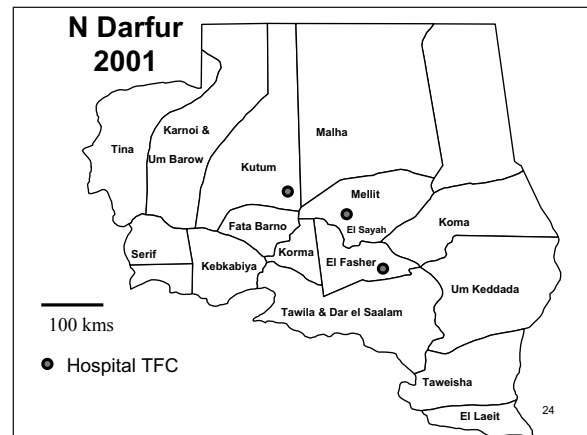


22

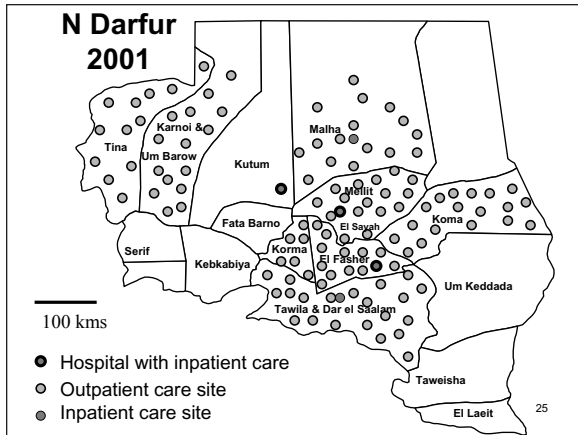
Key Principle of CMAM

Maximum access and coverage

23



24



Key Principle of CMAM

Timeliness



Timeliness (continued)

- Find children before SAM becomes serious and medical complications arise
- Good community outreach is essential
- Screening and referral by outreach workers (e.g., community health workers [CHWs], volunteers)

Catching Acute Malnutrition Early

Inpatient care Outpatient Care SFP

Key Principle of CMAM

Appropriate medical care
and nutrition rehabilitation

31

Appropriate Medical Treatment and Nutrition Rehabilitation Based on Need



Key Principle of CMAM

Care as long as it is needed

33

Care For as Long as Needed

- Care for the management of SAM is provided as long as needed
- Services to address SAM can be integrated into routine health services of health facilities, if supplies are present
- Additional support to health facilities can be added during certain seasonal peaks or during a crisis

34

New Innovations Making CMAM Possible

- RUTF
- New classification of acute malnutrition
- Mid-upper arm circumference (MUAC) accepted as independent criteria for the classification of SAM

35

Ready-to-Use Therapeutic Food (RUTF)



- Energy and nutrient dense: 500 kcal/92g
- Same formula as F100 (except it contains iron)
- No microbial growth even when opened
- Safe and easy for home use
- Is ingested after breast milk
- Safe drinking water should be provided
- Well liked by children
- Can be produced locally
- Is not given to infants under 6 months

36

RUTF (continued)

- Nutriset France produces 'PlumpyNut®' and has national production franchises in Niger, Ethiopia, and Zambia
- Another producers of RUTF is Valid Nutrition in Malawi, Zambia and Kenya
- Ingredients for lipid-based RUTF:
 - Peanuts (ground into a paste)
 - Vegetable oil
 - Powdered sugar
 - Powdered milk
 - Vitamin and mineral mix (special formula)
- Additional formulations of RUTF are being researched

37

Local production-RUTF

Malawi and Ethiopia



38

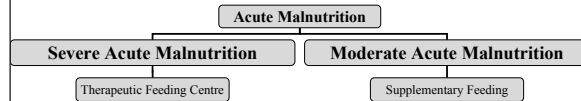
Effectiveness of RUTF



- Treatment at home using RUTF resulted in better outcomes than centre-based care in Malawi (Ciliberto, et al. 2005.)
- Locally produced RUTF is nutritionally equivalent to PlumpyNut® (Sandige et al. 2004.)

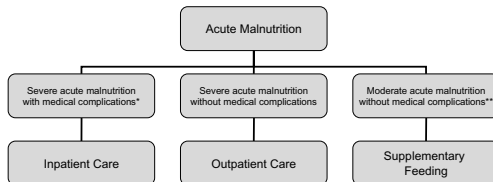
39

WHO Classification for the Treatment of Malnutrition



40

Classification for the Community-Based Treatment of Acute Malnutrition



***Complications:** anorexia or no appetite, intractable vomiting, convulsions, lethargy or not alert, unconsciousness, lower respiratory tract infection (LRTI), high fever, severe dehydration, severe anaemia, hypoglycaemia, or hypothermia

**Children with MAM with medical complications are admitted to supplementary feeding but are referred for treatment of the medical complication as appropriate¹

Mid-Upper Arm Circumference (MUAC) for Assessment and Admission



- A transparent and understandable measurement
- Can be used by community-based outreach workers (e.g., CHWs, volunteers) for case-finding in the community

42

Screening and Admission Using MUAC

- Initially, CMAM used 2 stage screening process:
 - MUAC for screening in the community
 - Weight-for-height (WFH) for admission at a health facility
 = Time consuming, resource intense, some negative feedback, risk of refusal at admission
- MUAC for admission to CMAM (with presence of bilateral pitting oedema, with WFH optional)
 - = Easier, more transparent, child identified with SAM in the community will be admitted, thus fewer children are turned away

43

MUAC: Community Referral



44

Components of CMAM

1. Community outreach
2. Outpatient care for the management of SAM without medical complications
3. Inpatient care for the management of SAM with medical complications
4. Services or programmes for the management of MAM

45

1. Community Outreach

Key individuals in the community:

- Promote CMAM services
- Make CMAM and the treatment of SAM understandable
- Understand cultural practices, barriers and systems
- Dialogue on barriers to uptake
- Promote community case-finding and referral
- Conduct follow-up home visits for problem cases



46

Community Mobilisation and Screening

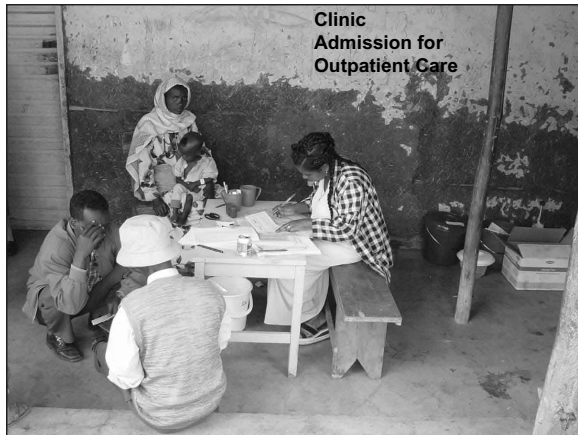


47

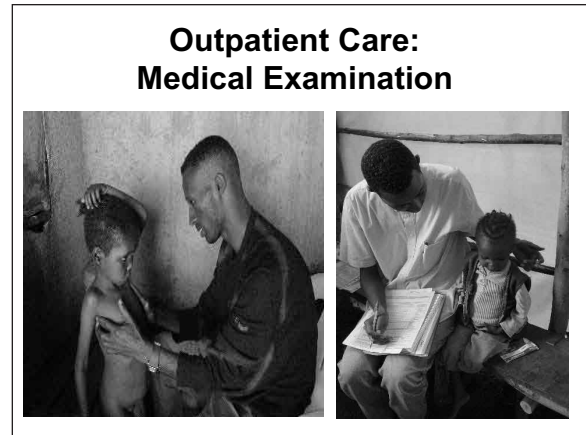
2. Outpatient Care

- Target group: children 6-59 months with SAM WITHOUT medical complications AND with good appetite
- Activities: weekly outpatient care follow-on visits at the health facility (medical assessment and monitoring, basic medical treatment and nutrition rehabilitation)

48




Clinic Admission for Outpatient Care



Outpatient Care: Medical Examination


Outpatient Care: Routine Medication



- Amoxicillin
- Anti-Malarials
- Vitamin A
- Anti-helminths
- Measles vaccination

51

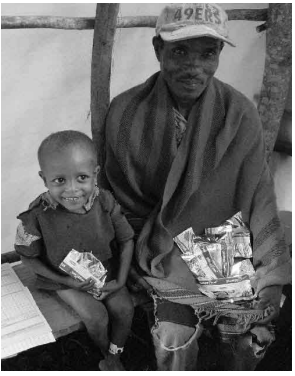
Outpatient Care: Appetite Test



52

RUTF Supply


- Ensure understanding of RUTF and use of medicines
 - Provide one week's supply of RUTF and medicine to take at home
 - Return every week to outpatient care to monitor progress and assess compliance



53

3. Inpatient Care

- SAM with medical complications or no appetite
- Medical treatment according to WHO and/or national protocols
- Return to outpatient care after complication is resolved, oedema reduced, and appetite regained
- All infants under 6 months with SAM receive specialised treatment until full recovery



54

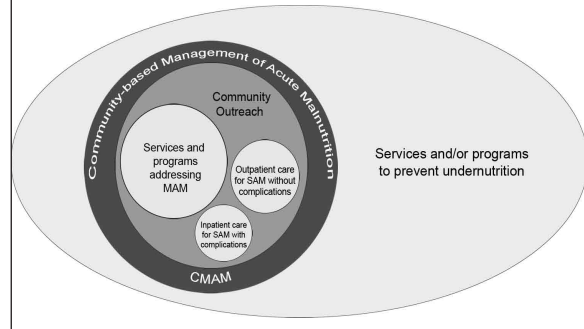
4. Services or Programmes for the Management of MAM



- Activities
 - Routine medication
 - Dry supplementary ration
 - Basic preventive health care and immunisation
 - Health and hygiene education; infant and young child feeding (IYCF) practices and behaviour change communication (BCC)

55

Components of CMAM



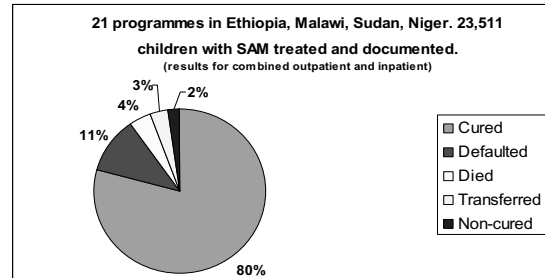
1.15

Relationship Between Outpatient Care and Inpatient Care

- **Complementary**
 - Inpatient care for the management of SAM with medical complications until the medical condition is stabilised and the complication is resolving
- **Different priorities**
 - Outpatient care prioritises early access and coverage
 - Inpatient care prioritises medical care and therapeutic feeding for stabilisation

57

Programme Outcomes for 21 Inpatient and Outpatient Care Programmes – 2001 to 2006

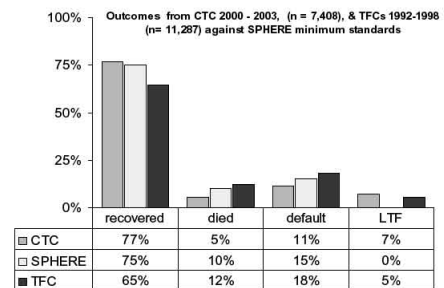


CMAM in Different Contexts

- **Extensive emergency experience**
 - Some transition into longer term programming, as in the cases of Malawi and Ethiopia
- **Growing experience in non-emergency or development contexts**
 - e.g., Ghana, Zambia, Rwanda, Haiti, Nepal
- **Growing experience in high HIV prevalent areas**
 - Links to voluntary counselling and testing (VCT) and antiretroviral therapy (ART)

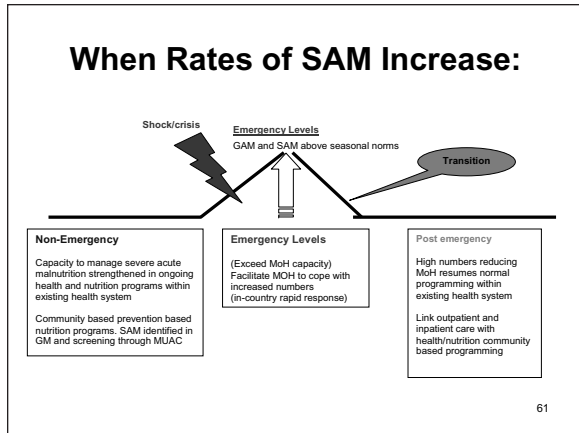
59

CMAM: It Works in Emergency Contexts



Source: Valid International

1



Global Commitment for CMAM (1)

- WHO consultation (Nov 2005) – agreement by WHO to revise SAM guidelines to include outpatient care and endorse MUAC as entry criterion for programmes
- United Nations Children’s Fund (UNICEF) accepted CMAM globally (2006)
- United Nations (UN) Joint Statement on Community-Based Management of Severe Acute Malnutrition (May 2007) – support for national policies, protocols, trainings, and action plans for adopting approach: e.g., Ethiopia, Malawi, Uganda, Sudan, Niger

Global Commitment for CMAM (2)

- Collaboration on joint trainings between WHO, UNICEF, United Nations High Council for Refugees (UNHCR), and United States Agency for International Development (USAID)
- Donor support for CMAM development, coordination and training
- Several agencies supporting integration of CMAM into national health systems

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE TWO

Defining and Measuring Acute Malnutrition

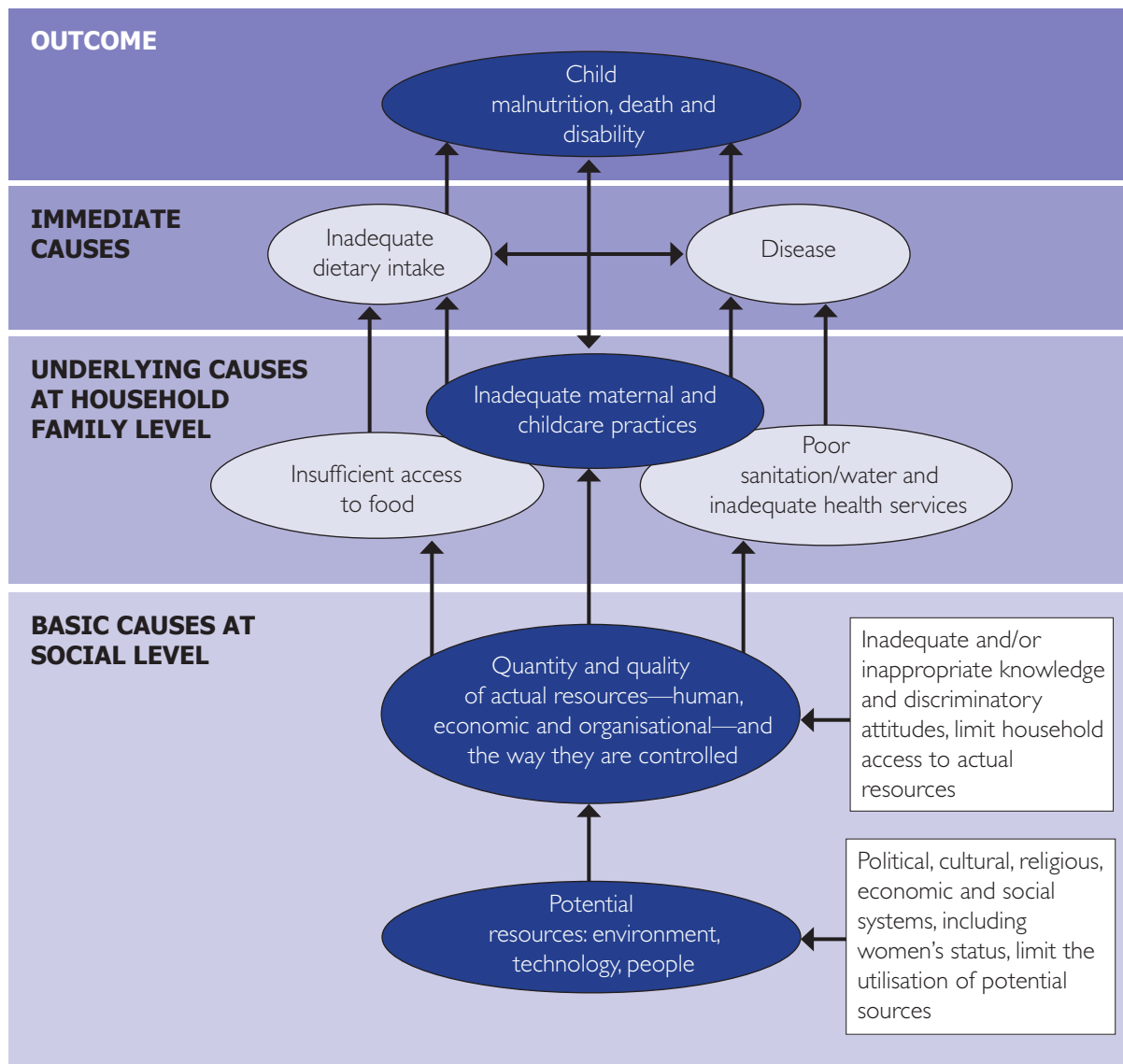
LEARNING OBJECTIVES	HANDOUTS AND EXERCISES
1. Discuss Causes and Consequences of Undernutrition and Undernutrition Terminology	Handout 2.1 Causal Framework of Undernutrition Handout 2.2 Undernutrition Definitions, Indices, Indicators and Indicator Cutoffs
2. Identify the Clinical Signs of Acute Malnutrition	Handout 2.3 Clinical Manifestations of Acute Malnutrition
3. Measure, Calculate and Classify Acute Malnutrition	Handout 2.4 Assessing Age, Bilateral Pitting Oedema, MUAC, Weight and Height Handout 2.5 Weight-for-Height Tables for Field Use Exercise 2.1 Grades of Bilateral Pitting Oedema Exercise 2.2 Calculating WFH and Classifying Acute Malnutrition
Wrap-Up and Module Evaluation	

HANDOUT 2.1

CAUSAL FRAMEWORK OF UNDERNUTRITION

CAUSES OF UNDERNUTRITION

The United Nations Children’s Fund (UNICEF) has developed a framework showing the immediate, underlying and basic causes of undernutrition and how they contribute to and influence one another. The framework can be used at national, district and local levels for assessment and analysis to gain a better understanding of causes of undernutrition. This can help improve nutrition and reduce child mortality and disability.



Adapted from UNICEF 1990

HANDOUT 2.2

UNDERNUTRITION DEFINITIONS, INDICES, INDICATORS AND INDICATOR CUTOFFS

UNDERNUTRITION

There are four forms of undernutrition:

- Acute malnutrition
- Stunting
- Underweight
- Micronutrient deficiency

Undernutrition is defined based on anthropometric indicators, clinical signs and clinical tests. The four forms often overlap in one child or in a population. The focus of these training modules is on acute malnutrition.

ACUTE MALNUTRITION

Acute malnutrition is caused by a decrease in food consumption and/or illness resulting in bilateral pitting oedema or sudden weight loss. It is defined by the presence of bilateral pitting oedema or by wasting.

- a. **Severe acute malnutrition (SAM)** is defined by the presence of bilateral pitting oedema or severe wasting. A child with SAM is highly vulnerable and has a high mortality risk.

Note: SAM can also be used as a population-based indicator defined by the prevalence of bilateral pitting oedema and severe wasting (based on the weight-for-height [WFH] indicator using the World Health Organization [WHO] standards or the National Centre for Health Statistics [NCHS] references). The prevalence of wasting based on mid-upper arm circumference (MUAC) is useful for estimating case load.

- b. **Moderate acute malnutrition (MAM)** is defined by moderate wasting.

Note: MAM can also be used as a population-level indicator defined by moderate wasting (based on the WFH indicator using the WHO standards or the NCHS references).

INDICES

When body measurements are compared to a reference value, they are called nutrition indices. Three commonly used nutrition indices are WFH which is used to assess wasting, height-for-age (HFA) which is used to assess stunting, and weight-for-age (WFA) which is used to assess underweight.

The WFH index is used to assess wasting, a clinical manifestation of acute malnutrition. It shows how a child's weight compares to the weight of a child of the same height and sex in the WHO standard or NCHS reference populations. The index reflects a child's current nutritional status.

INDICATORS

Nutrition indicators are an interpretation of nutrition indices based on cutoff points. Nutrition indicators measure the clinical phenomena of malnutrition and are used for making a judgement or assessment. A good nutrition indicator detects as many people at risk as possible (sensitivity) without including too many people who are not at risk (specificity). A good nutrition indicator should also be functionally meaningful (i.e., related to the risk of morbidity and mortality), and be sensitive to change.

Standard cutoff points are used internationally to define undernutrition in children ages 6-59 months. The cutoff points for nutrition indicators are derived from the WHO child growth standard population (WHO standards) or NCHS reference population (NCHS references).

Note: Cutoffs may vary according to the context, agency and national guidelines.

Bilateral Pitting Oedema

Bilateral pitting oedema is a clinical manifestation of acute malnutrition caused by an abnormal infiltration and excess accumulation of serous fluid in connective tissue or in a serous cavity. Bilateral pitting oedema (also called kwashiorkor) is verified when thumb pressure applied on top of both feet for three seconds leaves a pit (indentation) in the foot after the thumb is lifted.

MUAC Indicator

Low MUAC is an indicator for wasting, to be used for a child age 6-59 months. The indicator is relatively easy to measure; it involves measuring the circumference of a child's left mid-upper arm. MUAC < 110 mm for children ages 6-59 months indicates SAM (cutoff being debated). MUAC ≥ 110 mm and < 125 mm for children ages 6-59 months indicates MAM (cutoffs being debated). MUAC is a better indicator of mortality risk associated with acute malnutrition than WFH z-score (WHO) or WFH as a percentage of the median (NCHS).

WFH Indicator

Low WFH is an indicator for wasting. A WFH standard deviation (SD) below -2 z-score of the median (WFH < -2 z-score) of the WHO standards or a WFH < 80% of the median (WFH < 80%) of the NCHS references indicate wasting. Severe wasting is indicated by a WFH < -3 z-score (WHO standards) or a WFH < 70% of the median (NCHS references). Moderate wasting is indicated by a WFH ≥ -3 and < -2 z-score (WHO standards) or a WFH ≥ 70% and < 80% (NCHS references).

SUMMARY TABLE: INDICATORS OF ACUTE MALNUTRITION WITH CUTOFF FOR SAM AND MAM

	Bilateral Pitting Oedema	MUAC*	WFH z-score (WHO standards or NCHS references)	WFH as a percentage of the median (NCHS references)
SAM:	Present	< 110 mm* or red	< -3	< 70%
MAM:	Not present	> 110 mm* and < 125 mm* or yellow	≥ -3 and < -2	≥ 70% and < 80%

*cutoffs being debated

Note on the WHO child growth standards and NCHS child growth references:

The NCHS child growth references were developed in 1978 from a cohort of American children and used as an international reference until 2006. The WHO 2006 Child Growth Standards were developed from a multicentre growth reference study that followed optimal child growth of a cohort of children in Oman, Norway, Ghana, India and the United States. The principal measures used in CTC/CMAM services are bilateral pitting oedema and MUAC. A measure commonly used in therapeutic and supplementary feeding is WFH as a percentage of the median based on the NCHS references. A transition to using WFH z-score of the median of the WHO standards was recommended but not yet accomplished before this document was published.

HANDOUT 2.3

CLINICAL MANIFESTATIONS OF ACUTE MALNUTRITION

Acute malnutrition is defined by the presence of **bilateral pitting oedema and wasting (defined by low mid-upper arm circumference [MUAC] or weight-for-height [WFH])**. Acute malnutrition is caused by a decrease in food consumption and/or illness.

- The following terms are used to describe the clinical manifestations of severe acute malnutrition (SAM):
 - Marasmus (severe wasting)
 - Kwashiorkor (bilateral pitting oedema)
 - Marasmic kwashiorkor (bilateral pitting oedema and severe wasting)
- Familiarity with these clinical signs will help health care providers triage cases efficiently – even before measurements are made.
- In most cases the anthropometric measurements will confirm these clinical diagnoses, but in a few cases there might be clinical but no anthropometric confirmation (e.g., observing that the skin on the buttocks has a “baggy pants” look.)

TABLE OF CLINICAL MANIFESTATIONS OF ACUTE MALNUTRITION

CLINICAL SIGNS OF MARASMUS

A child with marasmus might have these characteristics:

- Thin appearance, “old man” face
- Apathy: the child is very quiet and does not cry
- The ribs and bones are easily seen
- The skin under the upper arms appears loose
- On the back, the ribs and shoulder bones are easily seen
- In extreme cases of wasting, the skin on the buttocks has a “baggy pants” look
- No bilateral pitting oedema

These children have lost fat and muscle and will weigh less than other children of similar height.

INDICATOR

Severe wasting :

MUAC < 110 mm
Z-score < -3 (WHO)
WFH < 70% of median (NCHS)

PICTURE



CLINICAL SIGNS OF KWASHIORKOR (BILATERAL PITTING OEDEMA)

A child with kwashiorkor (bilateral pitting oedema) might have these characteristics:

- “Moon face”
- Dermatitis: flaky skin or patches of abnormally light or dark skin (in severe cases)
- Apathy, little energy
- Loss of appetite
- Hair changes
- Irritable, cries easily

INDICATOR

Bilateral pitting oedema

PICTURE



CLINICAL SIGNS OF MARASMIC KWASHIORKOR

A child with marasmic kwashiorkor has these characteristics:

- Bilateral pitting oedema
- Severe wasting

PICTURE



INDICATOR

Bilateral pitting oedema

And

Severe Wasting

MUAC < 110 mm

Z-score < -3 (WHO)

WFH < 70% of median (NCHS)

HANDOUT 2.4

ASSESSING AGE, BILATERAL PITTING OEDEMA, MUAC, WEIGHT AND HEIGHT

I. AGE

In CMAM, estimating a child's age is relevant for a number of reasons. CMAM outpatient care targets children between 6-59 months. A child under 6 months with severe acute malnutrition (SAM) and no medical complications is not eligible for outpatient care as older children would be. Mid-upper arm circumference (MUAC) is only used for children 6-59 months. And measuring height for WFH calculations is carried out differently for children under the age of two.

If birth dates are not recorded on a child health card (CHC) or immunisation card and it is necessary to determine the age, the recall of the mother/caregiver is used to estimate the child's age.

Age is easy to estimate for younger children but is often difficult to determine for older children. The mother/caregiver's recall is valid for assessing the age of a young infant in case of absence of proof. Otherwise, the child's ability to swallow semi-solids will be tested using ready-to-use therapeutic food (RUTF). If the child eats the RUTF (passes the appetite test) then the child is considered to be 6 months and the MUAC measurement is valid as an admission criterion for CMAM.

Other methods of estimating age include:

- Asking the mother/caregiver if the child was born before or after certain major local events until a fairly accurate age is pinpointed. It might be helpful to develop a local event calendar. The World Health Organization (WHO) Child Age Calculator, a rotating disk mounted on a calendar, has been developed as a job aid for health workers to calculate a child's age. The calculators might be available at regional WHO offices. Also, the Food and Agriculture Organisation of the United Nations (FAO) has developed guidelines to estimate the month and year of birth (Draft, 2008).
- Estimating age based on height. The standard international height proxy for children 59 months is 110 cm. Note that while the standard international height proxy for children 6 months is 65 cm, it is not recommended to use this height cutoff in stunted populations. The mother/caregiver's recall is much more accurate in these cases.

2. BILATERAL PITTING OEDEMA

Bilateral pitting oedema, or kwashiorkor, can be verified when thumb pressure applied on top of both feet for three seconds leaves a pit (indentation) in the foot after the thumb is lifted. The pit will remain in both feet for several seconds. Bilateral pitting oedema usually starts in the feet and ankles. It is important to test both feet; if the pitting is not bilateral, the oedema is not of nutritional origin. The presence of bilateral pitting oedema should be confirmed by a second person who repeats the test.

There are three grades of bilateral pitting oedema. When there is no bilateral pitting oedema, the grade is "absent." Grades of bilateral pitting oedema are classified by plus signs.

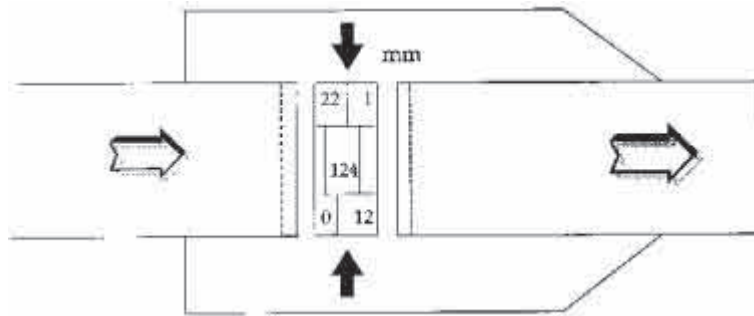
Grades of bilateral pitting oedema	Definition
Absent	Absent
Grade +	Mild: Both feet/ankles
Grade ++	Moderate: Both feet, plus lower legs, hands or lower arms
Grade +++	Severe: Generalised bilateral pitting oedema, including both feet, legs, arms and face

3. MUAC

MUAC is used for children age 6-59 months (see **Age** section above).

MUAC should be measured on the left upper arm while the arm is hanging down the side of the body and relaxed. The tape should be placed at the midpoint between the shoulder and the tip of the elbow. It is recommended to use a string instead of the MUAC tape to find the midpoint.

For the numbered tapes, feed the end of the tape down through the first opening and up through the third opening. The measurement is read from the middle window where the arrows point inward. MUAC can be recorded with a precision of 1 mm. Read the number in the box that is completely visible in the middle window. For the example below, it is 124 mm.



For the simple three-colour tape (red, yellow, green), slide the end through the first opening and then through the second opening. Read the colour that shows through the window at the point the two arrows indicate.



Photo Credit: WHO-Tanzania, training on the management of severe acute malnutrition, September 2006 (Valid International)

4. WEIGHT

To increase accuracy and precision, two people are always needed to measure weight. Weight may be measured using a Salter-type hanging spring scale (as is commonly found in the field) or an electronic scale such as the United Nations Children's Fund (UNICEF) UNISCALE, which is more precise and allows a child to be measured in the mother/caregiver's arms.

Hanging Spring (Salter) Scale

A 25-kg hanging spring scale, graduated by 0.100 kg, is most commonly used. In the field setting, the scale is hooked to a tree, a tripod or a stick held by two people. In a clinic, it is attached to the ceiling or a stand.

Weighing pants (or a weighing hammock for smaller infants) are attached to the scale. However, culturally adapted solutions, such as a mother's wrap, basin or grass basket, are preferable to use to weigh the child; these are suspended from the lower hook of the scale, and the scale is readjusted to zero. The child's clothes are removed, and the child is placed in the weighing pants (or alternative). The scale should be read at eye level.

Considerations:

- Make sure the child is safely in the weighing pants or hammock with one arm in front and one arm behind to help maintain balance.
- In cold climates or in certain cultures, it might be impossible or impractical to undress a child completely. The average weight of the clothes should be estimated and deducted from the measure. It is helpful to retain similar clothing for girls and boys during weighing to help to standardize the weight deductions.
- When the child is steady and settled, the weight is recorded to the nearest 100 grams. If the child is moving and the needle does not stabilise, the weight should be estimated by recording the value at the midpoint of the range of oscillations. The measurer announces the value read from the scale, the assistant repeats it for verification and records it on the clinic form or CHC. The child is then dressed.
- The scale should be checked daily against a known weight. To do this, set the scale to zero and weigh objects of known weight (e.g., 5, 10 or 15 kg). If the measure does not match the weight to within 10 grams, the scale should be replaced or the springs must be changed.

Electronic Scale (e.g., UNISCALE)

The UNISCALE, which is very precise, is powered by a lithium battery good for one million weighings and a solar switch that turns the device on in daylight or a normally lit room. It is designed to allow a mother/caregiver to hold the child while the child is being weighed. The scale comes with instructions.

To use the UNISCALE:

- Place the scale on a flat surface in a well-lit area, making sure that all four of the scale's feet are on the ground.
- Remove as much clothing as possible from the child.
- Wave a hand over the solar switch to turn on the scale. The scale indicates that it is ready to weigh an adult. (A picture of an adult is shown.)

- The mother/caregiver stands on the scale first, without the child. The weight is shown. The adult remains on the scale. The scale stores this weight in its memory.
- Wave a hand over the solar switch again. The scale indicates that it is ready to weigh an adult with a child. (A picture of an adult holding a child is shown.)
- Pass the child to be weighed to the adult on the scale (the adult should remain still).
- The scale indicates the child's weight.

Note: Infants under 6 months with SAM are referred to inpatient care for SAM with medical complications where specific infant scales with a precision of **10 g or 20 g** should be available.

5. LENGTH AND HEIGHT

To increase accuracy and precision, two people are always needed to measure length and height.

Children age 2 or older are measured standing up, while those under 2 are measured lying down. If the age is difficult to assess, children at least 85 cm (National Centre for Health Statistics [NCHS] references) or 87 cm tall (WHO standards) are measured standing, and those under 85 cm (NCHS) or 87 cm (WHO) are measured lying down. If children age 2 or older or at least 85 cm (NCHS) or 87 cm tall (WHO) are measured lying down, 0.5 cm is subtracted from the measurement.

For children age 2 or older or with a height of 85 cm (NCHS) / 87 cm (WHO) or more:

The child's shoes are removed. The child is placed on the height board, standing upright in the middle of the board. The child's ankles and knees should be firmly pressed against the board by the assistant while the measurer positions the head and the sliding board. The child's head, shoulders, buttocks and heels should be touching the board. The measurer reads out loud the measurement to the nearest 0.1 cm. The assistant repeats the measurement for verification and records it on the anthropometric form or health card. A height stick or tape secured against a wall also can be used to quickly measure a child's length or height.

For children under age 2 or with a height below 85 cm (NCHS) / 87 cm (WHO):

The height board is placed on the ground. The child's shoes are removed. The child is gently placed on his/her back on the middle of the board. The assistant holds the sides of the child's head and positions the head touching the board. The measurer places his/her hands on the child's ankles or knees. While positioning the child's legs, the measurer positions the sliding board up against the bottom of the child's feet, which should be at right angles. The measurer reads the measurement to the nearest 0.1 cm out loud. The assistant repeats the measurement for verification and records it on the anthropometric form or health card.

HANDOUT 2.5

WEIGHT-FOR-HEIGHT TABLES FOR FIELD USE

WHO SEX-SPECIFIC CHILD GROWTH STANDARDS (2006), EXPRESSED AS Z-SCORE (SD) ASSESSED SUPINE UP TO 86.9 CM (LENGTH) AND STANDING FROM 87.0 CM (HEIGHT)

Length is measured for children below 87 cm. For children 87 cm or more, height is measured. Recumbent length is on average 0.5 cm greater than standing height, although the difference is of no importance to individual children, a correction may be made by subtracting 0.5 cm from all lengths above 86.9 cm if standing height can not be measured.

-4 SD	-3 SD	-2 SD	-1 SD	Median	LENGTH (cm)	Median	-1 SD	-2 SD	-3 SD	-4 SD
1.7	1.9	2.0	2.2	2.4	45.0	2.5	2.3	2.1	1.9	1.7
1.8	2.0	2.2	2.4	2.6	46.0	2.6	2.4	2.2	2.0	1.9
2.0	2.1	2.3	2.5	2.8	47.0	2.8	2.6	2.4	2.2	2.0
2.1	2.3	2.5	2.7	2.9	48.0	3.0	2.7	2.5	2.3	2.1
2.2	2.4	2.6	2.9	3.1	49.0	3.2	2.9	2.6	2.4	2.2
2.4	2.6	2.8	3.0	3.3	50.0	3.4	3.1	2.8	2.6	2.4
2.5	2.7	3.0	3.2	3.5	51.0	3.6	3.3	3.0	2.8	2.5
2.7	2.9	3.2	3.5	3.8	52.0	3.8	3.5	3.2	2.9	2.7
2.9	3.1	3.4	3.7	4.0	53.0	4.0	3.7	3.4	3.1	2.8
3.1	3.3	3.6	3.9	4.3	54.0	4.3	3.9	3.6	3.3	3.0
3.3	3.6	3.8	4.2	4.5	55.0	4.5	4.2	3.8	3.5	3.2
3.5	3.8	4.1	4.4	4.8	56.0	4.8	4.4	4.0	3.7	3.4
3.7	4.0	4.3	4.7	5.1	57.0	5.1	4.6	4.3	3.9	3.6
3.9	4.3	4.6	5.0	5.4	58.0	5.4	4.9	4.5	4.1	3.8
4.1	4.5	4.8	5.3	5.7	59.0	5.6	5.1	4.7	4.3	3.9
4.3	4.7	5.1	5.5	6.0	60.0	5.9	5.4	4.9	4.5	4.1
4.5	4.9	5.3	5.8	6.3	61.0	6.1	5.6	5.1	4.7	4.3
4.7	5.1	5.6	6.0	6.5	62.0	6.4	5.8	5.3	4.9	4.5
4.9	5.3	5.8	6.2	6.8	63.0	6.6	6.0	5.5	5.1	4.7
5.1	5.5	6.0	6.5	7.0	64.0	6.9	6.3	5.7	5.3	4.8
5.3	5.7	6.2	6.7	7.3	65.0	7.1	6.5	5.9	5.5	5.0
5.5	5.9	6.4	6.9	7.5	66.0	7.3	6.7	6.1	5.6	5.1
5.6	6.1	6.6	7.1	7.7	67.0	7.5	6.9	6.3	5.8	5.3
5.8	6.3	6.8	7.3	8.0	68.0	7.7	7.1	6.5	6.0	5.5
6.0	6.5	7.0	7.6	8.2	69.0	8.0	7.3	6.7	6.1	5.6
6.1	6.6	7.2	7.8	8.4	70.0	8.2	7.5	6.9	6.3	5.8
6.3	6.8	7.4	8.0	8.6	71.0	8.4	7.7	7.0	6.5	5.9
6.4	7.0	7.6	8.2	8.9	72.0	8.6	7.8	7.2	6.6	6.0
6.6	7.2	7.7	8.4	9.1	73.0	8.8	8.0	7.4	6.8	6.2
6.7	7.3	7.9	8.6	9.3	74.0	9.0	8.2	7.5	6.9	6.3
6.9	7.5	8.1	8.8	9.5	75.0	9.1	8.4	7.7	7.1	6.5
7.0	7.6	8.3	8.9	9.7	76.0	9.3	8.5	7.8	7.2	6.6
7.2	7.8	8.4	9.1	9.9	77.0	9.5	8.7	8.0	7.4	6.7
7.3	7.9	8.6	9.3	10.1	78.0	9.7	8.9	8.2	7.5	6.9
7.4	8.1	8.7	9.5	10.3	79.0	9.9	9.1	8.3	7.7	7.0
7.6	8.2	8.9	9.6	10.4	80.0	10.1	9.2	8.5	7.8	7.1
7.7	8.4	9.1	9.8	10.6	81.0	10.3	9.4	8.7	8.0	7.3
7.9	8.5	9.2	10.0	10.8	82.0	10.5	9.6	8.8	8.1	7.5
8.0	8.7	9.4	10.2	11.0	83.0	10.7	9.8	9.0	8.3	7.6
8.2	8.9	9.6	10.4	11.3	84.0	11.0	10.1	9.2	8.5	7.8
8.4	9.1	9.8	10.6	11.5	85.0	11.2	10.3	9.4	8.7	8.0
8.6	9.3	10.0	10.8	11.7	86.0	11.5	10.5	9.7	8.9	8.1
8.7	9.5	10.2	11.1	12.0	87.0	11.7	10.7	9.9	9.1	8.3
8.9	9.7	10.5	11.3	12.2	88.0	12.0	11.0	10.1	9.3	8.5
9.1	9.9	10.7	11.5	12.5	89.0	12.2	11.2	10.3	9.5	8.7
9.3	10.1	10.9	11.8	12.7	90.0	12.5	11.4	10.5	9.7	8.8
9.5	10.3	11.1	12.0	13.0	91.0	12.7	11.7	10.7	9.9	9.0
9.7	10.5	11.3	12.2	13.2	92.0	13.0	11.9	10.9	10.1	9.2
9.8	10.7	11.5	12.4	13.4	93.0	13.2	12.1	11.1	10.2	9.4
10.0	10.8	11.7	12.6	13.7	94.0	13.5	12.3	11.3	10.4	9.5
10.2	11.0	11.9	12.8	13.9	95.0	13.7	12.6	11.5	10.6	9.7
10.3	11.2	12.1	13.1	14.1	96.0	14.0	12.8	11.7	10.8	9.9
10.5	11.4	12.3	13.3	14.4	97.0	14.2	13.0	12.0	11.0	10.1
10.7	11.6	12.5	13.5	14.6	98.0	14.5	13.3	12.2	11.2	10.2
10.8	11.8	12.7	13.7	14.9	99.0	14.8	13.5	12.4	11.4	10.4
11.0	12.0	12.9	14.0	15.2	100.0	15.2	13.7	12.6	11.6	10.6

WHO SEX-SPECIFIC CHILD GROWTH STANDARDS (2006), EXPRESSED AS Z-SCORE (SD) ASSESSED SUPINE UP TO 86.9 CM (LENGTH) AND STANDING FROM 87.0 CM (HEIGHT)

Boys' weight (kg)					Height* (cm)	Girls' weight (kg)				
-4 SD	-3 SD	-2 SD	-1 SD	Median		Median	-1 SD	-2 SD	-3 SD	-4 SD
5.4	5.9	6.3	6.9	7.4	65	7.2	6.6	6.1	5.6	5.1
5.6	6.1	6.5	7.1	7.7	66	7.5	6.8	6.3	5.8	5.3
5.7	6.2	6.7	7.3	7.9	67	7.7	7.0	6.4	5.9	5.4
5.9	6.4	6.9	7.5	8.1	68	7.9	7.2	6.6	6.1	5.6
6.1	6.6	7.1	7.7	8.4	69	8.1	7.4	6.8	6.3	5.7
6.2	6.8	7.3	7.9	8.6	70	8.3	7.6	7.0	6.4	5.9
6.4	6.9	7.5	8.1	8.8	71	8.5	7.8	7.1	6.6	6.0
6.5	7.1	7.7	8.3	9.0	72	8.7	8.0	7.3	6.7	6.1
6.7	7.3	7.9	8.5	9.2	73	8.9	8.1	7.5	6.9	6.3
6.8	7.4	8.0	8.7	9.4	74	9.1	8.3	7.6	7.0	6.4
7.0	7.6	8.2	8.9	9.6	75	9.3	8.5	7.8	7.2	6.6
7.1	7.7	8.4	9.1	9.8	76	9.5	8.7	8.0	7.3	6.7
7.3	7.9	8.5	9.2	10.0	77	9.6	8.8	8.1	7.5	6.8
7.4	8.0	8.7	9.4	10.2	78	9.8	9.0	8.3	7.6	7.0
7.5	8.2	8.8	9.6	10.4	79	10.0	9.2	8.4	7.8	7.1
7.7	8.3	9.0	9.7	10.6	80	10.2	9.4	8.6	7.9	7.2
7.8	8.5	9.2	9.9	10.8	81	10.4	9.6	8.8	8.1	7.4
8.0	8.7	9.3	10.1	11.0	82	10.7	9.8	9.0	8.3	7.6
8.1	8.8	9.5	10.3	11.2	83	10.9	10.0	9.2	8.5	7.7
8.3	9.0	9.7	10.5	11.4	84	11.1	10.2	9.4	8.6	7.9
8.5	9.2	10.0	10.8	11.7	85	11.4	10.4	9.6	8.8	8.1
8.7	9.4	10.2	11.0	11.9	86	11.6	10.7	9.8	9.0	8.3
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

* Length is measured for children below 87 cm. For children 87 cm or more, height is measured. Recumbent length is on average 0.5 cm greater than standing height, although the difference is of no importance to individual children, a correction may be made by subtracting 0.5 cm from all lengths above 86.9 cm if standing height can not be measured.

NCHS/CDC/WHO SEX-COMBINED CHILD GROWTH REFERENCES (1982), WEIGHT FOR HEIGHT INDEX EXPRESSED AS A PERCENTAGE OF THE MEDIAN WITH HEIGHT ASSESSED SUPINE UP TO 84.5 CM (LENGTH) AND STANDING FROM 85.0 CM (HEIGHT)

Height in cm	MALNUTRITION					
	100% in Kg	85% in Kg	80% in Kg	Moderate		Severe
				75% in Kg	70% in Kg	60% in Kg
49,0	3,2	2,7	2,6	2,4	2,2	1,9
49,5	3,3	2,8	2,6	2,5	2,3	2,0
50,0	3,4	2,9	2,7	2,6	2,4	2,0
50,5	3,4	2,9	2,7	2,6	2,4	2,0
51,0	3,5	3,0	2,8	2,6	2,5	2,1
51,5	3,6	3,1	2,9	2,7	2,5	2,2
52,0	3,7	3,1	3,0	2,8	2,6	2,2
52,5	3,8	3,2	3,0	2,9	2,7	2,3
53,0	3,9	3,3	3,1	2,9	2,7	2,3
53,5	4,0	3,4	3,2	3,0	2,8	2,4
54,0	4,1	3,5	3,3	3,1	2,9	2,5
54,5	4,2	3,6	3,4	3,2	2,9	2,5
55,0	4,3	3,7	3,5	3,2	3,0	2,6
55,5	4,4	3,8	3,5	3,3	3,1	2,6
56,0	4,6	3,9	3,6	3,5	3,2	2,8
56,5	4,7	4,0	3,7	3,5	3,3	2,8
57,0	4,8	4,1	3,8	3,6	3,4	2,9
57,5	4,9	4,2	3,9	3,7	3,4	2,9
58,0	5,1	4,3	4,0	3,8	3,6	3,1
58,5	5,2	4,4	4,2	3,9	3,6	3,1
59,0	5,3	4,5	4,3	4,0	3,7	3,2
59,5	5,5	4,6	4,4	4,1	3,9	3,3
60,0	5,6	4,8	4,5	4,2	3,9	3,4
60,5	5,7	4,9	4,6	4,3	4,0	3,4
61,0	5,9	5,0	4,7	4,4	4,1	3,5
61,5	6,0	5,1	4,8	4,5	4,2	3,6
62,0	6,2	5,2	4,9	4,7	4,3	3,7
62,5	6,3	5,4	5,0	4,7	4,4	3,8
63,0	6,5	5,5	5,2	4,9	4,6	3,9
63,5	6,6	5,6	5,3	5,0	4,6	4,0
64,0	6,7	5,7	5,4	5,0	4,7	4,0
64,5	6,9	5,9	5,5	5,2	4,8	4,1
65,0	7,0	6,0	5,6	5,3	4,9	4,2
65,5	7,2	6,1	5,7	5,4	5,0	4,3
66,0	7,3	6,2	5,9	5,5	5,1	4,4
66,5	7,5	6,4	6,0	5,6	5,3	4,5

Height in cm	MALNUTRITION					
	100% in Kg	85% in Kg	80% in Kg	Moderate		Severe
				75% in Kg	70% in Kg	60% in Kg
67,0	7,6	6,5	6,1	5,7	5,3	4,6
67,5	7,8	6,6	6,2	5,9	5,5	4,7
68,0	7,9	6,7	6,3	5,9	5,5	4,7
68,5	8,0	6,8	6,4	6,0	5,6	4,8
69,0	8,2	7,0	6,6	6,2	5,7	4,9
69,5	8,3	7,1	6,6	6,2	5,8	5,0
70,0	8,5	7,2	6,8	6,4	6,0	5,1
70,5	8,6	7,3	6,9	6,5	6,0	5,2
71,0	8,7	7,4	7,0	6,5	6,1	5,2
71,5	8,9	7,6	7,1	6,7	6,2	5,3
72,0	9,0	7,7	7,2	6,8	6,3	5,4
72,5	9,1	7,7	7,3	6,8	6,4	5,5
73,0	9,2	7,8	7,4	6,9	6,4	5,5
73,5	9,4	8,0	7,5	7,1	6,6	5,6
74,0	9,5	8,1	7,6	7,1	6,7	5,7
74,5	9,6	8,2	7,7	7,2	6,7	5,8
75,0	9,7	8,2	7,8	7,3	6,8	5,8
75,5	9,8	8,3	7,8	7,4	6,9	5,9
76,0	9,9	8,4	7,9	7,4	6,9	5,9
76,5	10,0	8,5	8,0	7,5	7,0	6,0
77,0	10,1	8,6	8,1	7,6	7,1	6,1
77,5	10,2	8,7	8,2	7,7	7,1	6,1
78,0	10,4	8,8	8,3	7,8	7,3	6,2
78,5	10,5	8,9	8,4	7,9	7,4	6,3
79,0	10,6	9,0	8,5	8,0	7,4	6,4
79,5	10,7	9,1	8,6	8,0	7,5	6,4
80,0	10,8	9,2	8,6	8,1	7,6	6,5
80,5	10,9	9,3	8,7	8,2	7,6	6,5
81,0	11,0	9,4	8,8	8,3	7,7	6,6
81,5	11,1	9,4	8,9	8,3	7,8	6,7
82,0	11,2	9,5	9,0	8,4	7,8	6,7
82,5	11,3	9,6	9,0	8,5	7,9	6,8
83,0	11,4	9,7	9,1	8,6	8,0	6,8
83,5	11,5	9,8	9,2	8,6	8,1	6,9
84,0	11,5	9,8	9,2	8,6	8,1	6,9
84,5	11,6	9,9	9,3	8,7	8,1	7,0

NCHS/CDC/WHO SEX-COMBINED CHILD GROWTH REFERENCES (1982), WEIGHT FOR HEIGHT INDEX EXPRESSED AS A PERCENTAGE OF THE MEDIAN WITH HEIGHT ASSESSED SUPINE UP TO 84.5 CM (LENGTH) AND STANDING FROM 85.0 CM (HEIGHT)

MALNUTRITION							MALNUTRITION						
Height in cm	100% in Kg	85% in Kg	80% in Kg	moderate		severe	Height in cm	100% in Kg	85% in Kg	80% in Kg	moderate		severe
				75% in Kg	70% in Kg	60% in Kg					75% in Kg	70% in Kg	60% in Kg
85,0	12,0	10,2	9,6	9,0	8,4	7,2	105,5	17,1	14,5	13,7	12,8	12,0	10,3
85,5	12,1	10,3	9,7	9,1	8,5	7,3	106,0	17,2	14,6	13,8	12,9	12,0	10,3
86,0	12,2	10,4	9,8	9,2	8,5	7,3	106,5	17,4	14,8	13,9	13,1	12,2	10,4
86,5	12,3	10,5	9,8	9,2	8,6	7,4	107,0	17,5	14,9	14,0	13,1	12,3	10,5
87,0	12,4	10,5	9,9	9,3	8,7	7,4	107,5	17,7	15,0	14,2	13,3	12,4	10,6
87,5	12,5	10,6	10,0	9,4	8,8	7,5	108,0	17,8	15,1	14,2	13,4	12,5	10,7
88,0	12,6	10,7	10,1	9,5	8,8	7,6	108,5	18,0	15,3	14,4	13,5	12,6	10,8
88,5	12,8	10,9	10,2	9,6	9,0	7,7	109,0	18,1	15,4	14,5	13,6	12,7	10,9
89,0	12,9	11,0	10,3	9,7	9,0	7,7	109,5	18,3	15,6	14,6	13,7	12,8	11,0
89,5	13,0	11,1	10,4	9,8	9,1	7,8	110,0	18,4	15,6	14,7	13,8	12,9	11,0
90,0	13,1	11,1	10,5	9,8	9,2	7,9	110,5	18,6	15,8	14,9	14,0	13,0	11,2
90,5	13,2	11,2	10,6	9,9	9,2	7,9	111,0	18,8	16,0	15,0	14,1	13,2	11,3
91,0	13,3	11,3	10,6	10,0	9,3	8,0	111,5	18,9	16,1	15,1	14,2	13,2	11,3
91,5	13,4	11,4	10,7	10,1	9,4	8,0	112,0	19,1	16,2	15,3	14,3	13,4	11,5
92,0	13,6	11,6	10,9	10,2	9,5	8,2	112,5	19,3	16,4	15,4	14,5	13,5	11,6
92,5	13,7	11,6	11,0	10,3	9,6	8,2	113,0	19,4	16,5	15,5	14,6	13,6	11,6
93,0	13,8	11,7	11,0	10,4	9,7	8,3	113,5	19,6	16,7	15,7	14,7	13,7	11,8
93,5	13,9	11,8	11,1	10,4	9,7	8,3	114,0	19,8	16,8	15,8	14,9	13,9	11,9
94,0	14,0	11,9	11,2	10,5	9,8	8,4	114,5	19,9	16,9	15,9	14,9	13,9	11,9
94,5	14,2	12,1	11,4	10,7	9,9	8,5	115,0	20,1	17,1	16,1	15,1	14,1	12,1
95,0	14,3	12,2	11,4	10,7	10,0	8,6	115,5	20,3	17,3	16,2	15,2	14,2	12,2
95,5	14,4	12,2	11,5	10,8	10,1	8,6	116,0	20,5	17,4	16,4	15,4	14,4	12,3
96,0	14,5	12,3	11,6	10,9	10,2	8,7	116,5	20,7	17,6	16,6	15,5	14,5	12,4
96,5	14,7	12,5	11,8	11,0	10,3	8,8	117,0	20,8	17,7	16,6	15,6	14,6	12,5
97,0	14,8	12,6	11,8	11,1	10,4	8,9	117,5	21,0	17,9	16,8	15,8	14,7	12,6
97,5	14,9	12,7	11,9	11,2	10,4	8,9	118,0	21,2	18,0	17,0	15,9	14,8	12,7
98,0	15,0	12,8	12,0	11,3	10,5	9,0	118,5	21,4	18,2	17,1	16,1	15,0	12,8
98,5	15,2	12,9	12,2	11,4	10,6	9,1	119,0	21,6	18,4	17,3	16,2	15,1	13,0
99,0	15,3	13,0	12,2	11,5	10,7	9,2	119,5	21,8	18,5	17,4	16,4	15,3	13,1
99,5	15,4	13,1	12,3	11,6	10,8	9,2	120,0	22,0	18,7	17,6	16,5	15,4	13,2
100,0	15,6	13,3	12,5	11,7	10,9	9,4	120,5	22,2	18,9	17,8	16,7	15,5	13,3
100,5	15,7	13,3	12,6	11,8	11,0	9,4	121,0	22,4	19,0	17,9	16,8	15,7	13,4
101,0	15,8	13,4	12,6	11,9	11,1	9,5	121,5	22,6	19,2	18,1	17,0	15,8	13,6
101,5	16,0	13,6	12,8	12,0	11,2	9,6	122,0	22,8	19,4	18,2	17,1	16,0	13,7
102,0	16,1	13,7	12,9	12,1	11,3	9,7	122,5	23,1	19,6	18,5	17,3	16,2	13,9
102,5	16,2	13,8	13,0	12,2	11,3	9,7	123,0	23,3	19,8	18,6	17,5	16,3	14,0
103,0	16,4	13,9	13,1	12,3	11,5	9,8	123,5	23,5	20,0	18,8	17,6	16,5	14,1
103,5	16,5	14,0	13,2	12,4	11,6	9,9	124,0	23,7	20,1	19,0	17,8	16,6	14,2
104,0	16,7	14,2	13,4	12,5	11,7	10,0	124,5	24,0	20,4	19,2	18,0	16,8	14,4
104,5	16,8	14,3	13,4	12,6	11,8	10,1	125,0	24,2	20,6	19,4	18,2	16,9	14,5
105,0	16,9	14,4	13,5	12,7	11,8	10,1	125,5	24,4	20,7	19,5	18,3	17,1	14,6

EXERCISE 2.1

GRADES OF BILATERAL PITTING OEDEMA

PHOTO 1

Clinical signs:

Anthropometry:



PHOTO 2

Clinical signs:

Anthropometry:



PHOTO 3

Clinical signs:

Anthropometry:



EXERCISE 2.2

CALCULATING WFH AND CLASSIFYING ACUTE MALNUTRITION

Bilateral Pitting Oedema and Mid-Upper Arm Circumference (MUAC)

Child Name	Age (in years unless noted)	Bilateral Pitting Oedema	MUAC (mm or colour)	Classification
Child 1	3	no	Green	
Child 2	5	no	123	
Child 3	5	++	Yellow	
Child 4	4	no	110	
Child 5	9 months	no	125	
Child 6	4	+++	Yellow	
Child 7	8 months	+	105	
Child 8	1	no	Red	
Child 9	2	no	109	
Child 10	1.5	+	Green	

Bilateral Pitting Oedema, MUAC and Weight-for-height (WFH) Z-score (World Health Organization [WHO])

Child Name	Sex	Age (in years unless noted)	Bilateral Pitting Oedema	MUAC (mm or colour)	Height (cm)	Weight (kg)	WFH Z-Score Category	Classification
Child 1	F	3	no	Green	98.2	12.5		
Child 2	M	5	no	123	110.0	14.8		
Child 3	M	5	++	Yellow	102.2	13.5		
Child 4	F	4	no	110	91.1	9.3		
Child 5	M	9 months	no	125	69.9	6.7		
Child 6	F	4	+++	Yellow	105.2	18		
Child 7	F	8 months	+	105	68.2	5.0		
Child 8	M	1	no	Red	84.3	8.9		
Child 9	F	2	no	109	97.2	11		
Child 10	M	1.5	+	Green	89.7	12.9		

Bilateral Pitting Oedema, MUAC and WFH as a Percentage of the Median (National Centre for Health Statistics [NCHS])

Child Name	Age (in years unless noted)	Bilateral Pitting Oedema	MUAC (mm or colour)	Height (cm)	Weight (kg)	WFH as a Percentage of the Median	Classification
Child 1	3	no	Green	98.2	12.5		
Child 2	5	no	123	110.0	14.8		
Child 3	5	++	Yellow	102.2	13.5		
Child 4	4	no	110	91.1	9.3		
Child 5	9 months	no	125	69.9	6.7		
Child 6	4	+++	Yellow	105.2	18		
Child 7	8 months	+	105	68.2	5.0		
Child 8	1	no	Red	84.3	8.9		
Child 9	2	no	109	97.2	11		
Child 10	1.5	+	Green	89.7	12.9		

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE THREE

Community Outreach

LEARNING OBJECTIVES	HANDOUTS AND EXERCISES
1. Explain the Importance of Community Outreach to CMAM Outcomes	Handout 3.1 Principles of Community Outreach in the Context of CMAM Exercise 3.1 Barriers to Access Role-Play Exercise 3.2 Overcoming Obstacles to Community Participation in CMAM
2. Identify Key Elements of a Community Assessment	Handout 3.2 Community Assessment Handout 3.3 Community Assessment Steps and Methods
3. Identify Key Steps in CMAM Outreach	Handout 3.4 Community Outreach: From Assessment to Strategy Handout 3.5 Community Outreach Strategy Handout 3.6 Example: Selection of Candidates for House-to-House Case-Finding Exercise 3.3 Comparison of Case-Finding Models Exercise 3.4 Worksheet: Selection of Candidates for Community Outreach
4. Discuss Considerations for Developing and Using CMAM Messages	Handout 3.7 Developing Simple and Standardised CMAM Messages Handout 3.8 Reference: Handbill Messages
5. Discuss Preparations for Community Mobilization and Training	Handout 3.9 Key Actions in Community Mobilisation and Training
Wrap-Up and Module Evaluation	Handout 3.10 Elements and Sequencing of CMAM Community Outreach

HANDOUT 3.1

PRINCIPLES OF COMMUNITY OUTREACH IN THE CONTEXT OF CMAM

3.1

Community outreach is an essential component of CMAM (together with inpatient care for children with severe acute malnutrition (SAM) with medical complications, outpatient care for children with SAM without medical complications and, in some contexts, services to address moderate acute malnutrition (MAM). It helps to ensure that children with SAM are detected early—before the onset of medical complications—and referred for treatment, leading to better clinical outcomes and decreased strain on inpatient services. Community outreach is vital to CMAM in any context, whether it is implemented by nongovernmental organisations (NGOs) or the Ministry of Health (MOH) and whether the context is a nutrition emergency or a stable development setting.

Once CMAM has begun, community outreach is characterised by:

Active case-finding for early detection and referral: For CMAM to function effectively and for coverage to reach acceptable levels, severely malnourished children should be identified early, usually through active case-finding.

Case follow-up in the home: In a minority of cases, outpatient care protocols will trigger a follow-up home visit to:

- Check on a child who is not thriving or responding well to the treatment
- Learn why a child was absent from an outpatient care follow-on session
- Learn why a child defaulted (defined as missing three outpatient care follow-on sessions in a row)

The following steps are required to establish the two components of community outreach effectively:

- Community Assessment
- Formulation of Community Outreach Strategy
- Development of Messages and Materials
- Community Mobilisation and Training

These steps allow CMAM health care providers to understand and anticipate challenges and constraints to community participation and service access and uptake, without which CMAM is ineffective. They also help involve and empower communities. With proper preparation, community outreach can generate a cycle of positive feedback in the community so that mothers/caregivers refer each other to the services, increasing coverage. Without these steps, service or programme miscalculations can generate negative feedback and reduce participation. Without good service access and uptake, even the best-run outpatient care sites will have only limited impact.

THE NEED FOR BALANCE

- In both development and emergency settings, a key objective is to identify how to find children with SAM with the least inconvenience to the population. People might be more willing to put up with inconveniences to receive assistance during nutrition emergencies, but here too there are hazards. An overly broad mobilisation—one in which many people are screened but few end up being admitted—can backfire by alienating the community and diminishing further participation.

- The overall challenge is to **regulate access** to CMAM in the most effective way. There is always a **compromise or balance** to be struck: as CMAM is initiated, ineligible children should be discouraged from coming while as many eligible ones as possible must be encouraged to come. If this balance can be found, a cycle of positive feedback is generated as mothers/caregivers return home from the outpatient care site with positive news.
- By getting this balance wrong or ignoring it, CMAM can quickly get off on the wrong foot and, especially in emergency settings, overwhelm health care providers with large crowds, giving CMAM a reputation of being a waste of precious time.

INVOLVING THE RIGHT ACTORS

- It is easier to strike this balance when CMAM is being implemented by people with some familiarity with the region, e.g., the local MOH or an NGO with existing health or development programmes in the area. This is the case in both development settings and emergencies.
- Community outreach is not new to the health sector. All efforts should be made to assess the existing health outreach systems and actors, and community outreach for CMAM should build on and further strengthen these systems.
- Appointing a dedicated staff member to run the community outreach activities will enhance the success of all CMAM services.
- Preparation for CMAM will usually begin with discussion among members of the MOH district health management team (DHMT) and its local partners.
- Staff with experience with local health-seeking practices are likely to know the community gatekeepers who can help or hinder acceptance of the CMAM services. They usually have some means of sharing and receiving information from the community.
- People who usually are involved in the first exploratory discussions include:
 - District medical officer
 - District maternal and child health (MCH) coordinator
 - Supervisor of community health workers (CHWs, if other than MCH coordinator)
 - Staff of community-based organisations (CBOs) and/or NGOs with strong community links
 - Civil society or religious leaders with good knowledge of local health-seeking practices

HANDOUT 3.2

COMMUNITY ASSESSMENTS

A community assessment is the first step in preparation for CMAM community outreach.

A. WHY DO A COMMUNITY ASSESSMENT?

Community assessments are the learning part of community outreach preparation.

The role-play and preceding group discussion on the role of the community assessment showed that there are obstacles to service access and uptake and community participation in CMAM. The community assessment is an opportunity to consider these in a systematic way in a specific implementation context.

Well before CMAM is established, potential barriers to service access and uptake must be identified. To do this, planners must have a sense of how the community is organised, how undernutrition is viewed there, how the new service is likely to be received, and how the community can best support the outreach component.

The answers to many of these questions might seem apparent if CMAM is being delivered by the Ministry of Health (MOH) or a nongovernmental organisation (NGO) with longstanding experience in the community. However, even MOH staff could be outsiders and might not be fully conversant in the local language.

It is important that the community assessment be used as an opportunity to identify and acknowledge the limits of staff knowledge of the local community.

B. WHAT DO COMMUNITY ASSESSMENTS CONSIST OF?

One way to think of the assessment is in terms of supply and demand. Two major questions must be answered:

- What factors are likely to create and affect demand for CMAM locally?
- How can community outreach be organised to meet this demand most effectively (supply)?

Understanding demand involves spending time at the community level and interviewing community members about local perceptions and practices to develop a sense of where the demand-inhibitors might lie. **Areas of investigation** might include:

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

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

Understanding supply also involves some community-level discussion (usually done at the same time as investigation of demand) but requires the assessors to also consider institutional and organisational factors at the facility and district level. Questions to be answered typically include:

- **Who are the likely candidates for case-finding?** Can these be identified from existing networks of outreach workers (e.g., community health workers [CHWs], health extension workers [HEWs], health educators, contraceptive distributors, home-based care [HBC] providers)? Are there other extension workers (e.g., agricultural, social welfare) or local community-based organisations (CBOs) who could also take on this role? Which of these seem to be most valued and respected by the community?
- **Where is the supervision of case-finding best situated?** How and to whom do existing outreach workers currently report? How reliable is this contact? Is there active monitoring from the District Maternal and Child Health (MCH) nurse or other members of a management team?
- **If volunteers will be used, what are the local limits to voluntarism?** Are there other forms of incentive besides payment that could help motivate them?
- **How strong/reliable are the links between health facilities and the community?** How can these be utilised or improved to establish a sense of community ownership of CMAM activities?
- **What leaders/gatekeepers must be involved to gain full access to the community** (i.e. for selection of volunteers, for house-to-house case-finding, for communicating the purpose of CMAM)?
- **What channels exist for spreading information about CMAM, and what risks and advantages are associated with each?** For example, while local health educators might be an effective way to pass information to households, they might not be the best channel to use if they have a reputation for simply repeating un-actionable messages (e.g., urging families to boil water when wood for fuel is scarce, urging families to wash clothes when soap is unaffordable). In this case, other influential people (e.g., traditional healers, clan leaders, religious figures) might be an important additional channel.

HANDOUT 3.3

COMMUNITY ASSESSMENT STEPS AND METHODS

Step	Method	Area of investigation/Questions to be answered	Time Required
1: Defining the parameters of the CMAM programme	Briefing to confirm CMAM objectives	<ul style="list-style-type: none"> ▪ Is this a short-term intervention to address a nutrition emergency or will it be a permanent part of PHC services? ▪ Will this be NGO-assisted or run independently by the MOH? If NGOs are to be involved, what will their role be? ▪ To what degree will the program be integrated into the existing health system? ▪ Is community case-finding needed only at startup, or will it be conducted indefinitely? 	1-3 hours
2: District-level-review to understand the local context	District-based discussions with NGO/MOH/civil society key informants at the district level	<ul style="list-style-type: none"> ▪ Local health-seeking practices ▪ Community coherence/difference ▪ Broad patterns of undernutrition (e.g., seasonal, spatial) ▪ Available networks of extension staff and volunteers ▪ Potential allies (e.g., civil society, political leadership, private health sector) 	1-2 days but might require additional time to contact and make arrangements with resource persons
3: Community-level review to complete information gathered at district-level	Community-level discussions to fill gaps that could not be answered at district-level	<ul style="list-style-type: none"> ▪ Further information on above topics is gathered in community meetings with separate groups of: <ul style="list-style-type: none"> – Community leaders – Community extension workers and volunteers ▪ Special attention is given to finding information on issues related to excluded groups and cultural barriers, (e.g., cases where women are not allowed to travel without a male relative) 	Varies greatly, depending on size and homogeneity of project area; plan for at least 1 day in the catchment of each outpatient care site but also factor in time required to plan and make appointments for meetings.
4: Beneficiary-level discussions to determine perspectives, knowledge, vocabulary of SAM	Interviews with mothers/caregivers to fill gaps	<ul style="list-style-type: none"> • Visual aids depicting SAM are used in individual or group interviews with community mothers/caregivers to gather more detailed information on: <ul style="list-style-type: none"> – Disease names and presumed causes – Clues as to who might see (and therefore refer) these children – Attitudes toward existing extension networks 	2-4 days depending on cultural homogeneity and ease of access; it is possible to have discussions with mothers/caregivers at local MCH clinic, but better information often is obtained when discussion takes place in the community, away from the clinic

HANDOUT 3.4

COMMUNITY OUTREACH: FROM ASSESSMENT TO STRATEGY

EXAMPLE FROM ETHIOPIA

	Key Findings	Implications for Strategy
1.	Locally, a variety of causes are thought to underlie swelling and wasting, and not all are food-related. Presumed causes include breastfeeding while pregnant, exposure to bright sunlight, malevolent spirits, and displeasure of ancestors.	<p>Include a communications component that uses local disease terms for acute malnutrition, particularly for swelling and wasting.</p> <p>Explore a range of local treatments and try to involve healers in referral to CMAM.</p>
2.	Local churches are often the first recourse for families with sick children, as they borrow funds for treatment.	Churches and mosques should be the first stop in a campaign to inform civil society partners about CMAM. Ultimately, they might refer potential clients in need.
3.	All parts of the community are uncertain about the relationship between proposed CMAM and pre-existing anthropometric screening for the targeted general ration.	Immediately take steps to prevent the outpatient care services or programmes from receiving large numbers of ineligible self-referrals.
4.	A cadre of unpaid community health workers (CHWs) are already conducting house-to-house health education regularly, but only literate workers receive regular training.	Use these CHWs for house-to-house case finding, but put priority on re-energising the group of illiterate volunteers with mid-upper arm circumference (MUAC) training.

HANDOUT 3.5

COMMUNITY OUTREACH STRATEGY

Formulating an outreach strategy is the second step in preparation for CMAM community outreach.

A. LIST AND DISCUSS KEY INSIGHTS FROM THE COMMUNITY ASSESSMENT

A community outreach strategy is determined by the outcomes of the community assessment. The assessment will have clarified the overarching questions about the objectives and nature of the CMAM service as well as both barriers and opportunities affecting participation in the community.

Other questions will remain, such as determining who should be involved and how efforts should be prioritized to achieve maximum service access and uptake. To answer these questions, insights from the assessment should be reviewed and their implications for the outreach strategy should be considered.

The product of this strategy discussion should be **a list of key insights and their implications** for the CMAM service. This list does not need to be elaborate or complicated. It can usually be done point by point on a single piece of paper.

B. DETERMINE THE MOST APPROPRIATE METHOD OF CASE-FINDING

An essential aspect of outreach strategy involves deciding how case-finding will be conducted. Considerations include: 1) whether or not a campaign-style mass screening is needed at start-up, either to gauge levels of severe acute malnutrition (SAM) or to establish awareness of CMAM; 2) how and when to transfer active case-finding from such campaign-style efforts to routine systems of primary health care (PHC) outreach; 3) where active case-finding can most likely be sustained with a minimum of external inputs.

Case-finding methods normally fall into one of three models:

- **House-to-house case-finding.** In this approach, roaming outreach workers (e.g., community health workers [CHWs], volunteers) periodically perform the bilateral pitting oedema and mid-upper arm circumference (MUAC) checks in the home. This approach is sometimes necessary at startup to ensure that pockets of the community are not overlooked and that all families are aware of CMAM. However, if admission numbers are high enough to demonstrate the benefits of CMAM, families will usually begin to self-refer, allowing for a shift to less-active forms of case-finding.
- **Community case-finding.** In this approach, the bilateral pitting oedema and MUAC checks are performed in the community or neighbourhood, bringing children from different households together. This can be done either by CHWs performing regular scheduled outreach (e.g., maternal and child health [MCH] visits, growth monitoring and promotion [GMP] sessions) or by specially recruited volunteers. Unscheduled community case-finding can also be performed at formal and informal community activities and gatherings, market days, and other settings where children are present. This approach is used in many nutrition emergencies.
- **Passive case-finding.** In this approach, the initiative rests with families, who must seek referral to CMAM from trained individuals in the community. This can only be done once knowledge of CMAM is well established. These individuals are usually resident CHWs or volunteer members of health extension services. They also could be teachers, home-based care (HBC) group members, local healers, or others who are in contact with children in the CMAM age group.

The appropriate model to use (or sequence or combination to use) in a given setting depends on a variety of factors including:

- The level of SAM in the community
- Community awareness of the signs of SAM
- Accessibility of homes and whether they are clustered together or widely dispersed
- Existing networks of outreach workers and whether the workloads will allow for taking on active case-finding duties
- Time and resources available for training outreach workers involved in case-finding
- Whether active case-finding is envisioned as permanent or temporary

HANDOUT 3.6

EXAMPLE: SELECTING CANDIDATES FOR HOUSE-TO-HOUSE CASE-FINDING

EXAMPLE FROM THE SOUTHERN NATIONS, NATIONALITIES, AND PEOPLE'S REGION (SNNPR), ETHIOPIA

3.6

Type of Outreach Worker	Job Description (including supervision)	Proximity to Cases	Breadth of Coverage	Accessible/ Amenable to Training	Can Accept Additional Work	Capable of Use of MUAC	Accepted in all Parts of the Community
Health Extension Worker (HEW)	Community health worker (CHW) supervised by health centre staff	XX	X	XX	X	XXX	X
Community Health Promoter (CHP)	Volunteer mobiliser supervised by HEW	XXX	XXX	XXX	XXX	XXX	XXX
Community Care Coalition (CCC) Members	HIV/AIDS home-based care (HBC) volunteers (not established in all parts of district)	XX	XX	XXX	XX	XX	XXX

XXX = high
XX = medium
X = low

HANDOUT 3.7

DEVELOPING SIMPLE AND STANDARDISED CMAM MESSAGES

Development of messages and materials is the third step in preparation for CMAM community outreach.

A. STANDARDISE CMAM MESSAGES

The start of any new service is a time of great interest and speculation for community members, and unless the information vacuum surrounding CMAM is filled with accurate information, it will be filled with rumours which can hurt community participation and service access and uptake.

Health facilities in low-literacy environments typically rely on word-of-mouth communication with the surrounding community, and messages to health committees and community leaders might be passed through many people before they reach their intended recipients.

Key messages, expressed simply and explaining admission and practical aspects of inpatient and outpatient care must be developed, standardised and disseminated rapidly to avoid confusion and service access and uptake problems.

It is important to note that the purpose of the key messages is not to change underlying behaviours or practices but to clarify how CMAM is offered and to whom.

Standard CMAM messages should:

- Describe the target children using the local disease terms for wasting and swelling collected during assessment
- Explain the benefits of CMAM, noting that children with severe acute malnutrition (SAM) without medical complications can be treated in outpatient care once a week in the community and fed RUTF at home, meaning that mothers/caregivers no longer need to leave the family; that only few children with SAM with medical complications and infants under 6 months of age with SAM will need to be treated in inpatient care
- State the time and date of outpatient care sessions at the closest outpatient care site
- Explain the referral process, noting that the child is measured near home
- Explain (if appropriate) that families can also self-refer children with SAM by going to the nearest outpatient care site or health facility with CMAM services
- Explain that a child can be re-assessed (re-measured) at different intervals to monitor his/her nutritional status and be admitted if s/he has deteriorated
- Introduce ready-to-use therapeutic food (RUTF) not as a food but as a medicine or as a “medicinal food”
- Reflect the findings of the assessment and address concerns directly

B. CREATE A HANDBILL USING SIMPLE, NON-TECHNICAL LANGUAGE

Once standard CMAM messages have been developed in simple, non-technical terms, it is important to print them in the local language(s) so that every reader is receiving the exact same information regardless of possible language barriers.

Creating a handbill is not costly; it normally just takes the use of a photocopier and paper. However, it does require a dedicated effort to think through the concerns and issues that emerged from the assessment and to address them directly with a set of core CMAM messages. It might take several attempts to boil these issues down to their simplest form, but it is worthwhile. It should take about a day to refine the messages and then arrange for them to be translated into the language(s) used in the homes of mothers/caregivers. The translated versions should then be back-translated to ensure accuracy by someone who did not translate the original into the local language(s). After dissemination, a record of any misconceptions arising from the handbill should be kept so that it can be revised periodically.

3.7

C. HOW TO MAKE THE BEST USE OF THE HANDBILL

- Use the handbill in information meetings with district and community leaders. Ask them to make announcements through their networks. Give them sufficient copies so that the handbill can be read aloud in the community. This should be done before active case-finding is initiated.
- Take the handbill to meetings with civil society partners (e.g., community-based organisations [CBOs], churches, mosques) and ask them to disseminate it.
- Create a separate handbill for significant minority language groups in the area.
- Tailor the handbill to address special concerns as they arise (e.g., confusion over whether referral constitutes admission).
- Where appropriate, pair with photographs of kwashiorkor and marasmus to help identify target children.
- Give copies to literate outreach workers so they can share the information accurately. They can use the handbill to make announcements at formal or informal gatherings (e.g., funerals, marketplace, water points, community government or committee meetings).
- Consider using radio, which has been a useful means of disseminating CMAM messages (e.g., Concern Worldwide's programme in the Democratic Republic of Congo).

HANDOUT 3.8

REFERENCE: HANDBILL MESSAGES

I. EXAMPLE FROM LUSAKA, ZAMBIA

HELP IS NOW AVAILABLE FOR FAMILIES WITH VERY THIN OR SWOLLEN CHILDREN

The New Treatment

A new treatment is now available at the health facility for children under 5 years old who are severely malnourished. Children who are very thin or whose feet have begun to swell but have no medical complications no longer need to spend a long time in the hospital. A new medicinal food is being offered for these children. Families can use it to rehabilitate their children at home.

How to Know Whether Your Child Needs this Treatment

To find out whether a child is eligible for this treatment, the child's arm is measured and his/her feet are checked. The arm measurement is taken with a tape similar to the cloth tape that tailors use in the marketplace. It is a fast, painless check that does not involve taking blood or injecting the child. Different people are being trained in this community in how to use the tape, so that in some cases the measurement may be taken by a person the child or family knows.

If you know a child who is very thin or whose feet have started to swell, tell his/her parents or guardians about this new treatment. They can ask in their neighbourhood for the name of a person trained to take the arm measurement, or they can go direct to the health centre.

Important Points to Remember

- The treatment will be offered every _____ morning at _____ clinic.
- Even *very* sick children can be helped with this treatment. Since the child remains at home, the parents/guardians can care for him/her at the same time as other children. However, the medicinal food is *only* for the very thin child and should not be shared.
- The treatment consists of medicines and a medicinal food made from groundnuts that comes in the form of a paste, so children normally have no trouble eating it. The results are usually very rapid.
- *(Note: The following paragraph should be adapted to the context.)*

In different communities, the diseases of thin and swollen children go by different names. It is common nowadays to speak of njala, but in some places, a child might be said to have njisi (anyonkela), matufya, kalyondeyonde, midulo, kulowewa, or kulozedwa. Or the child might be said to be *osila* or *dayonda*. Families who suspect these diseases should also ask for their children's arms and feet to be checked, since the new treatment might also help these children.

2. EXAMPLES FROM GHANA

A. Sensitisation Letter to Civil Society Groups/Leaders in Agona District (includes key messages)

Date:

Postal Address/Name of Institution:

Dear Sir/Madam,

RE: NEW TREATMENT FOR CHILDREN WITH SEVERE ACUTE MALNUTRITION (VERY THIN OR SWOLLEN)

A new treatment is now available at Swedru hospital, Kwanyako, Abodom, Duakwa and Nsaba health centres under Agona District Health Directorate for children who are very thin or swollen (showing signs of severe acute malnutrition, or SAM). These children need a specific medical treatment and nutrition rehabilitation and must be referred to the health centre. If a child with SAM has good appetite and no medical complication, the child does not have to go to the hospital; s/he can be treated at home and followed up through weekly health centre visits. If a child with SAM has no appetite or has a medical complication, then s/he will be admitted to the hospital for a short time until the complication is resolved and then will receive further treatment at the health centre and at home. Children under 6 months who are very thin or have swelling will need specialised care in the hospital.

To determine whether a child is eligible for this treatment, his/her arm is measured in the community to see if s/he is too thin and both feet are checked for swelling. If the child is referred to the health centre, s/he is measured again at the centre and receives a medical check. If the child is too thin or has swelling but has good appetite and no medical complications, s/he receives a medical treatment and a weekly supply of the medicinal food free of charge. All small children with SAM and older children with SAM with medical complications will be referred to Swedru hospital for inpatient care. The arm measurement is taken with a tape similar to the cloth tape tailors use in the marketplace and can be taken by many types of persons. Community health workers or volunteers are being trained in communities around the above-mentioned health facilities to take the measurement, so that it may be taken by a person the child or his/her family knows.

If you know a child who is very thin or whose feet are swollen, tell the parents or guardians about this new treatment. They can ask around their neighbourhood for a community health worker or volunteer or someone else trained to take the arm measurement, or they can go directly to these health facilities.

We are confident that this new treatment will significantly improve the District's ability to support the recovery of malnourished children, and we look forward to your cooperation. Please do not hesitate to contact me for more information or clarification.

Yours faithfully,

DISTRICT DIRECTOR OF HEALTH

B. Sensitisation Letter to Private Clinics in Agona District (includes key messages)**Date:****Postal Address:**

Dear Sir/Madam,

Re: Community-Based Management of Acute Malnutrition (CMAM)

As part of its mandate to improve the quality and accessibility of health services in Agona District, the Ghana Health Services (GHS) has introduced a new treatment for children under 5 years with a severe form of acute malnutrition (bilateral pitting oedema or severe wasting). The service is called Community-Based Management of Acute Malnutrition (CMAM). It brings the treatment of children with severe acute malnutrition (SAM) much closer to the family, making it possible for children and their mothers/caregivers to avoid the long stays at the Paediatric Ward or the Nutrition Rehabilitation Centre, which customarily have been necessary for treating undernutrition.

Children with SAM need a specific programme containing both medical treatment and nutrition rehabilitation, and must be referred to the health centre. If a child with SAM has good appetite and no medical complications, s/he can be treated at home and followed up through weekly health centre visits. If a child with SAM has no appetite or has a medical complication, then s/he will be admitted to inpatient care at Swedru Hospital for a short time until the medical complication is resolved and then receive further treatment at the health centre and at home. Children under 6 months who are very thin or have swelling will need specialised care in inpatient care at the hospital.

The treatment, which is free of charge, provides antibiotic, antihelminth and malaria drug treatment, vitamin A supplementation and a ready-to-use therapeutic food (RUTF) called **Plumpy'nut®** at the health centre level, which the families of eligible children can take home. Early detection of cases and referral for treatment is essential to avoid medical complications.

Children in the communities and the health facilities are checked for bilateral pitting oedema and screened for severe wasting based on a mid-upper arm circumference (MUAC) measurement with a specially marked tape (MUAC tape) for referral and admission to the CMAM service at the health centre.

We would like to involve a variety of health practitioners and service providers, including private clinics, to help us identify children with SAM so that they can be treated at an early stage. Currently the services are provided in five sites (Swedru Hospital and Kwanyako, Abodom, Duakwa and Nsaba Health Centres) under Agona District Health Directorate, but it is hoped that the services will be extended to other health centres in Agona District. We are writing therefore to kindly request that your facility brief all staff members, especially those in the Out-Patient Department (OPD), and have them refer children with bilateral pitting oedema and severe wasting to any of the above-mentioned health centres for treatment. The GHS SAM team would be pleased to provide your clinic with these tapes and train your staff in identifying children with bilateral pitting oedema and severe wasting.

We are confident that the CMAM services will significantly improve the District's ability to support the recovery of malnourished children, and we look forward to your cooperation. Please do not hesitate to contact us for more information or clarification.

Yours faithfully,

DISTRICT DIRECTOR OF HEALTH

3. Sensitisation Basic Messages - Public Address or Peer System Version in Agona District

Message to All Mothers/Caregivers with Children between 6 Months and 5 Years of Age from Ghana Health Services

A new treatment is now available for children under 5 years with severe acute malnutrition (SAM, very thin or swollen). These children need a specific programme containing both medical treatment and nutrition rehabilitation, and must be referred to the health centre. If a child with SAM has good appetite and no medical complications, s/he can be treated at home and followed up through weekly health centre visits. These children do not have to go to the hospital but can be rehabilitated while staying at home with their families. If the child with SAM has no appetite or has developed a medical complication, then s/he will be admitted to hospital for a short time until the complication is resolved and then receive further treatment at the health centre and at home. Children under 6 months who are very thin or have swelling will need specialised care in inpatient care in Swedru Hospital.

How to know whether your child needs this treatment

Some people within your communities have been trained to take an arm measurement of children with a small tape and check if both feet are swollen.

The treatment

All children found to be thin or swollen are referred to the health centre, where the arm measurement and swelling are checked again. If the children have appetite and are clinically well, they are given a medical treatment and a weekly supply of the medicinal food called **Plumpy'nut®**. Children who are very small or very ill will need referral to inpatient care.

If you know a child who appears to be very thin or whose feet are swollen, tell his/her parents or guardians about this new treatment. They can ask around their neighbourhood for a community health worker, volunteer, or someone else trained to take the arm measurement. Or, they can go directly to the following health centres to have their child measured any day. Follow-up service days are:

- Swedru Hospital on Monday
- Kwanyako Health Centre on Wednesday
- Abodom Health Centre on Wednesday
- Nsaba Health Centre on Friday
- Duakwa Health Centre on Friday

HANDOUT 3.9

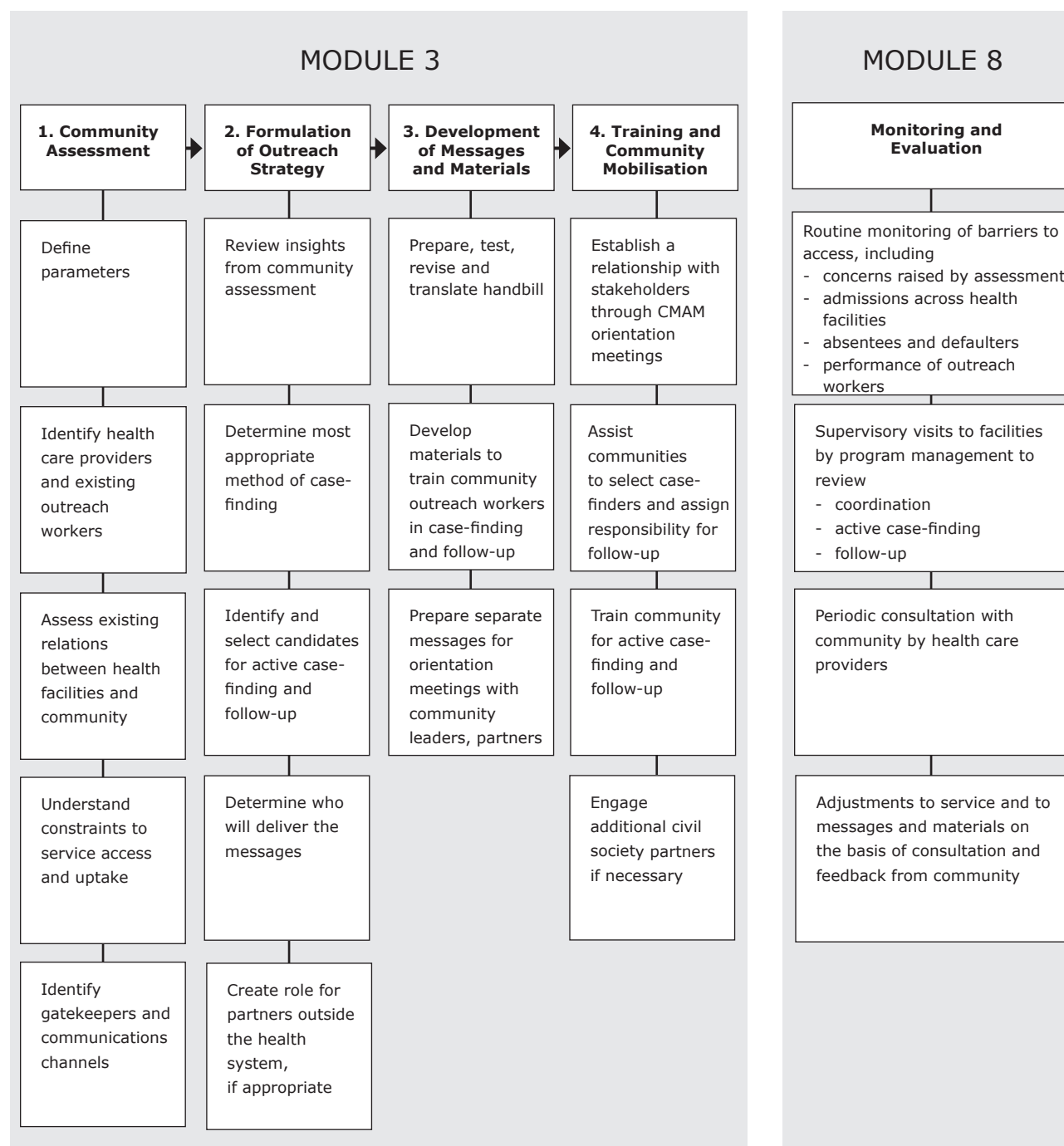
KEY ACTIONS IN COMMUNITY MOBILISATION AND TRAINING

WHAT?	WHY?	HOW?
Establish reliable communication between health care providers and the community	<p>CMAM implementation relies on good relations between service providers and the community, both at the start, when CMAM is explained, and later on.</p> <p>At the start, agreements must be made with the community concerning joint responsibilities (e.g., outpatient care day activities, volunteer case-finding, case follow-up).</p> <p>Issues and challenges that arise later (e.g., defaulting) will require the community's advice on correctives and assistance with implementing solutions.</p>	<ul style="list-style-type: none"> ▪ Conduct orientation meetings before startup that explain the purpose of CMAM. ▪ Seek the advice and involvement of standard health sector partners but also other gatekeepers, (e.g., administrative officials, political officials, religious officials). ▪ Look for ways to disseminate messages rapidly and without cost, such as at regular gatherings of political or traditional leaders. ▪ Make full use of the handbill, and adjust content as necessary. ▪ Take advantage of existing mechanisms for engaging community leaders on local health issues.
Help communities select outreach workers when necessary	<p>If volunteers will be used for active case-finding, it helps to be part of the selection process, not to control who is selected but to ensure that volunteers understand what they are volunteering for.</p> <p>If extension workers will be used, it helps to be involved so that community leadership has a good sense of what is needed.</p>	<ul style="list-style-type: none"> ▪ Spell out the level of effort expected of outreach workers. ▪ Explain that the need for house-to-house case-finding will diminish after startup. ▪ Try to recruit outreach workers who: <ul style="list-style-type: none"> - Are accepted in the homes of all community members - Feel secure walking within and between communities - Are trusted to deal with all families fairly - Are prepared to assist at the outpatient care site if needed - Have the confidence to learn, if not literate

WHAT?	WHY?	HOW?
<p>Train outreach workers (e.g., CHWs, volunteers) to perform active case-finding</p>	<p>Accurate assessment of bilateral pitting oedema and use of mid-upper arm circumference (MUAC) tape requires basic training.</p> <p>Giving good quality training to large numbers of outreach workers can be challenging, since considerable individual practice with MUAC is required.</p> <p>These trainings are often also the first real opportunity outreach workers have to learn about their new responsibilities.</p>	<ul style="list-style-type: none"> • Conduct training at or near a maternal and child health (MCH) clinic or other location where many children under 5 are available for practicing. Make arrangements beforehand with mothers/caregivers and offer a bar of soap or other token as thanks. • Try to ensure that referral criteria used by outreach workers are identical to admission criteria at outpatient care sites to minimise the number of referrals rejected. • Be sure to allocate sufficient time for both the bilateral pitting oedema and MUAC practise and discussion. The topics should include: <ul style="list-style-type: none"> - Explanation of outpatient care and CMAM - Proposed role of outreach workers - Probable workload - MUAC measurement - Identification of bilateral pitting oedema - Referral procedure - Questions to confirm understanding of training
<p>Engage civil society partners</p>	<p>Reaching out beyond the health sector can help identify and address gaps in community participation or service access and uptake.</p>	<ul style="list-style-type: none"> • Brief the leadership of churches, mosques and community-based organisations (CBOs) about CMAM objectives and procedures. • Look for opportunities in their activities to identify children with severe acute malnutrition (SAM). Train outreach workers from their organisations. • Leave handbills so they can use a consistent message when passing information through their hierarchies.

HANDOUT 3.10

ELEMENTS AND SEQUENCING OF CMAM COMMUNITY OUTREACH



HANDOUT 3.11

TEAM CHECKLIST FOR COMMUNITY OUTREACH FIELD VISIT

COMMUNITY INTERVIEWS	
	Courteous treatment of community members
	Clarity of instruction/explanation to informants
	Efficient use of community time and maximum use of opportunities
	Ability to employ variety of tactics to prompt discussion
	Good written record of the discussion
INTERVIEW QUESTIONS – Based on interview guide developed by trainers	
POST-INTERVIEW DISCUSSION, PLANNING	
	Content gaps are recognised by team
	Team is able to distil useful insights from raw material of interview
	Team can identify changes and improvements needed to interview guides and process
	Team can draw practical operational conclusions from interview insights
	Team can determine priority messages and package them in the simplest, most appropriate form
	Team can demonstrate a grasp of the necessary next steps by devising an action plan for the mobilisation phase

EXERCISE 3.2

OVERCOMING OBSTACLES TO COMMUNITY PARTICIPATION IN CMAM

OBSTACLES	WHO NEEDS TO BE INVOLVED
Poor awareness of acute malnutrition	
Poor awareness of CMAM	
Community mobilisation has been overly broad	
Referral and admission criteria are not aligned	
Local medico-cultural traditions do not connect advanced wasting or swelling with undernutrition	
Stigma of acute malnutrition in the community or the influence of peers or family members	
Important community gatekeepers or opinion-makers to CMAM	
Primary health care (PHC) facilities are poorly regarded	
Location of outpatient care sites	
Interruption of seasonal labour patterns	

EXERCISE 3.3

COMPARISON OF CASE-FINDING MODELS

MODEL	SUITABLE FOR	STRENGTHS	WEAKNESSES
House-to-House Case-Finding			
Community Case-Finding			
Passive Case-Finding			

EXERCISE 3.4

WORKSHEET: SELECTION OF CANDIDATES FOR COMMUNITY OUTREACH

Job Description (including supervised by)	Proximity to Cases (sees children < 2 yrs)	Breadth of Coverage (exist in every community or catchment area)	Accessible/ Amenable to Training	Can Accept Additional Work	Can Learn Mid-Upper Arm Circumference (MUAC)	Requires Little/No Extra Payment	Accepted in All Parts of the Community (for house-to-house)
1. OUTREACH WORKERS (E.G., COMMUNITY HEALTH WORKERS [CHWS], HEALTH EXTENSION WORKERS [HEWS], VOLUNTEERS)							
2. OTHER EXTENSION WORKERS AND VOLUNTEERS							
3. IMPORTANT COMMUNITY FIGURES							

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE FOUR

Outpatient Care for the Management of SAM Without Medical Complications

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

LEARNING OBJECTIVES

HANDOUTS AND EXERCISES

1. Describe Outpatient Care for the Management of SAM Without Medical Complications	PowerPoint: Overview of CMAM from Module 1 (optional)
2. Describe Admission Criteria in Outpatient Care	Handout 4.1 Admission Criteria and Entry Categories for CMAM Handout 4.2 Outpatient Care: Admission Criteria Exercise 4.1 Outpatient Care Admission
3. Describe Process for Admissions and Outpatient Care Follow-On Sessions	Handout 4.3 Outpatient Care: Admission Process Handout 4.4 Outpatient Care Treatment Card Handout 4.5 RUTF Ration Card Handout 4.6 Using Outpatient Care Treatment Card and RUTF Ration Card Exercise 4.2 Outpatient Care Treatment Card and RUTF Ration Card
4. Explain Medical Treatment for the Management of Children With SAM Without Medical Complications in Outpatient Care	Handout 4.7 Medical Treatment for the Management of SAM in Outpatient Care Handout 4.8 Routine Medicines for SAM in Outpatient Care Handout 4.9 Supplemental Medicines for SAM in Outpatient Care Handout 4.10 Medicine Protocol Rationale for Outpatient Care (Reference)
5. Explain Nutrition Rehabilitation for the Management of SAM Without Medical Complications in Outpatient Care	Handout 4.11 Nutrition Rehabilitation and RUTF
6. Describe the Key Messages for Mothers/Caregivers Used in Outpatient Care	Handout 4.12 Key Messages for Individual Counselling at Outpatient Care
7. Recognising When Further Action is Needed: Referral to Inpatient Care and Follow-Up Home Visits	Handout 4.13 Outpatient Care Action Protocol Handout 4.14 Referral to Inpatient Care or Follow-Up Home Visits Handout 4.15 Referral Slip Exercise 4.3 Identifying Children Who May Need Follow-Up Home Visits or Referral to Inpatient Care
8. Explain Discharge Criteria and Procedures	Handout 4.16 Outpatient Care: Discharge Criteria Handout 4.17 Discharge Criteria and Exit Categories for CMAM Exercise 4.4 Partially Completed Outpatient Care Treatment Cards
9. Describe Linkages Between Outpatient Care and Other Services, Programmes and Initiatives	Handout 1.12 Integrating CMAM into Routine Health Services at the District Level
Wrap-up and Module Evaluation	Handout 4.18 Essentials of Outpatient Care for SAM Without Medical Complications Optional Exercise 4.5 Outpatient Care Admissions Role Play

HANDOUT 4.1

ADMISSION CRITERIA AND ENTRY CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ADMISSION CRITERIA FOR CHILDREN 6 - 59 MONTHS*		
<p>Bilateral pitting oedema +++</p> <p>OR Marasmic kwashiorkor: Any grade of bilateral pitting oedema with severe wasting (MUAC < 110 mm or WFH < -3 z-score [WHO] or < 70% of median [NCHS])</p> <p>OR Bilateral pitting oedema + or ++ or MUAC < 110 mm or WFH < -3 z-score (WHO) or < 70% of median (NCHS) with any of the following medical complications:</p> <ul style="list-style-type: none"> ▪ Anorexia, no appetite ▪ Intractable vomiting ▪ Convulsions ▪ Lethargy, not alert ▪ Unconsciousness ▪ Lower respiratory tract infection (LRTI) ▪ High fever ▪ Severe dehydration ▪ Severe anaemia ▪ Hypoglycaemia ▪ Hypothermia <p>OR</p> <ul style="list-style-type: none"> ▪ Referred from outpatient care according to action protocol ▪ Other: e.g., infant ≥ 6 months and < 4 kg 	<p>Bilateral pitting oedema + and ++</p> <p>OR MUAC < 110 mm</p> <p>OR WFH < -3 z-score (WHO) or < 70% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert 	<p>MUAC ≥ 110 mm and < 125 mm</p> <p>OR WFH ≥ -3 z-score and < -2 z-score (WHO) or ≥ 70% and < 80% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert <p>ALSO: Children recovering from SAM, after discharge from outpatient care, regardless of their anthropometry</p> <p><i>Note: Children with MAM and medical complications are admitted to supplementary feeding (receive supplementary food ration) but are referred for medical treatment and return when medical complications are resolved.</i></p>

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and mild acute malnutrition (MAM) are being debated.

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

4.1

ADMISSION CRITERIA FOR INFANTS < 6 MONTHS		
Infants < 6 months with bilateral pitting oedema or visible wasting (or e.g., insufficient breastfeeding in vulnerable environment)		
ADMISSION CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		<p>Pregnant women In second and third trimester with MUAC < 210 mm</p> <p>Lactating Women MUAC < 210 mm with infants < 6 months</p>

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ENTRY CATEGORY: NEW ADMISSIONS OF CHILDREN 6-59 MONTHS		
New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New MAM cases of children 6-59 months meet admission criteria -including relapse after cure and referral from outpatient care
ENTRY CATEGORY: OTHER NEW ADMISSIONS		
New SAM cases of infants, children, adolescents or adults (< 6 months or ≥ 5 years) need treatment of SAM in inpatient care	New SAM cases not meeting pre-set admission criteria need treatment of SAM in outpatient care	New MAM cases not meeting pre-set admission criteria need treatment of MAM
ENTRY CATEGORY: OLD CASES: REFERRAL FROM OUTPATIENT CARE		
Child's health condition deteriorated in outpatient care (according to action protocol) and child needs inpatient care Returned after defaulting Moved in from other outpatient care site	Child's health condition improved in inpatient care and child continues treatment in outpatient care OR Returned after defaulting, or Moved in from other outpatient care site	Returned after defaulting, or Moved in from other supplementary feeding site

Note: MUAC is the preferred indicator for admission to CMAM. MUAC is used for children age 6-59 months. MUAC cutoffs for SAM and MAM are being debated. The cutoff for SAM could increase to 115 mm, however, this had not been put in practice at the time these materials were published. In some countries, the MUAC cutoff for MAM has been set at < 120 mm.

Depending on national guidelines, weight-for-height (WFH) is expressed as standard deviations (SDs) below the median of the World Health Organization (WHO) child growth standards (WFH < - z-score) or as a percentage of the median of the National Centre for Health Statistics (NCHS) child growth references (WFH < % of median).

HANDOUT 4.2

OUTPATIENT CARE: ADMISSION CRITERIA

WHO SHOULD BE ADMITTED TO CMAM OUTPATIENT CARE?

- Children age 6-59 months who have severe acute malnutrition (SAM), an appetite (ability to eat ready-to-use therapeutic food [RUTF], passing the appetite test) and no medical complications
- Children whose mother/caregiver refuses inpatient care despite advice; the child will require follow-up home visits and close monitoring while in outpatient care
- Children who a health care provider has determined should be admitted even though they do not meet admission criteria, such as children over 5 years old with bilateral pitting oedema or who are visibly severely wasted
- Children referred from inpatient care to complete the treatment according to the protocol
- Children who return after defaulting (absent for three consecutive sessions) and who need to continue the treatment

WHO IS NOT ADMITTED TO OUTPATIENT CARE?

- Children with SAM and medical complications, including no appetite, should be referred to inpatient care
- Children under 6 months who have bilateral pitting oedema or visible wasting, and/or whose mother has insufficient breast milk should be referred to inpatient care for SAM with medical complications for specialised treatment of SAM in infants
- Moderately malnourished children should be referred to supplementary feeding or other treatment services for moderate acute malnutrition (MAM), as available
- Children who are sick but do not have SAM should be referred to other appropriate health services
- Children with HIV/AIDS and SAM follow the SAM treatment protocol

Note:

Adults and adolescents: To date, outpatient care programmes have little experience with adults or adolescents. Care and treatment will depend on the context and national guidelines. Currently, best practice is referral to inpatient care and treatment based on World Health Organization (WHO) and national protocols. In several countries (e.g., Malawi, Zambia, Mozambique), severely malnourished HIV-positive adults have been treated as inpatients using F75/F100 and as outpatients using RUTF. Research is ongoing to determine the most effective treatment protocol for HIV-positive adults and adolescents.

Twins: If the first twin meets CMAM admission criteria and the second does not, the second twin is not admitted. However, the second twin receives a weekly RUTF ration because ration sharing must be assumed. An RUTF ration card for the second twin is filled out and stapled to the RUTF ration card of the admitted first twin.

HANDOUT 4.3

OUTPATIENT CARE: ADMISSION PROCESS

A. OVERVIEW OF OUTPATIENT CARE ADMISSION PROCESS

ADMISSION PROCESS FOR CHILD WITH SAM REFERRED TO OR PRESENTED AT THE HEALTH FACILITY WITH OUTPATIENT CARE

(Outpatient Care Follow-On Sessions: Steps 1-15 [except 6] are repeated)

1. Sugar water given
2. Bilateral pitting oedema checked
3. Anthropometry checked:
MUAC measured
Weight measured
Length or height measured; WFH verified*
4. Nutritional status recorded
5. DECISION WHETHER CHILD IS ADMITTED FOR SAM OR REFERRED FOR MAM OR OTHER
(In **outpatient care follow-on sessions**: progress of nutritional status monitored)
6. Registration number provided
7. Medical assessment:
Medical history taken and physical examination conducted, all recorded on outpatient care treatment card
8. Appetite tested
9. DECISION WHETHER CHILD IS ADMITTED TO OUTPATIENT CARE OR REFERRED TO INPATIENT CARE (BASED ON ADMISSION CRITERIA) (In **outpatient care follow-on sessions**: decision whether child continues treatment in outpatient care, is referred to inpatient care or tertiary care [based on outpatient care action protocol], needs a follow-up home visit, or is ready for discharge [based on discharge criteria])

CHILD RECEIVES TREATMENT IN OUTPATIENT CARE

10. Routine medication given upon admission (In **outpatient care follow-on sessions**: medication following treatment protocol given)
11. Weekly supply of RUTF given
12. RUTF ration card filled out and RUTF given
(Soap provided if available)
13. Counselling on how to give RUTF (key messages) and antibiotics given upon admission (In **outpatient care follow-on sessions**: counselling on progress, and health and nutrition education given)
14. Explanation of outpatient care schedule and when to return for outpatient care follow-on sessions, and linkage with outreach worker (e.g., CHW, volunteer) given
15. Links with other services, programmes and initiatives made

CHILD IS REFERRED TO INPATIENT CARE

10. First-dose antibiotic given
11. Referral slip provided
(Arrange transportation where possible)

*Note: In countries where bilateral pitting oedema and mid-upper arm circumference (MUAC) are used for admission, adjust chart and remove length or height measurement and weight-for-height (WFH) information.

B. IMPORTANT CONSIDERATIONS IN THE ADMISSION PROCESS

- Shade should be provided if mothers/caregivers and children have to wait outside. Organise the flow of patients and the waiting area so that mothers/caregivers have somewhere to sit, and health care providers can see patients and take measurements in an orderly manner.
- Children waiting for admission can be given clean, safe water to drink. Where possible, **sugar water** should be given to help prevent hypoglycaemia.
- Children in a severe condition should be triaged and treated first.
- Water should be available for children who eat the ready-to-use therapeutic food (RUTF) during the appetite test and during the waiting period.
- Soap and water should be available for hand-washing.

C. STEPS FOR ADMISSION

- Children are checked for bilateral pitting oedema, their MUAC is taken, they are weighed and their length or height is measured.
- If a child meets the admission criteria for severe acute malnutrition (SAM), the health care provider takes a medical history and conducts a physical examination. The medical history includes information on bilateral pitting oedema, diarrhoea, vomiting, cough, appetite, frequency of stools and urine, bilateral pitting oedema duration, and breastfeeding status. The physical examination includes measurement of respiratory rate, chest retraction and body temperature, and observations of the eyes, ears, lymph nodes, skin, mouth and extremities (see **Handout 4.7 Medical Treatment for Management of SAM in Outpatient Care** for more information).
- All information is recorded on the child's outpatient care treatment card, which is kept on file at the outpatient care site. The health care provider should complete an outpatient care treatment card for all children admitted at the outpatient care site, even those that will be referred to inpatient care. Each child has a unique registration number noted on the outpatient care treatment card.
- The appetite is tested; RUTF is given to the mother/caregiver to give to the child for an observed appetite test. The child's appetite is graded by the health care provider. See **Section D** below for detailed information on the appetite test.
- Based on the appetite test and the medical assessment (i.e. anthropometry, medical history, physical examination), the health care provider determines whether the child should be referred to inpatient care or admitted into outpatient care.
- Routine medication is provided based on the treatment protocol.
- The child will receive a ration of RUTF, and the amount is marked on the outpatient care treatment card and on an RUTF ration card that is given to the mother/caregiver.
- The health care provider counsels the mother/caregiver with key messages on how to feed the child RUTF, how to give the medicines to the child, when to return to outpatient care, and to bring the child to the health facility immediately if his/her condition deteriorates.

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

Note: Outpatient care includes individual counselling, health and nutrition education, and behaviour change communication (BCC) at each session. It is important that the initial counselling session focus only on the messages above so that the mother/caregiver clearly understands the practices that are essential to the successful treatment of SAM. As the child's condition improves, other messages should be given. These messages will be discussed more fully under **Learning Objective 6**.

- The mother/caretaker receives explanation on the outpatient care schedule and when to return for outpatient care follow-on sessions. S/he is also linked with the responsible outreach worker for his/her community (i.e., name of the community health worker [CHW] or volunteer, how to reach the outreach worker if the introduction was not made during the screening or admission).
- Linkages are made with other services, programs or initiatives as appropriate (e.g., voluntary counselling and testing [VCT], expanded programme of immunisation [EPI], reproductive health clinic, food security initiatives).

D. APPETITE TEST TO DETERMINE WHETHER CHILD SHOULD BE TREATED IN OUTPATIENT CARE WITH RUTF

- Appetite is essential for a child to be admitted to and remain in outpatient care. If a child has no appetite, s/he will not be able to eat RUTF at home and therefore needs referral for specialized care in inpatient care for the management of SAM with medical complications.
- An appetite test is given to children ages 6 months and above to determine whether the child can eat the RUTF. The test shows whether the child has appetite, accepts the RUTF's taste and consistency and can swallow (e.g., child is old enough to swallow solids, child has no lesions that prevent him/her from eating). Anorexia, or absence of appetite, is considered to reflect a severe disturbance of the metabolism.
- Children with SAM who pass the test and have no medical complications are treated in outpatient care. Those who do not pass are referred to inpatient care.
- The appetite test is repeated at every outpatient care follow-on session. For children who are used to the RUTF, there is flexibility on when the repeat test can be done (e.g., with supervision in a group, during the waiting time).
- Children who have other medical complications that require referral to inpatient care do not need to take the appetite test at the outpatient care site.
- The Appetite Test
 1. The child is given a packet or pot of RUTF to eat.
 2. The child should eat *at least one third of a packet or three teaspoons from a pot of RUTF* to pass the test.
 3. The health care provider observes the child eating the RUTF and decides whether the child passes or fails.
 4. If the child passes, s/he can be sent home and continues treatment in outpatient care. If the child fails, referral procedures to inpatient care are started.
 5. The health care provider notes on the outpatient care treatment card whether the child passed or "failed" the appetite test.

Note: Many children will eat the RUTF enthusiastically straight away while others might refuse initially. These children should sit quietly with their mothers/caregivers in a secluded place and be given time to become accustomed to the RUTF.

E. STEPS FOR OUTPATIENT CARE FOLLOW-ON SESSIONS

- Depending on the outpatient care site's schedule and the ability of the mother/caregiver to bring in the child, weekly or bi-weekly outpatient care follow-on sessions are scheduled.
- The mother/caregiver is asked to return for each outpatient care follow-on session, and the importance of compliance with this is explained: returning for outpatient care follow-on sessions is critical for the child's treatment as receiving the needed RUTF is vital for the child's nutrition rehabilitation.
- At each outpatient care follow-on session, the child receives a comprehensive evaluation that includes:
 - anthropometry, medical history, and physical examination
 - an appetite test
 - monitoring the progress of the child's nutritional status
 - decision making for referral to inpatient care or tertiary care depending on the outpatient care action protocol, for a follow-up home visit, or for discharge
 - continuation of drug treatment protocol
 - adequate supply of RUTF
 - individual counselling, and group health and nutrition education.
 - verifying and excluding the presence of medical complications
- The mother/caretaker is linked with services, programs and initiatives as appropriate.

HANDOUT 4.4

OUTPATIENT CARE TREATMENT CARD

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD									
NAME					Reg. N°	/ /			
AGE (months)			SEX	M	F	DATE OF ADMISSION			
ADMINISTRATIVE UNIT					TIME TO TRAVEL TO SITE				
COMMUNITY					FATHER ALIVE				
HOUSE DETAILS/LANDMARKS					MOTHER ALIVE				
NAME OF CAREGIVER					TOTAL NUMBER IN HOUSEHOLD				
ADMISSION (CIRCLE)	self referral	outreach referral		inpatient care referral	health facility referral	TWIN	yes	no	
RE-ADMISSION (relapse)	no	yes	ADDITIONAL INFORMATION						
ADMISSION ANTHROPOMETRY									
BILATERAL PITTING OEDEMA	+	++	+++						
MUAC (mm)			WEIGHT (kg)			HEIGHT (cm)			
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC		Weight for Height		OTHER:			
HISTORY									
DIARRHOEA	yes	no		# STOOLS/DAY	1-3	4-5	>5		
VOMITING	yes	no		PASSING URINE	yes		no		
COUGH	yes	no		IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?					
APPETITE	good	poor	none		BREASTFEEDING	yes		no	
ADDITIONAL INFORMATION									
PHYSICAL EXAMINATION									
RESPIR. RATE (# min)	<30	30 - 39	40 - 49	50+		CHEST INDRAWING	yes no		
TEMPERATURE °C					CONJUNCTIVA	normal	pale		
EYES	normal	sunken	discharge		DEHYDRATION	none	moderate	severe	
EARS	normal	discharge		MOUTH	normal	sores	candida		
ENLARGED LYMPH NODES	none	neck	axilla	groin		HANDS & FEET	normal	cold	
SKIN CHANGES	none	scabies	peeling	ulcers / abscesses		DISABILITY	yes no		
ADDITIONAL INFORMATION									
ROUTINE MEDICATION: ADMISSION									
ADMISSION:	DRUG	DATE	DOSAGE		DRUG	DATE	DOSAGE		
	Amoxicillin								
	Vitamin A (if not in last 6 months)				Measles immunisation	no	yes	date:	
	Malaria treatment				Fully immunised	no	yes		
2nd VISIT:	Mebendazole								
OTHER MEDICATION									
DRUG	DATE	DOSAGE		DRUG	DATE	DOSAGE			

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

FOLLOW UP: OUTPATIENT CARE

NAME	REG.N°																	
	ADM.																	
	(=0)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Week																		
Date																		
ANTHROPOMETRY																		
Bilateral Pitting Oedema (+ ++ +++)			*		*													
MUAC (mm)																		
Weight (kg)																		
Weight loss * (Y/N)																		
Height (cm)																		
Weight for Height																		
* If below admission weight on week 3 refer for home visit; If no weight gain by week 5 refer to inpatient care																		
HISTORY																		
Diarrhoea (# days)																		
Vomiting (# days)																		
Fever (# days)																		
Cough (# days)																		
PHYSICAL EXAMINATION																		
Temperature (°C)																		
Respiratory rate (# /min)																		
Dehydrated (Y/N)																		
Anaemia / palmar pallor (Y/N)																		
Skin infection (Y/N)																		
APPETITE CHECK / FEEDING																		
RUTF test (Passed/Failed)																		
RUTF (# units given)																		
ACTION / FOLLOW UP																		
ACTION NEEDED (Y/N)																		
Other medication (see front of card)																		
Name of Examiner																		
VISIT OUTCOME																		
OK= Continue A= Absent D= Defaulted for 3 visits R= Referral RR= Refused referral C= Cured NR= Non-recovered HV= home visit X= Died																		
ACTION TAKEN DURING FOLLOW-UP (INCLUDE DATE)																		
Name of outreach worker:																		

HANDOUT 4.5

RUTF RATION CARD

Front of card:

OUTPATIENT CARE RUTF RATION CARD				Registration N°		
Site				Community		
Name of Child				Age	Sex	
Target Weight (kg)				CRITERIA FOR ADMISSION:		
Date	Bilateral pitting oedema	MUAC (mm)	Height (cm)	Weight (kg)	WFH	RUTF ration
Notes:						
OUTCOME: Cured Died Defaulted Non-Recovered Referred						

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

Back of card:

Date	Bilateral pitting oedema	MUAC (mm)	Height (cm)	Weight (cm)	WFH	RUTF ration

Notes / Follow-Up Home Visits (date/signature by outreach worker)

HANDOUT 4.6

USING OUTPATIENT CARE TREATMENT CARD AND RUTF RATION CARD

A. OUTPATIENT CARE TREATMENT CARD

- The outpatient care treatment card is completed for all children admitted to CMAM at the outpatient care site, including those being referred to inpatient care.
- Each child admitted to CMAM is given a unique **registration number**, which is noted on the outpatient care treatment card. The numbering system starts with the first child admitted at that site e.g., 001/OC/XXX (OC for “outpatient care” and XXX as the code for the health facility). This number remains the same even if the child is referred to inpatient care. The number must appear on referral slips. The hospital or agency running inpatient care should use this number on the slip when the child is returned from inpatient care to outpatient care. The same numbering system applies to programmes that manage moderate acute malnutrition (MAM). Note: If a mother/caregiver presents a child directly to inpatient care and the child is admitted, then the inpatient care code is used.
- The **outpatient care treatment card filing system** is a simple data repository system that maintains the most detailed monitoring information of individual treatment. Outpatient care treatment cards are kept in a simple file on site. The file should have dividers with separate sections for defaulters, deaths, recovered (cured children who were discharged) and referrals. This system makes it easy to organise, find the right cards and fill out reports weekly and monthly.
- If a child is referred to inpatient care, the outpatient care treatment card is filed under “referrals to inpatient care” until the child returns to the outpatient care site. Cards in the referral section should be checked weekly, and health care providers should discuss the referral status of the children with the outreach workers (e.g., community health workers [CHWs], volunteers) to be sure that each child returns from inpatient care. If a child dies in inpatient care, the outpatient care treatment card is filed under deaths.
- For health facilities that require registration to meet follow-up and reporting requirements, a simplified registration system using **registration books** can be useful. The health care provider records the child’s number, name, place of origin, admission date, nutrition indicators upon admission (i.e. bilateral pitting oedema, mid-upper arm circumference [MUAC], weight, height, weight-for-height [WFH]), date of discharge, and nutrition indicators upon discharge. In stand-alone CMAM services, outpatient care treatment cards can also serve as registration records and no registration book would be required.

B. READY-TO-USE THERAPEUTIC FOOD (RUTF) RATION CARD

- Information provided on RUTF ration cards include:
 - Name of Child
 - Age
 - Sex
 - Community
 - Registration number
 - Health facility with outpatient care site

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

- Target weight
 - Criteria for admission
 - Date and nutrition indicators: bilateral pitting oedema assessments, measurements of MUAC, height, weight, WFH
 - Sizes of rations and dates given
 - Notes
 - Follow-up home visits
 - Outcome (e.g., referred, defaulted)
- The mother/caregiver keeps the RUTF ration card until discharge.
 - The amount of RUTF given is determined according to the child's weight and visit frequency, and is recorded on the RUTF ration card.
 - At the time of discharge, date and discharge criteria are recorded on the RUTF ration card.

Note: Monitoring of individual children is based on the outpatient care treatment cards, which feed information into the monitoring system of the services (see **Module 8: Monitoring and Evaluation of CMAM**). Individual and service data collection must be adapted to the existing monitoring system of individual cases at the health facility and the health management information system (HMIS) at the district level. The existing systems should be reviewed first to determine how to best integrate the CMAM outpatient care treatment cards into an HMIS that is already in place.

HANDOUT 4.7

MEDICAL TREATMENT FOR MANAGEMENT OF SAM IN OUTPATIENT CARE

A. EVALUATION OF THE HEALTH AND NUTRITION STATUS

- **When a child with severe acute malnutrition (SAM) first presents** at the health facility, the health care provider assesses the nutritional status: bilateral pitting oedema is checked and anthropometry is measured.
- The medical assessment includes a medical history and physical examination, and determines whether the child with SAM has any medical complications, including Integrated Management of Childhood Illness (IMCI) danger signs, that might require inpatient care. The medical assessment includes: asking the mother/caregiver about the child's general condition in the past week (e.g., diarrhoea, vomiting, cough, appetite, passing stools and urine, oedema, breast feeding); examining the eyes, ears, lymph nodes, mouth, extremities and skin; checking for bilateral pitting oedema, fever, anaemia and superficial infections; checking respiration rate and chest retraction, alertness and hydration status.
- **At every outpatient care follow-on session**, a health care provider evaluates the child's nutritional status and medical condition. The medical assessment determines the severity of the case and serves as the basis for deciding whether to continue the course of treatment, refer to inpatient care or perform a follow-up home visit to monitor the child's progress.
- A health care provider, educator or trained volunteer counsels mothers/caregivers individually on the child's nutritional and medical status and progress, and provides health and nutrition education, including guidance on optimal infant and young child feeding (IYCF) practices, among other health topics.

B. ROUTINE MEDICAL TREATMENT IN OUTPATIENT CARE

- Routine medicines are given to all children admitted to outpatient care whether or not they show symptoms because ill children with SAM might have suppressed immune systems and not show symptoms until they begin to recover from SAM.
- Treatment is based on World Health Organization (WHO) guidelines for the treatment of SAM and should be adapted to national treatment protocols and based on the national Essential Drugs List (EDL).
- The recommended first-line antibiotic is **amoxicillin**. The child's mother/caregiver gives the first dose of amoxicillin at admission to outpatient care, under the guidance of the health care provider. The health care provider should clearly explain how to continue treatment of antibiotics at home and should ask the mother/caregiver to repeat the instructions to make sure they were understood.
- **Vitamin A** is given in a single dose at admission to children who do not have bilateral pitting oedema and who have not received it in the past month. Children who are admitted with bilateral pitting oedema should receive Vitamin A ONLY upon discharge unless there are signs of Vitamin A deficiency (e.g., night blindness, Bitot's spots, corneal xerosis), if there is currently a measles outbreak or if there is a high prevalence of Vitamin A deficiency in the area.

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

- **Deworming:** Mebendazole (or albendazole) is provided as a single dose at the second visit. This ensures that the child does not take too many medications on the first day and increases the effectiveness of the medications by reducing the likelihood of vomiting. By the second session, the antibiotics will have taken effect and absorption of the deworming medication will be higher.
- **Iron and folic acid are not given routinely.** Ready-to-use therapeutic food (RUTF) contains iron and folic acid. If anaemia is identified, it should be treated according to IMCI guidelines, and treatment should begin after 14 days in the CMAM service. Cases of severe anaemia should be referred to inpatient care. Malaria testing and treatment should be done before the iron and folic acid treatment is given.
- In areas where malaria is endemic, malaria testing and/or treatment should be given to all children on admission. Rapid malaria tests (e.g., Paracheck) are conducted systematically in malaria-endemic areas to verify the presence of malaria. In the absence of malaria tests, routine antimalaria treatment is given. Note: Artemisinin-based combination therapy (ACT) is provided only to confirmed cases.
- The child's vaccination status is checked upon admission. If the child has not been vaccinated for measles, the vaccination is given to the child on the fourth session. If the child's vaccinations are incomplete, arrangements should be made to complete them, and the vaccination status is recorded on the outpatient care treatment card and the vaccination card.

C. SUPPLEMENTAL MEDICINES

- Supplemental medicines are given based on the clinical diagnosis of individual children upon admission or during the medical assessment. Second-line antibiotics might be required if a child continues to have signs of infection after the first-line routine antibiotic is given. Some children might need additional treatment for conditions such as skin lesions, mouth infection and parasitic infections.

HANDOUT 4.8

ROUTINE MEDICINES FOR SAM IN OUTPATIENT CARE

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

4.8

Name of Product	When	Age/Weight	Prescription	Dose
VITAMIN A*	At admission (EXCEPT children with bilateral pitting oedema*)	< 6 months	50,000 IU	Single dose on admission (single dose on discharge for children with bilateral pitting oedema)
		6 months to 12 months	100,000 IU	
		> 12 months	200,000 IU	
		DO NOT USE WITH BILATERAL PITTING OEDEMA ON ADMISSION*		
AMOXICILLIN	At admission	All beneficiaries	See protocol	3 times a day for 7 days
ANTIMALARIAL (follow national protocol)	At admission in malarial areas	All beneficiaries > 2 months old and > 2 kg	See protocol	Follow national protocol. (when using ACT, treat only confirmed/positive cases [malaria test])
MEBENDAZOLE**	Second session	< 12 months	DO NOT GIVE	None
		12-23 months	250 mg	Single dose on second session
		≥ 24 months	500 mg	
MEASLES VACCINATION***	On week 4	From 6 months	Standard	Once on week 4

* VITAMIN A: Do not give if the child has already received Vitamin A in the past month. Do not give to children with bilateral pitting oedema until discharge from OUTPATIENT CARE, unless there are signs of Vitamin A deficiency (e.g., night blindness, Bitot's spots, corneal xerosis), if there is currently a measles outbreak or if there is a high prevalence of Vitamin A deficiency in the area.

** MEBENDAZOLE: Give mebendazole or other antihelminth according to national guidelines (e.g., albendazole 12-23 months 200 mg or ≥ 24 months 400 mg [both can be given again after 3 months if signs of reinfection appear]).

*** MEASLES vaccination at 6 months; a second dose should be given around 9 months.

Iron and folic acid should not to be given routinely. Where anaemia is identified according to Integrated Management of Childhood Illness (IMCI) guidelines, treatment should begin ONLY after 14 days in the CMAM service and given according to national and World Health Organization (WHO) guidelines (INACG 1998). For severe anaemia, refer to inpatient care.

Always consult the national treatment protocols and adapt (e.g., IMCI, malaria protocols, other relevant protocols).

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

AMOXICILLIN DOSAGES

- Systematic treatment for all beneficiaries EXCEPT for children under 2 kg
- Give 3 times a day for 7 days (or 10 days if needed)

SYRUP – 125 mg/5 ml	
Weight of Child (kg)	Dose
≤ 9.9	125 mg (5 ml) 3 times per day
10.0 - 30.0	250 mg (10 ml) 3 times per day
> 30.0	Give tablets
SYRUP – 250 mg / 5 ml	
Weight of Child (kg)	Dose
≤ 9.9	125 mg (2.5 ml) 3 times per day
10.0 - 30.0	250 mg (5 ml) 3 times per day
> 30.0	Give tablets
TABLETS – 250 mg	
Weight of Child (kg)	Dose
≤ 9.9	125 mg (½ tablet) 3 times per day
10.0 - 30.0	250 mg (1 tablet) 3 times per day
> 30.0	500 mg (2 tablets) 3 times per day

NOTE: Always check label on bottles for dosages and dilution of syrups, as different manufacturers might use different levels.

ARTESUNATE AND FANSIDAR DOSAGES (for Artemisinin-Based Combination Therapy [ACT])

- Give Artesunate 3 days + Fansidar single dose on day 1
- Artesunate tablet = 50 mg
- Fansidar tablet = 525 mg

Note: Only for confirmed cases of malaria

DOSE		
Weight of Child (kg)	Artesunate Days 1-3	Fansidar Day 1 Tablets
< 5	1/4	1/4
5 – 7	1/2	1/2
7.1 – 12	1	1/2
12.1 – 20	2	3/4
20.1 – 30	2	1
30.1 – 40	3	1 1/2
40.1 – 50	4	2
50.1 – 60	4	2 1/2
> 60	5	3

NOTE: Always check label on bottles for dosages and dilution of syrups, as different manufacturers might use different levels.

HANDOUT 4.9

SUPPLEMENTARY MEDICINES FOR SAM IN OUTPATIENT CARE

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

4.9

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	For treatment of candida albicans	100,000 units (1 ml) 4 times a day after food (use dropper and show mother/caregiver how to use it)	Continue for 7 days
PARACETAMOL	For children with fever over 39°C	See separate protocol	Single dose only—DO NOT give to take home
BENZYL BENZOATE	For treatment of scabies	Apply over whole body; Repeat without bathing on following day; Wash off 24 hours later	Avoid eye contact; Do not use on broken or secondary infected skin
WHITFIELDS	For treatment of ringworm or other fungal infections of the skin	Apply twice a day	Continue treatment until condition has completely resolved
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
QUININE	Second-line antimalarial treatment for children who have not responded to Fansidar	See separate protocol	
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 treatment for children who have not responded to amoxicillin, e.g., with continued fever that is not due to malaria
- Give 3 times a day for 7 days

Syrup - 125 mg / 5 ml	
Weight of Child (kg)	Dose
2.0 - 5.9	62.5 mg (2.5 ml) 3 times per day
6.0 - 9.9	125 mg (5 ml) 3 times per day
10.0 - 30.0	250 mg (10 ml) 3 times per day
Capsules – 250 mg	
Weight of Child (kg)	Dose
2.0 - 5.9	Give syrup
6.0 - 9.9	125 mg (1/2 capsule) 3 times per day
10.0 - 30.0	250 mg (1 capsule) 3 times per day

NOTE: Always check label on bottles for dosages and dilution of syrups, as different manufacturers might use different levels.

PARACETAMOL DOSAGES

For severely malnourished children, use for symptomatic treatment of fever but with extreme caution. Give one-time treatment only and start an antibiotic or antimalarial immediately. Monitor the child; if the fever is 39° C or greater, refer him/her to inpatient care where possible. If inpatient care is not available, give a single dose of paracetamol and sponge the child with tepid water until the fever subsides. Have the mother/caregiver return to outpatient care if the high fever continues at home.

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

NOTE: Always check label on bottles for dosages and dilution of syrups, as different manufacturers might use different levels. Remember to give ONE DOSE only and start antibiotic or antimalarial.

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

HANDOUT 4.10

MEDICINE PROTOCOL RATIONALE FOR OUTPATIENT CARE (REFERENCE)

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

4.10

Vitamin A

Vitamin A should be given only if it has not been received in the past 30 days (World Health Organization [WHO] 2000/a). Vitamin A should not be given to children with bilateral pitting oedema related to undernutrition. Research has concluded that children with kwashiorkor who receive high-dose Vitamin A therapy suffer five times greater mortality than the control group (Donnen et al. 1998; Donnen et al. 2003). Ready-to-use therapeutic food (RUTF) has enough Vitamin A (0.91 mg/100 g) to satisfy a daily low-dose requirement. Therefore, children with bilateral pitting oedema should be given Vitamin A **ONLY** if they show any signs of Vitamin A deficiency (e.g., night blindness, Bitot's spots, corneal xerosis), if there is currently a measles outbreak or if there is a high prevalence of Vitamin A deficiency in the area.

Dosages should follow WHO or national guidelines (WHO 1999/b).

Amoxicillin

Amoxicillin is given routinely on admission to treat underlying infections that might be masked due to immunosuppression, which limits response such as fever. Amoxicillin is also effective in reducing the overgrowth of bacteria in the gastrointestinal (GI) tract (Meyers et al. 2001), which is commonly associated with severe acute malnutrition (SAM). Amoxicillin can cross the wall of the GI tract into the bloodstream passively and does not rely on active transport mechanisms that might be inefficient in severely malnourished individuals. If signs and symptoms of infection continue beyond the initial treatment, a second-line antibiotic should be started.

Chloramphenicol

While the simultaneous use of several antibiotics might be justified in an inpatient setting, a simpler regime is required in an outpatient setting. Chloramphenicol is an antibiotic with a sufficiently broad spectrum to fulfil this need. It is given as a second-line treatment if amoxicillin fails to cure the infection. Dosage and timing are dependent on the specifically identified infection (WHO 1999/a and WHO 1999/b). The use of chloramphenicol is associated with a very small risk of aplastic anaemia, leading to lethal bone marrow failure. Because the medicine is used in the United Kingdom and is believed to be a valuable treatment for dangerous conditions, its use is appropriate for treating potentially life-threatening infections in malnourished children.

Additional Antibiotics

Antibiotics other than those mentioned above should be given only when specifically indicated by the presence of an infection and should be given according to the drug protocol and in consideration of national drug protocols. In cases where severe infections require referral to an inpatient unit, second-line antibiotics may be added to amoxicillin according to standard WHO inpatient protocols (WHO 1999/a). National protocols or local antibiotic resistance information will indicate which additional antibiotics to use.

Measles Vaccination

Evidence shows that an early two-dose strategy from the age of 6 months is very effective. All children entering inpatient care (except those in shock or those with evidence of previous vaccination) should be given the vaccination immediately and again on discharge from **outpatient care**. This should be coordinated with the expanded programme of immunisation (EPI) where applicable. The first vaccination

in the inpatient setting is to ameliorate the severity of both incubating measles and the episode if the child is exposed to measles in inpatient care. However, the first vaccination does not provide adequate immunity in many children requiring inpatient care due to insufficient antibody response, so the second injection is needed for future protection.

In outpatient care, children are at less risk of exposure to active measles cases and are less severely affected by undernutrition. It is recommended that they receive one measles vaccination only after they have sufficiently recovered from their undernutrition to ensure a sufficient antibody response to produce immunity (i.e., on week four).

Outpatient care also can provide an opportunity for referring the children's siblings for measles vaccination, which can reduce the mortality of household members who are unvaccinated.

Antimalarial Therapy

National protocols should guide the antimalarial therapy used. It is recommended that a Paracheck (rapid malarial test) is done on all children in a malaria-endemic area. Artemisinin-based combination therapy (ACT) (e.g., Fansidar in combination with artesunate) usually is given for positive cases only. However, ACT can be given without Paracheck if there is a strong indication of malaria and the signs and symptoms cannot be attributed to any other cause. In other areas, testing should be done only on those with a strong indication of malaria. This protocol is designed to prevent overuse of the antimalarial therapy, which could cause the malarial parasite to become resistant to the drug regimen. Note: Do not give Fansidar with folic acid (see below).

Folic Acid

The folic acid in RUTF and F75 is sufficient for a malnourished child. Folic acid should be given only to children showing signs of anaemia. However, if these children receive Fansidar as part of the malaria therapy on admission, they should not be given folic acid until the second session at outpatient care. Giving folic acid within seven days of Fansidar can make the antimalarial ineffective as the malarial parasite can use folic acid to overcome the effect of Fansidar (Wang et al. 1999). Because folic acid is present in RUTF, priority is given to treating life-threatening malaria.

Iron

High-dose iron tablets should not be given to the severely malnourished because it can increase the risk of severe infections. The presence of free iron in the blood is often a limiting substrate to infective organisms. In a normal functioning liver, the enzyme transferrin can "mop up" this free iron. In the severely malnourished, poor liver function and the reduced levels of transferrin allow iron to remain free for use by the infective organisms. Although there is some iron content in RUTF, the levels are lower than in high-dose tablets and insufficient to allow the formation of free iron in the same way.

There is currently no research to document the bioavailability of iron in RUTF. RUTF is given only to those with an appetite. However, good appetite correlates with good liver function and consequently with transferrin activity.

Where moderate anaemia is identified according to Integrated Management of Childhood Illness (IMCI) guidelines, treatment should be provided according to WHO guidelines (INACG 1998) after day 14 in the CMAM service. Where anaemia is severe, the child should be referred to inpatient care according to the action protocol.

Mebendazole/Albendazole

Mebendazole/albendazole is actively absorbed from the intestine and, because it is more effective when the GI tract is free of other infections, is given on the second session. Indications are that mebendazole/albendazole is metabolised efficiently by children over 12 months (Montresor et al. 2003), so routine

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

treatment should be given only to those children. Worm infection is less common in infants due to reduced exposure to potential contaminants (e.g., soil).

Paracetamol

Paracetamol should be used with caution in severely malnourished children because it is metabolised by the liver and there is a high possibility of reduced liver function with SAM. Irreversible liver damage and death can occur even with relatively small overdoses in susceptible people, so paracetamol should not be given unless there is a documented fever of 39° C or higher. A low-grade fever of less than 39° C is a normal immune response that usually helps the body fight infection; paracetamol should not be given in these cases. Paracetamol also should never be dispensed to take home.

4.10

IMPORTANT NOTE ON ORAL REHYDRATION SALTS

Oral rehydration salts are not part of the CTC protocols. The pathophysiology of SAM causes an inability to regulate and excrete sodium normally that can lead to bilateral pitting oedema, fluid retention and heart failure. This deterioration can happen very quickly. Oral rehydration salts are therefore contraindicated for all children with SAM.

Children with SAM and dehydration are treated in inpatient care with an oral rehydration solution of electrolytes and minerals called **ReSoMal** (Rehydration Solution for Malnutrition). Children with SAM are deficient in potassium and need a solution that contains less sodium and more potassium. These children are usually also deficient in other minerals like magnesium, copper and zinc. ReSoMal, which should be taken orally, is composed of:

- Glucose 125 mmol/l
- Sodium 45 mmol/l
- Potassium 40 mmol/l
- Chloride 70 mmol/l
- Magnesium 3 mmol/l
- Zinc 0.3 mmol/l
- Copper 0.045 mmol/l
- Citrate 7 mmol/l

HANDOUT 4.11

NUTRITION REHABILITATION AND RUTF

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

4.11

READY-TO-USE THERAPEUTIC FOOD (RUTF)

- RUTF is high-energy, nutrient-dense food used for nutrition rehabilitation in outpatient care in combination with systematic medical treatment. It should not be used alone to treat severe acute malnutrition (SAM).
- Some characteristics of RUTF:
 - Similar in composition to F100 (except RUTF contains iron and is about five times more energy-nutrient dense)
 - Soft lipid-based paste (e.g., Plumpy'nut®) or crushable nutrient bar (e.g., BP100)
 - Ideal for outpatient care because it does not need to be cooked or mixed with water, which prevents growth of bacteria
 - Easy to distribute and carry
 - Easy to store (in a clean dry place) and can be kept for some time even when opened
 - Available locally through either imports or local production
- Lipid-based RUTF² is most commonly used in outpatient care. It has a caloric value of 545 kilocalories (kcal) per 100 g of product. The ration given is 200 kcal per kg per day on average.
 - 1 packet of Plumpy'nut® = 92 g = 500 kcal
 - 1 packet of locally produced RUTF = 100 g = 545 kcal
 - 1 locally produced pot = 250 g = 1,362 kcal
- Lipid-based RUTF is composed of:
 - 25% peanut butter
 - 26% milk powder
 - 27% sugar
 - 20% oil
 - 2% combined mineral and vitamin mix (CMV)
- Non-lipid-based RUTF,³ such as BP100, might be available, especially in emergencies. BP100 is a solid but crushable biscuit-like food based on F100. It is very dry, and children age 2 years or older should take it with plenty of clean water. For children under 2, it is recommended that BP100 be crushed and mixed with clean water and eaten as porridge. However, this raises serious problems with contamination as the mix contains water and mothers/caregivers tend to want to keep the unfinished portion. To avoid these problems, younger children ideally should not be given RUTF that is not lipid-based.

¹ Lipid-based RUTF: e.g., Plumpy'nut® is produced by Nutriset, France; similar RUTF products are produced by other companies in several countries, e.g., Ethiopia, Niger, Malawi, DRC.

² Non-lipid-based RUTF: e.g., BP100, is produced by Compact, Sweden.

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

- RUTF's low water content means that children should be offered clean water when eating it.
- In the first weeks of nutrition rehabilitation, the child should not be offered any food other than breastfeeding and RUTF.
- RUTF should be eaten after breastfeeding and before any other food.
- Allergic reactions to RUTF in children with SAM who are immunosuppressed have not been recorded.

4.11

PROCEDURES FOR NUTRITION REHABILITATION

- The health care provider asks the mother/caregiver of a child returning for the outpatient care follow-up session how many packets the child has eaten in the past week and how many are untouched at home. The health care provider then subtracts the number of untouched packets from this week's ration. This is to make sure the child is eating well at home. If the child is not eating well, the health care provider discusses this with the mother/caregiver and reinforces the importance of RUTF. If needed, the health care provider performs a follow-up home visit to investigate the reduced RUTF intake.
- Note: If the child has not gained weight in the past week (approximately 5g/kg/day can be expected), it is very likely that the child did not consume the required amount of RUTF.
- Key messages should be given to the mother/caregiver on how to use the RUTF, including the importance of regular feeding in small amounts. These messages are important. The mother/caregiver should repeat the key messages so the health care provider can be sure they are understood.
- The health care provider fills out an RUTF ration card and gives it to the mother/caregiver.
- Mothers/caregivers are asked to return empty packets of RUTF. This is to avoid littering and help discourage the sale of the RUTF. This measure is not intended to be a means to control how much is eaten.

CONSIDERATIONS IN PROVIDING RUTF AND OTHER RATIONS IN OUTPATIENT CARE

- If a twin is admitted to outpatient care and the other is not, sharing is assumed. The twin without SAM should be given an equal amount of RUTF ration.
- To prevent sharing of the RUTF, a family ration of fortified blended food (FBF) can be provided to the mother/caregiver of a child admitted to outpatient care. This might be possible during periods of high food insecurity when supplementary feeding is available.
- The mother should be encouraged to continue breastfeeding especially if the child is 2 years old or younger.
- The child should complete the daily ration of RUTF before being given any other foods (except for breast milk).
- On discharge from outpatient care, each child receives seven packets of RUTF to help transition the child to family food. Children are referred to supplementary feeding for continuing nutrition rehabilitation. If no supplementary feeding services or programmes are available, a ration of FBF can be provided to the mother/caregiver upon discharge.

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

RUTF RATION

- The number of packets of RUTF the child eats in a day is determined by the child’s weight.
- The number of packets of RUTF provided is determined by the child’s weight and the frequency of the child’s session to the health facility.

RUTF Ratios* in Outpatient Care: Plumpy’Nut® (92 g packets containing 500 kcal)

Weight of Child (kg)	Packets per Day	Packets per Week
3.5 - 3.9	1.5	11
4.0 – 5.4	2	14
5.5 – 6.9	2.5	18
7.0 – 8.4	3	21
8.5 – 9.4	3.5	25
9.5 – 10.4	4	28
10.5 – 11.9	4.5	32
≥ 12	5	35

*Based on average nutrition rehabilitation ration of 200 kcals/kg/day

RUTF Ratios* in Outpatient Care: Locally Produced RUTF (100g packets containing 545 kcal)

Weight of Child (kg)	Packets per Day	Packets per Week
3.5 - 3.9	1.3	9
4.0 – 5.4	1.5	11
5.5 – 6.9	2	15
7.0 – 8.4	2.5	18
8.5 – 9.4	3	22
9.5 – 10.4	3.5	25
10.5 – 11.9	4	28
≥ 12	4.5	32

*Based on average nutrition rehabilitation ration of 200 kcals/kg/day

RUTF Ratios* in Outpatient Care: Locally Produced RUTF (250g pots containing 545 kcal/100g)

Weight of Child (kg)	Pots per Day	Pots per Week
3.5 - 3.9	0.5	4
4.0 – 4.9	0.66	5
5.0 – 5.9	0.75	5
6.0 – 7.9	1	7
8.0 – 9.4	1.25	9
9.5 – 10.9	1.5	11
11.0 – 11.9	1.75	12
≥ 12	2	14

*Based on average nutrition rehabilitation ration of 200 kcals/kg/day

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

HANDOUT 4.12

KEY MESSAGES FOR INDIVIDUAL COUNSELLING

Key messages should explain to mothers/caregivers:

- How to feed ready-to-use therapeutic food (RUTF) to the child
- When and how to give the medicines to the child
- When to return to outpatient care
- That the child should be brought to the health facility immediately if his/her condition deteriorates

The health care provider should ask the mother/caregiver to repeat the messages to be sure they were understood. Key messages include:

- RUTF is a food and medicine for very thin children only. It should not be shared.
- Sick children often do not like to eat. Give small regular meals of RUTF and encourage the child to eat often (if possible eight meals a day). Your child should have ___ packets a day.
- RUTF is the only food sick and/or thin children need to recover during their time in outpatient care. However, breastfeeding should continue, when applicable.
- For young children, continue to breastfeed regularly.
- Always offer the child plenty of clean water to drink or breast milk while he or she is eating RUTF.
- Wash children's hands and face with soap before feeding if possible.
- Keep food clean and covered.
- Sick children get cold quickly. Always keep the child covered and warm.
- When a child has diarrhoea, never stop feeding. Continue to feed RUTF and (if applicable) breast milk.

These key messages can be supplemented with more detail and more messages if time allows.

NOTE: In some circumstances, mothers/caregivers are given a ration of supplementary food for the other children in the family to prevent sharing of the RUTF. The health care provider should make it clear that the supplementary food is for the other children in the family and that the severely malnourished child should only eat RUTF (preceded by breast milk, when applicable).

As soon as the child is improving and has increased appetite, mothers/caregivers can start giving the child other foods (e.g., supplementary food, local food) in addition to — but after — breast milk and the RUTF.

Health and Nutrition Education

Individual counselling and group sessions on health and nutrition education are essential. In some contexts, existing messages can be adapted (e.g., Essential Nutrition Actions [ENA]¹). Every attempt should be made to use the same or similar messages disseminated in other programmes.

Messages must be reinforced by *practice*. They should focus on:

- Basic hygiene
- Continuation of optimal breastfeeding behaviours, especially with infants and young children age 6-23 months
- The importance of frequent and active feeding
- What local foods to give young children, while reinforcing that the child in outpatient care **MUST** finish eating all the RUTF **BEFORE** other foods (except breast milk) are given
- Identifying undernutrition (recognising when to bring children to outpatient care)
- Managing diarrhoea and fever
- Recognising danger signs

The outreach workers (e.g., community health workers [CHWs], volunteers) should be encouraged to give the same health and nutrition education messages to the communities.

¹ The ENA approach, which has been adopted in several African countries, identifies the key nutrition actions that can be promoted at key contact points in the life cycle through research-based messages that are contextually appropriate. The seven key action areas are: 1) promotion of optimal breastfeeding practices during the first six months; 2) promotion of optimal complementary feeding beginning at six months with continued breastfeeding to 2 years and beyond; 3) promotion of feeding of the child during and after illness; 4) prevention of Vitamin A deficiency (e.g., breastfeeding, consumption of fortified and Vitamin A-rich foods, maternal and child Vitamin A supplementation); 5) prevention of anaemia (e.g., maternal and child iron supplementation, deworming, malaria control, consumption of fortified and iron-rich foods); 6) promotion of iodized salt consumption by all families; and 7) promotion of improved women's nutrition (e.g., increase food intake during pregnancy and lactation, iron and/or folic acid supplementation, treatment and prevention of malaria, deworming during pregnancy, postpartum Vitamin A supplementation). Visit <http://www.linkagesproject.org> for more information.

HANDOUT 4.13

OUTPATIENT CARE ACTION PROTOCOL

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

Sign	Referral to Inpatient Care	Follow-Up Home Visit
BILATERAL PITTING OEDEMA	Grade ++++	Bilateral pitting oedema not reducing by week 3
	Marasmic kwashiorkor	
	Increase in, or development of, bilateral pitting oedema	
APPETITE / ANOREXIA	No appetite or unable to eat	Eats < 75% of the RUTF a week by third session
VOMITING	Intractable	General medical deterioration
TEMPERATURE	Fever: > 39C	
	Hypothermia: < 35 C	
RESPIRATION RATE (rr)	≥ 60 respirations/minute for under 2 months	
	≥ 50 respirations/minute from 2 to 12 months	
	≥ 40 respirations/minute from 1 year to 5 years	
	≥ 30 respirations/minute for over 5 years	
ANAEMIA	Any chest in-drawing	
SUPERFICIAL INFECTION	Very pale (severe palmer pallor), difficulty breathing	
ALERTNESS	Extensive infection requiring intermuscular treatment	
	Very weak, apathetic, unconscious	
HYDRATION STATUS	Fitting/convulsions	
	Severe dehydration based primarily on recent history of diarrhoea, vomiting, fever or sweating and on recent appearance of clinical signs of dehydration as reported by the mother/caregiver	
WEIGHT CHANGES		Below admission weight on week 3
	Weight loss for 3 consecutive weighings	Weight loss for 2 consecutive weeks
	Static weight for 5 consecutive weighings	Static weight for 3 consecutive weeks
GENERAL	Mother/caregiver requests inpatient care	Returned from inpatient care (first 2 weeks)
		Refused referral to inpatient care
NOT RECOVERING	Child that is not recovering is referred to hospital for investigation.	

HANDOUT 4.14

REFERRAL TO INPATIENT CARE OR FOLLOW-UP HOME VISITS

A. REFERRAL TO INPATIENT CARE

Referral system

- Close collaboration between inpatient and outpatient care is essential. Health care providers in inpatient facilities should receive an orientation on outpatient care treatment and visit the site and vice versa.
- Children with severe acute malnutrition (SAM) who are referred to inpatient care are sent to the nearest inpatient care site linked to the referring outpatient care site.
- The mother/caregiver receives appropriate explanations and instructions on what to expect and what to do. If possible, arrangements should be made or facilitated for the mother/caregiver and beneficiary to travel to the health facility and stay for a certain time.
- Mothers/caregivers might refuse to go to inpatient care for a number of reasons: fear that they will have to pay at the hospital, lack of transport, unwillingness to be separated from the family and other children, or a belief that the child might die on the way to or in the hospital. Instead, they choose to stay home. Where possible, these issues should be considered and a careful explanation given to the mother/caregiver. The mothers/caregivers will often need some time to tell the family that they must go to the hospital and to collect things they need. If after careful explanation the mother/caregiver still refuses to go to inpatient care, the child can stay in outpatient care and should receive follow-up home visits according to the outpatient care action protocol (refused referral to inpatient care).

Referral slip

- If children are being referred to inpatient care from outpatient care, the mother/caregiver is given a referral slip with the child's unique registration number, medical history and information on treatment the child has received. The purpose of the referral slip is to keep track of children between outpatient care and inpatient care. The referral slip should also include information on what medications were given and why to avoid giving children medicine that they have already been given.
- Using the child's unique registration number on referral slips helps ensure smooth referrals among services. When inpatient care sites use an already existing system for registration numbers, efforts should be made to use the child's unique CMAM registration number in addition.
- It is important to have effective tracking and reporting systems so that children do not get lost and defaulters and deaths do not go unreported.

Referral to tertiary care

- A child might need to be sent from outpatient care to a higher-level referral centre for underlying medical complications. If the child has appetite, the child might be sent to the hospital with a supply of ready-to-use therapeutic food (RUTF) or an arrangement might be made to make sure the hospital has RUTF for children who are referred. Otherwise, F75 and instructions should be made available for inpatient care (in case the hospital does not have specific inpatient care for SAM).

B. FOLLOW-UP HOME VISITS

- The health care provider in collaboration with the outreach worker (e.g., community health worker [CHW], volunteer) should arrange for children who are at-risk based on the outpatient care action protocol to be followed up at home through an outreach visit.
- The follow-up home visit is used to assess what might be hindering the child's recovery and to support the family to help the child recover through counselling, education and close monitoring of the child's progress.
- Follow-up home visits can be made by a health care provider or outreach worker.
- There must be communication channels in place between the health care provider and the outreach worker to ensure that children receive necessary follow-up. Ideally, outreach workers will be present on an outpatient care day so they will know which children need follow-up. But having a communication system can help ensure that those who could not attend the outpatient care day are told which children need follow-up and who is responsible for making the follow-up home visit.

HANDOUT 4.15

REFERRAL SLIP

Name of child:		Community:	
Age:		Sex:	
Date of Admission:		Site:	
ADMISSION DATA	Weight:	MUAC:	Referral to:
	Height:	WFH:	
Bilateral pitting oedema (circle) None + ++ +++			Registration No:
Date of Referral:			
Criteria for Referral:			
Treatment given:		Comments:	

Adapted from *Community-based Therapeutic Care (CTC): A Field Manual*

HANDOUT 4.16

OUTPATIENT CARE: DISCHARGE CRITERIA

WHEN ARE CHILDREN DISCHARGED FROM OUTPATIENT CARE?

- A child is discharged from outpatient care when s/he has recovered from bilateral pitting oedema or a low weight, and thus no longer has severe acute malnutrition (SAM).
- The decision to discharge the child is based on the child recovering from the initial SAM condition, consistently gaining weight, and being clinically well and alert.

The decision rules for discharge differ based on the criteria used to admit the child:

- **Children who were admitted for bilateral pitting oedema** must have no bilateral pitting oedema for more than two consecutive outpatient care follow-on sessions before being discharged. If this condition is met, and the child is clinically well and alert, the child may be discharged from CMAM services after being checked to ensure that his/her mid-upper arm circumference (MUAC) ≥ 110 mm or weight-for-height (WFH) ≥ -2 z-score (World Health Organization [WHO]) or $\geq 80\%$ of the median (National Centre for Health Statistics [NCHS]).
- **Children who were admitted based on a low MUAC** must spend a minimum of two months (or eight weeks) in treatment before being discharged. After two months, if their MUAC ≥ 110 mm, they have consistently gained weight, and they are clinically well and alert, the children may be discharged after being checked to ensure that they have no bilateral pitting oedema.

Another option to discharge a child admitted based on a low MUAC, is to discharge the child based on the percentage increase in weight gain. The percentage increase in weight gain is measured from the lowest weight while in treatment (or at the point where the child is without bilateral pitting oedema). The child is discharged if s/he has a 20% increase of initial or lowest weight and is clinically well and alert. However, this discharge criterion was not based on evidence at the time this document was published.

- **Children who were admitted based on a low WFH** must achieve WFH ≥ -2 z-score (WHO) or $\geq 80\%$ of the median (NCHS) for more than two consecutive outpatient care follow-on sessions. Once this condition is met, the child may be discharged if he or she has consistently gained weight, is clinically well and alert and has been checked to ensure that s/he does not have bilateral pitting oedema. In situations where there is no programme to manage moderate acute malnutrition [MAM], the discharge criterion based on percentage of the median may be changed to WFH $\geq 85\%$ of the median.
- **Children who were admitted with marasmic kwashiorkor** (bilateral pitting oedema and severe wasting) must have no bilateral pitting oedema and no severe wasting for more than two consecutive outpatient care follow-on sessions, must have consistently gained weight and must be clinically well and alert before being discharged. If they were admitted using MUAC, they must stay in treatment for at least two months and have a MUAC ≥ 110 mm upon discharge. If they were admitted using WFH, they must achieve WFH ≥ -2 z-score (WHO) or $\geq 80\%$ of the median (NCHS) for more than two consecutive outpatient care follow-on sessions.

HANDOUT 4.17

DISCHARGE CRITERIA AND EXIT CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
DISCHARGE CRITERIA* FOR CHILDREN 6 - 59 MONTHS		
<p>DISCHARGED TO OUTPATIENT CARE:</p> <p>Appetite returned (passed appetite test)</p> <p>AND medical complication resolving</p> <p>AND bilateral pitting oedema decreasing</p> <p>AND clinically well and alert</p> <p>(If marasmic kwashiorkor admission: bilateral pitting oedema resolved)</p>	<p>DISCHARGED CURED:</p> <p>If bilateral pitting oedema admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ MUAC \geq 110 mm ▪ WFH \geq -2 z-score (WHO) or \geq 80 % of the median (NCHS) ▪ Child clinically well and alert <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC \geq 110 mm ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment and WFH \geq -2 z-score (WHO) or ▪ WFH \geq 80 % of the median (NCHS) for 2 consecutive sessions** ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If marasmic kwashiorkor admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ If MUAC admission: minimum 2 months in treatment and MUAC \geq 110 mm ▪ If WFH admission: WFH \geq -2 z-score (WHO) or \geq 80% of the median (NCHS) for 2 consecutive sessions ▪ Child clinically well and alert <p>Children are discharged to supplementary feeding if available</p>	<p>DISCHARGED CURED:</p> <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC \geq 125 mm <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ WFH \geq -2 z-score (WHO) or \geq 85% of median (NCHS) for 2 consecutive sessions <p>DISCHARGED AFTER RECOVERING FROM SAM:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC \geq 125 mm

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) are being debated.

** If there is no supplementary feeding, discharge criteria may be adjusted to weight-for-height (WFH) \geq 85% of median (National Centre for Health Statistics [NCHS]).

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

DISCHARGE CRITERIA FOR INFANTS < 6 MONTHS

Discharged cured if successful re-lactation and appropriate weight gain (minimum 20 grams weight gain per day on breastfeeding alone for 5 days) and clinically well and alert (if no access to breastfeeding, alternative method of replacement feeding based on national guidelines is required).		
---	--	--

DISCHARGE CRITERIA FOR PREGNANT AND LACTATING WOMEN

		Pregnant and lactating women MUAC ≥ 210 mm or infant ≥ 6 months of age
--	--	--

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
EXIT CATEGORY: CURED		
Child 6-59 months meets outpatient care discharge criteria Infant < 6 months meets inpatient care discharge criteria	Child 6-59 months meets discharge criteria	Child 6-59 months meets discharge criteria
EXIT CATEGORY: DIED		
Child dies while in inpatient care	Child dies while in outpatient care	Child dies while in supplementary feeding
EXIT CATEGORY: DEFAULTED		
Child is absent for 2 days	Child is absent for 3 consecutive sessions (e.g., 3 weeks)	Child is absent for 3 consecutive sessions (e.g., 6 weeks)
EXIT CATEGORY: NON-RECOVERED		
Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)
EXIT CATEGORY: REFERRED TO OUTPATIENT OR INPATIENT CARE		
Referred to Outpatient Care Child's health condition is improving and child is referred to outpatient care to continue treatment	Referred to Inpatient Care Child's health condition is deteriorating (action protocol)	Referred to Outpatient or Inpatient Care Child's health condition is deteriorated and child meets outpatient or inpatient care admission criteria

HANDOUT 4.18

ESSENTIALS OF OUTPATIENT CARE FOR SAM WITHOUT MEDICAL COMPLICATIONS

ESSENTIALS

4.18

- Children with severe acute malnutrition (SAM) who have an appetite and no medical complications are treated on an outpatient basis at a health facility that offers outpatient care for SAM without medical complications. These children do not have to be admitted to inpatient care at a hospital or health facility with beds. The majority of children with SAM (> 80%) can be treated on an outpatient basis.
- After the child is admitted to outpatient care, the mother/caregiver brings him/her to the health facility or outpatient care site every week or two weeks. At each of these outpatient care follow-on sessions, the health care provider assesses the child's medical condition and nutritional status, provides additional medical treatment if necessary and gives the mother/caregiver the quantity of ready-to-use therapeutic food (RUTF) needed until the child's next outpatient care follow-on session. The amount of RUTF given is determined by the child's weight and frequency of sessions.
- Outpatient care is offered in as many health facilities or treatment points as possible in a given area or district. This ensures that as many malnourished children as possible can access treatment.
- Outpatient care sites are run by health care providers such as a doctor or nurse (depending on the Ministry of Health's [MOH's] policy).
- Outpatient care should be incorporated into the routine health service for children under 5 years old. Depending on the size of the caseload, outpatient care might be offered once a week on a designated day or every day as part of the routine health service (ideally), with patients returning weekly or biweekly.
- Children can be referred to CMAM services by outreach workers (e.g., community health workers [CHWs], community volunteers). They can also be self-referrals, meaning they are brought to the health facility or outpatient care without community referral. Other outpatient care admissions will include children discharged from inpatient care and those who have deteriorated in programmes to treat moderate acute malnutrition (MAM).
- Most of the children will first access CMAM services at the outpatient care site and will be examined and referred to inpatient care or MAM programmes as needed. Thus, the outpatient care sites are an access point for the majority of SAM cases.
- Children are admitted to CMAM at any time if they present at the health facility. They should be treated when they present and asked to return on the designated outpatient care day, if applicable.
- Community outreach is an essential part of a community-based programme. This ensures that the community understands the services. Outreach workers (e.g., CHWs, volunteers) are used to find and refer children to CMAM services, which increases understanding and coverage.

HANDOUT 4.19

OUTPATIENT CARE FIELD PRACTICE CHECKLIST

ANTHROPOMETRY	
	Assess for bilateral pitting oedema
	Measure mid-upper arm circumference (MUAC), weight, height
	Classify nutritional status
	Record Nutrition indicators on outpatient care treatment cards and on ready-to-use therapeutic food (RUTF) ration card
NEW ADMISSIONS	
	Obtain registration details from mother/caregiver and record anthropometric measurement
	Take medical history
	Conduct physical examination
	Test appetite
	Decide if eligible for outpatient care or needs referral to inpatient care
	Calculate doses and give routine medicines to child
	Explain medical treatment to mother/caregiver
	Calculate amount of RUTF for child and record and give the ration
	Fill out RUTF ration card
	Discuss key messages with mothers/caregivers
	Ask mother/caregiver to repeat instructions on how to give medicine and RUTF
	Link with outreach worker
OUTPATIENT CARE FOLLOW-ON SESSIONS	
	Take medical history
	Conduct physical examination
	Test appetite
	Review information on outpatient care treatment card to date and interpret progress (Are they improving? Are they not improving? Why?)
	Continue medical treatment as appropriate
	Use action protocol to assess need for follow-up home visit and arrange if necessary
	Use action protocol to assess need for referral and arrange if necessary
	Discuss child's progress with mother/caregiver
	Calculate amount of RUTF for child and record and give the ration
	Fill out RUTF ration card

	Provide health and nutrition counselling
	Inform mother/caregiver about linking with other services, programmes and initiatives (e.g., expanded programme of immunisation [EPI], voluntary counselling and testing [VCT], reproductive health)
DISCHARGES	
	Identify children ready for discharge
	Fill in the outpatient care treatment card upon discharge
	Provide appropriate information to mother/caregiver about child's discharge (e.g., when to bring the child back, danger signs)
	Give discharge ration of RUTF
	Inform mother/caregiver about linking with other services, programmes and initiatives, if appropriate (e.g., supplementary feeding programme [SFP])
ACCEPTING REFERRALS FROM INPATIENT CARE	
	Review referral slip from inpatient care and record relevant information on outpatient CARE treatment card (including medicines)
	Review information and medications provided in inpatient care, confirm with mother/caregiver medicines received to date and adjust outpatient care medicines for admission
	Follow admission protocols (i.e. do anthropometry, take medical history, do physical examination, test appetite, calculate RUTF ration, discuss key messages, fill out RUTF ration card, link with outreach worker)
DISCUSSION WITH MOTHERS/CAREGIVERS AT SITES	
	Where have you come from?
	How long did it take to get here?
	How did you hear about the service?
	Why did you bring your child?

EXERCISE 4.1 OUTPATIENT CARE ADMISSION

Note: In countries where presence of bilateral pitting oedema and mid-upper arm circumference (MUAC) are used for admission, adjust chart to remove information on weight-for-height (WFH) as a z-score (World Health Organization [WHO]) or % of the median (National Centre for Health Statistics [NCHS]).

EXERCISE 4.2 OUTPATIENT CARE TREATMENT CARD AND RUTF RATION CARD

	Age (months)	Appetite	Bilateral Pitting Oedema	MUAC in mm	WFH z-score (WHO)	WFH as a percentage of the median (NCHS)	Admission to outpatient care?
Child 1	7	Yes	No	102	$-3 \leq x < -2$	$70\% \leq X < 80\%$	
Child 2	24	Yes	No	112	$x < -3$	$X < 70\%$	
Child 3	20	Yes	No	98	$x < -3$	$X < 70\%$	
Child 4	16	Yes	++	117	$-3 \leq x < -2$	$70\% \leq X < 80\%$	
Child 5	36	Yes	+	115	$-3 \leq x < -2$	$70\% \leq X < 80\%$	
Child 6	12	No	No	95	$x < -3$	$X < 70\%$	
Child 7	50	Yes	No	102	$x < -3$	$X < 70\%$	
Child 8	45	Yes	No	111	$x < -3$	$X < 70\%$	
Child 9	7	Yes	No	107	$-3 \leq x < -2$	$70\% \leq X < 80\%$	
Child 10	5	No	No	104	$x < -3$	$X < 70\%$	

EXERCISE 4.2

OUTPATIENT CARE TREATMENT CARD AND RUTF RATION CARD

Below is all of the information needed to complete the front and back of an outpatient care treatment card and a ready-to-use therapeutic food (RUTF) ration card.

A CHILD REQUIRING ADMISSION TO OUTPATIENT CARE

First section of admission details

- The next registration number available is 015. The outpatient care site code is GRG.
- The child's name is Mohammed Ahmed.
- He lives in Lusaka District; his community is Bombali.
- Mohammed is 17 months old.
- He has come directly from his community after a community volunteer referred him to CMAM services.
- He lives in a house with his mother, father, grandfather and five brothers and sisters.
- It took 20 minutes for his mother to walk with him from their house to the outpatient care site.
- There is no general food distribution where he lives.

Admission anthropometry

- He weighs 6.8 kg.
- His height is 76 cm.
- His mid-upper arm circumference (MUAC) is 104 mm.
- He has no bilateral pitting oedema.

What are his admission criteria?

Medical History

- His mother says he has had diarrhoea for the past week and passes four to five loose stools every day.
- He does not vomit.
- He passes urine with no problem.
- He occasionally has a cough.
- His appetite is generally good.
- He no longer breastfeeds.
- She reports no other problems but says he has been getting thinner for some time.

Physical examination

- He has 38 respirations per minute, and there are no chest retractions.
- His temperature is 36.9° C.
- His conjunctiva is pink.
- His eyes are wet and have no discharge.
- Although his skin is saggy, he shows no apparent signs of dehydration.
- He has a discharge from his left ear.
- His mouth is clear, and there are no enlarged lymph glands.
- He has no apparent disabilities.
- His skin looks good.
- His hands and feet are warm.

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

Routine admission medication

His mother has his expanded programme of immunisation (EPI) card; he was given all his vaccinations and Vitamin A three weeks ago.

RUTF appetite test

By the time Mohammed is seen, he has already eaten half a packet of RUTF.

EXERCISE 4.3

IDENTIFYING CHILDREN WHO MAY NEED REFERRAL TO INPATIENT CARE OR FOLLOW-UP HOME VISITS

CHILD A

Child A is two years old, has a mid-upper arm circumference (MUAC) of 109 mm and has been referred by the community health worker (CHW) to CMAM services. On admission, the child refuses to eat the ready-to-use therapeutic food (RUTF) during the appetite test. You ask his mother to move to a quiet area and try again. After a half-hour, the child still refuses to eat the RUTF. During the medical assessment, you discover that the child has had vomiting for two days. What action is needed?

CHILD B

Child B is presented at the outpatient care site with bilateral pitting oedema + and a MUAC of 112 mm. The child has good appetite and no other signs of medical complications. What action is needed?

CHILD C

Child C was admitted to outpatient care with a MUAC of 109 mm and a weight of 10 kg. By the fourth week, the child has lost weight, did not gain any weight for three weeks and now weighs 9.5 kg. What action is needed?

CHILD D

Child D is presented at the outpatient care site with bilateral pitting oedema ++ and a MUAC of 108 mm. What action is needed?

CHILD E

Child E is four months old. The grandmother brings the visibly very wasted and dehydrated child to the health facility. On investigation, you find that the mother died shortly after the child was born and that the child has been given cow's milk and tea. What action is needed?

CHILD F

Child F is presented at the outpatient care site with bilateral pitting oedema +++. You want to refer the child to the hospital. But, despite your best efforts to persuade the mother, her family refuses to let her take the child to the hospital. What action is needed?

CHILD G

Child G is above 6 months and was admitted with a MUAC of 109 mm and a weight of 5 kg. The child gained a little weight the first week but has not gained weight for the past two weeks. His medical assessment does not show any signs of illness or medical complications.

**Module 4: Outpatient Care for the Management of SAM
Without Medical Complications**

EXERCISE 4.4

PARTIALLY COMPLETED OUTPATIENT CARE TREATMENT CARDS

(EXAMPLES)

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD												
NAME	Jemma Banda				Reg. N ^o	LGR / 104						
AGE (months)	24 m	SEX	M	<input checked="" type="radio"/> F	DATE OF ADMISSION	6/12/2007						
ADMINISTRATIVE UNIT	Lusaka				TIME TO TRAVEL TO SITE	25 minutes						
COMMUNITY	Bombali				FATHER ALIVE							
HOUSE DETAILS/LANDMARKS					MOTHER ALIVE							
NAME OF CAREGIVER					TOTAL NUMBER IN HOUSEHOLD	8						
ADMISSION (CIRCLE)	<input checked="" type="radio"/> self referral	<input type="radio"/> outreach referral	<input type="radio"/> inpatient care referral	<input type="radio"/> health facility referral	TWIN	<input type="radio"/> yes	<input type="radio"/> no					
RE-ADMISSION (relapse)	<input type="radio"/> no	<input type="radio"/> yes	ADDITIONAL INFORMATION									
ADMISSION ANTHROPOMETRY												
BILATERAL PITTING OEDEMA	<input type="radio"/> +	<input type="radio"/> ++	<input type="radio"/> +++		MUAC (mm)	109	WEIGHT (kg)	8.1 kg	HEIGHT (cm)	84 cm	WEIGHT FOR HEIGHT	70%
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC		Weight for Height	OTHER:							
HISTORY												
DIARRHOEA	<input type="radio"/> yes	<input checked="" type="radio"/> no		# STOOLS/DAY	<input type="radio"/> 1-3	<input type="radio"/> 4-5	<input checked="" type="radio"/> >5					
VOMITING	<input type="radio"/> yes	<input checked="" type="radio"/> no		PASSING URINE	<input type="radio"/> yes	<input checked="" type="radio"/> no						
COUGH	<input type="radio"/> yes	<input checked="" type="radio"/> no		IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?								
APPETITE	<input checked="" type="radio"/> good	<input type="radio"/> poor	<input type="radio"/> none	BREASTFEEDING	<input type="radio"/> yes	<input checked="" type="radio"/> no						
ADDITIONAL INFORMATION												
PHYSICAL EXAMINATION												
RESPIR. RATE (# min)	<input type="radio"/> <30	<input checked="" type="radio"/> 30 - 39		<input type="radio"/> 40 - 49	<input type="radio"/> 50+	CHEST INDRAWING	<input type="radio"/> yes	<input checked="" type="radio"/> no				
TEMPERATURE °C	37.2					CONJUNCTIVA	<input checked="" type="radio"/> normal	<input type="radio"/> pale				
EYES	<input checked="" type="radio"/> normal	<input type="radio"/> sunken	<input type="radio"/> discharge			DEHYDRATION	<input checked="" type="radio"/> none	<input type="radio"/> moderate	<input type="radio"/> severe			
EARS	<input checked="" type="radio"/> normal	<input type="radio"/> discharge			MOUTH	<input checked="" type="radio"/> normal	<input type="radio"/> sores	<input type="radio"/> candida				
ENLARGED LYMPH NODES	<input checked="" type="radio"/> none	<input type="radio"/> neck	<input type="radio"/> axilla	<input type="radio"/> groin		HANDS & FEET	<input checked="" type="radio"/> normal	<input type="radio"/> cold				
SKIN CHANGES	<input checked="" type="radio"/> none	<input type="radio"/> scabies	<input type="radio"/> peeling	<input type="radio"/> ulcers / abscesses			DISABILITY	<input type="radio"/> yes	<input checked="" type="radio"/> no			
ADDITIONAL INFORMATION												
ROUTINE MEDICATION: ADMISSION												
ADMISSION:	DRUG	DATE	DOSAGE			DRUG	DATE	DOSAGE				
	Amoxicillin	6.12.2007	100,000 iu									
	Vitamin A (if not in last 6 months)	6.12.2007	5ml tds x 7 days			Measles immunisation	<input type="radio"/> no	<input checked="" type="radio"/> yes	(EPI card) date: 6.10.2007			
	Malaria treatment					Fully immunised	<input type="radio"/> no	<input type="radio"/> yes				
2nd VISIT:	Mebendazole	20.12.2007	500 mg									
OTHER MEDICATION												
DRUG	DATE	DOSAGE			DRUG	DATE	DOSAGE					

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

FOLLOW UP: OUTPATIENT CARE

NAME	Jemma Banda								REG.N°	LGR / 104							
Week	ADM. (=0)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Date	6.12	13.1	20.1	27.1	3.2	10.2	17.2	24.2									
ANTHROPOMETRY																	
Bilateral Pitting Oedema (+ ++ +++)	N	N	N	N	N	N	N	N									
MUAC (mm)	109	109	109	111	114	114	116	117									
Weight (kg)	8.1	8.4	8.6	8.6	8.8	9.4	9.6	10									
Weight loss * (Y/N)		N	N	N	N	N	N	N									
Height (cm)	84				84												
Weight for Height	70%																
* If below admission weight on week 3 refer for home visit; If no weight gain by week 5 refer to inpatient care																	
HISTORY																	
Diarrhoea (# days)		6	2	2	0	0	0	0									
Vomiting (# days)		6	0	4	0	2	0	0									
Fever (# days)		2	0	0	0	1	0	0									
Cough (# days)		7	0	0	0	0	0	0									
PHYSICAL EXAMINATION																	
Temperature (°C)	37.2	36.2	37.2	37	36.9	36	36.5	36.8									
Respiratory rate (# /min)	36	38	36	35	38	35	36	35									
Dehydrated (Y/N)	N	N	N	N	N	N	N	N									
Anaemia / palmar pallor (Y/N)	N	N	N	N	N	N	N	N									
Skin infection (Y/N)	N	N	N	N	N	N	N	N									
APPETITE CHECK / FEEDING																	
RUTF test (Passed/Failed)	P	P	P	P	P	P	P	P									
RUTF (# units given)	21	21	25	25	25	25	28	7									
ACTION / FOLLOW UP																	
ACTION NEEDED (Y/N)	N	N	N	N	N	N	N	Y									
Other medication (see front of card)	N	N	N	N	N	N	N	N									
Name of Examiner	AW	AW	AW	CT	AW	CT	CT	CT									
VISIT OUTCOME								SFP									
OK= Continue A= Absent D= Defaulted for 3 visits R= Referral RR= Refused referral C= Cured NR= Non-recovered HV= home visit X= Died																	
ACTION TAKEN DURING FOLLOW-UP (INCLUDE DATE)																	
Child discharged cured to SFP. Given 7 packets of RUTF and mother advised of follow-up care																	
Name of outreach worker:																	

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Adam Ali				Reg. N°	LGR / 054	
AGE (months)	15 m	SEX	<input checked="" type="radio"/> M	<input type="radio"/> F	DATE OF ADMISSION	6/12/2007	
ADMINISTRATIVE UNIT	Lusaka				TIME TO TRAVEL TO SITE	1 hour	
COMMUNITY	Bombali				FATHER ALIVE		
HOUSE DETAILS/LANDMARKS					MOTHER ALIVE		
NAME OF CAREGIVER					TOTAL NUMBER IN HOUSEHOLD	7	
ADMISSION (CIRCLE)	<input checked="" type="radio"/> self referral	<input type="radio"/> outreach referral	<input type="radio"/> inpatient care referral	<input type="radio"/> health facility referral	TWIN	<input type="radio"/> yes	<input type="radio"/> no
RE-ADMISSION (relapse)	<input type="radio"/> no	<input type="radio"/> yes	ADDITIONAL INFORMATION				

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	<input type="radio"/> +	<input type="radio"/> ++	<input type="radio"/> +++				
MUAC (mm)	106	WEIGHT (kg)	5.1 kg	HEIGHT (cm)	68 cm	WEIGHT FOR HEIGHT	
ADMISSION CRITERIA	Bilateral pitting oedema	<input checked="" type="radio"/> MUAC		Weight for Height		OTHER:	

HISTORY

DIARRHOEA	<input checked="" type="radio"/> yes	<input type="radio"/> no	# STOOLS/DAY	1-3	<input checked="" type="radio"/> 4-5	<input type="radio"/> >5
VOMITING	<input type="radio"/> yes	<input checked="" type="radio"/> no	PASSING URINE	<input checked="" type="radio"/> yes	<input type="radio"/> no	
COUGH	<input type="radio"/> yes	<input checked="" type="radio"/> no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?			
APPETITE	<input type="radio"/> good	<input checked="" type="radio"/> poor	<input type="radio"/> none	BREASTFEEDING	<input type="radio"/> yes	<input checked="" type="radio"/> no
ADDITIONAL INFORMATION						

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<30	<input checked="" type="radio"/> 30 - 39	40 - 49	50+	CHEST INDRAWING	<input type="radio"/> yes	<input checked="" type="radio"/> no	
TEMPERATURE °C	37.2				CONJUNCTIVA	<input type="radio"/> normal	<input type="radio"/> pale	
EYES	<input checked="" type="radio"/> normal	<input type="radio"/> sunken	<input type="radio"/> discharge		DEHYDRATION	<input checked="" type="radio"/> none	<input type="radio"/> moderate	<input type="radio"/> severe
EARS	<input checked="" type="radio"/> normal	<input type="radio"/> discharge			MOUTH	<input checked="" type="radio"/> normal	<input type="radio"/> sores	<input type="radio"/> candida
ENLARGED LYMPH NODES	<input checked="" type="radio"/> none	<input type="radio"/> neck	<input type="radio"/> axilla	<input type="radio"/> groin	HANDS & FEET	<input checked="" type="radio"/> normal	<input type="radio"/> cold	
SKIN CHANGES	<input checked="" type="radio"/> none	<input type="radio"/> scabies	<input type="radio"/> peeling	<input type="radio"/> ulcers / abscesses	DISABILITY	<input type="radio"/> yes	<input checked="" type="radio"/> no	
ADDITIONAL INFORMATION								

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	6.12.2007	100,000 iu			
	Vitamin A (if not in last 6 months)	6.12.2007	5 ml tds x 7 days	Measles immunisation	<input type="radio"/> no	<input type="radio"/> yes
	Malaria treatment			Fully immunised	<input type="radio"/> no	<input type="radio"/> yes
2nd VISIT:	Mebendazole	20.12.2007	500 mg			

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

Module 4: Outpatient Care for the Management of SAM Without Medical Complications

FOLLOW UP: OUTPATIENT CARE

NAME		Adam Ali					REG.N°		LGR / 054								
Week	ADM. (=0)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Date	6.12	13.1	20.1	27.1	3.1												
ANTHROPOMETRY																	
Bilateral Pitting Oedema (+ ++ +++)	N	N	N	N	N												
MUAC (mm)	106	106	107	106	105												
Weight (kg)	5.1	5	5.1	5	5												
Weight loss * (Y/N)		Y	N	Y	N												
Height (cm)	68				68												
Weight for Height																	
* If below admission weight on week 3 refer for home visit; If no weight gain by week 5 refer to inpatient care																	
HISTORY																	
Diarrhoea (# days)		6	2	2	5												
Vomiting (# days)		0	0	4	0												
Fever (# days)		0	0	0	0												
Cough (# days)		0	0	0	0												
PHYSICAL EXAMINATION																	
Temperature (°C)	37.2	36.9	37.2	37	36.9												
Respiratory rate (# /min)	36	38	36	35	38												
Dehydrated (Y/N)	N	N	N	N	N												
Anaemia / palmar pallor (Y/N)	N	N	N	N	N												
Skin infection (Y/N)	N	N	N	N	N												
APPETITE CHECK / FEEDING																	
RUTF test (Passed/Failed)	P	P	P	P	P												
RUTF (# units given)	14	14	14	14	14												
ACTION / FOLLOW UP																	
ACTION NEEDED (Y/N)	N	N	N	N													
Other medication (see front of card)	N	N	N	N													
Name of Examiner	AW	AW	AW	CT													
VISIT OUTCOME																	
OK= Continue A= Absent D= Defaulted for 3 visits R= Referral RR= Refused referral C= Cured NR= Non-recovered HV= home visit X= Died																	
ACTION TAKEN DURING FOLLOW-UP (INCLUDE DATE)																	
Name of outreach worker:																	

MODULE FIVE

Inpatient Care for the Management of SAM with Medical Complications in the Context of CMAM

LEARNING OBJECTIVES	HANDOUTS AND EXERCISES
1. Outline the Management of SAM with Medical Complications in Inpatient Care	Handout 5.1 Essentials of the Management of SAM With Medical Complications in Inpatient Care
2. Describe Admission and Discharge for the Management of SAM With Medical Complications in Inpatient Care	Handout 5.2 Admission Procedures in Inpatient Care Handout 5.3 Admission Criteria and Entry Categories for CMAM Handout 5.4 Discharge Procedures in Inpatient Care Handout 5.5 Discharge Criteria and Exit Categories for CMAM
3. Review Medical Treatment and Nutrition Rehabilitation in Inpatient Care	Handout 5.6 Medical Treatment and Nutrition Rehabilitation of SAM With Medical Complications Handout 1.3 References and Further Reading
4. Practice Referral Process Between Inpatient Care and Outpatient Care	Handout 5.5 CMAM Discharge Criteria and Exit Categories Handout 5.7 Practical Implications in Discharges From Inpatient Care Exercise 5.1 Referral from Inpatient to Outpatient Care
Wrap-Up and Module Evaluation	

HANDOUT 5.1

ESSENTIALS FOR THE MANAGEMENT OF SAM WITH MEDICAL COMPLICATIONS IN INPATIENT CARE

GENERAL

5.1

1. Children with severe acute malnutrition (SAM) with medical complications face a high risk of mortality. They require 24-hour inpatient care until their condition stabilises, over a period usually spanning four to seven days.
2. Inpatient care is the component of CMAM services that provides medical treatment and nutrition rehabilitation for **children with SAM with medical complications or no appetite** and **infants under 6 months old with bilateral pitting oedema or visible wasting** (or insufficient breast milk in a vulnerable environment). **Once stabilised, the children continue treatment in outpatient care until they recover.**¹
3. Inpatient care is provided in a hospital or health facility that offers 24-hour care.
4. Inpatient treatment for SAM with medical complications follows the initial steps listed in the World Health Organization (WHO) treatment protocol. CMAM inpatient care is equivalent to the initial treatment of the WHO treatment protocol for stabilising the medical condition. (The term “stabilisation centre [SC]” is used in the Community-based Therapeutic Care [CTC] manual.)
5. In certain cases, CMAM inpatient care sites can provide inpatient care for the management of SAM until weight recovery.²

Note: Centre-based care for SAM is provided in hospitals, health facilities or specialised centres (e.g., therapeutic feeding centre [TFC], nutrition rehabilitation centre, nutrition rehabilitation unit [NRU]) with 24-hour care. Children with SAM receive inpatient care for the stabilisation of the medical condition and for nutrition rehabilitation until weight recovery.

6. Medical complications for children age 6-59 months with SAM include: anorexia, intractable vomiting, convulsions, lethargy or not alert, unconsciousness, lower respiratory tract infections (LRTIs), high fever ($> 39^{\circ}\text{C}$), severe dehydration, severe anaemia, hypoglycaemia, hypothermia ($< 35^{\circ}\text{C}$). Other conditions that require inpatient care include children with SAM in outpatient care who are losing weight or have static weight, following the outpatient care action protocol, and infants of 6 months or older and below 4 kg.
7. The **inpatient care component of CMAM is relatively small because most children with SAM are treated as outpatients**. Generally, fewer than 20 percent of children with SAM have medical complications that require inpatient care. This will vary according to location and context.

¹ Depending on national guidelines for discharge from outpatient care, recovery from SAM can include one or more of the following criteria: no bilateral pitting oedema for more than two consecutive sessions; a minimum of two months in treatment and mid-upper arm circumference (MUAC) ≥ 110 mm or 20 percent weight gain; weight-for-height (WFH) ≥ -2 z-score or WFH $\geq 80\%$ of the median or WFH $\geq 85\%$ of the median for more than two consecutive sessions; clinically well and alert.

² These cases include a lack of outpatient care in the area, safety concerns, no mother/caregiver at home, or a patient or mother/caregiver's preference to stay as in inpatient care.

8. Inpatient care as part of CMAM **should be provided within existing health facilities with 24-hour care capacity wherever possible**, using Ministry of Health (MOH) staff. Inpatient care for children with SAM often already exists in the paediatric units of hospitals and sometimes at clinics or NRUs. Hospitals should have health care providers on duty who have been trained in the WHO treatment protocols, including the management of SAM with medical complications.
9. **Treatment in inpatient care is provided according to national protocols and/or the WHO guidelines for the stabilisation of SAM.** Decisions about adapting medical treatment and nutrition rehabilitation protocols to account for outpatient care and about the location of sites must be made jointly with the MOH and should take into account existing capacity (e.g., staff, space, beds, supplies, storage). The WHO guidelines (WHO 2003) provide detailed information on a 10-step treatment of children with SAM.
10. The number of admissions to inpatient care in CMAM services depends on the context:
 - During an **emergency**, there will likely be a high influx to inpatient care at first, but this will decrease quickly as children are stabilised and moved to outpatient care. A sudden population migration or an outbreak of diarrhoeal disease, acute respiratory infections (ARIs) or measles could also sharply increase the caseload.
 - The **inpatient care caseload will probably fluctuate according to the season.** During peak hunger seasons, the caseload might increase significantly. This usually follows a pattern, therefore it is possible to plan for such periodic increases.
 - In contexts with high HIV prevalence, the inpatient caseload might be high because of increased incidence of **medical complications associated with HIV.**
11. **Medical officers and other health care providers at inpatient care sites should visit outpatient care sites and vice versa.** This will help ensure a smooth referral process between the two components.
12. **Treatment supplies required for inpatient care are based on the WHO guidelines.** The main required supplies are F75 and F100 therapeutic milks, essential medicines and medical equipment, ReSoMal, treatment protocols, and a reliable clean water source. Ready-to-use therapeutic food (RUTF) is also important, as it is used to help transition children to an RUTF diet before his/her referral to outpatient care and for children with SAM who are admitted to inpatient care and have appetite. F100 is used for the nutrition rehabilitation of infants under 6 months (F100 diluted) or of children over 6 months who remain in inpatient care and are unable to eat the RUTF for specific medical reasons (e.g., mouth rash, disability). In addition, if appropriate and possible, inpatient care should make food available for the child's mother/caregiver, as well as provide soap. Other requirements include equipment for food preparation and distribution and insecticide treated nets (ITNs) in malaria-endemic areas.
13. **Providing transportation to and from inpatient care should be considered.** Lack of transportation and high transportation costs prohibit some mothers/caregivers from taking their children to inpatient care. It might be possible to establish a small fund through community health committees for local or short-distance transportation. Other alternatives such as a bicycle ambulance or donkeys might be considered.

HANDOUT 5.2

ADMISSION PROCESS IN INPATIENT CARE

ADMISSION PROCESS

5.2

- Children admitted to inpatient care should be triaged, with the most urgent cases treated first. Sugar water (10 percent dilution) should be made available during transport and upon arrival to prevent hypoglycaemia.
- The child's medical condition is assessed and life-saving treatment is started as soon as possible, followed by the routine World Health Organization (WHO) treatment protocols for severe acute malnutrition (SAM) with medical complications.
- Health and nutrition information is recorded on the inpatient care treatment card: child information, medical history, physical examination, bilateral pitting oedema, and anthropometry (mid-upper arm circumference [MUAC], weight, and height.)
- Admission registration is completed using the registration number assigned by the referring outpatient care site if the child was referred. If the inpatient care site has an existing system for registration numbers, arrangements should be made to also include the unique CMAM registration number obtained in outpatient care.
- The mother/caregiver will receive counselling, including on the treatment of the child, breastfeeding, good hygiene practices. The mother/caregiver should be given soap for hand-washing and general hygiene, and food during their stay in inpatient care.

CHILDREN 6-59 MONTHS

- **No appetite:** Lack of appetite is a key indicator of the need to refer a child to inpatient care. Poor appetite is demonstrated by continued refusal to eat ready-to-use therapeutic food (RUTF, appetite test) and might be the result of poor liver and/or gut function due to SAM. Occasionally, some mothers/caregivers might try to force-feed their children RUTF because they would rather stay in outpatient care than go to inpatient care. Observation is needed to make sure this is not the case.
- **Bilateral pitting oedema:** Children with bilateral pitting oedema +++ have an increased mortality risk and must be referred to inpatient care.
- **Marasmic kwashiorkor:** Children with bilateral pitting oedema AND severe wasting (MUAC < 110 mm or weight-for-height [WFH] < -3 z-score or WFH < 70% of the median) must be referred to inpatient care. These children are at an increased risk of mortality and require careful treatment.
- **SAM with medical complications:** Anorexia, intractable vomiting, convulsions, lethargy or not alert, unconscious, lower respiratory tract infections (LRTIs), high fever (> 39° C), severe dehydration, severe anaemia, hypoglycaemia, hypothermia (< 35° C).

- **Other medical conditions that require inpatient care include:** Infants 6 months or older with a weight below 4 kg, or children with SAM in outpatient care with weight loss (3 weeks) or static weight (5 weeks), following the outpatient care action protocol.
- **Other medical conditions that need referral to tertiary care:** Underlying acute medical complications might require specialised diagnosis and treatment. These cases should be referred to the appropriate service at the hospital. The children should be referred while continuing their treatment for SAM (including receiving the therapeutic food) and should return to inpatient care or outpatient care for continued SAM treatment as soon as their treatment for the other medical complications is completed.
- **Choice:** Some mothers/caregivers might prefer inpatient care to outpatient care. This choice is a right and should be respected. However, practice has shown that it is more common for mothers/caregivers to refuse referral from outpatient care to inpatient care.
- **HIV-positive children:** Evidence has shown that the standard admission criteria can be applied to children who are HIV-positive. A good proportion of HIV-positive children will have poor appetite and opportunistic infections (OIs) requiring inpatient care. Others meeting the criteria for outpatient care are treated in outpatient care and usually respond well to outpatient care management. Duration of treatment tends to be prolonged for children with HIV-positive with SAM.

INFANTS UNDER 6 MONTHS

- Infants under 6 months of age who have bilateral pitting oedema or are visibly wasted are admitted to inpatient care for specialised care. In vulnerable environments, infants that are losing weight and/or are at high risk because of insufficient breastfeeding should also be admitted to inpatient care.
- **Note:** MUAC is NOT applicable for infants below 6 months of age.
- The number of infants requiring inpatient care will vary according to the context. Some experience in managing SAM in infants in emergencies exists. However, there are **knowledge gaps** when it comes to best practices. The Management of Acute Malnutrition in Infants (MAMI) project of the Institute of Child Health, the Emergency Nutrition Network (ENN) and Action Contre La Faim (ACF) have started to review experiences, current practices and knowledge gaps with funding from the Inter Agency Standing Committee (IASC) Global Nutrition Cluster (2008).

OTHER TARGET GROUPS

- **Adults and adolescents:** Criteria for admission to inpatient care for adults and adolescents are based on WHO treatment protocols (WHO 1999) and national protocols. To date, outpatient care programmes have limited experience with adults or adolescents.
- **HIV-positive adults:** In several countries (e.g., Malawi, Zambia, Mozambique), HIV-positive adults with SAM have been treated as inpatients using F75/F100 and as outpatients using RUTF. There are protocols available for HIV-positive adults, but the evidence on best practices is pending.

HANDOUT 5.3

ADMISSION CRITERIA AND ENTRY CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ADMISSION CRITERIA FOR CHILDREN 6 - 59 MONTHS*		
<p>Bilateral pitting oedema +++</p> <p>OR Marasmic kwashiorkor: Any grade of bilateral pitting oedema with severe wasting (MUAC < 110 mm or WFH < -3 z-score [WHO] or < 70% of median [NCHS])</p> <p>OR Bilateral pitting oedema + or ++ or MUAC < 110 mm or WFH < -3 z-score (WHO) or < 70% of median (NCHS) with any of the following medical complications:</p> <ul style="list-style-type: none"> ▪ Anorexia, no appetite ▪ Intractable vomiting ▪ Convulsions ▪ Lethargy, not alert ▪ Unconsciousness ▪ Lower respiratory tract infection (LRTI) ▪ High fever ▪ Severe dehydration ▪ Severe anaemia ▪ Hypoglycaemia ▪ Hypothermia <p>OR</p> <ul style="list-style-type: none"> ▪ Referred from outpatient care according to action protocol ▪ Other: e.g., infant ≥ 6 months and < 4 kg 	<p>Bilateral pitting oedema + and ++</p> <p>OR MUAC < 110 mm</p> <p>OR WFH < -3 z-score (WHO) or < 70% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert 	<p>MUAC ≥ 110 mm and < 125 mm</p> <p>OR WFH ≥ -3 z-score and < -2 z-score (WHO) or ≥ 70% and < 80% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert <p>ALSO: Children recovering from SAM, after discharge from outpatient care, regardless of their anthropometry</p> <p><i>Note: Children with MAM and medical complications are admitted to supplementary feeding (receive supplementary food ration) but are referred for medical treatment and return when medical complications are resolved.</i></p>

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and mild acute malnutrition (MAM) are being debated.

**Module 5: Inpatient Care for the Management of SAM
With Medical Complications in the Context of CMAM**

ADMISSION CRITERIA FOR INFANTS < 6 MONTHS		
Infants < 6 months with bilateral pitting oedema or visible wasting (or e.g., insufficient breastfeeding in vulnerable environment)		
ADMISSION CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		<p>Pregnant women In second and third trimester with MUAC < 210 mm</p> <p>Lactating Women MUAC < 210 mm with infants < 6 months</p>

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ENTRY CATEGORY: NEW ADMISSIONS OF CHILDREN 6-59 MONTHS		
New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New MAM cases of children 6-59 months meet admission criteria -including relapse after cure and referral from outpatient care
ENTRY CATEGORY: OTHER NEW ADMISSIONS		
New SAM cases of infants, children, adolescents or adults (< 6 months or ≥ 5 years) need treatment of SAM in inpatient care	New SAM cases not meeting pre-set admission criteria need treatment of SAM in outpatient care	New MAM cases not meeting pre-set admission criteria need treatment of MAM
ENTRY CATEGORY: OLD CASES: REFERRAL FROM OUTPATIENT CARE		
Child's health condition deteriorated in outpatient care (according to action protocol) and child needs inpatient care Returned after defaulting Moved in from other outpatient care site	Child's health condition improved in inpatient care and child continues treatment in outpatient care OR Returned after defaulting, or Moved in from other outpatient care site	Returned after defaulting, or Moved in from other supplementary feeding site

Note: MUAC is the preferred indicator for admission to CMAM. MUAC is used for children age 6-59 months. MUAC cutoffs for SAM and MAM are being debated. The cutoff for SAM could increase to 115 mm, however, this had not been put in practice at the time these materials were published. In some countries, the MUAC cutoff for MAM has been set at < 120 mm.

Depending on national guidelines, weight-for-height (WFH) is expressed as standard deviations (SDs) below the median of the World Health Organization (WHO) child growth standards (WFH < - z-score) or as a percentage of the median of the National Centre for Health Statistics (NCHS) child growth references (WFH < % of median).

HANDOUT 5.4

DISCHARGE PROCEDURES IN INPATIENT CARE

DISCHARGE TO OUTPATIENT CARE

- When a child is ready for discharge from inpatient care to outpatient care, the clinical status, bilateral pitting oedema, mid-upper arm circumference (MUAC), weight, and height are assessed, and appetite is tested with ready-to-use therapeutic food (RUTF). RUTF has been introduced gradually in the past days and the child is expected to eat more than 75% of its daily diet with RUTF.
- The referral slip to outpatient care is completed, including a summary section informing health care providers at the outpatient care site about the medical intervention and treatment (medicines are specified) given to the child.
- The mother/caregiver is informed where and on which day to go for outpatient care, at the health facility closest to her community, and is given sufficient RUTF to last until the next outpatient care follow-on session (usually one week's worth).
- Key messages about the use of RUTF and basic hygiene are discussed again with the mother/caregiver. The mother/caregiver is also given any remaining medications and instructions on how to use them. S/he should repeat these instructions to the health care provider to make sure they were clearly understood and will be followed correctly.
- Discharge from inpatient care can occur on any day. Staff in the inpatient care facility should not retain children that are ready for outpatient care.
- The mother/caregiver is informed on what to do if the child's condition deteriorates before the next outpatient care follow-on session.

CHILDREN 6-59 MONTHS

- Children who have been **referred to inpatient care because of medical complications** may be discharged to outpatient care if they pass the RUTF appetite test, their medical complication is resolving, bilateral pitting oedema is decreasing, and they are clinically well and alert.
- Children who have been **referred to inpatient care because of marasmic kwashiorkor** may be discharged to outpatient care when their bilateral pitting oedema is resolved as long as they pass the RUTF appetite test, have no medical complications and are clinically well and alert.
- Children whose **mothers/caregivers chose inpatient care** over outpatient care, or whose medical condition required long hospitalisation, will stay in inpatient care until the mother/caregiver agrees to continue treatment in outpatient care or until the child has fully weight thus no longer suffering from severe acute malnutrition (SAM). The discharge criteria will be the same as those for outpatient care.

INFANTS UNDER 6 MONTHS

- Infants under 6 months may be discharged from inpatient care when they are exclusively breastfed (successful re-lactation has occurred), appropriate weight has been gained, and they are clinically well and alert. Appropriate weight gain for an infant under 6 months means a minimum of 20 g per day gained due to breastfeeding alone over a period of five consecutive days. Infants recovering from SAM who have no access to breastfeeding by the mother or other caregiver require alternative methods of feeding based on national guidelines or remain in inpatient care until the age of 6 months.

HANDOUT 5.5

DISCHARGE CRITERIA AND EXIT CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
DISCHARGE CRITERIA* FOR CHILDREN 6 - 59 MONTHS		
<p>DISCHARGED TO OUTPATIENT CARE:</p> <p>Appetite returned (passed appetite test)</p> <p>AND medical complication resolving</p> <p>AND bilateral pitting oedema decreasing</p> <p>AND clinically well and alert</p> <p>(If marasmic kwashiorkor admission: bilateral pitting oedema resolved)</p>	<p>DISCHARGED CURED:</p> <p>If bilateral pitting oedema admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ MUAC ≥ 110 mm ▪ WFH ≥ -2 z-score (WHO) or ≥ 80 % of the median (NCHS) ▪ Child clinically well and alert <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 110 mm ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment and WFH ≥ -2 z-score (WHO) or ▪ WFH ≥ 80 % of the median (NCHS) for 2 consecutive sessions** ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If marasmic kwashiorkor admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ If MUAC admission: minimum 2 months in treatment and MUAC ≥ 110 mm ▪ If WFH admission: WFH ≥ -2 z-score (WHO) or $\geq 80\%$ of the median (NCHS) for 2 consecutive sessions ▪ Child clinically well and alert <p>Children are discharged to supplementary feeding if available</p>	<p>DISCHARGED CURED:</p> <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 125 mm <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ WFH ≥ -2 z-score (WHO) or $\geq 85\%$ of median (NCHS) for 2 consecutive sessions <p>DISCHARGED AFTER RECOVERING FROM SAM:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 125 mm

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) are being debated.

** If there is no supplementary feeding, discharge criteria may be adjusted to weight-for-height (WFH) $\geq 85\%$ of median (National Centre for Health Statistics [NCHS]).

**Module 5: Inpatient Care for the Management of SAM
With Medical Complications in the Context of CMAM**

DISCHARGE CRITERIA FOR INFANTS < 6 MONTHS		
Discharged cured if successful re-lactation and appropriate weight gain (minimum 20 grams weight gain per day on breastfeeding alone for 5 days) and clinically well and alert (if no access to breastfeeding, alternative method of replacement feeding based on national guidelines is required).		
DISCHARGE CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		Pregnant and lactating women MUAC ≥ 210 mm or infant ≥ 6 months of age

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
EXIT CATEGORY: CURED		
Child 6-59 months meets outpatient care discharge criteria Infant < 6 months meets inpatient care discharge criteria	Child 6-59 months meets discharge criteria	Child 6-59 months meets discharge criteria
EXIT CATEGORY: DIED		
Child dies while in inpatient care	Child dies while in outpatient care	Child dies while in supplementary feeding
EXIT CATEGORY: DEFAULTED		
Child is absent for 2 days	Child is absent for 3 consecutive sessions (e.g., 3 weeks)	Child is absent for 3 consecutive sessions (e.g., 6 weeks)
EXIT CATEGORY: NON-RECOVERED		
Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)
EXIT CATEGORY: REFERRED TO OUTPATIENT OR INPATIENT CARE		
Referred to Outpatient Care Child's health condition is improving and child is referred to outpatient care to continue treatment	Referred to Inpatient Care Child's health condition is deteriorating (action protocol)	Referred to Outpatient or Inpatient Care Child's health condition is deteriorated and child meets outpatient or inpatient care admission criteria

Note: MUAC is the preferred indicator for admission to CMAM. MUAC is used for children age 6-59 months. MUAC cutoffs for SAM and MAM are being debated. The cutoff for SAM could increase to 115 mm, however, this had not been put in practice at the time these materials were published. In some countries, the MUAC cutoff for MAM has been set at < 120 mm.

Depending on national guidelines, weight-for-height (WFH) is expressed as standard deviations (SDs) below the median of the World Health Organization (WHO) child growth standards (WFH < - z-score) or as a percentage of the median of the National Centre for Health Statistics (NCHS) child growth references (WFH < % of median).

HANDOUT 5.6

MEDICAL TREATMENT AND NUTRITION REHABILITATION OF SAM WITH MEDICAL COMPLICATIONS

Medical treatment and nutrition rehabilitation of children with severe acute malnutrition (SAM) and medical complications in inpatient care follow the World Health Organization (WHO) protocols for the treatment of SAM (WHO 1999). When the medical condition is stabilised and the medical complication is resolving, the child is referred to outpatient care to continue the nutrition rehabilitation.

TREATMENT

- The WHO manual (WHO 1999) and guidelines (WHO 2003) provide detailed information on the treatment of children with SAM and do not account for early discharge to outpatient care after the medical condition is stabilised and the medical complication is resolving.
- It usually takes four to seven days of treatment for the medical complication to start resolving.

FIGURE 1. WHO 10-STEP TREATMENT OF CHILDREN WITH SAM

WHO Guidelines for the Inpatient Treatment of Severely Malnourished Children (2003)

STEP	STABILISATION PHASE		REHABILITATION PHASE
	Days 1-2	Days 3-7	Weeks 2-6
1. Hypoglycaemia	→		
2. Hypothermia	→		
3. Dehydration	→		
4. Electrolytes			→
5. Infection	→	→	
6. Micronutrients		no iron	with iron
7. Cautious feeding		→	
8. Catch-up growth			→
9. Sensory stimulation			→
10. Prepare for follow-up			→

NUTRITION REHABILITATION

- Children receive F75 (100 kcal/kg/day) every two to three hours and are given routine or specific medication according to the medical complication and the WHO treatment protocol (Steps 1-7). When appetite has returned (child drinks F75 voluntarily), ready-to-use therapeutic food (RUTF) is gradually introduced (Step 8).
- Once the child can eat at least 75 percent of the RUTF ration at each meal (150 kcal/kg/day), nutrition support can continue with RUTF (200 kcal/kg/day, according to the RUTF protocol) and, if the medical complication is resolving, the child can be discharged to outpatient care.
- Children with SAM and medical complications in inpatient care can be given RUTF immediately if they have appetite and can eat the RUTF.

- Children who have been referred to inpatient care from outpatient care because of static weight for five consecutive weigh-ins or weight loss for more than three consecutive weeks also can be given RUTF if they have appetite.

NUTRITION REHABILITATION OF INFANTS UNDER 6 MONTHS WITH SAM

Health care providers need special training in the management of SAM in infants under 6 months receiving inpatient care. Treatment can be very labour-intensive. Management of SAM in infants generally requires:

- If the mother is present:
 - Nutrition rehabilitation with intensive breastfeeding counselling and support to the mother, and the supplemental suckling technique (SST) with diluted F100, along with medical treatment according to the WHO protocol; the aim is to restore exclusive breastfeeding (EBF) with appropriate weight gain of 20g per day for 5 days on breast milk alone
 - Nutrition, medical and psychological care for breastfeeding mothers
 - Promotion and support for breastfeeding in all instances
- If the mother is not breastfeeding or is absent:
 - Nutrition rehabilitation with diluted F100, medical treatment according to the WHO protocol; alternatives for continued feeding with local available complementary foods should be considered

Note: Infants under 6 months are never given RUTF, as they have not sufficiently developed the swallowing reflex for solid foods.

See WHO's *Guidelines for the Inpatient Treatment of Severely Malnourished Children* (WHO 2003) for more information on inpatient care.

HANDOUT 5.7

PRACTICAL IMPLICATIONS IN DISCHARGES FROM INPATIENT CARE

A. DISCHARGES FROM INPATIENT CARE TO OUTPATIENT CARE

- Children with severe acute malnutrition (SAM) who are discharged from inpatient care are referred to the nearest outpatient care site to continue their treatment. The hospital or health facility with inpatient care should have a complete list of outpatient care sites in its catchment area, along with the sites' service days, so they can refer the child to the appropriate health facility closest to their community and on the right service day.
- If there is no outpatient care site, outpatient treatment should continue at the health facility's outpatient department (OPD). Arrangements should be made for the mother/caregiver and child to have a temporary and safe living space near the health facility.
- A referral slip to the outpatient care site should be provided, including a summary section listing any medical interventions and medicines given to the child.
- **Children discharged from inpatient care are considered a priority for follow-up home visits during their first week in outpatient care**, according to the action protocol. Outreach workers (e.g., community health workers [CHWs], volunteers) should visit the child at home to be sure there are no problems with feeding and to refer the child to the nearest health facility with outpatient care if his/her condition deteriorates.
- On discharge, the mother/caregiver is given sufficient ready-to-use therapeutic food (RUTF) to last until the next outpatient care follow-on session. Key messages about the use of RUTF and basic hygiene are discussed again with the mother/caregiver.
- **Note:**
 - Close collaboration and information sharing between inpatient and outpatient care are essential. Health care providers in health facilities with inpatient care should receive a full orientation at the outpatient care treatment site and vice versa.
 - It is important to have effective tracking and reporting systems so that children do not get lost and defaulters and deaths do not go unreported. Using the child's unique registration number on referral slips helps ensure smooth referrals among services. When inpatient care sites use an already existing system for registration numbers, efforts should be made to also use the child's CMAM registration number.

B. DISCHARGES FROM INPATIENT CARE THAT EXIT CMAM

- If a child is absent from inpatient care for two days, the case is **classified as a default**.
- If a child died while in inpatient care, the cause of death should be reported according to local regulations. If possible, transportation should be provided to take the mother/caregiver and the child's body home. The outpatient care treatment site where the child entered CMAM should be notified.

C. REFERRAL FOR TERTIARY CARE

- A child in inpatient care might need to go to a higher-level referral hospital — or tertiary care — for underlying medical complications that cannot be treated at the inpatient care site. If the child has appetite, the child might be sent to the referral hospital with a supply of RUTF, or an arrangement might be made with the referral hospital to make sure it has RUTF for children with SAM who are referred. F75 and instructions should be made available.

HANDOUT 5.8

INPATIENT CARE FIELD VISIT CHECKLIST

OBSERVE THE FOLLOWING:

Registration
Admission criteria
Admission process
Discharge criteria
Discharge procedures
Preparation of therapeutic foods (e.g., F75, F100, D-F100)
Storage of therapeutic foods and drugs
Feeding of children with severe acute malnutrition (SAM)
Feeding routines
Inpatient care treatment card
Flow of activities within inpatient care
Referral process

ASK THE STAFF:

How well inpatient care is working now that there is outpatient care
How the numbers/types of children in inpatient care now compare with the numbers/types before outpatient care was available
What the challenges to managing the workload are

EXERCISE 5.1

REFERRAL FROM INPATIENT TO OUTPATIENT CARE

Fill out this referral card completely and accurately with the information provided.

Name of child:		Community:	
Age:		Sex:	
Date of Admission:		Site:	
ADMISSION DATA	Weight:	MUAC:	Referral to:
	Height:	WFH:	
Bilateral pitting oedema (circle) None + ++ +++			Registration No:
Date of Referral:			
Criteria for Referral:			
Treatment given:		Comments:	

Adapted from *Community-based Therapeutic Care (CTC): A Field Manual*

MODULE SIX

Supplementary Feeding to Manage MAM in the Context of CMAM

LEARNING OBJECTIVES

HANDOUTS AND EXERCISES

1. Describe Some Types of Programmes to Manage MAM and How this Component Fits Within CMAM	Handout 6.1 Supplementary Feeding to Manage MAM in Emergencies Handout 6.2 Principles of Supplementary Feeding for the Management of MAM
2. Describe Admission to and Discharge from Supplementary Feeding for the Management of MAM	Handout 6.3 Admission Procedures in Supplementary Feeding Handout 6.4 Admission Criteria and Entry Categories for CMAM Handout 6.5 Discharge Criteria and Exit Categories for CMAM Handout 6.6 CMAM Classification of Acute Malnutrition Handout 6.7 Supplementary Feeding Treatment Card Cards with Admission Criteria
3. Discuss Medical Treatment and Nutrition Rehabilitation in Supplementary Feeding	Handout 6.8 Medical Treatment Protocols for Management of MAM in Supplementary Feeding Handout 6.9 Nutritional Rehabilitation Protocols for the Management of MAM in Supplementary Feeding Handout 6.10 Food Commodities Used in Supplementary Feeding Handout 6.11 Supplementary Feeding Ration Card
4. Practice Making Referrals from Supplementary Feeding to Outpatient or Inpatient Care	Handout 6.12 Referral Slip Exercise 6.1 Referrals in CMAM
Wrap-Up and Module Evaluation	

HANDOUT 6.1

SUPPLEMENTARY FEEDING TO MANAGE MAM IN EMERGENCIES

A. PURPOSE OF SUPPLEMENTARY FEEDING PROGRAMMES (SFPs)

Supplementary feeding implemented in an emergency context is known as an SFP. Its purpose is to treat moderate acute malnutrition (MAM) in children 6-59 months and other vulnerable groups, such as malnourished pregnant women and lactating women with infants under 6 months of age.

Children under 6 months are never admitted to SFPs. However, the mother receives counselling on adequate breastfeeding and, if malnourished, will be admitted to the SFP herself. If the infant shows signs of severe acute malnutrition (SAM, i.e. bilateral pitting oedema, visible wasting), the infant will then be referred to inpatient care for specialised care.

There are two types of supplementary feeding interventions in emergencies:

Blanket supplementary feeding: A supplementary ration is provided for everyone in an identified vulnerable group for a defined period. This might be all children under 3 or 5 years old and/or all pregnant and lactating women, regardless of their nutritional status. Anthropometric criteria are not used for admission. Blanket feeding is used when the prevalence of acute malnutrition is high, numbers of vulnerable people are very large and general food distributions are inadequate. It can also be used during certain peak seasons or shocks.

Targeted supplementary feeding: A supplementary ration is targeted to individuals with MAM in specific vulnerable groups. The vulnerable groups usually include children age 6 to 59 months and malnourished pregnant women and lactating women with infants under 6 months of age. Groups also might include individuals with special needs such as people living with HIV (PLHIV), people with tuberculosis (TB) and the elderly. Specific anthropometric criteria for entry and discharge are usually used.

The supplementary feeding discussed in this module as part of CMAM is a **targeted SFP**.

B. SFPs IN THE CONTEXT OF CMAM

- In emergencies where the population depends on external food assistance, a general ration for the whole population is a priority to reach the maximum number of children. Normally, SFPs should not be set up before a general ration is in place. Also in an emergency, SFPs (to manage MAM in children) should be prioritised over CMAM outpatient care and inpatient care (to manage SAM in children).
- An SFP is implemented through a large number of decentralised treatment sites. These are located at or near the sites chosen for outpatient care and should be within a day's walk (round-trip) for the beneficiaries, which helps facilitate referrals between outpatient care and supplementary feeding.
- When an SFP and outpatient care are provided at the same site, this can lead to very large crowds. Good organisation is necessary to ensure that the crowds do not interfere with outpatient care and other ongoing health facility activities. It is preferable to place the SFP nearby rather than in the health facility, with strong established links for referral.

C. OBJECTIVES OF AN SFP AND WHEN TO START AND CLOSE AN SFP

- The objectives of an SFP intervention should be measurable and, in most cases, achieved in a defined period. The precise objectives will depend on the context and resources available. The objectives might include:
 - Reducing mortality among children under 5
 - Treating and preventing deterioration in the nutritional status of children with MAM
 - Preventing deterioration in the nutritional status of pregnant and lactating women
- The decision to start supplementary feeding in an emergency context is often based on a high prevalence of MAM and/or the presence of aggravating factors, such as a crude death rate above 1 in 10,000 per day, an epidemic of measles, high prevalence of respiratory or diarrhoeal disease, poor sanitation environment, inadequacy in the relief food basket and/or an unreliable food distribution system.
- Decision charts can be used as guidelines for when to open and close an SFP. They should be used only as a guide and when appropriate for the SFP's context, precise objectives and timeframe.
- The decision to close an SFP will depend on the SFP's objectives. The decision to close ideally should be made after a nutrition survey has clearly shown a decrease in global acute malnutrition (GAM) in the population to below emergency levels and the end of aggravating factors.

D. WHERE THERE IS NO SFP

In some situations, no SFP is available. This is likely to be the case when outpatient care is part of routine health care in non-emergency situations or in a food-secure environment. In non-emergency situations, some form of supplementary feeding for the management of MAM might be part of child survival interventions or a national programme. For example, in Ethiopia, distribution of supplementary food is part of the country's Enhanced Outreach Strategy for Child Survival. It also might be the case after an emergency when resources are no longer available for SFPs and/or where the prevalence of acute malnutrition has been significantly reduced.

Below are some options that should be considered to ensure that children recovering from SAM can continue gaining weight and avoid readmission:

1. In cases where there is high GAM and efforts to set up an SFP have failed, adapt the outpatient care admission and discharge criteria.
 - Admission Criteria: Raise mid-upper arm circumference (MUAC) from < 110 mm to < 115 mm or raise weight-for-height (WFH) as a percentage of the median to < 72% or 75%.
 - Discharge Criteria: Extend length of stay from two to three months or increase WFH as a percentage of the median to > 85%.
2. In an emergency response, advocate for a general food distribution for families of vulnerable or malnourished children or, when there is access to fortified blended food (FBF), provide a family food ration in outpatient care.
 - A ration of FBF can be provided to the mother/caregiver of a child admitted to outpatient care every two weeks (usually 2.5 kg of FBF every two weeks). This is given as a family food ration to prevent sharing of the ready-to-use therapeutic food (RUTF). The ration will likely be provided by the World Food Programme (WFP) or government agencies. This should be a standard part of emergency outpatient care.
3. Provide a food ration on discharge from outpatient care.
 - If access to supplementary foods is secured/allowed, a food ration can be provided upon discharge from outpatient care (equivalent to two months of supplementary rations) to help avoid readmission.

Module 6: Supplementary Feeding for the Management of Moderate Acute Malnutrition (MAM) in the Context of CMAM

4. Link to prevention programmes.
 - Once children have been treated for SAM or MAM and have started to recover, they and their mothers/caregivers should be linked with prevention programmes to help prevent them from becoming malnourished again. Many cases of undernutrition could be prevented through other interventions that promote child growth (e.g., community-based programmes such as Positive Deviance/Hearth [PD/Hearth], community-based growth monitoring and promotion (GMP), community-based care groups). These programmes offer nutrition and health counselling, education communication interventions and support for mothers/caregivers.

HANDOUT 6.2

PRINCIPLES OF SUPPLEMENTARY FEEDING FOR THE MANAGEMENT OF MAM

Source: Adapted from the World Food Programme (WFP) *Guidelines for Supplementary Feeding* (WFP 1999)

Blanket Supplementary Feeding	Targeted Supplementary Feeding
<p>A generalised SFP for prevention purposes can be implemented in the absence of a full basic ration under one or a combination of these circumstances:</p> <ul style="list-style-type: none"> ▪ Problems in the delivery/distribution of the general ration ▪ Prevalence of acute malnutrition above 15% to 20% among children under 5 ▪ Prevalence of acute malnutrition above 10% to 15% among children under 5, plus aggravating factors* ▪ Seasonal major food insecurity 	<p>Implementation of SFPs for selected individuals in vulnerable groups is required under these circumstances:</p> <ul style="list-style-type: none"> ▪ Prevalence of acute malnutrition above 10% among children under 5 ▪ Prevalence of acute malnutrition above 5% to 9% among children under 5, plus aggravating factors*
<p>* Aggravating factors to be considered are crude death rates above 1 in 10,000 per day, an epidemic of measles, high prevalence of respiratory or diarrhoeal disease, poor sanitation environments, high levels of food insecurity, and an unreliable food distribution system.</p>	

When to close an SFP

An SFP can be closed when the prevalence of general acute malnutrition (GAM) is below 10% with no aggravating factors and the following conditions are met:

- General food distributions are reliable and adequate or food security is acceptable.
- Effective public health and disease control measures are in place.
- No seasonal deterioration of nutritional status is expected.
- The population size is stable, with no new displacement expected.

Note: In some situations where GAM is below 10%, but the absolute number of malnourished children is still considerable, it might not be appropriate to close the targeted SFP. The same might apply in unstable and insecure situations where the SFP could be needed as a safety net.

HANDOUT 6.3

ADMISSION PROCEDURES IN SUPPLEMENTARY FEEDING

ADMISSION PROCEDURES

- Children directly admitted to a supplementary feeding are given an individual registration number that is kept the same on all records (i.e. in register book, on treatment and rations cards).
- A supplementary feeding treatment card is filled out for all admissions.
- A supplementary feeding ration card is given to the mother/caregiver or individual on admission. The mother/caregiver keeps the card.
- The amount of information recorded on a supplementary feeding treatment card should be kept to a minimum: registration number, name, place of origin, admission indicators (mid-upper arm circumference [MUAC] or weight-for-height [WFH]), weight and height on admission and discharge, and date of admission and discharge.
- MUAC, weight and/or either WFH z-score (World Health Organization [WHO] standards) or WFH as a percentage of the median (National Centre for Health Statistics [NCHS] standards), depending on the national guidelines, are recorded at every session on the supplementary feeding treatment card. If WFH is used, height is recorded at admission and once a month until discharge.
- Like outpatient and inpatient care, the performance of the supplementary feeding service/programme is measured through monthly reports.

CHILDREN 6-59 MONTHS

- Children are screened by outreach workers (e.g., community health workers [CHWs], volunteers) using MUAC and are referred to supplementary feeding, or they are admitted via self-referrals (mothers/caregivers bring them on their own initiative).
- In community-based management of acute malnutrition (CMAM), children with moderate acute malnutrition (MAM) without medical complications are automatically admitted to supplementary feeding. Moderately malnourished children with medical complications are immediately referred for treatment and/or further investigation to the appropriate health service and should have access to a nutrient-dense supplementary food. They return to supplementary feeding as soon as their medical complication is resolved.
- Admissions also include children discharged from outpatient care as cured who are admitted to supplementary feeding for a defined period of time to continue their recovery irrespective of their current anthropometrical status.
- MUAC is often used for community screening, referral and admission to supplementary feeding. However, WFH (either z-score [WHO standards] or as a percentage of the median [NCHS standards]) is more commonly used. Hence, some agencies use dual criteria, i.e. community screening using MUAC and admission using WFH. Using different criteria increases the number of children who are refused admission, which can compromise access and uptake of MAM services.

- The global community has not yet endorsed MUAC as an independent criterion for admission to supplementary feeding. Research is ongoing, and a joint statement by international organisations is expected.

INFANTS UNDER 6 MONTHS WITH MAM

- Infants under 6 months are never included in supplementary feeding. If an infant under 6 months is malnourished (with or without medical complications) or the mother has insufficient breast milk and the child is at high risk for undernutrition, the mother and infant are both referred to inpatient care.

HIV-POSITIVE CHILDREN WITH MAM

- Children who are moderately malnourished and HIV-positive may be referred to outpatient care or inpatient care, depending on national guidelines. It is unknown if these children have more specific energy and nutrient needs and whether or not they would do well in supplementary feeding. Research in the treatment of malnourished HIV-positive children is ongoing.

PREGNANT AND LACTATING WOMEN

- In emergencies, malnourished pregnant and lactating women are included in SFPs, usually using MUAC as the criterion for admission.

HANDOUT 6.4

ADMISSION CRITERIA AND ENTRY CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ADMISSION CRITERIA FOR CHILDREN 6 - 59 MONTHS*		
<p>Bilateral pitting oedema +++</p> <p>OR Marasmic kwashiorkor: Any grade of bilateral pitting oedema with severe wasting (MUAC < 110 mm or WFH < -3 z-score [WHO] or < 70% of median [NCHS])</p> <p>OR Bilateral pitting oedema + or ++ or MUAC < 110 mm or WFH < -3 z-score (WHO) or < 70% of median (NCHS) with any of the following medical complications:</p> <ul style="list-style-type: none"> ▪ Anorexia, no appetite ▪ Intractable vomiting ▪ Convulsions ▪ Lethargy, not alert ▪ Unconsciousness ▪ Lower respiratory tract infection (LRTI) ▪ High fever ▪ Severe dehydration ▪ Severe anaemia ▪ Hypoglycaemia ▪ Hypothermia <p>OR</p> <ul style="list-style-type: none"> ▪ Referred from outpatient care according to action protocol ▪ Other: e.g., infant ≥ 6 months and < 4 kg 	<p>Bilateral pitting oedema + and ++</p> <p>OR MUAC < 110 mm</p> <p>OR WFH < -3 z-score (WHO) or < 70% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert 	<p>MUAC ≥ 110 mm and < 125 mm</p> <p>OR WFH ≥ -3 z-score and < -2 z-score (WHO) or ≥ 70% and < 80% of median (NCHS)</p> <p>AND</p> <ul style="list-style-type: none"> ▪ Appetite ▪ Clinically well ▪ Alert <p>ALSO: Children recovering from SAM, after discharge from outpatient care, regardless of their anthropometry</p> <p><i>Note: Children with MAM and medical complications are admitted to supplementary feeding (receive supplementary food ration) but are referred for medical treatment and return when medical complications are resolved.</i></p>

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and mild acute malnutrition (MAM) are being debated.

ADMISSION CRITERIA FOR INFANTS < 6 MONTHS		
Infants < 6 months with bilateral pitting oedema or visible wasting (or e.g., insufficient breastfeeding in vulnerable environment)		
ADMISSION CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		<p>Pregnant women In second and third trimester with MUAC < 210 mm</p> <p>Lactating Women MUAC < 210 mm with infants < 6 months</p>

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
ENTRY CATEGORY: NEW ADMISSIONS OF CHILDREN 6-59 MONTHS		
New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New SAM cases of children 6-59 months meet admission criteria -including relapse after cure	New MAM cases of children 6-59 months meet admission criteria -including relapse after cure and referral from outpatient care
ENTRY CATEGORY: OTHER NEW ADMISSIONS		
New SAM cases of infants, children, adolescents or adults (< 6 months or ≥ 5 years) need treatment of SAM in inpatient care	New SAM cases not meeting pre-set admission criteria need treatment of SAM in outpatient care	New MAM cases not meeting pre-set admission criteria need treatment of MAM
ENTRY CATEGORY: OLD CASES: REFERRAL FROM OUTPATIENT CARE		
Child's health condition deteriorated in outpatient care (according to action protocol) and child needs inpatient care Returned after defaulting Moved in from other outpatient care site	Child's health condition improved in inpatient care and child continues treatment in outpatient care OR Returned after defaulting, or Moved in from other outpatient care site	Returned after defaulting, or Moved in from other supplementary feeding site

Note: MUAC is the preferred indicator for admission to CMAM. MUAC is used for children age 6-59 months. MUAC cutoffs for SAM and MAM are being debated. The cutoff for SAM could increase to 115 mm, however, this had not been put in practice at the time these materials were published. In some countries, the MUAC cutoff for MAM has been set at < 120 mm.

Depending on national guidelines, weight-for-height (WFH) is expressed as standard deviations (SDs) below the median of the World Health Organization (WHO) child growth standards (WFH < - z-score) or as a percentage of the median of the National Centre for Health Statistics (NCHS) child growth references (WFH < % of median).

HANDOUT 6.5

DISCHARGE CRITERIA AND EXIT CATEGORIES FOR CMAM

INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
DISCHARGE CRITERIA* FOR CHILDREN 6 - 59 MONTHS		
<p>DISCHARGED TO OUTPATIENT CARE:</p> <p>Appetite returned (passed appetite test)</p> <p>AND medical complication resolving</p> <p>AND bilateral pitting oedema decreasing</p> <p>AND clinically well and alert</p> <p>(If marasmic kwashiorkor admission: bilateral pitting oedema resolved)</p>	<p>DISCHARGED CURED:</p> <p>If bilateral pitting oedema admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ MUAC ≥ 110 mm ▪ WFH ≥ -2 z-score (WHO) or ≥ 80 % of the median (NCHS) ▪ Child clinically well and alert <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 110 mm ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment and WFH ≥ -2 z-score (WHO) or ▪ WFH ≥ 80 % of the median (NCHS) for 2 consecutive sessions** ▪ No bilateral pitting oedema ▪ Child clinically well and alert <p>If marasmic kwashiorkor admission:</p> <ul style="list-style-type: none"> ▪ No bilateral pitting oedema for 2 consecutive sessions ▪ If MUAC admission: minimum 2 months in treatment and MUAC ≥ 110 mm ▪ If WFH admission: WFH ≥ -2 z-score (WHO) or ≥ 80% of the median (NCHS) for 2 consecutive sessions ▪ Child clinically well and alert <p>Children are discharged to supplementary feeding if available</p>	<p>DISCHARGED CURED:</p> <p>If MUAC admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 125 mm <p>If WFH admission:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ WFH ≥ -2 z-score (WHO) or ≥ 85% of median (NCHS) for 2 consecutive sessions <p>DISCHARGED AFTER RECOVERING FROM SAM:</p> <ul style="list-style-type: none"> ▪ Minimum 2 months in treatment ▪ MUAC ≥ 125 mm

*Subject to adaptations according to national guidelines; mid-upper arm circumference (MUAC) cutoffs for severe acute malnutrition (SAM) and moderate acute malnutrition (MAM) are being debated.

** If there is no supplementary feeding, discharge criteria may be adjusted to weight-for-height (WFH) ≥ 85 % of median (National Centre for Health Statistics [NCHS]).

DISCHARGE CRITERIA FOR INFANTS < 6 MONTHS		
Discharged cured if successful re-lactation and appropriate weight gain (minimum 20 grams weight gain per day on breastfeeding alone for 5 days) and clinically well and alert (if no access to breastfeeding, alternative method of replacement feeding based on national guidelines is required).		
DISCHARGE CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		Pregnant and lactating women MUAC ≥ 210 mm or infant ≥ 6 months of age

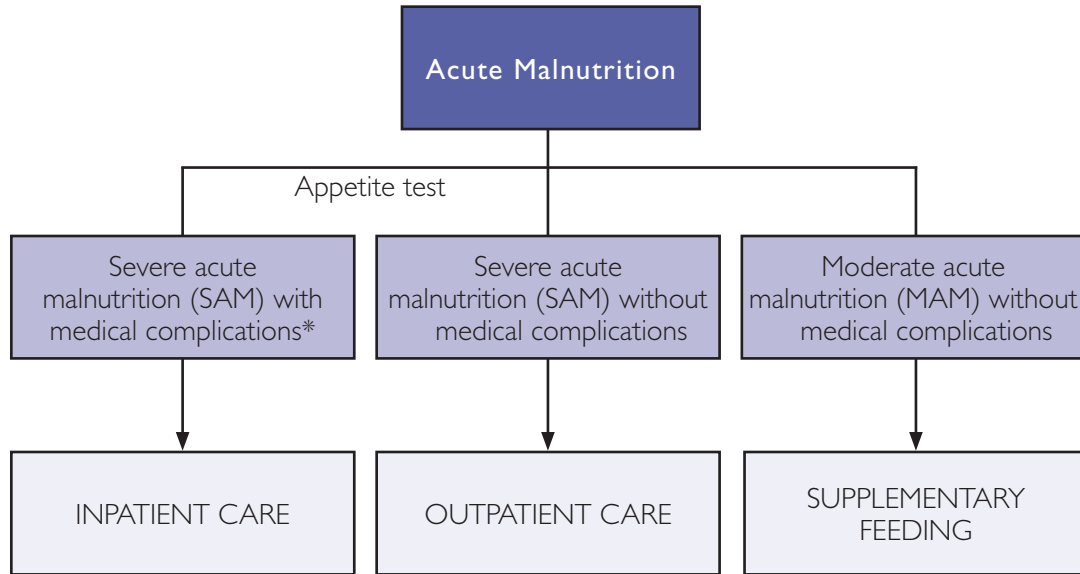
INPATIENT CARE for the Management of SAM with Medical Complications	OUTPATIENT CARE for the Management of SAM without Medical Complications	SUPPLEMENTARY FEEDING for the Management of MAM
EXIT CATEGORY: CURED		
Child 6-59 months meets outpatient care discharge criteria Infant < 6 months meets inpatient care discharge criteria	Child 6-59 months meets discharge criteria	Child 6-59 months meets discharge criteria
EXIT CATEGORY: DIED		
Child dies while in inpatient care	Child dies while in outpatient care	Child dies while in supplementary feeding
EXIT CATEGORY: DEFAULTED		
Child is absent for 2 days	Child is absent for 3 consecutive sessions (e.g., 3 weeks)	Child is absent for 3 consecutive sessions (e.g., 6 weeks)
EXIT CATEGORY: NON-RECOVERED		
Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)	Child does not reach discharge criteria after 4 months in treatment (medical investigation previously done)
EXIT CATEGORY: REFERRED TO OUTPATIENT OR INPATIENT CARE		
Referred to Outpatient Care Child's health condition is improving and child is referred to outpatient care to continue treatment	Referred to Inpatient Care Child's health condition is deteriorating (action protocol)	Referred to Outpatient or Inpatient Care Child's health condition is deteriorated and child meets outpatient or inpatient care admission criteria

Note: MUAC is the preferred indicator for admission to CMAM. MUAC is used for children age 6-59 months. MUAC cutoffs for SAM and MAM are being debated. The cutoff for SAM could increase to 115 mm, however, this had not been put in practice at the time these materials were published. In some countries, the MUAC cutoff for MAM has been set at < 120 mm.

Depending on national guidelines, weight-for-height (WFH) is expressed as standard deviations (SDs) below the median of the World Health Organization (WHO) child growth standards (WFH < - z-score) or as a percentage of the median of the National Centre for Health Statistics (NCHS) child growth references (WFH < % of median).

HANDOUT 6.6

CMAM CLASSIFICATION OF ACUTE MALNUTRITION



*Medical complications include: Severe bilateral pitting oedema, marasmic kwashiorkor, anorexia/no appetite, intractable vomiting, convulsions, lethargic, lower respiratory tract infection (LRTI), high fever, severe dehydration, severe anaemia, hypoglycaemia, and hypothermia.

Note: Children with moderate acute malnutrition (MAM) and medical complications are admitted to supplementary feeding (receive supplementary food ration) but are referred for medical treatment and return when the medical complication is resolved.

HANDOUT 6.7

SUPPLEMENTARY FEEDING TREATMENT CARD

SUPPLEMENTARY FEEDING TREATMENT CARD FOR CHILDREN, EXAMPLE

Registration no.:	
Name of Child:	Age: Sex: M / F
Caregiver's Name:	Name of Community Leader:
Community:	Supplementary Feeding Site:

ENTRY	Direct New Admission	New Admission, Referred from Inpatient care/ Outpatient care	Referred from Other Supplementary Feeding Site	Re-Admission after Defaulting
--------------	----------------------	--	--	-------------------------------

ADMISSION	DISCHARGE
Date	Date
Weight	Weight
Height	Height
WFH	WFH
MUAC (mm)	MUAC (mm)
	Length of Stay (days)
	Status
	1. Cured 4. Non-recovered 2. Died 5. Referral 3. Defaulted

DRUGS GIVEN ONCE	DATE	OTHER
Vitamin A		
Mebendazole		
Measles Vaccination		
EPI update		

	DATE	WEIGHT	HEIGHT	MUAC	WFH	IRON	REMARKS
1							
2							
3							
4							
5							
6							
7							
8							
9							

HANDOUT 6.8

MEDICAL TREATMENT PROTOCOLS FOR THE MANAGEMENT OF MAM IN SUPPLEMENTARY FEEDING

ROUTINE MEDICINES FOR MODERATE ACUTE MALNUTRITION (MAM)

6.8

VITAMIN A

Children 6-59 months:

- Routine supplementation should be given on admission except where Vitamin A has been given in the past month or health campaigns have ensured good coverage.
- Children referred from outpatient care, inpatient care or other health facility where Vitamin A has already been given should not be given Vitamin A.
- Children showing clinical signs of Vitamin A deficiency should be referred for treatment according to World Health Organization (WHO) guidelines.

Pregnant and lactating women: Pregnant women should NOT be given Vitamin A. Vitamin A is given postpartum, within six weeks after delivery only.

ANTHELMINTHS

To ensure adequate weight gain, **all children 12-59 months** must be routinely treated (every six months) for worm infections with mebendazole or albendazole (or other appropriate antihelminth).

IRON AND FOLIC ACID

Children 6-59 months: Children with anaemia should be treated according to WHO and Integrated Management of Childhood Illness (IMCI) guidelines; this should include malaria testing and treatment in endemic areas. Children with severe anaemia should be referred to a health facility for treatment.

Pregnant and lactating women: Supplementation should be given according to WHO and national guidelines.

OTHER TREATMENTS

Other medical treatments, including vaccination for measles and expanded programme of immunisation (EPI) update, should be provided through referral to clinic services and administered according to national guidelines.

HANDOUT 6.9

NUTRITION REHABILITATION PROTOCOLS FOR THE MANAGEMENT OF MAM IN SUPPLEMENTARY FEEDING

FOOD SUPPLEMENTS IN SUPPLEMENTARY FEEDING

6.9

Food supplements may be distributed as either take-home rations (e.g., dry rations, ready-to-use supplementary food [RUSF]) or on-site rations (wet rations):

- **Dry rations** are provided as raw ingredients and are not prepared for the recipients at the SFP site, but are taken home. The ration is usually a fortified blended food (FBF, e.g., corn-soy blend [CSB], UNIMIX, SF450)¹ with sugar and oil, pre-mixed or distributed separately. Other commodities that might be distributed through an SFP include high-energy biscuits, beans, lentils, and bulgur wheat. The dry, take-home ration is usually distributed on a biweekly or monthly basis.
- **RUSF** is a high-energy nutrient dense food product designed for the nutritional rehabilitation of moderate acute malnutrition (MAM). It comes in a crushable form (e.g., BP 5 from Compact, Norway) or in a soft lipid-based form (e.g., Supplementary Plumpy® from Nutriset, France).
- **Wet rations** are cooked once or twice daily in the kitchen of a feeding centre and consumed on-site. The child must be brought to the feeding centre daily if s/he is prescribed wet rations.

Sphere Minimum Standards and other guidelines discourage the use of wet supplementary feeding programmes. Wet feeding can be induced at the peak of an emergency, when populations have limited access to fuel and water, where security conditions place people at risk while taking rations home, or for groups who need additional food but cannot cook for themselves.

NUTRITION REHABILITATION IN SUPPLEMENTARY FEEDING

- The ration should provide 1,000-1,200 kilocalories (kcal) per person per day, with 10 percent to 12 percent of energy coming from protein, and should be provided for a long time (i.e. two to three months, according to the national guidelines). The ration accounts for family sharing with a family ration of approximately 500 kcal per day provided to the child's family.
- In emergency situations, SFPs generally use take-home rations. (On-site feeding is very rare and is considered to be a temporary solution ONLY or where security is a concern.) Usually, food is distributed as a pre-mix by weight using a balance or calibrated container. Where possible, mothers/caregivers take the pre-mixed food home in their own containers or receive reusable containers.
- A dry ration is provided every two weeks or every month. The frequency depends on resources, the needs and size of the target population, and access to distribution sites. In some cases—particularly in large-scale national programmes, such as the Enhanced Outreach Strategy for Child Survival in Ethiopia—dry rations might be provided every three months, as long as oil has not been mixed into the FBF.

¹ UNIMIX is an FBF distributed by the United Nations Children's Fund (UNICEF); it has replaced 5-10% of corn with sugar. SF450 is made of pre-cooked cereal flour including oats, toasted soy flour, vegetable fat and sugar, with added vitamins and minerals, and is produced by Nutriset, France.

SUPPLEMENTARY FOOD RATIONS IN SUPPLEMENTARY FEEDING

- Rations usually consist of an imported or locally produced blended foods, such as CSB or UNIMIX (includes already sugar), which are fortified with vitamins and minerals, hence the term FBF. They contain about 350-400 kcal per 100 g. The ration should include vegetable oil to ensure adequate energy, and the oil should be fortified with Vitamin A. Sugar should be added to the ration when available if it is not already part of the blend.
- A typical basic ration for children with MAM consists of:
 - Daily ration of 200-300g FBF and 25-30g of oil per person per day
 - Two-week ration of 2.5-4kg blended food and about 300g of oil per person(Note: the ration accounts for sharing).
Other commodities such as sugar and powdered milk can be added.
- If ingredients are mixed before distribution, this is known as pre-mix. The aim is to ensure that rations (particularly high-value commodities such as oil) are not used for the general household or sold. However, pre-mixing can be time consuming, and it reduces the ration's shelf life. Once oil and powdered milk are mixed with FBF, the mixture will last a maximum of two weeks before going rancid.
- Pulses and high-energy biscuits may also be distributed with the FBF, depending on what is available.
- Sugar is included in some FBFs, but not those from the United States. Where available, sugar should be added to FBF to increase palatability and energy.
- **Powdered milk is never distributed alone.** It must always be mixed with an FBF before distribution.
- Clear information should be given on the hygienic use of the ration and on how and when it should be consumed. The pre-mix is combined with two portions of water for each portion of pre-mix and is cooked for at least 20 minutes. Practical preparation and cooking demonstrations should be given at the SFP site or in the community. Note that the demonstrations can draw large numbers of mothers/caregivers and provide a good opportunity for health education. The messages should be clear, simple and practical.
- Several types of FBFs and other supplementary foods with a large variety of nutrient and energy densities are currently available on the market. It is recommended to seek advice from specialised agencies on which foods and what quantities are appropriate for the context and for the vulnerable groups that are targeted for supplementary feeding.
- Ration levels are normally determined by the World Food Programme (WFP) and national/local governments, according to needs and available resources. However, all agencies working in nutrition have a role in advocating for adequate supplementary foods and ration levels.

HANDOUT 6.10

FOOD COMMODITIES USED IN SUPPLEMENTARY FEEDING

6.10

Fortified blended food (FBF, 25kg bags), 350-400 kilocalories (kcal) per 100g

Blended foods should be fortified. A vitamin and mineral mix should be added to blended foods that have not been fortified before distribution, if possible. FBFs include corn-soy blend (CSB), wheat-soy blend (WSB), UNIMIX, and other national fortified blends. Some contain sugar, which improves palatability. Sugar should be added to FBFs that have not already been sweetened before distribution, if possible.

Note that FBFs' effectiveness in treating moderate undernutrition is under question for several reasons:

- They are not energy-dense
- The mix of ingredients makes valuable nutrients unavailable to the body
- They require cooking
- The prevalence of and intra-household sharing is high

Vegetable oil (four-litre cans), 900 kcal per 100g

Vegetable oil is usually fortified with Vitamin A.

High-energy and high-protein biscuits, 450 kcal per 100g

High-energy and high-protein biscuits may be suitable for use in supplementary feeding programmes (SFPs) on a short-term basis. Commonly used biscuits include:

- BP5, which has 458 kcal per 100g and is designed to meet complete daily needs (nine bars in a 500g box)
- High-energy biscuits, which have 450 kcal per 100g, 12g of protein and are fortified with micronutrients (50 percent to 75 percent of adult daily requirements)

These biscuits significantly increase the supplementary diet's energy content and are particularly useful at the beginning of the emergency operation. The biscuits are a valuable commodity; efforts should be made to prevent them from being sold. The biscuits could be crushed or broken before being added to the dry ration pre-mix. Long-term dependence on the biscuits should be avoided.

Ready-to-use supplementary food (RUSF), 500 kcal per 90g packet

RUSF, which is similar to ready-to-use therapeutic food (RUTF) but is designed for supplementary feeding, has been developed for treating moderate acute malnutrition (MAM). RUSF is more expensive than blended foods, but the energy/nutrient density is so high that it might offset the costs because much less of it is needed to achieve the same energy and nutrient comparison. Like RUTF, RUSF might prove to be much more successful than blended foods in achieving better outcomes. This also would make it more cost-effective. Research on the effectiveness of RUSF is ongoing.

Powdered milk (25kg bags) as a supplement mixed with FBFs, 362 kcal per 100g

Powdered milk—also known as dry skim milk (DSM), non-fat dry milk (NFDM) or dry whole milk—should **never be distributed alone in a take-home ration**. The risk of dilution and germ contamination are very high and the milk could be used as a breastmilk substitute (also respecting the International Code of Marketing of Breast-milk Substitutes, see www.enonline.org). Powdered milk can be added to FBFs before distribution but not when FBFs are pre-mixed with oil, unless the client is directed to use the FBF within two weeks to avoid spoilage.

Examples of Supplementary Rations

Commodity	Ration 1 (g)	Ration 2 (g)	Ration 3 (g)
Fortified blended food (FBF)	250	250	140
Sugar		20	30
Oil	25	25	50
Powdered milk			50
Energy (kcal)	1,162	1,250	1,250
Protein % energy	14.5	14.5	14.5

Source: Adapted from the World Health Organization (WHO) 2000

HANDOUT 6.11

SUPPLEMENTARY FEEDING RATION CARD

Name of Child:							Registration Number: / /						
Caregiver's Name:							Sex (M/F):						
Dates of Admission:							Age (Months):						
Community:							Supplementary Feeding Site:						
Admission Criteria:							Discharge Status:						
Week	1	2	3	4	5	6	7	8	9	10	11	12	13
Date													
Weight (kg)													
MUAC (mm)													
WFH													
Ration (type and quantity)													

Adapted from *Community-based Therapeutic Care: A Field Manual*

HANDOUT 6.12

REFERRAL SLIP

Name of child:		Community:	
Age:		Sex:	
Date of Admission:		Site:	
ADMISSION DATA	Weight:	MUAC:	Referral to:
	Height:	WFH:	
Bilateral pitting oedema (circle) None + ++ +++			Registration No:
Date of Referral:			
Criteria for Referral:			
Treatment given:		Comments:	

Adapted from *Community-based Therapeutic Care (CTC): A Field Manual*

HANDOUT 6.13

SUPPLEMENTARY FEEDING FIELD VISIT CHECKLIST

OBSERVE THE FOLLOWING:

	Admission criteria
	Admission procedures
	Discharge criteria
	Discharge procedures
	Individual child's supplementary feeding treatment card (e.g., information collected, progress)
	Ration card
	Referral process
	Food supplies

ASK THE STAFF:

	How they ensure linkages between the supplementary food programme (SFP) and outpatient care
	How they ensure caregivers know how to prepare and give the supplementary food
	What kind of health/nutrition education they offer
	What strategies they use to avoid disrupting outpatient care or ongoing health centre activities
	Where their supplementary food comes from and how they order and store it

EXERCISE 6.1

REFERRAL IN CMAM

CHILD A

Child A was admitted to an SFP with a mid-upper arm circumference (MUAC) of 112 mm, weight of 10 kg and no medical complications. At the second weighing, the child had bilateral pitting oedema on the feet. What action is needed?

CHILD B

Child B was referred to the SFP by the outreach worker with a MUAC of 113 mm. On admission, the nurse finds the child has no appetite and an extremely high fever. What action is needed?

CHILD C

Child C was admitted to the SFP with a MUAC of 111 mm. After four weeks (third weighing), the child has lost weight and MUAC is 109. The child has diarrhoea and some appetite. You want to send the child to outpatient care, but the mother/caregiver refuses to go. How would you deal with this?

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE SEVEN**Planning CMAM Services at the District Level**

LEARNING OBJECTIVES	HANDOUTS AND EXERCISES
1. Describe Key Elements of CMAM and Prepare for the Planning Process	Handout 7.1 Key Elements of CMAM Framework
2. Identify Key Components of a Situation Analysis and Conduct a Basic Situation Analysis	Handout 7.2 Case Study: Situation Analysis, Ghana Handout 7.3 Assessing the Nutrition Situation Handout 7.4 Mapping Matrices Handout 7.5 Capacity Grid for CMAM at the District Level Handout 7.6 SWOT Analysis for CMAM Handout 7.7 Example Capacity Grids for Outpatient Care at the Health Facility Level and for CMAM at the National Level
3. Develop a Logical Framework for CMAM	Handout 7.1 Key Elements of CMAM Framework Handout 7.8 Using a Logical Framework for CMAM Handout 7.9 Example Logical Framework for CMAM
4. Develop an Action Plan for CMAM	Handout 7.1 Key Elements of CMAM Framework Handout 7.10 Calculating Estimated SAM Cases Handout 7.11 Staff Needs, Roles and Responsibilities Handout 7.12 Calculating Estimated RUTF Needs Handout 7.13 Overview of Resources for CMAM Handout 7.14 Matrix for Action Planning
5. Plan for Special Cases: Transitioning and Contingencies	Handout 7.15 Matrix for Transition Planning of CMAM Handout 7.16 Guidance for Contingency Planning for CMAM
Wrap-Up and Module Evaluation	

HANDOUT 7.1

KEY ELEMENTS OF CMAM FRAMEWORK

KEY ELEMENTS FOR CMAM

7.1

1. ENABLING ENVIRONMENT FOR CMAM
Ministry of Health (MOH) leadership
MOH coordination
CMAM integration into national health and nutrition policies and strategic plans
National CMAM guidelines
National database and repository
CMAM support unit
Sustainability of funding
Free treatment for children with severe acute malnutrition (SAM)
Contingency planning
2. ACCESS TO CMAM SERVICES
Initial implementation of learning sites and gradual scale-up of CMAM services
Inpatient care in health facilities with 24-hour care capacity
Expanded outpatient care in decentralized health facilities
Referral system between inpatient and outpatient care
Qualified health care providers
Community outreach for community assessment and mobilisation, active case-finding and referral
CMAM integration into routine health services
CMAM linkages with informal health systems
CMAM linkages with other community services and safety nets
3. ACCESS TO CMAM SUPPLIES
Procurement of CMAM supplies
Management of CMAM equipment and supplies
National production capacity for ready-to-use therapeutic food (RUTF)
4. QUALITY OF CMAM SERVICES
Adherence to standardised treatment protocols
Support and supervision
Monitoring of individual care
Monitoring of service performance
Evaluation of services, including coverage
5. COMPETENCIES FOR CMAM
Pre-service training
In-service training
Learning sites and visits
Accountability for health care providers (e.g., job description, roles, responsibilities)
Information exchange
Research

HANDOUT 7.2

CASE STUDY: SITUATION ANALYSIS, GHANA

This situation analysis was conducted in August 2007 in preparation of a pilot project to introduce CMAM into the Ghana Health Service (GHS). It provided an overview of the nutrition situation and how undernutrition is addressed in Ghana. At a later stage, after the pilot districts were identified, the situation analysis was repeated at the district level, providing more detailed information for CMAM planning at the district level.

I. NUTRITION SITUATION IN GHANA

The 2006 Multiple Indicator Cluster Survey (MICS)¹ shows an 18 percent prevalence of underweight (weight-for-age [WFA]) and a 22 percent prevalence of stunting (height-for-age [HFA]) among children under 5. Wasting (weight-for-height [WFH]) affects 5 percent of children under 5. No information is available on the prevalence of bilateral pitting oedema, but a relatively high incidence of kwashiorkor is expected as numerous cases are reportedly admitted to referral hospitals, especially during the lean period (March through September). Acute malnutrition is highest in the three northern regions (Upper East, Upper West and Northern), in the east (Volta region) and in Greater Accra, where levels can be more than double the national average. Globally, Ghana has the 15th highest burden of children suffering from severe wasting.²

The table below presents the results of nutrition surveys conducted in different regions of Ghana. None of the surveys measured bilateral pitting oedema or mid-upper arm circumference (MUAC).

Table 1. Undernutrition Rates of Priority Regions in Ghana (indicators based on the NCHS references)

Source (age group)	Date	Geographic Area	Severe Wasting (% < -3 z-score)	Wasting (% < -2 z-score)	Stunting (% < -2 z-score)	Underweight (% < -2 z-score)
DHS (0-59 months)	Aug/Oct 2003	National	1.3	7.1	29.9	22.1
		Upper East Region	2.4	12.9	31.7	32.4
		Upper West Region	2.6	11.0	34.1	25.9
		Northern Region	1.0	6.6	48.8	35.5
		Volta Region	3.1	13.9	23.3	25.7
		Greater Accra Region	2.7	7.2	13.9	11.5
		Central Region	0.0	3.0	31.6	22.0
MICS (0-59 months)	Aug/Oct 2006	National	0.9	5.4	22.4	17.8
		Upper East Region	2.8	11.6	28.4	29.1
		Upper West Region	0.3	7.7	22.5	19.1
		Northern Region	1.1	7.1	30.5	26.8
		Volta Region	2.1	4.8	20.9	20.3
		Greater Accra Region	1.1	3.1	7.7	9.8
GHS (0-59 months)	2005	Central Region	0.0	3.7	26.4	16.3
		Dangbe East District, Greater Accra Region	NA	9.4	NA	NA
		Ga District, Greater Accra Region	NA	9.9	NA	NA

¹ Ghana Multiple Indicator Cluster Survey 2006, Ghana Statistical Service, February 2007.

² Wasting time for wasted children: severe child undernutrition must be resolved in non-emergency settings, Viewpoint, R. Gross and P. Webb, The Lancet, 2006; 367:1209-1211.

2. CAPACITY FOR CMAM

2.1 Enabling Environment for CMAM

Ghana Health System Organisation

The Ghanaian health system is administered through three primary bodies: the Ministry of Health (MOH), the GHS and private and mission health facilities. The MOH is responsible for national health policy formulation, resource mobilisation and health service delivery regulation. It also is responsible for physician pre-service curriculum and training. The three physician teaching hospitals are part of the MOH but have some degree of autonomy. The GHS, an autonomous body, is responsible for health care provision, in accordance with MOH policies, through public non-teaching hospitals and health centres. The GHS provides in-service training and develops guidelines and plans for implementing national policies. Private and faith-based health facilities, such as mission hospitals, administer about 40 percent of health care services in the country. While independent, these facilities are bound by national MOH policies and GHS guidelines, and they submit statistics to the GHS.

The GHS is organized into eight divisions, encompassing administrative, financial and care services. Health services are covered under two divisions: Institutional Care, which covers clinical services, and Public Health, which covers maternal and child health and nutrition (MCHN). The Public Health division is divided into three departments: Family Health, Health Promotion, and Disease Surveillance and Control. The Family Health department comprises the Nutrition Unit and the Reproductive and Child Health Unit. The Nutrition Unit has assigned officers for supplementary feeding, infant and young child feeding (IYCF) and micronutrient supplementation and fortification. At the regional and district levels, there are assigned nutrition officers, while at the sub-district levels, a health director is in charge of nutrition and other health activities.

Health and Nutrition Policies

The MOH five-year Programme of Work outlines national priority health and nutrition programs. In the 2007 Annual Programme of Work, there is a strong focus on preventive nutrition through essential nutrition actions (ENAs), IYCF and micronutrient fortification and supplementation. The Programme of Work specifies facility- and community-based management of malnutrition, without further defining it.

Nutrition priorities of the GHS are outlined in a strategy document entitled "Imagine Ghana Free of Malnutrition." Like the MOH Programme of Work, it has a strong emphasis on prevention, but with an overall objective "to contribute to the reduction of malnutrition." Specific objectives are "to provide curative services to individuals who are ... malnourished" and "to improve the management of children with protein energy malnutrition." As with the MOH Programme of Work, the term "malnutrition" is not defined.

Nutrition is a priority for the MOH. Overall, severe acute malnutrition (SAM) is a recognized medical priority that must be addressed. The Nutrition Unit of the GHS has strong interest in CMAM but lacks the capacity to lead the process of strengthening CMAM services. Most key nutrition stakeholder agencies were represented at a the United States Agency for International Development (USAID)- and Food and Nutrition Technical Assistance Project (FANTA)-organized meeting on August 23, 2007, in Accra, and all expressed keen interest and support for strengthening CMAM services.

Other GHS health priorities and strategies include the Expanded Programme of Immunisation (EPI), integrated management of childhood illness (IMCI), Guinea worm eradication, and provision of antiretroviral therapy (ART) for HIV.

National CMAM Guidelines

There are no national CMAM guidelines in Ghana. A policy for nutrition rehabilitation, written in 1995, was a significant step that should be updated. Hospitals and nutrition rehabilitation centres (NRCs) might have their own treatment protocol, but they are not standardised and vary by facility. Consequently, undernutrition is frequently described in non-specific terms, ranging from underweight to weight loss to wasting, leading to acute malnutrition not being identified, referred or treated in a uniform manner.

Information, Research and Documentation

Nutrition surveillance is weak, with most information obtained from growth monitoring (WFA). Information on wasting (WFH or MUAC) and bilateral pitting oedema is lacking.

Some information and experience sharing related to nutrition does occur through an inter-agency nutrition technical working group, which is regularly organized by USAID/Ghana for donor agencies, the United Nations (UN) and some nongovernmental organisations (NGOs).

The University of Ghana's Department of Nutrition and Food Science, in partnership with the University of California at Davis, is conducting research on lipid-based nutrient supplements (LNS) for complementary feeding. Other research institutions in Ghana conducting health, nutrition and medical research include the Food Research Centre, the Noguchi Memorial Institute for Medical Research (part of the University of Ghana, College of Health Sciences), the GHS Health Research Unit and the Kintampo and Navrongo Health Research Centres.

Funding Availability

USAID's implementing partners support the Community-Based Health Planning and Services Initiative (CHPS) and the GHS in general. The Japanese International Cooperation Agency is also supporting the expansion of CHPS coverage. The United Nations Children's Fund (UNICEF) supports the Catholic Relief Services (CRS) Integrated Nutrition Action Against Malnutrition (INAAM) programme in the Upper West region. Moreover, the United Nations Children's Fund (UNICEF) committed funds to procure locally produced ready-to-use therapeutic food (RUTF) in 2008. There is currently no funding in Ghana for training or for procuring therapeutic supplies, including therapeutic foods (e.g., therapeutic milks, RUTF). The World Bank is about to provide US\$15 million for nutrition programming, which will be managed by the GHS.

2.2. Access to Health Services for CMAM**Inpatient Care**

Hospitals in Ghana provide services for treatment of acute malnutrition but have no standardised treatment protocol in place. Nutrition rehabilitation is based on an improved milk diet. About 10 of the 42 NRCs provide residential (i.e., inpatient) care based on administering an improved diet of enriched porridge and local foods. No NGO programmes provide inpatient treatment of SAM.

Outpatient Care

Undernutrition is managed through outpatient services at the 42 (number is uncertain) NRCs providing an improved diet of enriched porridge and local foods. CRS provides outpatient care for SAM with UNICEF support in Upper West region (see section 3 below).

Health Care System

The country comprises 10 regions, divided into 139 districts. Each region has a regional hospital, which is the highest referral level within the health system. District hospitals operate at the district level, though they vary in levels of staffing and equipment. Some new districts lack hospitals. Districts are further divided into sub-districts, which have health centres. Health centres are headed by nurses and have other ancillary staff. Some larger urban health centres, called polyclinics, are staffed with physicians.

The GHS operates at each administrative level through regional health directorates, district health directorates and sub-district health directorates. Services for children under 5 were recently mandated to be free of charge, though this has not been uniformly applied, and central-level reimbursement to facilities has not yet occurred. Consequently, some facilities must charge for services to children under 5. A new national health insurance scheme covers costs of care for the indigent, who must be enrolled in the programme. Several of the health facilities FANTA visited actively encourage or even assist patients in enrolling in the insurance plan. However, the cost of obtaining a photo needed for the insurance card was frequently cited as an obstacle to registration.

Beyond the sub-district level, community-level health services are provided through different mechanisms. Two of the more-developed mechanisms include child welfare outreach points and CHPS zones. First, health centres might operate monthly child welfare outreach services at a community structure or under a tree, where nurses and community volunteers conduct monthly growth monitoring and promotion (GMP) of children under 5, ante- and post-natal care, EPI, treatment of minor illnesses, health and nutrition education, first aid and referral. FANTA observed 50 to more than 100 mothers and children at each of the outreach points visited. There is strong and effective community mobilisation to promote participation in the monthly services.

Next, CHPS zones include communities of 3,000 to 4,500 people (generally one to three communities), to which a community health officer³ is assigned to provide primary health care (PHC) services out of a CHPS compound (the nurse's home and office, built by the community) and through frequent follow-up home visits. The community health officer is supported by a number of community health volunteers selected by a community health committee that consists of community leaders, women's and youth groups, traditional birth attendants and others. Not all health centres provide child welfare outreach services, and while CHPS zones have been planned nationally, coverage of active zones—i.e., those assigned a trained and equipped community health officer with active volunteers—is still very limited, with a concentration of active zones in the Upper East region. Currently, in most districts within the country, less than 10 percent of CHPS zones are active. The GHS is working toward obtaining 100 percent coverage in all districts in Ghana by 2015.

Undernutrition is treated through inpatient care in hospitals and through inpatient or outpatient care at NRCs, which generally have high default rates. The lack of national CMAM guidelines translates into non-standardised treatment and non-uniform admission criteria, ranging from low WFA to low WFH to weight loss to visible wasting. Consequently, undernutrition screening at these facilities does not always target or identify the acutely malnourished, thereby impeding access. Hospitals tend to admit severely acutely malnourished children to the paediatric wards or assign a specific malnutrition ward. For instance, the Princess Mary Louise Children's Hospital in Accra has assigned one of their four wards for cases of severe undernutrition. At the time of the visit, over one-quarter of all the inpatients who were admitted were children with severe undernutrition.

The NRCs, some of which provide residential (inpatient) nutrition care, tend to be clustered in more urban areas. Referral from hospital-based inpatient services to NRCs for continued outpatient nutrition rehabilitation of stabilised cases is done only when a nearby NRC exists. NRCs with day programmes do refer cases with serious illness back to inpatient care at the hospital level. In the NRCs, mothers/caregivers of the malnourished children prepare the improved food with guidance and education from the staff.

³ A community health officer is a community health nurse or midwife with additional training.

Thus, there is a well-developed health care delivery system in Ghana from community-based child welfare outreach points and CHPS zones providing primary health care, to sub-district and district health centres and hospitals providing primary and secondary health care. There is good potential to address SAM in inpatient and outpatient care in this structure.

Staffing

Hospitals and health centres generally have adequate staffing, with some exceptions in the new districts. Health centres conduct community outreach through outreach satellite points or through CHPS zones. Health centres have state-registered nurses, community health nurses and/or midwives. As noted, CHPS zones are staffed by one community health officer. In a recent initiative, the Ministry of Manpower, Youth and Employment has hired and trained senior secondary school students to become extension workers. These students conduct tasks for different government agencies, with health as one of the sectors, thus becoming health extension workers (HEWs).

NRCs are supposed to be staffed by one nutrition officer (requiring a bachelor's degree) and one nutrition technical officer (requiring a two-year diploma). In reality, they often have just one officer, usually the less-qualified nutrition technical officer. A nurse may run the NRC. The NRC health worker may be assisted by community volunteers or HEWs.

The community outreach activities often benefit from the supplemental contribution of community health volunteers and community health committees.

Community Screening and Referral Systems

Community screening for acute malnutrition has been limited to child welfare outreach points organised from the health centres, using weight loss or visible wasting as evidenced on a WFA growth chart.

While referral of cases between hospitals and NRCs does occur, NRC links with the communities are nonexistent. Community screening and referral of SAM cases to NRCs would be a challenge in the absence of an institutionalized community outreach system. Moreover, active community screening of SAM would imply an increased caseload, a situation with which the NRC would have difficulty coping. Without community outreach for early detection, referral and follow-up of cases through HEWs or community health nurses and officers linked with community volunteers, it would be difficult for the NRCs to take up outpatient care for SAM.

2.3. Access to CMAM Supplies

Therapeutic foods such as F75, F100, combined mineral and vitamin mix (CMV) and ReSoMal are not available in Ghana. Hospitals and NRCs prepare and administer improved milk recipes, cereal-based porridges and local foods as an improved diet, though this diet lacks the micronutrient content and energy density to be considered therapeutic foods. Even when these institutions produce improved foods, insufficient quantities require that they be administered as a supplement to porridges. NRCs tend to provide two to three wet meals daily, requiring mothers/caregivers to bring their children to the centre between 8 am and 2 pm Monday through Friday. This burden results in high default rates, infrequent attendance and high relapse rates as children will not fully recover despite the weight gain.

Some health professionals have been very innovative. Several initiatives prepare fortified milks and foods based on the F75, F100 and RUTF formulae from the World Health Organization (WHO) guidelines. However, due to the lack of CMV, the actual F75, F100 or RUTF formulae are not achieved. One nutritionist had a local pharmacy producing a mineral mix to mimic CMV, which turned out to be incomplete and very expensive. The Princess Marie Louise Children's Hospital in Accra produces a peanut butter paste in its kitchen based on the RUTF recipe, with an incomplete mineral and vitamin mix. The hospital produces 5 kg of peanut paste every two days that is neatly packed in plastic containers with lids.

An estimate of the expected RUTF needs for the treatment of **all** severe acutely malnourished children under 5⁴ in Ghana in one year would be **958 metric tons**. Calculations are based on the estimated point prevalence rate of SAM augmented by the expected yearly incidence rate, the daily provision of 200 kilocalories of RUTF per kilogram of body weight, an average weight of the affected child population of 8 kg and an average length of treatment of eight weeks. However, it is never expected that CMAM services would cover the entire country or achieve national coverage during the initial years of implementation. On the contrary, CMAM services are expected to start at learning sites and target specific and limited populations in specific locations before gradual scale-up.

WFP provides a fortified supplementary food (e.g., corn-soy blend [CSB])—not a therapeutic food—for use in wet feeding at some of the NRCs. There is a history of producing a fortified blended food (FBF) called Weanimix⁵ in Ghana. Some of the hospitals and health centres have been provided mills for producing these local blends as well as for additional income generation from the milling.

The system of provision of essential drugs is generally well established. Procurement of drugs is organised through central medical stores. No stock-outs in the drug supply were reported in the places that were visited.

Hospitals and NRCs lack infant weighing scales and sometimes infanto-meters (height boards). Patient registers, patient records and statistical forms are not standardised and depend on individual facility efforts.

In contrast, the CRS INAAM program has sufficient therapeutic food and measuring equipment. However, its medical treatment protocol does not include drugs for treating underlying infections. The programme uses MUAC for community screening; however, the MUAC tapes it uses are colour-coded with red measuring up to 125 mm—identifying moderate acute malnutrition (MAM) and SAM—while the cutoff point for severe wasting in use is 115 mm (above the more commonly accepted 110 mm). In addition, this programme has access to 16 metric tons of imported RUTF (Plumpy'nut), of which a certain quantity is ready-to-use supplementary food (RUSF; e.g., Supplementary Plumpy), whose use in the program is unclear.

2.4. Quality of CMAM Services

Due to the lack of national guidelines for CMAM, there are significant variations across facilities in terms of admission and discharge criteria, treatment protocol, patient registration, individual record-keeping and programme monitoring. There is neither a national system of data collation nor surveillance. The ad hoc approach has significant implications for the quality of the individual treatment and for the quality and consistency of the services. For instance, admission and treatment might be based on WFH, WFA, visible wasting or bilateral pitting oedema, weight loss or severe clinical anaemia. Target weights or target WFH (z-score or percentage of the median) generally are not documented in patient registers or records. As a result, progress is often subjectively interpreted as any consistent weight gain, which means discharge criteria are not standardised. While staff might perform competently—i.e., follow the limited guidelines they have—they are significantly hampered by the lack of guidelines.

³ A community health officer is a community health nurse or midwife with additional training.

⁴ RUTF is not administered to children under 6 months; however the RUTF estimates are based on children 0 to 59 months and are therefore slightly overestimated. Neither the Demographic and Health Survey (DHS) nor the MICS provide wasting prevalence rates for the 6- to 59-month-old age group.

2.5. Competencies for CMAM

The June 2007 training workshop was the first introduction to the WHO protocol for the management of SAM.

The lack of national CMAM guidelines equates to inadequate pre- and in-service training (and curricula) for physicians, nurses and nutrition officers. While some facilities benefit from staff that had access to the WHO protocol from the Internet or elsewhere or conducted on-the-job training after the June 2007 workshop, there are no formal curricula or training programs.

The GHS has not profited from the presence of NGO programs for CMAM as seen in countries with recurrent emergencies and high inputs of international expertise (e.g., Ethiopia, Malawi, Niger, Sudan).

3. MAPPING OF HEALTH, NUTRITION AND COMMUNITY ACTIVITIES AND PROGRAMMES

3.1. Outpatient Care for SAM

The CRS (and UNICEF) INAAM program in Upper West region covers 108 target communities in four districts and provides 1,000 kilocalories daily of RUTF free of charge to children 6 to 36 months with a MUAC below 115 mm. A food ration (CSB and vegetable oil) is also given as an incentive to all children attending monthly growth monitoring and promotion services.

3.2. Blanket Supplementary Feeding Programme

The World Food Programme (WFP) supports a blanket supplementary feeding programme (SFP) in the three northern regions in 138 centres covering 170 communities in 17 districts. Pregnant and lactating women (about 10,000) and children 6 to 23 months (about 14,000) receive a monthly dry take-home ration (e.g., CSB, wheat flour) during the lean season from March through September. Children 2 to 5 years (about 36,000) receive wet rations (breakfast and lunch) prepared at the feeding centres by volunteer mothers Monday through Friday year-round. Health services offered at the feeding centres include health and nutrition education, vaccination, deworming and micronutrient supplementation. In addition, a preschool is organized for 4- and 5-year-olds if community volunteers are available. Inputs from the communities are requested in the form of labour and food supplies, such as additional ingredients. WFP procures two-thirds of the food for the SFP locally, with an agreement that 100 percent will be purchased within Ghana by 2010. It is expected that the Ghana government will take over the program in 2010.

3.3. Other Health and Nutrition Programmes

Child survival activities fall under High Impact and Rapid Delivery (HIRD) interventions, supported in part by UNICEF. HIRD activities include promotion of breastfeeding and complementary feeding, distribution of insecticide-treated nets (ITNs), use of oral rehydration solution and other services that address the primary causes of mortality for children under 5. There is a strong emphasis on addressing Millennium Development Goals (MDGs) in Ghana's health system, particularly in reducing child mortality (MDG 4).

USAID-supported programmes include:

- The Community-Based Health Planning and Services Initiative – Technical Assistance (CHPS-TA), a Population Council program, provides support to the national-level CHPS programme in the 30 USAID priority districts in the seven southern regions. It has updated job descriptions for community health officers and volunteers, developed curricula for community health officer schools and updated the community health officer in-service training manual.
- The Ghana Sustainable Change Project (GSCP), an Academy for Educational Development (AED) project, supports communication and social marketing activities in more than 100 sub-districts of the

30 USAID priority districts. GSCP has developed communication materials (e.g., posters, pamphlets, counselling cards) and training materials, as well as behaviour change communication (BCC) messages, primarily focused on reproductive health, child health (particularly IYCF) and HIV/AIDS care and support. GSCP engages communities through community mobilisation campaigns organised through national level stakeholders, regional coordination committees, district level advocacy and sub-district action.

- The Quality Health Partners (QHP) programme of EngenderHealth helps the GHS improve the quality of reproductive and child health services. Recent activities include developing a rapid integrated management of childhood illness (IMCI) course with a shortened curriculum, incorporating IMCI into the national pre-service training curricula for nurses and medical assistants (ancillary position below a nurse), developing quality assurance questionnaires and tools, and supporting regional planning workshops for HIRD interventions.
- Opportunities Industrialization Centers International (OICI) conducts a food security and MCHN programme in northern Ghana. Activities include health and nutrition education, GMP, distribution of incentive food rations for BCC session participants, deworming, and training of community health agents.

Programmes run by World Vision, the Adventist Development and Relief Agency, CRS and others have nutrition components, such as nutrition education, promotion of exclusive breastfeeding (EBF) and complementary feeding practices, and Positive Deviance (PD)/Hearth.

4. SWOT ANALYSIS FOR CMAM

A group of stakeholders involved in nutrition activities in Ghana – comprising the GHS, donors (USAID, the Dutch Embassy), UNICEF, WHO, WFP and NGOs – conducted a brainstorming exercise in August 2007 to review the capacity of the Ghanaian health system in order to introduce CMAM. An analysis of strengths, weaknesses, opportunities and threats (SWOT) was conducted (see the next page) reflecting the following areas:

1. Capacity of the Ghanaian health system for CMAM
2. Capacity for quality CMAM services
3. Human resources development for CMAM
 - a. Capacity of health planners and managers
 - b. Capacity of physicians, nurses (SRN, CHN/CHO, PHN), nutrition officers and nutrition technical officers
4. Capacity of the enabling environment for CMAM

SWOT ANALYSIS FOR CMAM (GHANA, AUGUST 2007)

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ▪ Community outreach points <ul style="list-style-type: none"> - CHPS zones - Health volunteers - Other community programmes ▪ Free treatment for children under 5 (policy) ▪ NGO presence 	<ul style="list-style-type: none"> ▪ No national guidelines or treatment protocols for SAM ▪ Therapeutic feeding supplies unavailable (e.g., F75, F100, RUTF) ▪ No teaching curriculum for SAM (pre-service or in-service) ▪ Lack of equipment (e.g., infanto-meters, scales, MUAC tapes) ▪ Not enough staff ▪ Staff skills and knowledge insufficient ▪ Community awareness of SAM insufficient
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ▪ Government awareness <ul style="list-style-type: none"> - MOH plan of work to address undernutrition - GHS strategy document ▪ Development partners are interested and committed ▪ Community structures: <ul style="list-style-type: none"> - District assemblies/government structures can be engaged - Mother-to-mother support groups ▪ Training could be mainstreamed: in-service and pre-service ▪ Other strong nutrition programmes (e.g., promotion of exclusive breastfeeding) 	<ul style="list-style-type: none"> ▪ Funding <ul style="list-style-type: none"> - Availability - Cost of therapeutic foods: F75, F100, RUTF - Sustainability ▪ Barriers <ul style="list-style-type: none"> - Existing resistance to accessing health services and to long inpatient stays - Acceptability of RUTF ▪ Underlying conditions <ul style="list-style-type: none"> - Food insecurity and poverty - Limited access to clean water and sanitation ▪ Vertical program approach

5. CONCLUSION: DETERMINED NEEDS

The situation analysis confirmed the need to introduce CMAM into Ghana’s health system in a phased manner.

HANDOUT 7.3

ASSESSING THE NUTRITION SITUATION

A. FOR EMERGENCY SETTINGS

Prevalence of acute malnutrition (nutrition surveys) may be used to indicate whether a CMAM programme is needed. However, to better understand the nutritional status of a population and see the big picture, other data and information should be used in addition to prevalence data.

The decision to start a programme to treat acute malnutrition is often based on large numbers of severely malnourished children who need life-saving treatment. Prevalence of acute malnutrition (global acute malnutrition [GAM] and severe acute malnutrition [SAM] rates) can provide a good idea of what is going on at that time. In the past WHO used a decision chart based on prevalence rates of wasting to determine when selective feeding programmes were needed. WHO cutoffs for wasting¹ and mortality rates are still used to indicate a possible emergency, which should be investigated and addressed if necessary.

As a rule of thumb, a GAM rate of more than 15 percent and SAM of more than 2 percent and/or a crude death rate (CDR) > 1/10,000/day might indicate an emergency and suggests further investigation is needed to determine if an emergency nutrition intervention is justified. High GAM and SAM rates might occur in situations that are not considered emergencies. For example, prevalence of acute malnutrition is always high in India and Bangladesh. SAM levels often increase sharply during certain seasons and might be high enough on an annual basis to justify provision of treatment of SAM as part of the routine health services for children under 5. GAM of 5 percent and SAM of less than 1 percent are considered normal for a developing country. The levels of GAM relative to SAM should also be considered. This might provide some indication of what is going on. For example in some countries, HIV has contributed to increasing SAM among children in recent years where previously SAM was not a significant problem (e.g., Mozambique, Zambia, Kenya).

- **If GAM is high and SAM is relatively low:** **It is likely the causal factors are primarily (but not only) due to insufficient access to food (N.E. Kenya).**

If GAM is very high and SAM low, this could be due to high mortality related to SAM.
- **If GAM and SAM are both high:** **This is likely to be due to a combination of food shortages and insufficient health and care practices (Niger, Bangladesh).**
- **If SAM is high and GAM is relatively low:** **This is likely to be due to disease, particularly HIV (Mozambique, Zambia).**

¹ The nutrition situation is also considered serious if GAM is between 10 percent and 14 percent and there are aggravating factors such as a general ration that is below the mean energy requirement, an epidemic of measles or whooping cough, a high incidence of respiratory infections or diarrhoeal disease and/or a CDR > 1/10,000/day. (WHO. 2000. *Management of Malnutrition in Major Emergencies*. Geneva: WHO.)

B. FOR DEVELOPMENT SETTINGS

In development settings, it is important to determine the nutrition situation in the community, district, region or country where you will be working. Service or Programme planners should gather important nutrition information using existing resources such as the Demographic and Health Surveys (DHS), the UNICEF Multiple Indicator Cluster Surveys (MICSs) and any surveys done locally or nationally by the government, district or NGOs. Key data include prevalence of moderate and severe wasting, underweight, stunting and, if available, bilateral pitting oedema. It might also be useful to gather information on illness and micronutrient deficiencies.

Example Nutrition Information from Secondary Sources*

Source	Age Group	Date	Geographic Area	% Wasting (weight-for-height < -2 z-score)	% Severe Wasting (weight-for-height < -3 z-score)	% Stunting (height-for-age < -2 z-score)	% Underweight (weight-for-age < -2 z-score)
DHS	0-59 months	Sept 2006	Eastern Region	8.4	1.2	35.3	22
District Health Office	0-36 months	Aug 2007	Eastern Region	6.2	0.9	36	25
NGO	6-59 months	Dec 2007	District A in Eastern Region	9.4	1.6	NA	NA

* Specify if prevalence estimates are based on National Centre for Health Statistics (NCHS) Reference Population or WHO Growth Standards are used and provide prevalence estimates with 95% confidence intervals.

The above information allows planners to determine how critical the nutrition situation is in the districts or regions for which they are planning. The table below is a WHO reference to determine the significance of the nutrition problem, based on anthropometry. This is just one method of classifying the urgency of a problem; other factors must also be considered.

Prevalence Range WHO Uses to Categorize the Public Health Significance of the Prevalence of Different Measures of Undernutrition*

	% Stunted (height-for-age)**	% Wasted (weight-for-height)**	% Underweight (weight-for-age)**
Low (Acceptable)	< 20	< 5	< 10
Medium (Poor)	20-29	5-9	10-19
High (Serious)	30-39	10-14	20-29
Very High	≥ 40	≥ 15	≥ 30

* The above categorization is not based on correlations with functional outcomes; it simply reflects a convenient statistical grouping of prevalence levels from different countries. (WHO. 1995. Physical Status: The use and interpretation of anthropometry, WHO Technical Report Series.)

** These indicators are expressed as <-2 z-score.

C. TRIANGULATE DATA

When looking at prevalence rates, it is also important to **look at several other sources of information and data**. This is often called **triangulation**.

A joint agency initiative known as Standardised Monitoring and Assessment for Relief and Transition (SMART) has developed a standard methodology and protocol for conducting survey and assessments that incorporate nutrition prevalence data, mortality rates and food security. SMART has been developed for use in crises, but the recommendations for analysis in context apply to non-emergency situations (www.smartindicators.org).

1. Trends over time to see what is “normal”: In many countries, there is a seasonal peak for acute malnutrition at the same time every year. For example, in Malawi, seasonal prevalence of SAM begins to rise in December and fall in April in the pre-harvest season. This happens every year. Looking at trends is important because it can:
 - Show what is considered “normal” for the context
 - Help determine when to plan for expected increases in admissions (increased caseload during peak seasons)

When prevalence and/or admissions increase outside of normal peak periods, this can indicate a possible crisis or changes in access to food and should be investigated. In Malawi, for example, when SAM rates began to creep up in October 2005—well before the seasonal peak—it was clear that this was not the norm. The increase was due to total harvest failure in some areas.

2. Admissions to therapeutic and/or supplementary feeding: Unexpected increases in the number of admissions (e.g., above previous years and/or outside of normal seasonal peaks) can be a useful early indicator of an impending crisis. For example, in Niger in 2005, admissions to therapeutic feeding began to increase sharply much earlier than would be expected. This information can help planners prepare for increased caseloads.
3. Surveillance data (routine screening, growth monitoring and health surveillance data): Severely malnourished children might be detected and referred through ongoing screenings or routine growth monitoring. Health surveillance data can provide information on disease outbreaks and epidemics.
4. Death (mortality) rates: It is vital to know whether death rates are above acceptable levels. In extreme cases, prevalence rates might appear low due to high mortality rates.
5. Morbidity rates and trends: There might be seasonal trends for illnesses such as diarrhoea and malaria or there might have been a recent epidemic (e.g., measles, whooping cough). This could temporarily lead to a sharp increase in the number of acutely malnourished children.
6. Contextual analysis: It is important to look at what is going on in the community. Some key questions to ask are:
 - Are there population movements that could lead to a sudden influx?
 - Are there hot spots where acute malnutrition is always higher than other areas?
 - Are other services or programmes being implemented?

D. CAUSES OF UNDERNUTRITION IN THE COMMUNITY

In addition to triangulating data and information to confirm their accuracy, it is useful to understand the causes of undernutrition (UNICEF, see **Module 2, Handout 2.1 Causal Framework of Undernutrition**) and the significance of factors that contribute to undernutrition. This will help planners

to better tailor CMAM services to the needs of the community. Below are examples of information to access and triangulate, by source.

Population surveys: 6-59 months population size and structure, geographic differences, prevalence of illness (diarrhoea, measles, malaria, acute respiratory infections), disease outbreaks, care and feeding practices, health service provision, access to health services

Surveillance and early warning systems: Seasonal norms and patterns, food security information, household food availability and consumption patterns, household food access, household food diversity, trends (according to seasonal norm)

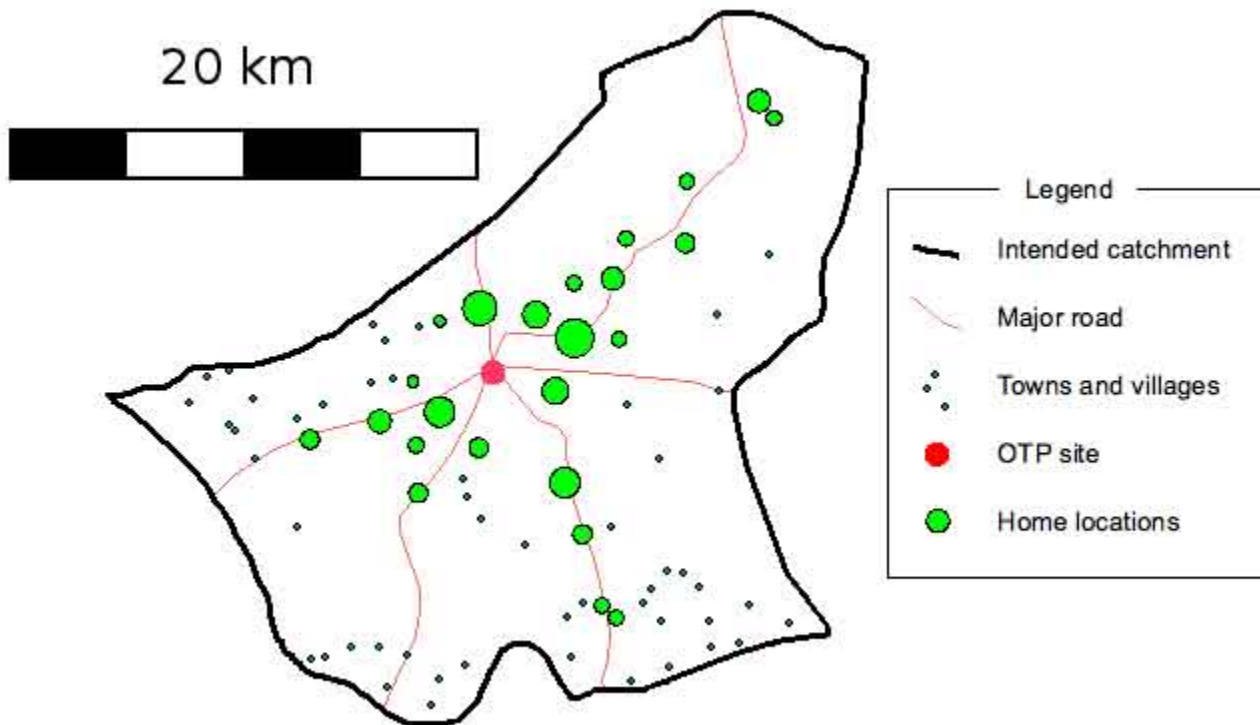
Other sources: Care and feeding practices, community norms, barriers to access, causes of defaulting learned from survey reports, focus group discussions, key informant and individual discussions, reports, publications or other sources

HANDOUT 7.4 MAPPING MATRICES

It is important to know and map how the district health system is structured, what other services and initiatives exist and who is doing what, where and how. CMAM services should complement and link with existing programmes. Use the matrices below and separate sheets to describe or list this information.

Develop a spatial map of the district showing district and sub-district boundaries, major roads, major settlements, rivers, health facilities and other relevant information.

EXAMPLE OF SPATIAL MAPPING (SOURCE: M. MYATT, SQUEAC)



MATRIX I: CMAM, HEALTH AND NUTRITION MAPPING

District:
Organization:
Date:

CMAM

Sub-district	Communities (list all by name)	Total Population (add source and date)	Population Under 5 (% of total pop)	Expected Number of Children With SAM (prevalence at start/certain date)	Expected Number of Children With SAM in One Year (prevalence plus incidence*)	Health Facilities (list type per location)	Inpatient Care Sites	Outpatient Care Sites	Supplementary Feeding Sites	SAM/MAM Service Start Date (per site and partner agency)	Market Place and Day
Sub-district 1	1										
	2										
	3										
	4										
	5										
Sub-district 2	1										
	2										
	3										
	4										
	5										
Sub-district 3	1										
	2										
	3										
	4										
	5										

* To determine the expected number of children with severe acute malnutrition (SAM) in one year, see **Handout 7.10 Calculating Estimated SAM Cases.**

HANDOUT 7.5

CAPACITY GRID FOR CMAM AT THE DISTRICT LEVEL

(NOTE: ADD SUPPLEMENTARY FEEDING IF APPROPRIATE)

7.5

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
ENABLING ENVIRONMENT FOR CMAM						
<p>CMAM technical leadership (at district level and links with a national/ regional technical task force):</p> <p>CMAM coordination system (at district level and links with a national/ regional coordination system):</p> <p>CMAM guidelines: -Do CMAM national guidelines exist? -Are they disseminated and in use?</p> <p>Funding: -Can costs for outpatient care supplies, supervision and training (including ready-to-use therapeutic food [RUTF]) be incorporated into the district budget?</p> <p>Free treatment for children under 5 with severe acute malnutrition (SAM) in place:</p> <p>Contingency planning: -How will the district manage seasonal and unexpected increases in caseload?</p>						

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
ACCESS TO CMAM SERVICES						
<p>Learning site: -Is there a learning site for inpatient and outpatient care?</p> <p>Community outreach: -Are community assessment and mobilisation provided? -Are effective active case-finding and referral and follow-up home visits of problem cases in place?</p> <p>Inpatient care: -Is there inpatient care for children with SAM with medical complications and infants under 6 months with SAM?</p> <p>Outpatient care: -Is there outpatient care for children with SAM without medical complications?</p> <p>Referral mechanisms: -What mechanisms exist to ensure children can be referred from outpatient care to inpatient care and vice versa? -How are they transported?</p> <p>Staff: -Are there enough qualified health care providers to provide inpatient and outpatient care? If not, can more be trained? -Is a district health manager appointed as a CMAM focal point? -Is a district community outreach coordinator appointed as a CMAM focal point? -Are there enough outreach workers (e.g., community health workers [CHWs] and/or volunteers) for screening and referral in the community? If not, can more be trained?</p> <p>Integration into routine health services (e.g., prevention of mother-to-child transmission of HIV [PMTCT], growth monitoring and promotion [GMP], integrated management of</p>						

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
ACCESS TO CMAM SUPPLIES						
<p>Procurement system: -Who procures therapeutic food and medicines and other equipment and supplies?</p> <p>Management system for supplies: -Is there a reliable supply of RUTF? -Is there a reliable pipeline for essential drugs? -Where will outpatient care treatment cards, RUTF ration cards and referral slips come from?</p> <p>Storage: -Do health centres have storage capacity?</p> <p>Transportation: -Is there transportation (and a budget) to bring RUTF and medicines to health facilities?</p>						
QUALITY OF CMAM SERVICES						
<p>Adherence to national and international guidelines and treatment protocols:</p> <p>Support and supervision system: -For health care providers at the health facility? -For outreach workers (e.g., CHWs, volunteers) in the community?</p> <p>Individual monitoring of cases: Registration, treatment cards, ration cards</p> <p>Monitoring and reporting system of services with standardised tools: -Tally sheets, monthly site report</p> <p>Links with national health management information system (HMIS):</p> <p>Evaluation of the effectiveness of services (e.g., performance, coverage; barriers to access; causes of defaulting, non-response and death):</p>						

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
COMPETENCIES FOR CMAM						
<p>Pre-service training: -Is management of SAM and MAM part of the training curriculum of health professions?</p> <p>In-service training: -For inpatient and outpatient care, and at learning sites?</p> <p>Continuous training (e.g., mentoring, refresher training, learning visits, internships):</p> <p>Accountability: -Is CMAM included in job descriptions?</p> <p>-Information exchange system: (Informative research ongoing)</p>						

HANDOUT 7.6

SWOT ANALYSIS FOR CMAM

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS (SWOT)

7.6

In planning for CMAM services, it is important to identify the current community/district strengths on which you can build a programme and weaknesses that must be addressed. Opportunities to support the programme and threats (constraints) that could impede the success of CMAM services must be explored.

CAPACITY OF HEALTH CARE SYSTEM FOR CMAM		
<i>Current situation</i>	Strengths	Weaknesses
<i>Considerations for future planning</i>	Opportunities	Threats

HANDOUT 7.7

EXAMPLE CAPACITY GRIDS FOR OUTPATIENT CARE AT THE HEALTH FACILITY LEVEL AND FOR CMAM AT THE NATIONAL LEVEL

CAPACITY GRIDS FOR OUTPATIENT CARE AT THE HEALTH FACILITY LEVEL

A. Capacities for Community Outreach*

Elements to Address	Who Currently	How Currently	MOH/ Community Organisation Capacity to Do This	Gaps	Solutions**	Priority
Community assessment						
Community mobilisation						
Active case-finding						
Follow-up home visits for problem cases (non-responders, defaulters)						
Health and nutrition education in the community						
Supervision of outreach workers (e.g., community health workers [CHWs], volunteers)						
Meetings for feedback and problem-solving with outreach workers						
Feedback from the community on the service/programme						
Ongoing training for outreach workers						
Links with other sectors for community outreach (e.g., community case management, growth monitoring, health and nutrition education, food security, livelihoods, agricultural extension programmes)						

* Trainer: Determine whether filling out the capacity grid is the responsibility of the district health management team or the health facility and adapt accordingly.

** Suggest solutions to modify organisation, management and support; suggest ideas on how to resolve the gaps or what discussions are needed and with whom.

B. Capacities for Implementing Outpatient Care

Elements to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions*	Priority
Screening and registration of children with severe acute malnutrition (SAM)						
Evaluation of the medical condition of child with SAM						
Appetite test						
Referral to inpatient care/hospital						
Giving medicines and ready-to-use therapeutic food (RUTF; according to protocol) to child with SAM						
Individual counselling						
Group health and nutrition education						
Beneficiary monitoring (identify cured, non-response, defaulters)						
Identify problem cases and link to outreach worker for follow-up home visit						
Discharge of beneficiaries						
Fill in tally sheets and site reports						
Supply of medicines						
Supply of RUTF						
Supply of outpatient care treatment cards, RUTF ration cards, monitoring and reporting forms						
Storage of medicines and RUTF						
Stock control for medicines and RUTF						
Ongoing training of health care providers in SAM protocols, monitoring and reporting						
Integration/links with other health and nutrition services and programmes						
Coordination/links with other community services and programmes						

* Suggest solutions to modify organisation, management, protocols and support; suggest ideas on how to address gaps or what discussions are needed and with whom.

C. Capacities for Supervision and Monitoring of Outpatient Care at the Health Facility

Elements to Address	Who Currently	How Currently	MOH Capacity	Gaps	Solutions*	Priority
Support and supervision of health care providers						
Support and supervision of outreach workers						
Completion and collection of tally sheets						
Completion and analysis of monthly site reports						
Checking and collection of RUTF and medicines stock control sheets						
Compilation of stock reports						
Checks on quality of stocks and storage conditions						
Problem-solving and coordination meetings						
Review of progress toward integration objectives						

* Suggest solutions to modify systems, tools and support; suggest ideas on how to address gaps or what discussions are needed and with whom.

CAPACITY GRID FOR CMAM AT THE NATIONAL LEVEL (NOTE: ADD SUPPLEMENTARY FEEDING IF APPROPRIATE.)

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
1. ENABLING ENVIRONMENT FOR CMAM INTEGRATION						
MOH technical leadership role for CMAM (including technical task force chaired by MOH)						
MOH coordination system for CMAM						
National health and nutrition policies and strategic plans reflecting CMAM						
National CMAM guidelines						
CMAM support unit for capacity development and strengthening policy and planning						
National database and repository for CMAM						
Funding for CMAM services and supplies (long term)						
Free treatment for children under 5 (including SAM)						
Contingency plan for CMAM in case of emergency (resources for supplies, expertise, staff, capacity development, logistic support)						
2. ACCESS TO CMAM SERVICES						
CMAM support unit for strengthening implementation of services						
Learning sites (before gradual scale-up and including plan for scaling up)						

Key Elements of CMAM to Address	Who Currently	How Currently	MOH Capacity to Do This	Gaps	Solutions	Priority
CMAM community outreach services in priority districts						
Inpatient and outpatient care sites in priority districts						
Referral system between inpatient and outpatient care						
Adequate/sufficient number of health care providers for CMAM						
CMAM integrated with routine health and nutrition services						
CMAM links with other community services						
3. ACCESS TO CMAM SUPPLIES						
CMAM support unit for strengthening access to CMAM supplies						
Procurement system for CMAM supplies						
Management system for CMAM equipment and supplies						
National production of RUTF ongoing, with capacity to cover country needs (United Nations Children’s Fund [UNICEF]-certified)						
4. QUALITY OF CMAM SERVICES						
CMAM support unit for strengthening quality of services						
Adherence to national and international CMAM guidelines and standardised treatment protocols						
Support and supervision system for implementation of services (e.g., for case management, organisation of services)						
Standardised system and tools for monitoring and reporting of services						
National health management information system (HMIS) includes SAM						
Evaluation system to analyse effectiveness						
5. COMPETENCIES FOR CMAM						
CMAM support unit for strengthening capacity development						
Pre-service training of health professionals includes CMAM						
In-service training system of health professionals includes CMAM						
CMAM learning site (learning visits, internships)						
Accountability for CMAM (national job description adopted)						
Information exchange system for CMAM (sharing evidence and lessons learned)						
Informative research system						

HANDOUT 7.8

USING A LOGICAL FRAMEWORK FOR CMAM

A. STEPS FOR DEVELOPING A LOGICAL FRAMEWORK

A simplified planning chart can help planners think through the CMAM service/programme goal, objectives, indicators and assumptions, and how to measure whether the service/programme is achieving its aims. The goal, service objectives, outcomes and activities are determined based on the situation analysis.

Steps:

1. Defining a goal (population level)
2. Defining objectives
3. Determining outcomes
4. Determining activities/outputs
5. Identifying performance and output indicators
6. Determining inputs

Defining a goal for CMAM: This should be a statement about the service/programme's broad aims. The service objectives (below) defined will directly contribute to this goal.

Example of a goal: To reduce mortality and morbidity associated with severe acute malnutrition (SAM) in District X

Defining CMAM objectives: This should be a more specific statement about what the service/programme hopes to achieve. The objectives of the CMAM service/programme must be clearly defined and measurable, and must directly contribute to achieving the stated goal. This will depend on the context. The objectives will determine what strategy and activities to plan for and what indicators to select to monitor the service/programme.

Example of an objective: To increase the proportion of children with SAM in District X who are receiving effective treatment through CMAM

Determining outcomes: The expected outcomes will relate to the service/programme's performance. The outcomes will likely encompass the components of CMAM: community outreach, inpatient care, outpatient care and possibly services/programmes to manage moderate acute malnutrition (MAM). The outcomes will focus on what each component actually achieves.

Examples of outcomes:

- To conduct effective community outreach in five villages in District X
- To provide effective outpatient care for severely malnourished children (6 to 59 months) without medical complications in District X
- To provide effective inpatient care for severely malnourished children (0 to 59 months) with medical complications as part of routine health services for children under 5

Determining activities/outputs: The activities or outputs are what the service/programme must do to achieve the expected outcomes and objectives. Much of the service/programme planning will be determined by specific activities.

Examples of activities:

- Establishing X number of sites
- Training X number of health care providers in CMAM,
- Recruiting and training X number of volunteers in community outreach
- Sensitising X number of communities

Identifying performance and output indicators: Indicators will measure the service/programme's performance (are the objectives achieved?) and outcomes (have the planned activities successfully been completed?).

Determining inputs: Inputs are the resources that a service/programme needs to implement its planned activities/outputs. Inputs could include human resources, financial resources, equipment, monitoring/reporting tools and guidelines.

B. CMAM ACTIVITIES/OUTPUTS

See **Handout 7.9 Example Logical Framework for CMAM.**

Activities/outputs are identified based on the findings of the situation analysis (assessment of existing capacities and needs). Activities/outputs should help:

1. Strengthen the enabling environment
2. Develop and strengthen access to CMAM services
3. Ensure access to CMAM supplies
4. Strengthen quality of CMAM services
5. Develop and strengthen competencies for CMAM

C. CMAM INDICATORS

The indicators selected will depend on the objectives and activities/outputs. There are two basic types of indicators: **performance indicators** and **output indicators**.

Performance indicators measure whether a CMAM service/programme has achieved its objectives and planned outcomes. They are measured in percentages.

- If the objectives or outcomes include increasing access to or coverage of CMAM services, it will be necessary to measure whether the programme is achieving them. The best way to do this is through a coverage survey. International minimum standards for therapeutic feeding programmes, established by the Sphere project for emergency settings, suggest that in emergencies the service/programme coverage in rural, urban and camp contexts should be 50, 70 and 90 percent, respectively, of the total population of children under 5 with SAM. Comparable coverage standards do not currently exist for routine, non-emergency CMAM programmes.

Note: Methods to determine coverage for CMAM have been developed (e.g., population survey with Centric Systematic Area Sampling [CSAS]) and more simple methods are being investigated. Cruder methods, such as comparing actual admissions to expected caseload (based on estimated prevalence and incidence), can be used to estimate coverage for monitoring purposes in between population surveys. Exhaustive screening in communities selected for this purpose can also provide useful information on coverage.

- If the objectives or outcomes include providing effective inpatient and/or outpatient care for children with SAM, it will important to measure the proportion of children receiving CMAM inpatient and outpatient care services who recovered, died, did not respond to treatment or defaulted. Results can be compared with Sphere Minimum Standards. Note that Sphere Minimum Standards might not be applicable to non-emergency contexts. This has not yet been tested. Examples of indicators:

Percentage discharged who recovered	Sphere > 75%
Percentage discharged who died	Sphere < 10%
Percentage discharged who defaulted	Sphere < 15%
Percentage discharged as non-recovered	No Sphere indication
- Additional indicators will depend on the specific objectives and expected outcomes and what is useful to measure to track progress in achieving those aims. Other indicators that might be useful involve quality of services, such as the percentage of children referred by community volunteers who are admitted to outpatient care or the percentage of children requiring follow-up who receive an appropriate follow-up home visit.
- When evaluating the overall performance of CMAM services for SAM specifically, indicators for all objectives should be considered.

Output indicators measure whether a programme has successfully completed the planned activities/ outputs that are necessary to achieve the established goals and objectives. Output indicators are measured in numbers or percentages and should be specific to the activities/outputs established.

Examples of output indicators include:

Number of health facilities with established outpatient care

Number of children with SAM admitted to outpatient care

Number of children with SAM referred to inpatient care

Number or percentage of health care providers trained and active in SAM case management

Number or percentage of community health workers (CHWs) trained and active in community outreach

Number or percentage of volunteers trained and active in community outreach

Barriers to access should be assessed through population surveys and regular meetings with outreach workers (e.g., CHWs, volunteers) and community stakeholders. Possible indicators include:

- Number and percentage of children under 5 screened
 - Number and percentage of children under 5 with SAM identified and referred for treatment
 - Number and percentage of children under 5 with SAM referred for treatment and admitted
- Number of meetings (include timeframe) between outreach workers and the community

HANDOUT 7.9

EXAMPLE LOGICAL FRAMEWORK FOR CMAM

EXAMPLE OF STEPS FOR DESIGNING CMAM AT THE DISTRICT LEVEL USING A LOGICAL FRAMEWORK

7.9

Note: This simplified framework focuses on outpatient care and on one outcome as an example. CMAM programmes will have multiple activities for each planned outcome.

	INDICATORS	INFORMATION SOURCE	ASSUMPTIONS
<p>PROGRAMME GOAL: What are the broad aims of the programme?</p> <p>To reduce district-level mortality and morbidity associated with severe acute malnutrition (SAM)</p>			
<p>OBJECTIVE 1: What are the specific aims of the CMAM service or programme?</p> <p>To increase the proportion of children with SAM in the district being effectively treated through CMAM</p>	<p>PERFORMANCE INDICATOR: % of children with SAM in the district receiving CMAM services_</p> <p>In CMAM services:</p> <ul style="list-style-type: none"> • % discharged recovered • % discharged non-recovered • % discharged died • % discharged defaulted 	<ul style="list-style-type: none"> • Coverage surveys • CMAM tally sheets and monthly site reports 	<ul style="list-style-type: none"> • Caseload remains at manageable levels (< 30 children/ week) • Community outreach, screening and referral systems are adequate
<p>OUTCOME 1: What can specific CMAM components do to help achieve the service objective?</p> <p>Provide effective outpatient care services to children 6-59 months in District X</p>	<p>PERFORMANCE INDICATORS: In outpatient care:</p> <ul style="list-style-type: none"> • % discharged recovered • % discharged died • % discharged defaulted • % discharged non-recovered • average length of stay (LOS) • average weight gain (AWG) <p>(Note: It is also useful to report changes in these indicators.)</p>	<ul style="list-style-type: none"> • Tally sheets • Monthly site reports • Outpatient care treatment cards 	<ul style="list-style-type: none"> • Reliable supply of ready-to-use therapeutic food (RUTF) and essential medicines • All necessary equipment is available • Sufficient staffing

<p>OUTPUTS/ACTIVITIES: What will you do to achieve your outcomes and objectives?</p> <p>1) Enabling environment: Provide national guidelines to all established sites</p> <p>2) Access to services: Establish and operate X number of outpatient care sites; Establish community outreach</p> <p>3) Access to supplies: Establish procurement system for RUTF</p> <p>4) Quality of services: Establish supervision system</p> <p>5) Competencies for CMAM developed/strengthened: Train X number of staff on outpatient care at all health centres</p>	<p>OUTPUT INDICATORS:</p> <ul style="list-style-type: none"> ▪ # sites with copies of national guidelines ▪ # functioning outpatient care sites ▪ # sites with access to RUTF and medicines through established procurement system ▪ # supervisors with supervision tools ▪ # and/or % of health care providers trained ▪ # and/or % of outreach workers trained ▪ # of community meetings held 	<ul style="list-style-type: none"> • Service/programme records • Monthly site reports • Health management information system (HMIS) 	<ul style="list-style-type: none"> • Ministry of Health (MOH) remains supportive of outpatient care integration • Health facility staff is available for training
---	---	--	---

HANDOUT 7.10

CALCULATING ESTIMATED SAM CASES

7.10

EXAMPLE OF ESTIMATING THE NUMBER OF CHILDREN WITH SEVERE ACUTE MALNUTRITION (SAM) WHO WILL NEED OUTPATIENT CARE IN THE FOLLOWING 12 MONTHS

Total population in target area	300,000
Population age 6-59 months (e.g., 20%, usually is less)	60,000
Prevalence of SAM	2%
Estimated cases of SAM	1,200 (= 60,000 X 0.02)
Estimated new cases to add in 1 year (incidence over 1 year could be 2x the prevalence)	2,400
Estimated number in need of treatment over 12 months	3,600 (= 1,200 + 2,400)
Expected coverage of services	70%
Expected number to be treated in quality CMAM services/programmes	2,520 (= 3,600 x 0.70)
Expected SAM without complications	80%
Expected number to be treated in outpatient care only	≈ 2,000 (= 2,520 x 0.80)
Expected number to be treated in inpatient care + outpatient care	≈ 500 (= 2,520 x 0.20)

- Prevalence data from nutrition surveys indicate the numbers of children with SAM at a given time. For planning purposes, it is important to know incidence, which is the number of new cases occurring every year. As a rough assumption, incidence is about two to three times the prevalence (i.e., new cases are added every four to six months if incidence rate is stable¹).
- Seasonal fluctuations that cause peaks in numbers should be considered in planning overall expected numbers.
- Coverage of CMAM services ideally is at least 70 percent.
- If you do not have access to local nutrition surveys, Demographic and Health Surveys (DHS) or United Nations Children's Fund (UNICEF) Multiple Indicator Cluster Survey (MICS) data will give you an idea of the national and district averages for severe wasting. However, these data do not include oedematous malnutrition (kwashiorkor) or wasting identified by low mid-upper arm circumference (MUAC). Therefore, an adjustment on total expected numbers in need of treatment can be considered.
- About 80 percent of the expected caseload can be treated in outpatient care without any inpatient care; less than 20 percent will need inpatient care for stabilisation.

¹ Incidence is prevalence/average duration of disease (years). Data from two studies suggest that average duration of severe wasting is four to seven months (0.33 to 0.6 years). Beyond this, most children either recover or die. If incidence is stable, the actual number of children to treat in a given country every year would be two to three times higher than what is suggested by a prevalence survey. (A. Briend, communication with author, October 2007.)

HANDOUT 7.11

STAFF NEEDS, ROLES AND RESPONSIBILITIES

Source: *Community-based Therapeutic Care (CTC): A Field Manual*

7.11

I. STAFF NEEDS FOR CMAM

Community Outreach

- A community outreach coordinator
- A team of community outreach workers: community health workers (CHWs) and/or volunteers

Supplementary Feeding

- A team leader (ideally with experience in food distribution)
- Two measurers
- One or two health care providers (nurse)
- One or two general assistants
- One food distributor

Outpatient Care

Appoint in each health facility (and plan rotations if appropriate):

- A qualified health care provider (nurse or medical assistant)
- Two measurers (if weight-for-height [WFH] is used)
- One assistant (if needed due to caseload)

Inpatient Care¹

- Qualified health care providers, at least one per shift for 24-hour care (e.g., nurse, medical assistant, physician, paediatrician)
- Nutrition assistant or assistant health staff
- Support staff
- Liaison staff

An overall CMAM coordinator and a community outreach coordinator must be identified in the district to manage the various components of the services.

Training should be provided to all health care providers and outreach workers. A one-day orientation is given at the start of the service/programme followed by continuous training (e.g., refresher training, mentoring, feedback meetings).

The budget for human resources will depend on where and how the service/programme is being implemented and by whom. Local salaries and per diems should be in line with the norm in the area. If per diems are given for training and allowances provided to Ministry of Health (MOH) staff, these should be based on the MOH's scale.

The above list suggests the need for external human resources, such as in case of emergencies. Otherwise the roles and responsibilities should be allocated to the health care providers who are regular staff members of the health facility.

¹ If outpatient care is functioning well, the inpatient caseload should be low (normally five to 10 patients, depending on the catchment area and prevalence of severe acute malnutrition [SAM]). Therefore, staff roles can be combined.

2. STAFF ROLES AND RESPONSIBILITIES FOR OUTPATIENT CARE

District Health Manager or CMAM Coordinator

- Resource mobilisation and allocation (e.g., human resources, infrastructure, supplies, transportation, training)
- Planning of services
- Support and supervision
- Monitoring and evaluation (M&E)
- Training health care providers

District Community Outreach Coordinator

- Community assessment and mobilisation
- Support and supervision
- Training outreach workers

Health Care Provider (nurse, medical assistant)

- Evaluation of the medical condition (i.e., anthropometry, medical history, physical examination, appetite test)
- Admission of children to outpatient care
- Referral to inpatient care
- Management of SAM (i.e., treatment, prescription of drugs and ready-to-use therapeutic food [RUTF])
- Organisation and supervision of outpatient care initial and follow-on sessions
- Discharge of children
- Monitoring and reporting (i.e., tally sheets, monthly site reporting sheets)
- Monitoring of equipment and supplies
- Training CHWs

CHW

- Anthropometric measurements
- Group nutrition and health education at the health facility
- Community-based nutrition and health education and individual counselling
- Community screening and referral
- Follow-up home visits for problem cases
- Training volunteers

Volunteers

- Community-based nutrition and health education and individual counselling
- Community screening and referral
- Follow-up home visits for problem cases

HANDOUT 7.12

CALCULATING ESTIMATED RUTF NEEDS

7.12

ESTIMATED READY-TO-USE THERAPEUTIC FOOD (RUTF) NEEDS FOR OUTPATIENT CARE PER DISTRICT PER MONTH ARE BASED ON A RUTF DIET (PLUMPY'NUT®) OF 200 KILOCALORIES (KCAL) PER KG PER DAY ON AVERAGE

Each child in outpatient care consumes about 20 packets of RUTF a week. Total consumption in outpatient care per time period is calculated as follows:

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

EXAMPLE

RUTF	
Number of outpatient care beneficiaries	1,000 children
Monthly consumption per child (@20 packets/child/week)	80 packets
Monthly packet consumption for outpatient care	1,000 x 80 = 80,000 packets
Monthly carton consumption for outpatient care	80,000/150 = 533.33 cartons
Monthly net weight (MT) (@13.8 kg/carton)	533.33 x 13.8/1000 = 7.35 MT
Monthly gross weight (MT) (@14.9 kg/carton)	533.33 x 14.9/1000 = 7.95 MT
+ add for contingencies	

HANDOUT 7.13

OVERVIEW OF RESOURCES FOR CMAM

Adapted from *Community-based Therapeutic Care (CTC): A Field Manual*, pages 158-160

7.13

1. STAFF

See **Handout 7.11 Staff Needs, Roles and Responsibilities.**

2. EQUIPMENT AND SUPPLIES

The materials required by the various components of a CMAM service/programme are described below, and detailed lists are given in the respective modules. The following provides an overview of resources needed, in addition to the normal requirements.

- **Community outreach:** mid-upper arm circumference (MUAC) tapes with correct colour-coding, referral slips
- **Supplementary feeding:** MUAC tapes with correct colour-coding and/or mm indication, height boards, scales, registration cards/book, fortified blended foods (FBF; plus sugar and oil for premix), mixing equipment, medicines (as per protocols), tally sheets, site reporting sheets, soap, stationery
- **Outpatient care:** MUAC tapes with mm indication, height boards, scales, medicines (as per protocols), ready-to-use therapeutic food (RUTF), FBF (optional), outpatient care treatment cards, RUTF ration cards, site tally sheets, site reporting sheets, soap (distributed to all beneficiaries at every visit), stationery, thermometer, other (extra soap to compensate mothers/caregivers whose child is referred but not admitted to CMAM is optional)
- **Inpatient care:** MUAC tapes with mm indication, height board, scales, medicines (as per protocols), F75, RUTF, inpatient care treatment cards, site tally sheets, site report sheets, stationery, equipment for preparing F75, cooking equipment (if cooking for mothers/caregivers)

3. TRANSPORTATION

- **Community outreach:** The community outreach coordinator needs transportation to sites and/or communities. Outreach workers (e.g., community health workers (CHWs), volunteers) are from the local or nearby community, so they can normally travel on foot. A transportation allowance is needed for training sessions held in a central location.
- **Supplementary feeding:** Supplies and medicines must be transported to each site, either biweekly or monthly depending on how secure stocks left on site can be. If mobile teams are used, they need daily transportation. Supplies and equipment also must be transported to the site.
- **Outpatient care:** RUTF and medicines must be transported to each site, either weekly or monthly depending on how secure stocks left on site can be. If mobile teams are used, they need daily transportation. Supplies and equipment also must be transported to the site.
- **Inpatient care:** Transportation might be needed for referrals between services.
- **Support, supervision and training:** Extra transportation might be needed for support and supervision if the coordinators cannot link the activity with their ongoing support and supervision duties. Transportation for trainees must be organised if training takes place off-site.

4. PHYSICAL STRUCTURES

- **Community outreach:** No new physical structures are needed because community structures are used.
- **Supplementary feeding:** Many communities have adequate accommodation in existing health facilities, community structures or shaded areas under trees. If not, temporary shelter must be provided. Local materials should be used if possible. Poles and plastic sheeting might be needed.
- **Outpatient care:** Ideally, outpatient care is provided within the health facility as a routine health service. If the caseload is high, outpatient care can be provided in a specific room at the health facility on the outpatient care day. If the caseload is very high, a simple temporary structure can be built or services can be set up under a tree, so children can be assessed out of public view while being protected from rain and sun.
- **Inpatient care:** Ideally, inpatient care is integrated into the paediatric ward or in a separate room of a health facility with 24-hour care. However, an existing facility might need to be rehabilitated or extended to accommodate inpatient care. If the caseload is high in an emergency, a temporary structure must be built to provide adequate shelter.

5. EQUIPMENT FOR OUTPATIENT CARE (PER SITE)

	Item	Amount
1	Files for outpatient care treatment cards	1 per clinic
2	Marker pens (permanent ink)	2
3	Clipboards	2
4	Stapler and box of staples	1
5	Pens	3
6	Scissors	1 pair
7	Notebook	1
8	Calculator	1
9	Small clock with second hand	1
10	Bucket with lid	2
11	Soap for hand-washing	1 bar
12	Small bowl	1
13	Small jug	1
14	Hand towels/paper towels	2
15	Water jug (with lid)	2
16	Plastic cups	10
17	Metal spoons	2
18	Teaspoons or medicine cups	6
19	Thermometer	3
20	Salter scale (25 kg) plus weighing pants	1
21	Height board	1
22	MUAC tape	5
23	Weight-for-height (WFH) table	1
24	Nail clippers	1

Minimum Stock to Keep Topped Up		
1	Outpatient care treatment cards for new admissions	100
2	Outpatient care ration cards for new admissions	100
3	ID bracelets (optional)	100
4	Clear plastic envelopes (for filing treatment cards)	100
5	Bags for carrying RUTF (if required)	100
6	Drinking water	1 jerry can
7	Sugar to make 10% sugar water solution	500g
8	Soap (optional) for children admitted plus extra for children referred from the community who do not meet admission criteria	500 bars
9	RUTF	(refer to Handout 7.12)
10	Medicines and dressings	(see separate lists below)

MEDICINES (per 500 children)

(Note: This list should be adapted to national treatment protocols.)

Routine Medicines		
1	Amoxicillin syrup 125 mg/5 ml	500 bottles
2	Mebendazole 100 mg	4 tins
3	Paracheck (malaria rapid test)	200
4	Fansidar*	1 tin
5	Artesunate tablets*	600 tablets
6	Vitamin A capsules	1 tin
7	Measles vaccine (where not possible to refer to an existing expanded programme of immunisation [EPI])	100 doses

*If artemisinin-based combination therapy blister packs available, 200 kits

Additional Medicines		
8	Chloramphenicol syrup or tablets	100 bottles or 1 tin
9	Tetracycline eye ointment	50 tubes
10	Nystatin suspension	20 bottles
11	Paracetamol syrup or 100 mg tablets	2 bottles or 1 tin
12	Benzyl benzoate 200 ml	100 bottles
13	Whitfield's Ointment	50 tubes
14	Gentian violet (powder)	1 tin
15	Betadine solution	2 bottles
16	Quinine (or suitable 2nd line antimalarial)	1 tin
17	Ferrous folate (or iron sulphate and folic acid) for treatment of anaemia	1 tin
18	Cotton wool	5 rolls
19	Examination gloves (non-sterile)	1 box
20	Medicine bags	100 bags
21	Rehydration solution for malnutrition (ReSoMal)	2 packets

Notes:

- All medicines must be clearly labelled.
- Daily stocks carried should be reviewed after the first month, as requirements will vary depending on the number of admissions.
- Stocks should be kept as low as possible to facilitate storage.

OTHER SUPPLIES

Dressing Materials (where needed)		
1	Gauze 10 x 10	20 packets
2	Small bandages	10 pieces
3	Tape	2 rolls
4	Zinc ointment	10 tubes
5	Normal saline for wounds (100 ml or 200 ml)	10 pieces
6	Dressing scissors	2 pairs

HANDOUT 7.15

MATRIX FOR TRANSITION PLANNING OF CMAM

TRANSITION

7.15

In many locations, CMAM has been initiated by nongovernmental organisations (NGOs) or outside donors in collaboration with the Ministry of Health (MOH) or local/district health office. From the outset, a plan should be in place for the MOH to eventually assume control of the CMAM services.

Transition refers to the process leading up to hand-over, including planning and preparation for the gradual transfer of roles and responsibilities for CMAM services from the NGO to the MOH until hand-over is complete.

EXAMPLE (adapt to the specific context)

KEY ELEMENTS OF CMAM	Status - Who Does Currently	MOH Capacity to Do This	Gaps	Solutions	Timeframe
1. Enabling Environment for CMAM					
CMAM support unit for strengthening policy and planning					
Technical leadership role for CMAM (task force chaired by MOH)					
Coordination system for CMAM (with stakeholder involvement)					
National health and nutrition policies and strategic plans reflecting CMAM					
National CMAM guidelines					
National database and repository					
Funding for CMAM services and supplies (long term) – work plans and budgets					
Free treatment for children under 5 (including severe acute malnutrition [SAM])					
Contingency plan for CMAM in case of emergency					
2. Access to CMAM Services					
CMAM support unit for strengthening implementation of services					
Learning sites before gradual scale-up and plan for scaling up					
Inpatient and outpatient care in priority districts					
Referral system between inpatient and outpatient care					

KEY ELEMENTS OF CMAM	Status - Who Does Currently	MOH Capacity to Do This	Gaps	Solutions	Timeframe
Adequate number of qualified health care providers for CMAM					
CMAM community outreach in priority districts					
CMAM integrated with routine health and nutrition services					
CMAM links with informal health systems					
CMAM links with other community services					
3. Access to CMAM Supplies					
CMAM support unit for strengthening access to CMAM supplies					
Procurement system for CMAM supplies					
Management system for CMAM equipment and supplies					
National production of RUTF ongoing, with capacity to cover country needs					
4. Quality of CMAM Services					
CMAM support unit for strengthening quality of services					
Adherence to national guidelines and treatment protocols					
Support and supervision system for implementation of services					
Standardized system of monitoring and reporting of services					
National surveillance system for SAM in place					
Evaluation system to analyse effectiveness (services' performance and coverage)					
5. Competencies for CMAM					
CMAM support unit for strengthening capacities					
Pre-service training; integration in teaching curriculum of health professions					
In-service training system for health care providers and outreach workers					
CMAM learning site					
Accountability system for promoting positive attitudes for CMAM					
Information exchange and documentation system					
Informative research system in place, promoted and supported					

HANDOUT 7.16

GUIDANCE FOR CONTINGENCY PLANNING FOR CMAM

7.16

Below is a brief overview of a model contingency planning process for humanitarian crises. This information can be helpful to understand the process for contingency planning and response for CMAM. Each step in the process is presented along with some of the major issues associated with the step.

CONTINGENCIES

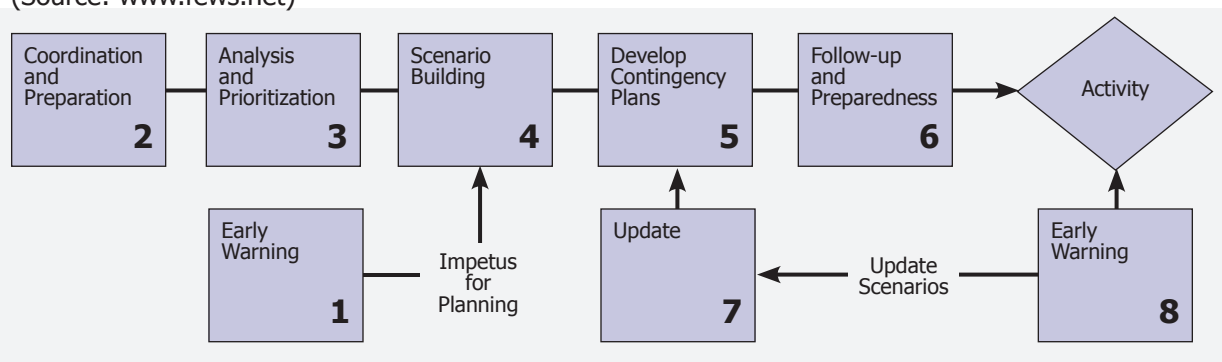
The nutrition situation in any given country is often uncertain. Unexpected events or circumstances, such as civil unrest or natural disasters, can rapidly increase the number of cases of severe acute malnutrition (SAM) among already vulnerable populations. It is important to plan for these contingencies so the system is prepared to handle an increased caseload.

Identify vulnerable districts. For each vulnerable district, it is important to plan for what to do in the event of a major increase in SAM levels, based on several scenarios. The contingency plan for CMAM is part of a broader contingency plan that could include:

- Identifying an emergency coordinator who is responsible for assessing emergency situations and deciding how to respond
- Planning coordination meetings and engaging participants
- Mapping CMAM capacities of the Ministry of Health (MOH) and its partners in the affected district and neighbouring districts
- Mapping health, nutrition and livelihood programmes and partners
- Having written arrangements agreed to by the national and district MOH and health facilities
- Making funding available for emergency equipment and supplies at the health facilities
- Accessing extra CMAM equipment and supplies
- Accessing extra staff with CMAM expertise
- Accessing in-service trainers and mentors

FRAMEWORK FOR FOOD CRISIS CONTINGENCY PLANNING AND RESPONSE

(Source: www.fews.net)



1. Early warning. Early warning triggers the contingency planning process. When the first signs of an emerging crisis are detected, contingency planning should begin or focus on updating relevant contingency plans. For example, when the first signs of drought are detected in an area where people are food insecure, planning for a food crisis should begin.

2. Coordinating and preparing the contingency planning process. An effective contingency planning process involves multiple actors, be they different offices or staff in one organization or staff from different organisations. To ensure that these actors are efficiently integrated into a productive planning process, it is necessary to organise. In essence, this involves making a plan to develop a contingency plan to determine who will do what, when and how.

3.a. Analysing context, hazards and risks. Planning for potential situations that have not yet occurred requires a good understanding of the hazards facing a population and the risks they present. The first substantive step in a contingency planning process is gaining a clear understanding of these hazards and their risks. This is done by collecting and analysing reports, maps, baseline data and other sources of information on the hazards faced in a country or region. This also involves discussing the issues with relevant experts and organisations.

3.b. Prioritising contingencies. Contingency planning can be an intensive process, and it is often done in a busy environment where people have limited time and resources to dedicate to the process. Therefore, planners must select a small number of contingencies and scenarios to address. Criteria for making this decision often include the potential severity of the crisis, its likelihood and the possibility that prevention measures will also guard against other potential contingencies. For example, a plan for dealing with a hurricane could help address flooding in the same area.

4. Building scenarios. A scenario is a set of assumptions on what will happen as the result of the contingency (e.g., hazard, threat, situation) for which you are planning. How many people will be affected? How will they be affected? Where are they situated? How long will they be affected? Plans are developed based on these assumptions. Scenario building is perhaps the most difficult step in the process, because it involves defining what will happen in the future, and, of course, there are infinite possibilities. Experience shows that developing flexible scenarios that support the development of easily adapted plans is the best approach.

5. Developing contingency plan(s). Based on the scenarios that are developed, planners make decisions about what to do to address the situation they have described. For example, if the scenario estimates that 100,000 people will be food insecure and unable to meet their food needs for six months, a food aid program for that period could be conceived. Contingency plans should go beyond the definition of response options and define what would be required to implement the operation programmatically, operationally, logistically and administratively—and ultimately how much it will cost.

6. Implementing follow-up and preparedness actions. During the contingency planning process, actions that would increase preparedness or require follow-up inevitably emerge in discussions. A good contingency planning process will ensure that these steps are recorded, prioritised and implemented. The implementation of preparedness actions can be the most important part of contingency planning in terms of really improving the quality and speed of response. Without this follow-up contingency preparation, planning will be merely a paper exercise.

7. Updating contingency plans. Contingency plans become outdated as events overtake the assumptions originally made. Contingency plans must be regularly updated to ensure they are relevant. This also can facilitate the continuation of the contingency planning process and the relationships developed during the process.

8. Early warning. Early warning also triggers the implementation of contingency plans and preparedness actions identified during the planning process. When signs of an emerging crisis are detected, response measures—outlined in a contingency plan—should be implemented. Following the example above, when monitoring shows crop and pasture failure as the result of the drought, responses such as food aid, livestock health interventions, seeds and input support should start to be implemented according to the plan and the needs.

9. Activating contingency plans. When a crisis materialises, contingency plans must be implemented. Normally, an emergency assessment should be done and used to validate or repudiate the assumptions made in the contingency plan. Based on the results of the assessment, the contingency plan should be adapted, converted into a response plan and implemented.

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

MODULE EIGHT**Monitoring and Reporting on CMAM**

LEARNING OBJECTIVES	HANDOUTS AND EXERCISES
1. Describe the Principles of a Monitoring System for CMAM	
2. Describe How the Individual Child Is Tracked and Monitored in CMAM	Handout 8.1: Monitoring the Individual Child in Outpatient Care Handout 8.2: Registration Numbering System Proposed for CMAM Handout 8.3 Monitoring and Reporting on CMAM Handout 8.4 Filing Outpatient Care Treatment Cards
3. Complete Site Tally Sheets and Site and District Report; Interpret the Findings	Handout 8.3 Monitoring and Reporting on CMAM Handout 8.5 Site Tally Sheet for the Management of SAM Handout 8.6 Site Reporting Sheet for the Management of SAM Handout 8.7 District or National Reporting Sheet for the Management of SAM Exercise 8.1 (a) Outpatient Care Site Tally Sheet and Site Reporting Sheet Exercise 8.2 Completing Site Tally Sheet
4. Calculate and Discuss Service/Programme Performance and Coverage	Handout 1.2 Terminology for CMAM Handout 8.8 CMAM Indicators Handout 8.9 Principles of Coverage Exercise 8.1 (b) Outpatient Care Site Reporting Sheet
5. Monitor and Respond to Barriers to Access	Handout 8.10 Monitoring Barriers to Access Exercise 8.3 Community Meeting Role-Play
6. Explain the Purpose of Support and Supervision Visits and the Role of a Supervisor/Mentor	Handout 8.11 Support and Supervision for CMAM Handout 8.12 Support and Supervision Checklist for Outpatient Care Handout 8.13 Support and Supervision Checklist for Community Outreach Exercise 8.4 Analysis of Site Reports of Three Outpatient Care Sites and One Inpatient Care Site OPTIONAL: Supplemental Reference 8.1 Setting Up a CMAM Monitoring System Using an Electronic Database in Excel
7. Prepare an Outline for CMAM Reporting	Handout 8.14 Guidance on CMAM Reporting
Wrap-Up and Module Evaluation	

HANDOUT 8.1

MONITORING THE INDIVIDUAL CHILD IN OUTPATIENT CARE

- **Individual treatment of children with severe acute malnutrition (SAM) is monitored on an outpatient care treatment card.** Each child with SAM who is admitted to CMAM at an outpatient care site will have an outpatient care treatment card, even if she/he is referred to inpatient care.
- **The child's unique registration number is recorded on treatment cards, referral slips, ration cards and any other records.** This will be the child's identifying number throughout his/her care in CMAM.
- **The outpatient care treatment card is kept on file at the outpatient care site.** Registration in a registration book is usually not necessary.
- **The mother/caregiver receives a ready-to-use therapeutic food (RUTF) ration card that provides a record of the child's progress and the RUTF received at each outpatient care follow-on session.** The card includes key information about the child and basic information on his/her progress: name, age, caregiver (e.g., mother, father, grandmother), place of origin, outreach worker name, date of admission, dates of outpatient care follow-on sessions. At admission, discharge and each outpatient care follow-on visit, mid-upper arm circumference [MUAC], weight, height and ration received are also recorded. Upon discharge, the RUTF ration card is returned to the health facility to be attached to outpatient care treatment card.
- **Individual children are tracked as they are referred to different CMAM services (inpatient care, outpatient care or supplementary feeding) to ensure that admission, discharge and treatment procedures are followed and documented correctly.** This is done by ensuring that outpatient and inpatient care treatment cards and referral slips are filled out properly and always include the child's unique registration number.
- **The referral slip keeps track of children who have moved between outpatient care and inpatient care.** The referral slip should describe which treatment(s) and medicine(s) were given and why, to avoid giving children the same medicine twice.

HANDOUT 8.2

REGISTRATION NUMBERING SYSTEM PROPOSED FOR CMAM

- Each child receives a registration number when she/he is first admitted to outpatient care, inpatient care or supplementary feeding. Each registration number has three parts: the health facility's name or code, the child's individual number and the service code indicating where the child started treatment (inpatient care, outpatient care or supplementary feeding). Most children will be admitted to outpatient care, as it is the most decentralised service and, therefore, the most common and accessible entry point for treatment.
- The code for each site must be established before services at that site start, must be unique for that site and must be used consistently by all staff to avoid confusion as to which site a child is receiving services. The site code should be three or four letters and should be easily understood.
- In some countries, there is a standard numbering system as part of the health management information system (HMIS). The numbering system for CMAM can be adapted to take this into account. In adapting the HMIS numbering system, ensure that the site where each child entered CMAM and his/her initial CMAM service are included. If national guidelines for CMAM exist, they should be followed.

TABLE 1 REGISTRATION NUMBERING SYSTEM

EXAMPLE 1 Standard 3-part numbering system NYL/001/Out	EXAMPLE 2 HMIS numbering system from Malawi 77/88/999/MMYY/OTP
NYL: The code of the site or health facility	77: The 2-digit code for the district
001: Child's individual allocated number (the numbers run sequentially)	88: The 2-digit code for the health facility
Out: Outpatient care, the service where the child started treatment	999: Child's individual allocated number
	MMYY: Month and year of admission
	OTP: Outpatient Therapeutic Programme, the service where the child started treatment

- To ensure effective tracking and follow-up in the community, ALL records concerning the child should follow the same numbering system. This includes registration books (if used), treatment cards, ration cards and referral slips. Other relevant registration numbers—such as those given at other clinics or hospitals, HIV testing and counselling sites or antiretroviral therapy (ART) sites—should also be recorded on the outpatient care treatment cards.
- The registration number must appear on referral slips. The child retains the number upon return.
- Returning defaulters use the same number they had as they are still suffering from the same episode of undernutrition. Their treatment continues using the same treatment card.

- Readmissions (children who meet admission criteria again after being discharged cured, i.e., they relapsed) receive a new number and a new card as they are now suffering from a different episode of undernutrition and need full treatment again.

HANDOUT 8.3

MONITORING AND REPORTING ON CMAM

Routine quantitative service data are collected on site tally sheets that are filled out at the end of the service session and summarised on monthly site reporting sheets.

This information is used to monitor the outputs and performance of the service/programme. Health managers and health care providers at the district or health facility level use the information to determine whether the target population is reached, to learn whether there are areas requiring investigation or strengthening or to monitor the effect of any changes made (e.g., new sites are opened, more community volunteers are added, more supplies are accessible).

SITE TALLY SHEET INFORMATION

(See also **Handout 8.6 Site Tally Sheet for the Management of SAM.**)

Routine service data that are tallied each service/programme session include:

- The **total** number of children under treatment at the **Start of Week [A]**.
- The number of **Total Admissions** by entry category are either:
 - **New cases 6-59 months**
 - **New cases Other:** Adults, adolescents, children > 5 years, and infants < 6 months
 - **Old cases:** Referrals who returned from inpatient care or outpatient care and are readmitted to the site; or Returned defaulters (who did not recover and returned after discharge to continue treatment)
 - **Optional:** New admissions can be categorised by gender or by admission criteria (bilateral pitting oedema, mid-upper arm circumference [MUAC] weight-for-height [WFH]), which can help identify differences in the type of undernutrition in different areas (e.g., cases of bilateral pitting oedema might be much higher in some areas than others or higher in certain seasons)
- The number of **Total Discharges** by exit category:
 - **Cured:** Children who reached the discharge criteria after treatment
 - **Died:** Children who died while in treatment
 - **Defaulted:** Children who left the service/programme before reaching the discharge criteria, children were absent for 3 consecutive sessions
 - **Non-recovered:** Children who do not meet the discharge criteria after four months in treatment (after medical investigation done)
- Other exit category:
 - **Referrals:** Children who left the site temporarily because they were referred to inpatient or outpatient care or for medical investigation

Note: Because services must track children and not double-count them, children who are referred between outpatient care and inpatient care are not considered full discharges; they are on referral status. They remain in the service/programme. In contrast, non-recovered children—who have been referred earlier for medical investigation—leave the service/programme if they are still not responding to treatment after four months.

- Optional quantitative data to collect to monitor effectiveness of treatment include **average daily weight gain (AWG)**, **average length of stay (LOS) of cured discharges** and the **readmission rate**. These can be calculated for all children that are discharged cured or on a random sample. AWG and LOS for cured cases of kwashiorkor or marasmus should be calculated separately.
 - **AWG of cured discharges** in outpatient care is expected to be **above 4 g/kg/day**
 - **LOS of cured discharges** in outpatient care is expected to be **below 60 days**
 - **Readmissions after discharge (or relapse)**: Interventions might be needed at the household level to avoid high readmission rates (number of readmissions per total new admissions); high rates might also mean children have been discharged too soon.

SITE REPORTING SHEET INFORMATION

(See also **Handout 8.6 Site Reporting Sheet for the Management of SAM.**)

The site tally sheet information is compiled in the [site reporting sheet](#), and rates of children discharged as cured, died, defaulted and non-recovered are listed as proportions of the total discharges. Site reporting sheets are sent to the district health office monthly.

- Epidemiological weeks can be used to define calendar months for reporting (e.g., weeks 1-4 = January; weeks 5-8 = February).
- Site reporting sheets feed information into district, sub-national or national reporting sheets.

DISTRICT REPORTING SHEET INFORMATION

(See also **Handout 8.7 District Reporting Sheet for the Management of SAM.**)

- The reporting sheets from all health facilities with inpatient care and outpatient care are compiled in the [district reporting sheet](#), and rates of children discharged as cured, died, defaulted and non-recovered are listed as proportions of the total discharges. The categories 'old cases' and 'referrals' are omitted as these children have not exited the service/programme.
- The compiled reporting sheets can be used at sub-national and national levels, and the reporting period can be adjusted as convenient or appropriate (e.g., month, year).

OTHER INFORMATION

- **Qualitative information is also collected from the communities and beneficiaries of CMAM** to understand the perceptions of the service/programme and to help managers better understand possible problems such as high default rates or low coverage.
- Other information to collect from the mothers/caregivers and/or community:
 - **Reported cause and place of death**: Recording this information on the child's outpatient care treatment card can help identify problems with treatment and use of action protocols, and determine where additional training and supervision might be needed.
 - **Reasons for default and non-recovery**: These could include a high prevalence of tuberculosis (TB) and/or HIV, sharing of food in the household or poor water and sanitation, which might indicate a need for stronger service linkages with other sectors.

- **Supervisory and Community Outreach:** See **Handout 8.10 Monitoring Barriers to Access** and **Module 3: Community Outreach**.
- **Coverage:** See **Handout 8.9 Principles of Coverage**.

USING SITE REPORTS TO DETERMINE SERVICE PERFORMANCE

8.3

- **The health facility site report is developed monthly** (using full four or five epidemiological weeks for the month, determined beforehand at the national level) and should be reviewed by the health facility or district management team during monthly or quarterly meetings.
- **The supervisor or supervisory team from the District Ministry of Health (MOH) will be responsible for reviewing health facility site reports.**
- **Service/programme performance (the proportions of children who were cured, died, defaulted and non-recovered) can be compared with Sphere key indicators (the minimum standards).** The Sphere standards might not be applicable to development services/programmes. However, there are currently no internationally accepted standards for CMAM in non-emergency contexts. Therefore, the Sphere standards can be used as a benchmark.
- **The monthly site reports can be used to address any issues that have emerged.** The information can be useful to hold meetings with the community to find out more about the reasons for specific problems, such as high defaulter rates, or issues such as why mothers/caregivers do not bring their children to outpatient care. This can be done through focus group discussions.
- **The data can be tracked using an electronic spreadsheet. Supplementary Reference 8.1 Setting Up a CMAM Monitoring System Using an Electronic Database in Excel** describes how to use Excel spreadsheets for program monitoring.

COMPILING AND ANALYSING SITE REPORTS FOR NATIONAL REPORTING (WHOLE SERVICE/PROGRAMME)

- **The site reports from the different CMAM sites for the management of SAM (outpatient care and inpatient care) are compiled into overall district, sub-national or national reports.** See **Handout 8.7 District or National Reporting Sheet for the Management of SAM** for an example.
- **Individual CMAM sites send their site tally sheets and/or site reporting sheets to the District MOH.** The district health officer-in-charge is responsible for compiling the individual site reports into a combined report for the district CMAM service as a whole.
- **The district sends its compiled monthly district reports to the MOH at the national level.**
- **Systems should be set up from the beginning to build the reporting capacity of health facilities and the District MOH** to ensure, for example, that it follows national guidelines or a standardized reporting format and that this reporting is done regularly and accurately. Reporting and feedback should be integrated with the existing health management information system (HMIS) where possible. The HMIS might need to be adapted to include SAM indicators.
- **The reports will help to identify issues and gaps and determine whether progress has been made toward accomplishing objectives.**

HANDOUT 8.4

FILING OUTPATIENT CARE TREATMENT CARDS

- All active and past outpatient care treatment cards are kept in files that should be accessible at the health facility at all times. This ensures the ability to monitor children, cross-check readmissions and verify reports.
- There should be two files: one for active cases, with a separate section for referrals, and the other for discharges, with separate sections for cured, died, defaulted and non-recovered.

TABLE 1. FILING SYSTEM

FILE 1: ACTIVE CASES	FILE 2: EXITS
<p>Sections:</p> <p>Children with SAM currently in treatment Note: Mark the outpatient care treatment cards of children who are not responding well and need follow-up home visits and of absentees (children who have missed one or two outpatient care follow-on visits).</p> <p>Separate section: Referrals awaiting return: children who have been referred to inpatient care or for medical investigation</p>	<p>Sections:</p> <p>Cured: children who reached the discharge criteria and exited the service/prorgamme Note: Check this file for any readmissions after default as the same outpatient care treatment card should be used.</p> <p>Died: children who died while in treatment</p> <p>Defaulted: children who have been absent consecutive sessions</p> <p>Non-recovered: children who did not respond after four months in treatment despite referral for medical investigation</p>

- **Referrals to inpatient care:** The “referrals awaiting return” file should be checked regularly. The child should receive a follow-up home visit by outreach workers (e.g., community health workers [CHWs], volunteers) if she/he does not return to outpatient care from inpatient care within two weeks. If the child dies in inpatient care, the outpatient care treatment card is filed under “died.”
- **Defaulted (absent for three consecutive sessions):** Children who defaulted should receive a follow-up home visit, and their mothers/caregivers should be encouraged to return to CMAM services. The reason for default should be investigated by the outreach worker, reported to the health care provider and recorded on the child’s outpatient care treatment card. Steps should be taken to address the cause of the default.
- **Died:** A record of the child’s symptoms and diagnosis should be recorded on the outpatient care treatment card and used to identify any problems with the treatment or the action protocol.

- Children who are not responding well and need a follow-up home visit: When children are not responding well in the service/programme and the action protocol indicates that follow-up at home is needed (e.g., if the child has lost weight), the outreach worker should identify and report to the health care provider all possible reasons the child is not recovering. The health care provider records this information on the child's outpatient care treatment card and uses the information to decide whether to refer the child to inpatient care or for further medical investigation. Smooth communication channels between outpatient care health care providers and outreach workers are essential for requesting follow-up home visits and monitoring children, especially when outreach workers cannot attend the outpatient care session.

HANDOUT 8.5

SITE TALLY SHEET FOR THE MANAGEMENT OF SAM

HEALTH FACILITY NAME					
DISTRICT					
SITE		Outpatient care	Inpatient Care		
WEEK					TOTAL
DATE					
TOTAL START OF WEEK (A)					
New Cases 6-59 m Bilateral Pitting Oedema (B1a)					
New Cases 6-59 m MUAC/WFH (B1b)					
Other New Cases (adults, adolescents, children > 5 y, infants <6 months) (B2)					
Old cases: Referred from Outpatient or Inpatient care; or Returned defaulters (C)					
TOTAL ADMISSIONS (D) [D=B+C]					
Cured (E1)					
Died (E2)					
Defaulted (E3)					
Non-recovered (E4)					
REFERRALS TO OUTPATIENT OR INPATIENT CARE (F)					
TOTAL DISCHARGES (E)					
TOTAL EXITS (G) [G=E + F]					
TOTAL END OF WEEK (H) [H=A+D-G]					

HANDOUT 8.6

SITE REPORTING SHEET FOR THE MANAGEMENT OF SAM

SITE REPORTING SHEET

MONTHLY SITE REPORT FOR MANAGEMENT OF SAM

SITE	<input style="width: 90%;" type="text"/>	IMPLEMENTED BY	<input style="width: 90%;" type="text"/>				
REGION	<input style="width: 90%;" type="text"/>	MONTH / YEAR	<input style="width: 90%;" type="text"/>				
		TYPE OF MANAGEMENT (CIRCLE)	<input type="radio"/> Inpatient <input type="radio"/> Outpatient				
DISTRICT	<input style="width: 90%;" type="text"/>	ESTIMATED MAXIMUM CAPACITY	<input style="width: 90%;" type="text"/>				
		ESTIMATED TARGET malnourished <5s (based on latest survey data and admission criteria)					
		RUTF CONSUMPTION	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Packets/pots</td> <td style="width: 50%;">kg equivalent</td> </tr> <tr> <td><input style="width: 90%;" type="text"/></td> <td><input style="width: 90%;" type="text"/></td> </tr> </table>	Packets/pots	kg equivalent	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
Packets/pots	kg equivalent						
<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>						

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)				REFERRAL (F) to inpatient or outpatient care	TOTAL EXITS (G) (E+F=G)	TOTAL END OF THE MONTH (H) (A+D-G=H)
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)			
<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>	<input style="width: 90%;" type="text"/>
					%	%	%	%			
					TARGET (Sphere Standards)	>75%	<10%	<15%			

E1: Cured = reaches discharge criteria
E3: Defaulted = absent for 3 consecutive sessions
E4: Non-recovered = does not reach the discharge criteria after 4 months in treatment (after medical investigation)

HANDOUT 8.7

DISTRICT REPORTING SHEET FOR THE MANAGEMENT OF SAM

DISTRICT (STATE OR NATIONAL) REPORTING SHEET (COMBINING INPATIENT CARE WITH OUTPATIENT CARE)

**(PERIOD/YEARLY) REPORT FOR MANAGEMENT OF SAM IN CMAM
(COMBINING INPATIENT CARE WITH OUTPATIENT CARE)**

COUNTRY/STATE/DISTRICT		IMPLEMENTING PARTNERS	
NUMBER OF TREATMENT SITES			REPORTING PERIOD
NUMBER OF OUTPATIENT CARE SERVICES			
NUMBER OF INPATIENT CARE SITES			
ESTIMATED MAXIMUM CAPACITY			
ESTIMATED TARGET; Children with SAM < 5 years of age in a given period			
ESTIMATED COVERAGE			
RUTF CONSUMPTION			

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		TOTAL ADMISSION (B)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)		CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
				%	%	%	%
				TARGET (Sphere Standards)	>75%	<10%	<15%

HANDOUT 8.8

CMAM INDICATORS

There are two basic sets of indicators: **performance indicators** and **output indicators**.

1. Performance indicators (or outcome indicators) measure whether a CMAM service/programme has achieved its objectives and planned outcomes, which are measured in percentages.

- These indicators tell how many children with SAM (and proportion in percentage) who are enrolled in the service/programme are discharged as cured, died, defaulted or non-recovered. Indicators for outpatient care and inpatient care per district or at the national level will be merged to evaluate the overall performance of therapeutic care for SAM. Results can be compared with international minimum standards for therapeutic feeding programmes in emergency settings, established by the Sphere Project. These Sphere minimum standards might not be applicable in non-emergency contexts, but this has not yet been tested.

% cured (or recovered)	Sphere minimum standard: > 75%
% died	Sphere minimum standard: < 10%
% defaulted	Sphere minimum standard: < 15%
% non-recovered	No Sphere indication

- In addition, it is important to determine whether the service/programme is achieving its aims, in terms of **access and utilization (coverage)**. The best way to do this is through a population-based coverage survey. In rural contexts, the programme should achieve at least 50 percent coverage of the total eligible population— malnourished children under 5— according to Sphere minimum standards.

Simple methods to determine coverage without conducting an expensive coverage survey are being investigated. Cruder methods, such as comparing actual admissions to the expected caseload (based on estimated prevalence and incidence), can be used to estimate coverage for monitoring purposes, in between population surveys. Exhaustive screening in purposively selected communities can also provide useful information on coverage.

- The optional indicators of **average daily weight gain (AWG)** and **average length of stay (LOS) of cured children** could be calculated for all children or a random sample of children (new cases only) who are discharged cured. The indicators are calculated for marasmus and kwashiorkor cases separately.

Note: AWG and LOS for outpatient care are not essential information but can provide information on the effectiveness of treatment.

- The **AWG of cured children** in outpatient care is expected to exceed 4 g/kg/day (the Sphere minimum standard for AWG based on traditional centre-based inpatient care is at least 8 g/kg/day). A low AWG could indicate factors such as a high absence rate, high default rate, ineffective treatment, sharing of ready-to-use therapeutic food (RUTF) and/or non-compliance to the treatment protocol.

To calculate AWG, first determine weight gain of each cured child in the sample: Weight gain (g/kg/day) is [discharge weight in g – minimum weight in g] divided by [minimum weight in kg x

number of days between minimum weight and discharge day]. AWG is the sum of the weight gains (g/kg/day) in the sample divided by the number of cured children/treatment cards per category (marasmus or kwashiorkor) in the sample.

- The **LOS of cured children** in outpatient care is expected to be less than 60 days. A long LOS might be the result of factors such as a high proportion of children who do not recover, frequent absences, defaulting, sharing of the RUTF and/or unresolved illness. A short LOS might indicate that children are discharged too soon, a finding that could be supported by a high relapse rate. The minimum LOS in CMAM if admission criteria are based on low mid-upper arm circumference (MUAC) is two months.

LOS is calculated by adding the length of stay for all cured children in the sample and dividing the sum by the number of cured children/treatment cards per group of cured children in the sample.

2. Output indicators measure whether a service/programme has completed the planned activities/ outputs needed to achieve the established goals and objectives. They are measured in numbers or percentages and should be specific to the activities/outputs established.

Examples of output indicators are:

- Number of health facilities with established inpatient care and/or outpatient care
- Number of children with SAM admitted to inpatient care or outpatient care per time period
- Number of children with SAM under treatment per time period
- Number of children discharged per time period
- Number or percentage of health care providers trained and active in SAM case management in outpatient care
- Number or percentage of health care providers trained and active in SAM case management in inpatient care
- Number or percentage of community health workers (CHWs) trained and active in community outreach
- Number or percentage of volunteers trained and active in community outreach

Additional indicators will depend on the service/programme's aim and monitoring needs. For example:

- Number of children referred by volunteers and admitted to outpatient care
- Percentage of communities in the target area within one day's return walk to CMAM services
- Percentage of health facilities in the district or target area that provide CMAM services
- To assess barriers to access the service/programme, possible indicators include:
 - Number of children under 5 with SAM identified in the community and referred for treatment
 - Number of children under 5 with SAM referred from the community for treatment and admitted
 - Number of meetings between the community outreach coordinator and/or workers and community members (e.g., community leaders, traditional healers and religious leaders, caregivers of beneficiaries and non-beneficiaries) per time period

TABLE I. SUMMARY OF PERFORMANCE INDICATORS

▪ Total number of new admissions
▪ Total number of discharges*
▪ Total number of children with SAM in treatment
▪ Information on new admissions 6-59 months: <ul style="list-style-type: none"> a. Proportion of children with SAM admitted on bilateral pitting oedema, low mid-upper arm circumference (MUAC), low weight-for-height (WFH) b. Proportion of children with SAM admitted by gender

BENCHMARKS	SPHERE STANDARDS (EMERGENCIES)	CMAM (ADAPTED)
% Cured Proportion of children discharged cured, out of total discharges*	> 75%	> 75%
% Died Proportion of children who died while in treatment, out of total discharges*	< 10%	< 10%
% Defaulted Proportion of children recorded as absent for three consecutive sessions, out of total discharges*	< 15%	< 15%
% Non-recovered Proportion of children who had been referred for further medical investigation and are discharged non-cured after four months in treatment , out of total discharges*	< 10%	< 10%
% Coverage Proportion of children with SAM who are in treatment out of total number of children with SAM in the community	50% (rural) 70% (urban)	> 70%
Average daily weight gain (AWG) (calculated from a sample of children cured per category [kwashiorkor or marasmus]) = sum of weight gains in a sample divided by number of children cured or treatment cards in the sample		
Average length of stay (LOS) (calculated from a sample of children discharged cured of kwashiorkor and marasmus) = sum of length of stay in a sample divided by number of children cured or treatment cards in the sample		

* Total discharges comprises the cured, died, defaulted and non-recovered categories.

TABLE 2. SUMMARY OF OUTPUT INDICATORS

▪ Number of functioning outpatient care sites
▪ Number of functioning inpatient care sites
▪ Number of functioning supplementary feeding sites
▪ Number of health care providers trained in outpatient care and referral based on action protocol (plus gender distribution of trainees)
▪ Number of health care providers trained in inpatient care and case management of SAM with medical complications (plus gender distribution of trainees)
▪ Number of CHWs trained in community outreach (plus gender distribution)
▪ Number of volunteers trained in community outreach (plus gender distribution)
▪ Number of communities mobilised

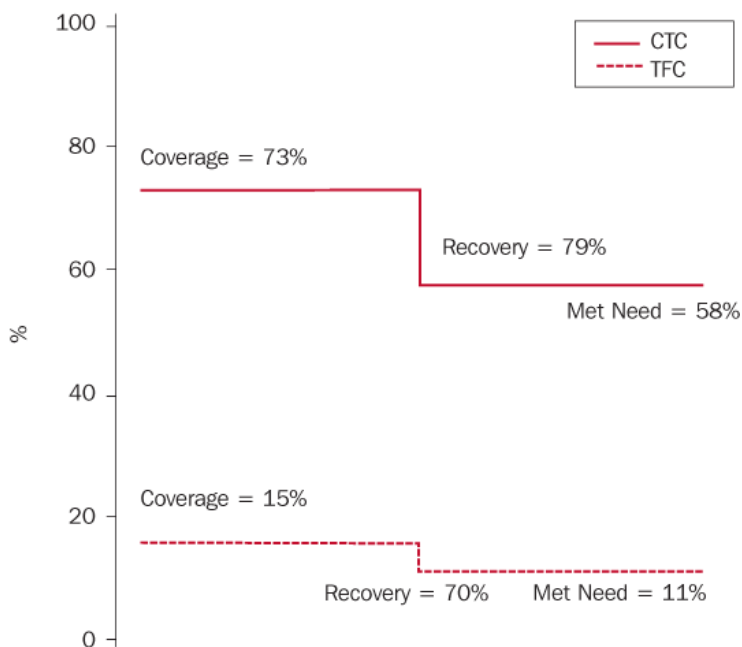
HANDOUT 8.9

PRINCIPLES OF COVERAGE

- The priority in CMAM is to make treatment available to the greatest number of children with SAM possible in an affected population. Therefore, it is important to assess coverage, the proportion of children who need assistance who actually receive care in the service/programme.
- Coverage is usually expressed as a percentage. For example, if there are 100 children with SAM in a service/programme area and 70 of them are in the service/programme, then coverage is 70 percent.
- Coverage is one of the most important indicators of how well a service/programme is **meeting the need**. A service/programme with a high coverage rate and a low cure rate might be better at meeting the need than one with a low coverage rate and a high cure rate (see **Figure 1** for a hypothetical illustration).

“Met need” is the product of the coverage rate and the cure rate. If, for example, a service/programme has a coverage rate of 70 percent and a cure rate of 90 percent then “met need” expressed as a percentage can be calculated as: $70 \times 90/100 = 63\%$, indicating that the service/programme is meeting 63% of the need.
- High-quality services/programmes have both high coverage and high cure rates.
- The coverage of a CMAM service/programme is mapped and estimated using a population-based coverage survey. One sampling method that is commonly used is centric systematic area sampling (CSAS), which refers to the way communities are selected for sampling. New techniques for assessing access and coverage that are less resource-intensive are under development.

FIGURE 1: COVERAGE, CURE RATE AND IMPACT



Source: Community-based Therapeutic Care: A Field Manual, p.116

HANDOUT 8.10

MONITORING BARRIERS TO ACCESS

Since coverage surveys are infrequent and resource-intensive, it is important to monitor barriers to access regularly by keeping an eye on routine data collected by the service/programme.

- **Barriers of special concern:** The starting point for routine monitoring should be the information collected during the community assessment (see **Module 3: Community Outreach**), which can reveal context-specific barriers that must be addressed. For example, if the community assessment showed that certain communities, ethnic groups or locations are marginalised, then enrolment data from these areas should be watched closely. If the assessment indicated that adherence to traditional treatments and healers was particularly strong in a specific area or that tension exists between community leaders and service providers, then the routine monthly and quarterly reporting from these communities should be scrutinised carefully.
- **Common barriers:** In addition to issues highlighted by the community assessment, routine monitoring can reveal additional information on barriers to access, e.g.,:
 - Comparing admission numbers across outpatient care sites, which would show whether the numbers reflect the size of known populations or catchment areas
 - Watching for health facilities or communities where admissions drop abruptly, which could indicate that a supervisory visit is needed to help staff clarify confusing admissions procedures, to correct misconceptions about eligibility in the community or to address other reasons for the decline
 - Monitoring the number of absentees and defaults at the outpatient care sites; for example, an increase could signal a variety of local problems such as interruptions to the supply chain, seasonal barriers to access or poor quality of service or instruction from the outpatient care providers
 - Scrutinising reports to ensure that community outreach is being performed
- **Corrective actions:** Monitoring should be tied to actions designed to address the problem. Corrective actions can usually take place in the context of routine supervisory visits, where service/programme managers meet and mentor local facility-based staff (see **Learning Objective 6**). In devising corrective measures, it is useful for managers to seek non-staff perspectives, including the views of community leaders, people who use the service/programme and those who do not.
- **Local monitoring:** Health care providers should conduct their own routine monitoring. For example, they could divide their catchment area into segments and use registration data to check whether outreach is taking place and whether admissions are coming from the parts of the community they were expected to. Finding solutions to issues flagged by routine monitoring requires health care providers to meet occasionally with community members and outreach workers.

HANDOUT 8.11

SUPPORT AND SUPERVISION FOR CMAM

8.11

- **Support and supervision/mentorship**, meaning continuous support and motivation with the purpose of improving performance, should be the overarching objective of the supervisor or supervisory team.
- Responsibility for supervising all CMAM services/programmes should be established during the planning stages. Supervisors are responsible for ensuring that the service/programme is running smoothly and for overall service quality.
- Supervision visits may be conducted by the district health management team or equivalent and may be part of an integrated supervisory visit, where supervisors check as well on other services.
- Supervisors should ensure that treatment cards are completed and filed correctly. Supervisory visits should include review of the treatment cards, particularly the cards of children who have died, defaulted or not recovered. The supervisor should ensure that admissions and discharges are made according to established criteria and that treatment protocols are performed correctly. The supervisor also should check whether the action protocol is properly followed so that cases are referred and/or followed up where appropriate.
- Supervisors should work closely with the health care providers and outreach workers (e.g., community health workers [CHWs], volunteers) at the outpatient care site to ensure that any issues regarding service delivery, follow-up home visits or the management of individual cases can be identified and followed up.
- Supervisors can use a **supervisor checklist**. This can be adapted to the context and should follow national protocols and the national health management information system (HMIS).
- Supervisors, health care providers and outreach workers (e.g., CHWs, volunteers) should have scheduled meetings to discuss any service/programme issues. The meetings should cover:
 - Issues in service/programme management, including a review of the caseload to determine whether it is manageable for the number of staff available, any expected increases/decreases in the caseload because of the season or a sudden population influx and a contingency plan to handle unexpected changes in caseload or other management challenges
 - Other staff issues
 - Factors that might affect attendance or require adjusting the outpatient care schedule (e.g., when the harvest season approaches)
 - Supply issues and planning
 - A review of deaths in outpatient care and inpatient care to identify any problems with using the action protocol or treatment protocol and to determine whether actions and treatments could have been conducted differently
 - A review of defaults

- A review of children who do not respond to treatment, such as children who do not gain weight or who lose weight
 - A review of non-recovered children (those who do not meet discharge criteria after four months of treatment [after medical investigation is done])
 - A review of referrals to ensure effective tracking within the CMAM service/programme
 - Any issues in the community that might affect service/programme access and uptake (coverage)
 - A review of monitoring and reporting systems
 - A review of site tally sheets and site reports
- It is good practice to keep supervision reports on file to track the progress of individual sites over time.

TABLE 1. SUPERVISOR RESPONSIBILITIES (EXAMPLE FOR OUTPATIENT CARE AT THE HEALTH FACILITY LEVEL)

Observation of Treatment and Completion of Treatment Cards	Tracking and Reporting	
<ul style="list-style-type: none"> ▪ Outpatient care treatment cards, ready-to-use therapeutic food (RUTF) ration cards (and health passports/health cards, where used) are completed ▪ Child’s progress is closely monitored and recorded on his/her treatment card throughout treatment. ▪ Admissions and discharges are made according to protocols and noted on the treatment cards. ▪ Medical assessments (medical history and physical examination) are conducted and noted on the treatment cards. ▪ Routine and supplemental medicines are given and noted on the treatment cards. 	<ul style="list-style-type: none"> ▪ Unique number system is being used. ▪ Referral slips are completed. ▪ Tally sheets are completed, compiled and filed. ▪ Site reports are developed from the tally sheets and sent on time to the appropriate agency (e.g., Ministry of Health [MOH], a specific nongovernmental organisation [NGO], the United Nations Children’s Fund [UNICEF]). 	
<ul style="list-style-type: none"> ▪ Appetite tests are conducted and noted on the treatment cards. ▪ Illnesses reported by the mothers/caregivers are noted on the treatment cards. ▪ Any deterioration in child’s condition is identified, addressed according to the action protocol and noted on his/her treatment card. ▪ Absences and defaults are noted on the treatment cards and followed up. ▪ Referrals are noted on the treatment cards and followed up. ▪ Deaths are noted, and symptoms and the reported cause of death are investigated and recorded on the treatment cards. 	<th>Supplies and Planning</th> <ul style="list-style-type: none"> ▪ RUTF supplies are adequate and stored appropriately. ▪ Request for RUTF supplies is made to the appropriate agency or the MOH. ▪ Supply of essential drugs (routine medicines) is adequate. ▪ Request for medicine supplies is made to the appropriate agency or the MOH. ▪ Stock records for medicines and RUTF are completed. 	Supplies and Planning

TIPS FOR SUPERVISORS/MENTORS

- Supervisory visits are conducted to help health care providers improve their performance. The visits should be seen as an ongoing part of the capacity development strategy and the motivation of health care providers.
- The best way to determine whether a health care provider is performing well is to watch him/her perform on the job. This observation should be followed by a discussion of what was observed and of the data the supervisor collected and recorded on monitoring forms (supervision checklist).
- Supervisory visits are the best time to identify any important areas in which particular health care providers can improve before the next supervisory visit.
- People who are praised for what they are doing well are motivated to continue to do a good job.
- If a health care provider needs to improve on a certain action, the supervisor first should show him/her how to perform the action more accurately. Then the supervisor should ask him/her to repeat the improved action on his/her own while the supervisor observes.
- If a health care provider has several areas to improve on for the next supervisory visit, the supervisor should have the person work on the area that will make the biggest difference if improved. The supervisor should address less important issues after the health care provider has mastered the priority area.

8.11

GUIDANCE CHECKLIST FOR A SUPERVISORY VISIT

During the pre-arranged supervisory visit, the supervisor/mentor:

- Courteously asks to accompany individual health care providers during their regular activities
- Observes the job performance of health care providers
- Stays in the background during the activities and does not interfere or give feedback until all the health care provider's activities are finished
- Discusses job performance with health care provider in private
- Provides feedback to the health care provider
- Praises the health care provider for what she/he is doing well to motivate her/him to continue this performance
- Works with the health care provider to identify important areas for improvement
- Shows the health care provider what has worked well in her/his experience and then gives him/her a chance to try it while observing
- Plays the role of mentor
- Schedules a follow-up supervisory visit

HANDOUT 8.12

SUPPORT AND SUPERVISION CHECKLIST FOR OUTPATIENT CARE

(EXAMPLE)

Health Facility: _____ **Date:** _____

	TOTAL OBSERVED	TOTAL CORRECT	DIRECT OBSERVATION AT SITE	QUALITY			COMMENT
				1 – Done correctly	2 – Done but needs improvement	3 – Not done/done incorrectly	
Number of health care providers (staff) and volunteers present							Staff: Volunteers:
Staff greet mothers/ caregivers and are friendly and helpful							
Registration numbers assigned correctly	Total new admissions in past month						
Registration numbers written on all documents							
Grade of bilateral pitting oedema measured accurately	Total bilateral pitting oedema checks observed						
Mid-upper arm circumference (MUAC) measured accurately	Total MUAC checks observed						
Weight measured accurately	Total weighings observed						
Height measured accurately	Total measurements observed						
Weight-for-height (WFH) classification done correctly	Total WFH checked						
Admission is according to correct criteria	Total treatment cards checked						(Spot check cards)
Medical history recorded accurately	Total medical histories observed						

Physical examination performed and recorded accurately	Total treatment cards checked	Total w/ full exam					(Check card)
Child's appetite tested using ready-to-use therapeutic food (RUTF), upon admission and during outpatient care follow-on sessions							How tested and by whom?
Routine medication given according to protocol and recorded accurately	Total treatment cards checked	Total with correct medicines					
Amount of RUTF needed is correctly calculated	Total treatment and ration cards checked						
Appropriate education given to mothers/ caregivers							Note topic and form:
Follow-up medicines given according to protocol and recorded accurately	Total treatment cards checked						
RUTF ration cards completed correctly	Total treatment cards checked						(Spot check)
Slow responders are identified according to the definition for follow-up and communicated to outreach workers	Total problem cases needing follow-up home visit during past month	Total					
Priorities for follow-up home visits discussed with outreach worker; list of names recorded/ cards marked			List/ clear discussion?				
Beneficiaries discharged according to protocol	Total treatment cards checked						
Correct number of absentees/defaults identified for follow-up home visits	Total number of absentees/ defaults according to treatment cards	Total w/ outcome recorded					
Tally sheets, reporting sheets and stock cards completed correctly	Total weeks reviewed						(Spot check)

HANDOUT 8.13

SUPPORT AND SUPERVISION CHECKLIST FOR COMMUNITY OUTREACH

(EXAMPLE)

Question/Issue	Why?
COORDINATION OF OUTREACH	
Has someone at the facility level been designated as responsible for managing/coordinating community outreach efforts?	Outreach is less clear-cut and less glamorous than clinical work, and health managers and health care providers might need reminding that outreach is also part of CMAM.
Has the job of the outreach worker (case-finder) been clearly defined, including his/her range of responsibilities and level of effort?	Case-finders are sometimes recruited before the amount of work required is specified.
Do outreach workers meet periodically (e.g., monthly, quarterly) with the designated outreach coordinator?	Supervisory meetings might help to motivate case-finders, especially when they are unpaid.
In general, do outreach workers feel they receive adequate information and support from the outreach coordinator?	Supervisory meetings should be an opportunity for two-way communication, not just for giving instructions.
Does the outreach coordinator appear familiar with basic service/programme data (e.g., admissions, absentees, defaults)?	The outreach coordinator should be interpreting this data and using it to adjust outreach methods and priorities.
Does the outreach coordinator have a means of discussing outreach problems or issues with community leaders? Is this being used?	Not all issues can be addressed by discussion between the outreach coordinator and the outreach workers alone. Problems such as defaulting and barriers to access might require the inclusion of community leaders, mothers/caregivers and other stakeholders.
CASE-FINDING	
What form of case-finding is being used locally? Is it still the most appropriate form?	The service/programme might need to alter case-finding methods as levels of severe acute malnutrition (SAM) and community awareness change.
How active are case-finders? Is this level of activity appropriate, given SAM prevalence?	Active case-finding should not be so frequent as to be intrusive, but neither should it be left alone for too long. During periods of high SAM prevalence and while awareness of CMAM is still low, monthly screenings might be appropriate.
FOLLOW-UP HOME VISITS	
Has responsibility for follow-up home visits been clearly designated and accepted in all parts of the health facility catchment area?	Follow-up might break down unless it is worked out in advance who is responsible for following up cases in a given location.

<p>Are absentees and children who defaulted being followed up reliably with follow-up home visits?</p>	<p>Even with clear lines of responsibility, follow-up might not occur. The reasons for this must be understood and addressed.</p>
<p>What do outreach workers and community members say about the value of these visits?</p>	<p>Outreach workers who perform follow-up home visits sometimes need further training on advising and negotiating effectively with families.</p>

HANDOUT 8.14

GUIDANCE ON CMAM REPORTING

MONTHLY SITE OR DISTRICT REPORTS

The monthly report (per site, district or overall at the national level) presents quantitative information on service/programme performance (key performance indicators). It provides basic information to monitor the effectiveness of the CMAM service/programme.

REPORTING ON SERVICE/PROGRAMME PERFORMANCE

The monthly, quarterly or yearly report presents key quantitative and qualitative information and analysis and interprets the information in a comprehensive manner. The report should include the following essential information:

General

- Author of report
- Date and period of reporting
- Geographical catchment area and population
- Name of health facilities with outpatient care and/or inpatient care
- Starting date of services/programmes

Performance and output indicators for the management of severe acute malnutrition (SAM) in inpatient care and outpatient care combined, per time period:

- Number of new admissions
- Number of discharges
- Number of beneficiaries in treatment
- Number and percentage cured
- Number and percentage died
- Number and percentage defaulted
- Number and percentage non-recovered
- Number of referrals to inpatient care or hospital
- Number admitted from community outreach referral
- Number of sites
- Number of new sites added
- Number of staff (e.g., health managers, health care providers, community health workers [CHWs], volunteers) trained

Figures

- Figure (graph) with trends of key performance and output indicators (see example figure below):
 - Bars with new admissions, discharges, beneficiaries in treatment
 - Lines for cured, died, defaulted and non-recovered rates
- Figure (graph) for monthly average length of stay (LOS) and average weight gain (AWG) per category of admission criteria
- Figure (pie chart) with distribution of admission criteria
- Figure (pie chart) with distribution of discharge categories (see example figure on the next page)

Death records: Date, sex, age, reported cause of death, LOS in service/programme

Default records: Date, sex, age, reported/presumed reason for defaulting, LOS in service/programme

Interpretation of overall progress

- Interpret findings on performance and coverage and any qualitative information that was obtained through community meetings, focus group discussions, etc.; then, triangulate the information.
- Discuss challenges, opportunities, lessons learned and success stories.

EXAMPLE GRAPH FIGURES

Figure 1. Number of Admissions, Discharged and in Treatment in CMAM Per Area and Time Period

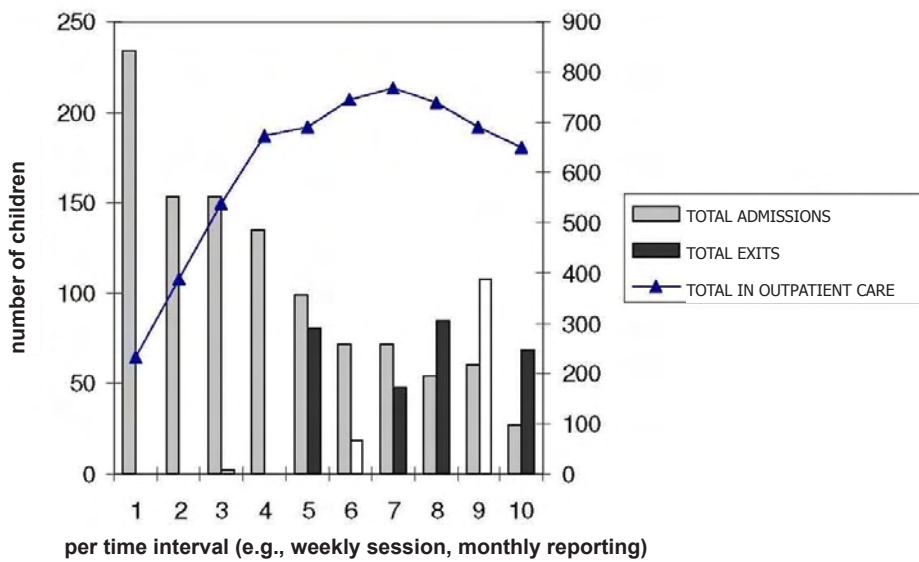
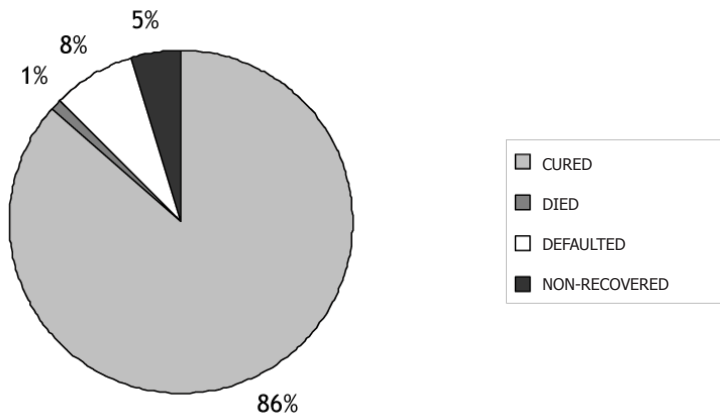


Figure 2. Discharge Categories in CMAM Per Area and Time Period



EXERCISE 8.1

OUTPATIENT CARE SITE TALLY SHEET AND SITE REPORTING SHEET

EXERCISE 8.1(A) OUTPATIENT CARE SITE TALLY SHEET

HEALTH FACILITY NAME		Kawale Health Centre				
DISTRICT		Yirba				
SITE		Outpatient care		Inpatient Care		
WEEK	DATE	wk 32	wk 33	wk 34	wk 35	TOTAL
TOTAL START OF WEEK (A)	25/01/08	50				
New Cases 6-59 m Bilateral Pitting Oedema (B1a)	01/02/08	5	3	2	3	
New Cases 6-59 m MUAC/WFH (B1b)	08/02/08	7	15	1	6	
Other New Cases (adults, adolescents, children > 5 y, infants <6 months) (B2)	15/02/08	0	0	0	1	
Old cases: Referred from Outpatient or Inpatient care; or Returned defaulters (C)		2	1	0	1	
TOTAL ADMISSIONS (D) [D=B+C]						
Cured (E1)		3	8	10	9	
Died (E2)		1	0	0	0	
Defaulted (E3)		2	1	0	1	
Non-recovered (E4)		1	1	0	1	
REFERRALS TO OUTPATIENT OR INPATIENT CARE (F)		1	3	1	2	
TOTAL DISCHARGES (E)						
TOTAL EXITS (G) [G=E + F]						
TOTAL END OF WEEK (H) [H=A+D-G]						

EXERCISE 8.1 (B) OUTPATIENT CARE SITE REPORTING SHEET

MONTHLY SITE REPORT FOR MANAGEMENT OF SAM

SITE	Kawale	IMPLEMENTED BY					
REGION		MONTH / YEAR	February / 2008				
DISTRICT		TYPE OF MANAGEMENT (CIRCLE)	<input type="checkbox"/> Inpatient <input checked="" type="checkbox"/> Outpatient				
		ESTIMATED MAXIMUM CAPACITY					
		ESTIMATED TARGET malnourished <5s (based on latest survey data and admission criteria)					
		RUTF CONSUMPTION	<table border="1"> <tr> <td>Packets/pots</td> <td>kg equivalent</td> </tr> <tr> <td></td> <td></td> </tr> </table>	Packets/pots	kg equivalent		
Packets/pots	kg equivalent						

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)				REFERRAL (F) to inpatient or outpatient care	TOTAL EXITS (G) (E+F=G)	TOTAL END OF THE MONTH (H) (A+D-G=H)
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)			
					%	%	%	%			
				TARGET (SPHERE Standards)	>75%	<10%	<15%				

E1: Cured = reaches discharge criteria

E3: Defaulted = absent for 3 consecutive sessions

E4: Non-recovered = does not reach the discharge criteria after 4 months in treatment (after medical investigation)

EXERCISE 8.2

COMPLETING SITE TALLY SHEET AND SITE REPORT

The organisation is assumed to be an outpatient care site at the Yirba health centre in the Boricha district in the *Southern Nations, Nationalities and People's Region* (SNNPR) in Ethiopia. Six outpatient care treatment cards are filled in for the first two weeks of admission to the Yirba outpatient care site.

HANDOUTS

- Outpatient care treatment cards for six children in the Yirba outpatient care site
- Site tally sheets for Yirba's outpatient care site
- Site report for Yirba

INSTRUCTIONS

Go through the outpatient care treatment cards and the text below, and complete the site tally sheet for each week.

Yirba outpatient care admission pattern:

- Week 1: Three children with mid-upper arm circumference (MUAC) < 110 mm were admitted to the service. Outpatient care treatment cards for all three are attached.
- Week 2: Two children were admitted, one with bilateral pitting oedema +++ and the other with weight-for-height (WFH) < 70% of the median. Outpatient care treatment cards for both are attached.
- Week 3: Two children were admitted, one with bilateral pitting oedema ++ and the other with MUAC < 110 mm. The outpatient care treatment card for the child with bilateral pitting oedema is attached. The other card is not available.
- Week 4: Five children who do not have outpatient care treatment cards are admitted: three with MUAC < 110mm, one with WFH < 70% of the median and one moved in from inpatient care.

WEEK 1: OUTPATIENT CARE TREATMENT CARD

CASE 1 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Neway Mefin			Reg. N°	YRB / 001 / OUTP
AGE (months)	13	SEX	M	DATE OF ADMISSION	04/10/2007
ADMINISTRATIVE UNIT	Boricha			TIME TO TRAVEL TO SITE	1 hour
COMMUNITY	Yirba			FATHER ALIVE	
HOUSE DETAILS/LANDMARKS				MOTHER ALIVE	
NAME OF CAREGIVER				TOTAL NUMBER IN HOUSEHOLD	5
ADMISSION (CIRCLE)	self referral	outreach referral	inpatient care referral	health facility referral	TWIN
RE-ADMISSION (relapse)	no	yes	ADDITIONAL INFORMATION		

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	+ ++ +++				
MUAC (mm)	107	WEIGHT (kg)	6.2	HEIGHT (cm)	62
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC	Weight for Height	OTHER:	

HISTORY

DIARRHOEA	yes	no	# STOOLS/DAY	1-3	4-5	>5
VOMITING	yes	no	PASSING URINE	yes	no	
COUGH	yes	no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?			
APPETITE	good	poor	BREASTFEEDING	yes	no	

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<30	30 - 39	40 - 49	50+	CHEST INDRAWING	yes	no
TEMPERATURE °C	38.2				CONJUNCTIVA	normal	pale
EYES	normal	sunken	discharge		DEHYDRATION	none	moderate
EARS	normal	discharge			MOUTH	normal	sores
ENLARGED LYMPH NODES	none	neck	axilla	groin	HANDS & FEET	normal	cold
SKIN CHANGES	none	scabies	peeling	ulcers / abscesses	DISABILITY	yes	no

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	4/10/2007	200,000 IU			
	Vitamin A (if not in last 6 months)	4/10/2007	125 mg (5 ml) 3x per day	Measles immunisation	no	yes
	Malaria treatment			Fully immunised	no	yes
2nd VISIT:	Mebendazole					

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

WEEK 1: OUTPATIENT CARE TREATMENT CARD

CASE 2 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Yohannes Solomon				Reg. N°	YRB / 002 / OUTP
AGE (months)	16	SEX	M	F	DATE OF ADMISSION	04/10/2007
ADMINISTRATIVE UNIT	Boricha				TIME TO TRAVEL TO SITE	2.5 hours
COMMUNITY	Yirba				FATHER ALIVE	
HOUSE DETAILS/LANDMARKS					MOTHER ALIVE	
NAME OF CAREGIVER					TOTAL NUMBER IN HOUSEHOLD	6
ADMISSION (CIRCLE)	self referral	outreach referral	inpatient care referral	health facility referral	TWIN	yes no
RE-ADMISSION (relapse)	no	yes	ADDITIONAL INFORMATION			

ADMISSION ANTHROPOMETRY							
BILATERAL PITTING OEDEMA	+ ++ +++						
MUAC (mm)	102	WEIGHT (kg)	7.5	HEIGHT (cm)	68	WEIGHT FOR HEIGHT	95
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC	Weight for Height	OTHER:			

HISTORY						
DIARRHOEA	yes no	# STOOLS/DAY	1-3	4-5	>5	
VOMITING	yes no	PASSING URINE	yes	no		
COUGH	yes no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?				
APPETITE	good poor none	BREASTFEEDING	yes	no		
ADDITIONAL INFORMATION						

PHYSICAL EXAMINATION						
RESPIR. RATE (# min)	<30	30 - 39	40 - 49	50+	CHEST INDRAWING	yes no
TEMPERATURE °C	37.6				CONJUNCTIVA	normal pale
EYES	normal	sunken	discharge		DEHYDRATION	none moderate severe
EARS	normal	discharge			MOUTH	normal sores candida
ENLARGED LYMPH NODES	none	neck	axilla	groin	HANDS & FEET	normal cold
SKIN CHANGES	none	scabies	peeling	ulcers / abscesses	DISABILITY	yes no
ADDITIONAL INFORMATION						

ROUTINE MEDICATION: ADMISSION						
ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	4/10/2007	200,000 IU			
	Vitamin A (if not in last 6 months)	4/10/2007	125 mg (5 ml) 3x per day	Measles immunisation	no yes	date:
	Malaria treatment			Fully immunised	no yes	
2nd VISIT:	Mebendazole					

OTHER MEDICATION					
DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

WEEK 1: OUTPATIENT CARE TREATMENT CARD

CASE 3 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Abaynesh Mengistu			Reg. N°	YRB / 003 / OUTP	
AGE (months)	18	SEX	M	DATE OF ADMISSION	04/10/2007	
ADMINISTRATIVE UNIT	Boricha			TIME TO TRAVEL TO SITE	3 hours	
COMMUNITY	Yirba			FATHER ALIVE		
HOUSE DETAILS/LANDMARKS				MOTHER ALIVE		
NAME OF CAREGIVER				TOTAL NUMBER IN HOUSEHOLD	5	
ADMISSION (CIRCLE)	self referral	outreach referral	inpatient care referral	health facility referral	TWIN	yes no
RE-ADMISSION (relapse)	no	yes	ADDITIONAL INFORMATION			

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	+ ++ +++						
MUAC (mm)	98	WEIGHT (kg)	7.5	HEIGHT (cm)	72	WEIGHT FOR HEIGHT	83
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC	Weight for Height	OTHER:			

HISTORY

DIARRHOEA	yes	no	# STOOLS/DAY	1-3	4-5	>5
VOMITING	yes	no	PASSING URINE	yes	no	
COUGH	yes	no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?			
APPETITE	good	poor	BREASTFEEDING	yes	no	
ADDITIONAL INFORMATION						

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<30	30 - 39	40 - 49	50+	CHEST INDRAWING	yes	no
TEMPERATURE °C	37.2				CONJUNCTIVA	normal	pale
EYES	normal	sunken	discharge		DEHYDRATION	none	moderate severe
EARS	normal	discharge			MOUTH	normal	sores candida
ENLARGED LYMPH NODES	none	neck	axilla	groin	HANDS & FEET	normal	cold
SKIN CHANGES	none	scabies	peeling	ulcers / abscesses	DISABILITY	yes	no
ADDITIONAL INFORMATION							

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	4/10/2007	200,000 IU			
	Vitamin A (if not in last 6 months)	4/10/2007	125 mg (5 ml) 3x per day	Measles immunisation	no yes	date:
	Malaria treatment			Fully immunised	no yes	
2nd VISIT:	Mebendazole					

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

WEEK 2: OUTPATIENT CARE TREATMENT CARD

CASE 4 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Meskerem Tena			Reg. N°	YRB / 004 / OUTP
AGE (months)	23	SEX	M <input type="radio"/> F <input checked="" type="radio"/>	DATE OF ADMISSION	04/17/2007
ADMINISTRATIVE UNIT	Boricha			TIME TO TRAVEL TO SITE	3.5 hours
COMMUNITY	Yirba			FATHER ALIVE	
HOUSE DETAILS/LANDMARKS				MOTHER ALIVE	
NAME OF CAREGIVER				TOTAL NUMBER IN HOUSEHOLD	6
ADMISSION (CIRCLE)	<input checked="" type="radio"/> self referral	<input type="radio"/> outreach referral	<input type="radio"/> inpatient care referral	health facility referral	TWIN <input type="radio"/> yes <input checked="" type="radio"/> no
RE-ADMISSION (relapse)	no <input type="radio"/> yes <input type="radio"/>	ADDITIONAL INFORMATION			

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	+ <input type="radio"/> ++ <input type="radio"/> +++ <input checked="" type="radio"/>	MUAC (mm)	114	WEIGHT (kg)	8.4	HEIGHT (cm)	78.2	WEIGHT FOR HEIGHT	80.7
ADMISSION CRITERIA	Bilateral pitting oedema		MUAC	Weight for Height		OTHER:			

HISTORY

DIARRHOEA	yes <input type="radio"/> no <input checked="" type="radio"/>	# STOOLS/DAY	1-3 <input checked="" type="radio"/> 4-5 <input type="radio"/> >5 <input type="radio"/>
VOMITING	yes <input type="radio"/> no <input checked="" type="radio"/>	PASSING URINE	yes <input checked="" type="radio"/> no <input type="radio"/>
COUGH	yes <input type="radio"/> no <input checked="" type="radio"/>	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?	
APPETITE	good <input type="radio"/> poor <input checked="" type="radio"/> none <input type="radio"/>	BREASTFEEDING	yes <input type="radio"/> no <input checked="" type="radio"/>
ADDITIONAL INFORMATION			

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<30 <input type="radio"/> 30 - 39 <input checked="" type="radio"/> 40 - 49 <input type="radio"/> 50+ <input type="radio"/>	CHEST INDRAWING	yes <input type="radio"/> no <input checked="" type="radio"/>
TEMPERATURE °C	37.8	CONJUNCTIVA	normal <input checked="" type="radio"/> pale <input type="radio"/>
EYES	normal <input checked="" type="radio"/> sunken <input type="radio"/> discharge <input type="radio"/>	DEHYDRATION	none <input checked="" type="radio"/> moderate <input type="radio"/> severe <input type="radio"/>
EARS	normal <input checked="" type="radio"/> discharge <input type="radio"/>	MOUTH	normal <input checked="" type="radio"/> sores <input type="radio"/> candida <input type="radio"/>
ENLARGED LYMPH NODES	none <input checked="" type="radio"/> neck <input type="radio"/> axilla <input type="radio"/> groin <input type="radio"/>	HANDS & FEET	normal <input checked="" type="radio"/> cold <input type="radio"/>
SKIN CHANGES	none <input checked="" type="radio"/> scabies <input type="radio"/> peeling <input type="radio"/> ulcers / abscesses <input type="radio"/>	DISABILITY	yes <input type="radio"/> no <input checked="" type="radio"/>
ADDITIONAL INFORMATION			

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	4/10/2007	200,000 IU			
	Vitamin A (if not in last 6 months)	4/10/2007	125 mg (5 ml) 3x per day	Measles immunisation	no <input type="radio"/> yes <input type="radio"/>	date:
	Malaria treatment			Fully immunised	no <input type="radio"/> yes <input type="radio"/>	
2nd VISIT:	Mebendazole					

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

WEEK 2: OUTPATIENT CARE TREATMENT CARD

CASE 5 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Taye Menberu			Reg. N°	YRB / 005 / OUTP
AGE (months)	14	SEX	M	DATE OF ADMISSION	04/17/2007
ADMINISTRATIVE UNIT	Boricha			TIME TO TRAVEL TO SITE	1.5 hours
COMMUNITY	Yirba			FATHER ALIVE	
HOUSE DETAILS/LANDMARKS				MOTHER ALIVE	
NAME OF CAREGIVER				TOTAL NUMBER IN HOUSEHOLD	3
ADMISSION (CIRCLE)	self referral	outreach referral	inpatient care referral	health facility referral	TWIN yes no
RE-ADMISSION (relapse)	no	yes	ADDITIONAL INFORMATION		

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	+ ++ +++				
MUAC (mm)	110	WEIGHT (kg)	5.2	HEIGHT (cm)	37.3
				WEIGHT FOR HEIGHT	66.6
ADMISSION CRITERIA	Bilateral pitting oedema	MUAC	Weight for Height	OTHER:	

HISTORY

DIARRHOEA	yes	no	# STOOLS/DAY	1-3	4-5	>5
VOMITING	yes	no	PASSING URINE	yes	no	
COUGH	yes	no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?			
APPETITE	good	poor	none	BREASTFEEDING	yes	no
ADDITIONAL INFORMATION						

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<30	30 - 39	40 - 49	50+	CHEST INDRAWING	yes	no
TEMPERATURE °C	37.8				CONJUNCTIVA	normal	pale
EYES	normal	sunken	discharge		DEHYDRATION	none	moderate
EARS	normal	discharge			MOUTH	normal	sores
ENLARGED LYMPH NODES	none	neck	axilla	groin	HANDS & FEET	normal	cold
SKIN CHANGES	none	scabies	peeling	ulcers / abscesses	DISABILITY	yes	no
ADDITIONAL INFORMATION							

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin	4/17/2007	125 mg (5 ml) 3x per day			
	Vitamin A (if not in last 6 months)	4/17/2007	125 mg (5 ml) 3x per day	Measles immunisation	no	yes
	Malaria treatment			Fully immunised	no	yes
2nd VISIT:	Mebendazole					

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

WEEK 3: OUTPATIENT CARE TREATMENT CARD

CASE 6 ADMISSION DETAILS

ADMISSION DETAILS: OUTPATIENT CARE TREATMENT CARD

NAME	Lemlem Bezabih			Reg. N°	YRB / 006 / OUTP
AGE (months)	18	SEX	M <input type="checkbox"/> F <input checked="" type="checkbox"/>	DATE OF ADMISSION	04/21/2007
ADMINISTRATIVE UNIT	Boricha			TIME TO TRAVEL TO SITE	3 hours
COMMUNITY	Yirba			FATHER ALIVE	
HOUSE DETAILS/LANDMARKS				MOTHER ALIVE	
NAME OF CAREGIVER				TOTAL NUMBER IN HOUSEHOLD	4
ADMISSION (CIRCLE)	<input checked="" type="checkbox"/> self referral	<input type="checkbox"/> outreach referral	<input type="checkbox"/> inpatient care referral	<input type="checkbox"/> health facility referral	TWIN <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
RE-ADMISSION (relapse)	<input type="checkbox"/> no <input type="checkbox"/> yes	ADDITIONAL INFORMATION			

ADMISSION ANTHROPOMETRY

BILATERAL PITTING OEDEMA	<input type="checkbox"/> + <input checked="" type="checkbox"/> ++ <input type="checkbox"/> +++	MUAC (mm)	113	WEIGHT (kg)	7.5	HEIGHT (cm)	72	WEIGHT FOR HEIGHT	83
ADMISSION CRITERIA	<input checked="" type="checkbox"/> Bilateral pitting oedema	MUAC		Weight for Height		OTHER:			

HISTORY

DIARRHOEA	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	# STOOLS/DAY	<input checked="" type="checkbox"/> 1-3 <input type="checkbox"/> 4-5 <input type="checkbox"/> >5
VOMITING	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	PASSING URINE	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
COUGH	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	IF BILATERAL PITTING OEDEMA, HOW LONG SWOLLEN?	
APPETITE	<input type="checkbox"/> good <input checked="" type="checkbox"/> poor <input type="checkbox"/> none	BREASTFEEDING	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
ADDITIONAL INFORMATION			

PHYSICAL EXAMINATION

RESPIR. RATE (# min)	<input type="checkbox"/> <30 <input checked="" type="checkbox"/> 30 - 39 <input type="checkbox"/> 40 - 49 <input type="checkbox"/> 50+	CHEST INDRAWING	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
TEMPERATURE °C	38	CONJUNCTIVA	<input checked="" type="checkbox"/> normal <input type="checkbox"/> pale
EYES	<input checked="" type="checkbox"/> normal <input type="checkbox"/> sunken <input type="checkbox"/> discharge	DEHYDRATION	<input checked="" type="checkbox"/> none <input type="checkbox"/> moderate <input type="checkbox"/> severe
EARS	<input checked="" type="checkbox"/> normal <input type="checkbox"/> discharge	MOUTH	<input checked="" type="checkbox"/> normal <input type="checkbox"/> sores <input type="checkbox"/> candida
ENLARGED LYMPH NODES	<input checked="" type="checkbox"/> none <input type="checkbox"/> neck <input type="checkbox"/> axilla <input type="checkbox"/> groin	HANDS & FEET	<input checked="" type="checkbox"/> normal <input type="checkbox"/> cold
SKIN CHANGES	<input checked="" type="checkbox"/> none <input type="checkbox"/> scabies <input type="checkbox"/> peeling <input type="checkbox"/> ulcers / abscesses	DISABILITY	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
ADDITIONAL INFORMATION			

ROUTINE MEDICATION: ADMISSION

ADMISSION:	DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE
	Amoxicillin					
	Vitamin A (if not in last 6 months)	4/21/2007	125 mg (5 ml) 3x per day	Measles immunisation	<input type="checkbox"/> no <input type="checkbox"/> yes	date:
	Malaria treatment			Fully immunised	<input type="checkbox"/> no <input type="checkbox"/> yes	
2nd VISIT:	Mebendazole					

OTHER MEDICATION

DRUG	DATE	DOSAGE	DRUG	DATE	DOSAGE

OUTPATIENT CARE SITE TALLY SHEET

HEALTH FACILITY NAME					
DISTRICT					
SITE		Outpatient care	Inpatient Care		
WEEK		TOTAL			
DATE					
TOTAL START OF WEEK (A)					
New Cases 6-59 m Bilateral Pitting Oedema (B1a)					
New Cases 6-59 m MUAC/WFH (B1b)					
Other New Cases (adults, adolescents, children > 5 y, infants <6 months) (B2)					
Old cases: Referred from Outpatient or Inpatient care; or Returned defaulters (C)					
TOTAL ADMISSIONS (D) [D=B+C]					
Cured (E1)					
Died (E2)					
Defaulted (E3)					
Non-recovered (E4)					
REFERRALS TO OUTPATIENT OR INPATIENT CARE (F)					
TOTAL DISCHARGES (E)					
TOTAL EXITS (G) [G=E + F]					
TOTAL END OF WEEK (H) [H=A+D-G]					

EXERCISE 8.4

ANALYSIS OF THE SITE REPORTS OF THREE OUTPATIENT CARE SITES AND ONE INPATIENT CARE SITE

OUTPATIENT CARE SITE A

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
50	48	0	4+1	49	30	3	6	9
Additional information: Wasted: 41 Bilateral pitting oedema: 7					62.5%	6.3%	12.5%	18.8%
TARGET (Sphere Standards)					>75%	<10%	<15%	

OUTPATIENT CARE SITE B

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
140	120	0	7+7	134	79	1	15	7
Additional information: Wasted: 90 Bilateral pitting oedema: 30					77.5%	0.9%	14.7%	6.8%
TARGET (Sphere Standards)					>75%	<10%	<15%	

OUTPATIENT CARE SITE C

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
40	59	0	3+4	66	40	0	4	6
Additional information: Wasted: 27 Bilateral pitting oedema: 32					80.0%	0%	8.0%	12.0%
TARGET (Sphere Standards)					>75%	<10%	<15%	

INPATIENT CARE SITE

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		OLD CASES (C) Referral from outpatient or inpatient care, or Returned defaulters	TOTAL ADMISSION (D) (B+C=D)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)			CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
18	19	0	11+0	30	0	1	2	1
Additional information: Wasted: 14 Bilateral pitting oedema: 5					NA%	NA%	NA%	NA%
TARGET (Sphere Standards)					>75%	<10%	<15%	

MONTHLY CMAM DISTRICT REPORT (CONSOLIDATED FOR INPATIENT CARE AND OUTPATIENT CARE)

TOTAL BEGINNING OF THE MONTH (A)	NEW CASES (B)		TOTAL ADMISSION (C)	DISCHARGES (E)			
	6-59 m (according to admission criteria) (B1)	Other (adults, adolescents, children > 5 y, infants < 6 m) (B2)		CURED (E1)	DIED (E2)	DEFAULTED (E3)	NON-RECOVERED (E4)
248	246	0	246	149	5	27	23
				73.0%	2.5%	13.2%	11.3%
TARGET (Sphere Standards)				>75%	<10%	<15%	

Conclusions Drawn from the Reports	Questions to ask or Possible Explanations
1. Health centre B has more patients than the other centres.	1. Is this normal? Does it cover a highly populated area or a very wide area? What are the walking distances to the centre? Is this centre manageable? Could a second centre be opened with existing resources?
2. At health centre C, more than half the admissions are from bilateral pitting oedema.	2. Is this normal? Are the other health centres neglecting this diagnosis? Or, the opposite—is there an over-diagnosis of bilateral pitting oedema here? Is this health centre in a different food economy area? Was the same observation made in previous months and in surveys?
3. Out of the overall 246 new admissions, 227 were admitted directly to outpatient care (92.3%) and 19 to inpatient care (7.7%).	3. This could be an indicator of the efficacy of “early detection” and therefore of the quality of community mobilisation. It also could indicate that children with serious conditions are hidden at households and are not reached.
4. Health centre A is not referring any patients to inpatient care.	4. This could mean that no patients required transfer, but it should be checked through supervision.
5. The death and non-recovered rates in health centre A are quite high for outpatient care.	5. This raises questions about the quality of the assessment of patients in this centre and the application of and adherence to treatment and action protocols.
6. Health centre B’s default rate is quite high and warrants follow-up to determine the reasons.	6. Perhaps mothers/caregivers decide not to return because waiting times or walking distances are too long. It will be necessary to visit the centre to determine the reasons.
7. Health centre C’s cured rate is good although there are questions about the non-recovered rate.	7. Is this related to the number of cases with bilateral pitting oedema, noted above? Could this be investigated?
8. Overall, 211 children left outpatient care during the month; 200 of these children were discharged. However, 11 were referred back to inpatient care, meaning that the conditions of 5.5% of the children under treatment in outpatient care deteriorated.	8. Why is the condition of children deteriorating when under treatment in outpatient care? Is there compliance to medicine and RUTF protocols? What health and nutrition messages are mothers/caregivers receiving? Are there other underlying health conditions that must be addressed?

9. While 17 children were referred from inpatient care to outpatient care, the outpatient care sites admitted only 14 children referred from inpatient care. Note that 11 patients were referred from outpatient care to inpatient care and 11 admissions are registered in the inpatient care site report as referred from outpatient care.

9. The difference between referrals from inpatient care and admissions to outpatient care could be due to a weak registration system or because some referred children did not go to the outpatient care sites. This observation should trigger closer assessment and supervision of the registration and referral system (e.g., the use of referral slips, the provision of transportation, the messages and explanations given to the mother/caregiver at the time of referral). Note that children who were referred left the site where they were being treated but did not leave the service/programme. The compiled number of cases under treatment in the district is 209, which counts 9 cases less than the sum of the individual report. This difference is due to the 3 missed referrals. Other missed cases may have been in transit while referred across months. (Note: this could be a shortcoming of the exercise and if this is repeated at the district level in the field, it should be reported for review of the compilation system).

Note: The specific discharge rates from the inpatient care site are not calculated. Children that improve are referred to outpatient care to continue treatment. The specific discharge rates would not reflect poor quality as they include ONLY those children with SAM that had medical complications. This is one of the reasons why the programme needs also to be evaluated as a whole, combining information from both inpatient and outpatient care as presented in the combined reporting sheet, where the performance indicators provide information of the CMAM service in the district for the management of SAM.

SUPPLEMENTAL REFERENCE 8.1

SETTING UP A CMAM MONITORING SYSTEM USING AN ELECTRONIC DATABASE IN EXCEL

Adapted from *Community-based Therapeutic Care (CTC): A Field Manual*, pages 207-211

The following instructions can be used to construct a database for outpatient care and inpatient care sites per district in Excel.

STEP 1. CREATING THE DATA INPUT SHEET (SEE SITE TALLY AND REPORTING SHEETS)

1.1. Create Columns

- Create a spreadsheet in Excel with four columns titled: 'Session Week', 'Site' and 'Month'.
- Create columns corresponding to the admission and exit criteria on your site tally and reporting sheet
- Ensure each column title is written in its own cell.
- Create columns titled:

Total End Last Session (or Total end of the week/month)

New Cases 6-59 months

New Cases Other

Old Cases

Total Admissions

Cured

Death

Defaulter

Non-recovered

Total Discharged

Referral

Total Exits

Total Under Treatment (or Total beginning of week/month)

1.2. Create Rows

- Write site names (e.g., names of health facilities with outpatient care or inpatient care sites) of the district in rows moving down the spreadsheet for cycle 1. (Leave some space to add extra sites as the service/programme progresses.)
- Write **1** in the each cycle number box.
- For the first row corresponding to cycle 2, write in a formula of the first box **+1**.
- Do not write site names for cycle 2. Write a formula of the appropriate cell in cycle 1.
- Make a bold line under the first cycle

1.3. Enter Formulas

- Add in formulas for:
 - Total end of last session (For cycle 1, there is no formula. Put 0 in the cells. For subsequent cycles, use Total under Treatment from the previous cycle).
 - Total Admissions = New cases 6-59 months + New cases other + Old cases
 - Total Discharged = Cured + Deaths + Defaulters + Non-recovered
 - Total Exits = Cured + Deaths + Defaulters + Non-recovered + Referral
 - Total Under Treatment = Total End Last Session + Total Admissions – Total Exits

- For all formulas, click and copy formulas down the sheet to fill as many weekly cycles as required. (We recommend no more than one year's data in one database.)
- Data can now be entered by cycle from the weekly tally sheets (Optional database at national level can use monthly cycles using the monthly district reporting sheets)

STEP 2. CREATING THE DATA REPORT

- From the input sheet under 'Data' on the top menu, select 'Pivot Table Report'.
- Click 'Microsoft Excel List or database'.
- Highlight all of the spreadsheet
- Click 'Next' to get to the Pivot Table construction.
- Into 'Page', drag Site and Month.
- Into 'Column', drag Week.
- Into 'Data', drag the following variables in the following order: New cases 6-59 months, New cases other, Old cases, Total Admissions, Cured, Death, Defaulters, Non-recovered, Total Discharges, Referral, Total Exits, Total under treatment.
- Double click on all variables in data sheet in the Pivot Table construction. Perform the following on each one:
 - Change title by removing Count of. Do not shift the title too much to the left or Pivot Table alarm will be set off.
 - Change from Count to Sum.
 - Click Number – click Number again – tick Use 1000 separator. Change decimal place to 0.
 - Click Next – click new work sheet – rename it 'Report'.
- Blank out number in grand total column for 'Total under Treatment' (the number is meaningless for CMAM data).
- Once data is added to the input sheet, the report can be updated. Place the cursor inside the report, right click and select 'refresh data'.
- Data can be viewed by cycle for the whole service/programme or, if required, for individual sites or months.

For additional guidance on the construction and use of pivot tables see: <http://office.microsoft.com/en-us/assistance/HA010346321033.aspx>

STEP 3. CREATING THE GRAPHS

Create Chart of Admission and Discharge Trends

- To make the bar chart, first click on the chart icon.
- In Custom Type, select 'Line – Column'.
- In Series, click 'Add'.
- Click 'Name' bar and write in 'Total Admission'.
- Click 'Values' and highlight 'Total Admission' row in report (leave out grand total).
- Click 'category x labels' and highlight distribution cycles row.
- Click 'Add' again
- Click 'Name' bar and write in 'Total Discharged'.
- Click 'Values' and highlight 'Total Discharged' row in report (leave out grand total).

- Click 'Add' again.
- Click 'Name' bar and highlight 'Total under treatment' row in report.
- Click 'Next', click 'Chart Title' and add in overall title and titles for axes.
- Put in new sheet – rename Graphs.

Create Pie Chart Showing Breakdown of Discharge Categories

- Click on the chart icon.
- Click on pie chart.
- In 'Series', click 'Add'.
- Click 'Values' and highlight the data in 'Grand Total' for discharge variables (i.e. Cured, Death, Defaulter, Non-recovered). Do not include Referral or Total Exits.
- Click 'Category labels' and highlight the exit titles (i.e. Cured, Death, Defaulter, Non-recovered).
- Click Next, click Chart Title and write in title.
- Click Data label and tick percent.

See Figures in **Handout 8.14 Guidance on CMAM Reporting** an example of how the graph and pie should look.

Note: When you start to input data into the database, columns corresponding to cycles where no data has yet been entered can be hidden. This makes it easier to view the report and graphs.