MODULE FIVE

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

MODULE OVERVIEW

This module provides an orientation of inpatient care for the management of severe acute malnutrition (SAM) with medical complications and notes the issues that should be considered. The module briefly outlines who should be admitted to inpatient care and why. It also covers admission and discharge processes and criteria as well as the basic principles of medical treatment and nutrition rehabilitation. Emphasis is placed on ensuring a smooth referral process between outpatient care and inpatient care, in both directions.

This module is NOT a guide to setting up or managing inpatient care. For this type of guidance, a separate seven-day World Health Organization (WHO) training course has been designed for health care managers and health care providers who will be managing children with SAM with medical complications in inpatient care. However, participants in the training of this module will partake in a half-day site visit to an inpatient care site to give them a better understanding of CMAM, the comprehensive treatment of SAM, and the referral process between the inpatient and outpatient components.

This module is intended to be used alongside the WHO guidelines for the management of severe malnutrition (1999, new WHO guidelines for community-based management of SAM in development).

In the community-based management of acute malnutrition (CMAM) approach, inpatient care is provided in a hospital or health facility with 24-hour care for children with SAM without appetite or with medical complications until their medical condition is stabilized and the complication is resolving. Treatment then continues in outpatient care until the child recovers sufficient weight per national guidelines. This is in contrast to center-based care, in which children with SAM are managed as inpatients through both stabilization of the medical condition and nutrition rehabilitation until they have achieved weight recovery. For certain cases, inpatient care sites can provide for the management of SAM until the child is fully recovered.

Inpatient care for the management of SAM with medical complications is equivalent to the stabilization phase of the WHO treatment protocol, which includes the transition to ready-to-use therapeutic food (RUTF).

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

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	

MATERIALS

- Referral slips (for referral from inpatient care to outpatient care and vice versa, or for referral for further medical investigation)
- Copies of a local inpatient care treatment card or from the WHO manual (1999)
- National guidelines for management of SAM
- Handouts and exercises

ADVANCE PREPARATION

- Room setup, materials, flip charts, markers, masking tape
- Check national protocols for the management of SAM
- Obtain and make copies of a local inpatient care treatment card
- Download and make some copies of WHO's *Management of Severe Malnutrition: A Manual for Physicians* (1999) and WHO's *Guidelines for the inpatient treatment of severely malnourished children* (2003) from www.who.int/nut/publications
- Prepare sets of cards with an admission and discharge criterion written on each
- Collect or prepare referral slips

MODULE DURATION: TWO HOURS OF CLASSROOM TIME FOLLOWED BY A HALF-DAY SITE VISIT

Note: Depending on the needs of their audience(s), trainers may choose to skip or spend more or less time on certain learning objectives and activities. The module duration is an estimate of the time it takes to complete all the learning objectives and activities.

LEARNING OBJECTIVE 1:

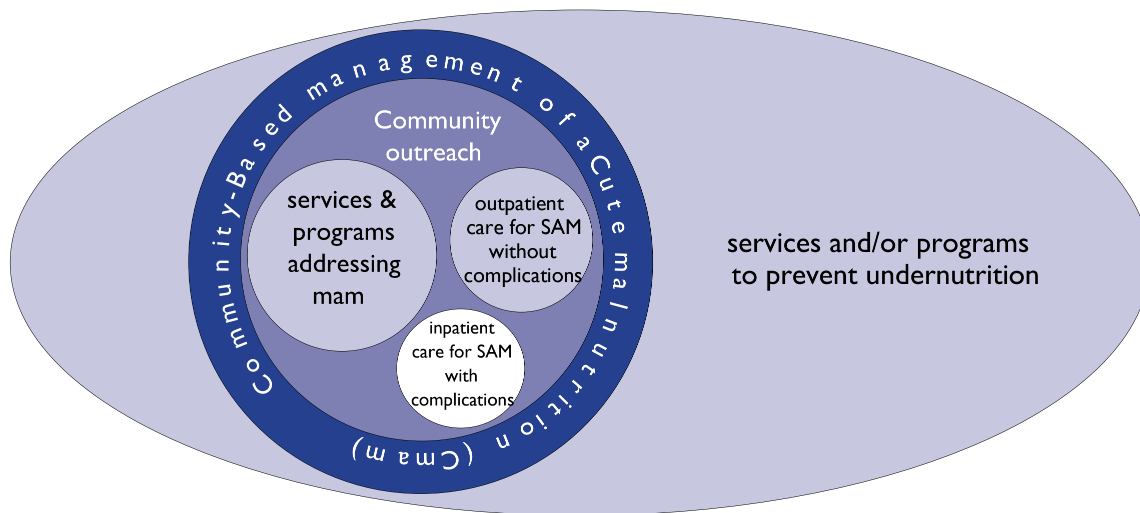
OUTLINE THE MANAGEMENT OF CHILDREN WITH SAM WITH MEDICAL COMPLICATIONS IN INPATIENT CARE

Become familiar with **Handout 5.1 Essentials for the Management of SAM with Medical Complications in Inpatient Care.**

BRAINSTORM: INPATIENT CARE FOR SAM. Draw the graphic below on the flip chart and ask participants:

- Why is the inpatient care component in CMAM services smaller than the other components?
- How does the inpatient component in CMAM differ from residential or center-based care? (Answers: only the most at-risk children are admitted while others are treated in outpatient care; children are released when their medical condition is stabilized and their medical complication is resolving, rather than fully recovered; children can take RUTF in inpatient care if they have appetite)

FIGURE 1. CORE COMPONENTS OF CMAM



GROUP DISCUSSION: ESSENTIALS OF INPATIENT CARE. Direct participants to **Handout 5.1 Essentials for the Management of SAM with Medical Complications in Inpatient Care**. Ask participants to review the handout and answer the following questions. Review responses in plenary and discuss.

- Why is inpatient care such an essential component of CMAM?
- Who receives treatment in inpatient care?
- How long is treatment provided?
- How is inpatient care best implemented? Within which structures?

LEARNING OBJECTIVE 2:

DESCRIBE ADMISSION AND DISCHARGE FOR THE MANAGEMENT OF SAM WITH MEDICAL COMPLICATIONS IN INPATIENT CARE

Become familiar with **Handout 5.2 Admission Process in Inpatient Care**, **Handout 5.3 Admission Criteria and Entry Categories for CMAM**, **Handout 5.4 Discharge Process in Inpatient Care** and **Handout 5.5 Discharge Criteria and Exit Categories for CMAM**.

PARTICIPATORY LECTURE: PROCESS FOR ADMISSION TO INPATIENT CARE.

Describe to participants the bullet points outlined in the first section of **Handout 5.2: Admission Process in Inpatient Care**.

ELICITATION AND GROUP DISCUSSION: ADMISSION CRITERIA FOR INPATIENT CARE. Ask participants to name criteria for admission to inpatient care. Many of the criteria will be those encountered in **Module 4** requiring referral to inpatient care. Write responses on a flip chart. Refer participants to **Handout 5.2 Admission Process in Inpatient Care** and **Handout 5.3 Admission Criteria and Entry Categories for CMAM**. Review the text and the table, making note of any discrepancies with the answers on the flip chart. Emphasize the differing admission criteria for infants under 6 months and briefly present admission criteria for adolescents, adults and HIV positive adults. Discuss and fill in gaps.

PARTICIPATORY LECTURE: PROCEDURE AND CRITERIA FOR DISCHARGE IN INPATIENT CARE. Describe to participants the bullet points outlined on **Handout 5.4 Discharge Process in Inpatient Care**, **Section A** and **Handout 5.5 Discharge Criteria and Exit Categories for CMAM**. Answer any questions then briefly review the discharge criteria in both the text and the table on the same handout.

PRACTICE AND GROUP DISCUSSION: DETERMINE APPROPRIATENESS OF INPATIENT CARE. Refer participants to the tables in both **Handout 5.3** and **Handout 5.5**. Tell them you will give examples of children either presenting at or already in inpatient care and ask them to determine if the child should be admitted, remain in inpatient care or be discharged to outpatient care. Ask them to explain why.

Examples:

1. Child is under 6 months and is brought to inpatient care with bilateral pitting edema grade +.
   (Answer: admit to inpatient care because of bilateral pitting edema.)
2. Child was admitted to inpatient care with a mid-upper arm circumference (MUAC) < 115mm and no appetite but no other medical complications. Child now passes the appetite test and is clinically well and alert.
   (Answer: discharge to outpatient care because appetite has returned and all other criteria met).
3. Child is brought to inpatient care with bilateral pitting edema grade ++ and MUAC <115mm.
   (Answer: admit to inpatient care with for treatment of Marasmic kwashiorkor.)
4. Child was brought to inpatient care with Marasmic kwashiorkor. Bilateral pitting edema has been reduced from grade +++ to grade +.
   (Answer: keep child in inpatient care until bilateral pitting edema resolved.)

LEARNING OBJECTIVE 3:

REVIEW MEDICAL TREATMENT AND NUTRITION REHABILITATION IN INPATIENT CARE

Become familiar with **Handout 5.6 Medical Treatment and Nutrition Rehabilitation of SAM with Medical Complications.**

REVIEW: MEDICAL COMPLICATIONS REQUIRING INPATIENT CARE.

Ask participants to name the medical complications that, coupled with SAM, would require inpatient care:

- Anorexia, no appetite
- Intractable vomiting
- Convulsions
- Lethargy, not alert
- Unconsciousness
- Lower respiratory tract infection
- High fever
- Severe dehydration
- Severe anemia
- Hypoglycaemia
- Hypothermia

READING AND GROUP DISCUSSION: Medical Treatment and Nutrition

Rehabilitation in Inpatient Care. Explain to participants that the medical treatment and nutrition rehabilitation of SAM in inpatient care follows the WHO treatment protocol for the treatment of SAM until the medical condition is stabilized, the medical complication is resolving and the child is referred to outpatient care.

Refer participants to **Handout 5.6 Medical Treatment and Nutrition Rehabilitation of SAM with Medical Complications.** In plenary, discuss the figure showing stabilization and rehabilitation phases. Note that after four to seven days of treatment, the medical condition should be stabilized and the medical complication resolving. Review the handout together and answer any questions regarding nutrition rehabilitation for children 6-59 months and for children under 6 months.

Refer participants to the *WHO Guidelines for the Inpatient Treatment of Severely Malnourished Children* (2003) and other guidance listed in **Handout 1.3 References and Further Reading** (received in **Module One**).

Give each participant a copy of a local inpatient treatment card and explain the information that can be found on it:

- Personal information: names and locations of mothers/caregivers to allow for follow-up home visits after discharge
- Results of daily bilateral pitting edema checks

- Anthropometry: MUAC, weight, and height recorded on admission; weight is also measured daily
- Clinical data/findings: results of daily medical assessments (because deterioration can occur quickly, it is essential to record medical findings and other information to make a correct diagnosis and provide timely treatment)
- Medicines: the medicines given and when they were given are recorded (Note: medical staff should directly observe the medicine being taken, the child's response to the medicine and the outcome)
- Feeding information: type and proportion of the therapeutic food the child consumes and any instances of vomiting

LEARNING OBJECTIVE 4:

PRACTICE REFERRAL PROCESS BETWEEN INPATIENT CARE AND OUTPATIENT CARE

Become familiar with **Handout 5.5 Discharge Criteria and Exit Categories for CMAM**, **Handout 5.7 Practical Implications in Discharges from Inpatient Care** and **Exercise 5.1 Referral from Inpatient to Outpatient Care**.

REVIEW: REFERRALS FROM INPATIENT CARE. In plenary, ask participants to name discharge criteria that would indicate a discharge from inpatient care to outpatient care. If participants have difficulty responding, remind them to refer to **Handout 5.5 Discharge Criteria and Exit Categories in CMAM**.

PARTICIPATORY LECTURE: REFERRALS BETWEEN INPATIENT AND OUTPATIENT CARE. Explain to participants that the main focus of these modules is on outpatient care, which includes referrals from inpatient to outpatient care. However, there are several cases where patients will be discharged to other settings. Outline to participants the key points regarding discharges from inpatient care to tertiary care and discharges that exit CMAM services as found in **Handout 5.7 Practical Implications in Discharges from Inpatient Care**.

Remind participants that an effective referral system between inpatient care and outpatient care is essential for the smooth functioning of CMAM services. Note that it is helpful for inpatient care staff to visit outpatient care sites and vice versa. Outline the key points in **Handout 5.7**. Ask participants if they have any other key points to add.

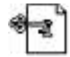
BRAINSTORM: REFERRALS FROM INPATIENT TO OUTPATIENT CARE.
Ask participants to think of key actions that should accompany the discharge of patients from inpatient care to outpatient care. Write responses on a flip chart. Fill in the gap in responses with the key points outlined in **Handout 5.7, Section D.**

PRACTICE: REFERRALS FROM INPATIENT TO OUTPATIENT CARE.
Ask participants to form pairs. Refer them to **Exercise 5.1 Referral from Inpatient to Outpatient Care**. Write the following details of a child on flip chart and ask pairs to fill out the referral card from inpatient to outpatient care. (Note: use a locally appropriate name for the child and the name of a local community.) Move within and among the pairs and answer questions. Discuss what changes occurred in the child's health to permit referral to outpatient care and fill in gaps.

- Admission data:
  - Date of admission: 09/Feb/08
  - Inpatient site: XXX
  - Registration number: 113/OC/ZAL
  - Age: 26 months
  - Sex: Female
  - Height: 78.5 cm
  - Weight: 7.2 kg
  - Bilateral pitting edema: +++
  - MUAC: 112 mm- WFH: < -3 z-score

- Discharge data:
  - Date of discharge: 15/Feb/08
  - Weight: 7.0 kg
  - Bilateral pitting edema: none
  - MUAC: 115 mm
  - WFH: < -3 z-score

- Treatment: F75, some RUTF
  - Amoxicillin: 125 mg (5 ml) 3x/day for 7 days
  - Artesunate: Days 1-3, 1 tablet per day



EXERCISE 5.1 REFERRAL FROM INPATIENT TO OUTPATIENT CARE (WITH ANSWERS IN BOLD)

Name of child: **(local name)**

Community: **(local name)**

Age: **26 months**

Sex: **F**

Date of Admission: **09/Feb/08**

Site: **XXX**

ADMISSION DATA

Weight: **7.2 kg** MUAC: **112 mm**

Height: **78.5 cm** WFH: **< -3 z-score**

Referral to: **Outpatient Care**

Bilateral pitting oedema (circle) None + ++ **+++** (circled)

Registration No: **113/OC/ZAL**

Date of Referral: **15/Feb/08**

Criteria for Referral:

Weight: **7.0 kg** MUAC: **115 mm**

WFH: **< -3 z-score** Bilateral Pitting Oedema: **None**

Treatment given:
F75, Some RUTF
Amoxicillin: 125 mg (5 ml) 3x/day for 7 days
Artesunate: Days 1-3, 1 tablet per day

Comments:

lo.4

WRAP-UP AND MODULE EVALUATION

SUGGESTED METHOD: REVIEW LEARNING OBJECTIVES AND COMPLETE EVALUATION FORM.

- Review the learning objectives of the module. In this module you have:
  1. Outlined the inpatient care component of CMAM
  2. Identified admission and discharge criteria for inpatient care
  3. Recalled medical treatment and nutrition rehabilitation used in inpatient care
  4. Practiced the referral process from inpatient care to outpatient care

- Ask for any questions and feedback on the module.

- Ask the following review questions:
  - What are the main reasons for referring a child with SAM to inpatient care?
  - About what percentage of the total caseload of children with SAM will require inpatient care?
  - How long (on average) is a child with SAM with medical complications expected to stay in inpatient care before continuing on to treatment in outpatient care? - What are the discharge criteria from inpatient care to outpatient care (i.e. how do you know when a child with SAM with complication is ready to go to outpatient care)?

- Let participants know that they will have an opportunity to observe procedures and discuss them with staff during the inpatient care field visit.

- Ask participants to fill out the module evaluation form.

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

INPATIENT CARE FIELD VISIT

OVERVIEW

- Ideally, a maximum of five participants should be at each inpatient care site on a given day to allow participants enough time to observe and interact directly. Coordinate with as many inpatient care sites as necessary to keep the number of participants at five or fewer.
- Pair participants with someone who speaks both the participants language and the local language.
- Introduce participants to the head of the ward or other person in charge.

LEARNING OBJECTIVES	HANDOUTS TO TAKE TO INPATIENT CARE FIELD VISIT
1. Review Admission, Treatment and Discharge Procedures for Inpatient Care	Handout 5.1 Essentials for the Management of SAM With Medical Complications in Inpatient Care Handout 5.8 Inpatient Care Field Visit Checklist Local Inpatient Care Treatment Card
2. Observe and Discuss Admission, Treatment and Discharge Procedures for Inpatient Care	

FIELD VISIT LEARNING OBJECTIVE 1: REVIEW ADMISSION, TREATMENT AND DISCHARGE PROCEDURES FOR INPATIENT CARE

READING THE EVENING BEFORE: ADMISSION AND DISCHARGE PROCEDURES FOR INPATIENT CARE

In preparation for the inpatient care field visit, ask participants to review **Handout 5.1 Essentials for the Management of SAM with Medical Complications in Inpatient Care**.

FIELD VISIT LEARNING OBJECTIVE 2: OBSERVE AND DISCUSS ADMISSION, TREATMENT AND DISCHARGE PROCEDURES IN INPATIENT CARE

Become familiar with **Handout 5.8 Inpatient Care Field Visit Checklist** and direct participants to bring this with them to the field visit.

During the field visit, observe the following:

- The patient registration process
- Admission and discharge criteria
- Daily nutrition assessment and monitoring
- Daily medical assessment, monitoring and medical treatment
- Food preparation and storage
- Feeding and feeding routines
- Recording on the individual child's inpatient care treatment card (e.g., the information collected, the child's progress)
- The flow of activities
- The referral process

During the field visit, ask the staff:

- How effective inpatient care is now that outpatient care is also available
- How the numbers of children and types of ailments they saw in inpatient care before outpatient care was available compares to the numbers and types they see now
- What the challenges to managing their workload are

FEEDBACK/DISCUSSION: INPATIENT CARE FIELD VISIT SESSIONS

After the inpatient care field visit, conduct a feedback session in which participants will:

- Provide feedback on strengths they observed at the health facility with inpatient care
- Raise issues for clarification by trainers
- Identify key gaps that require more observation time at the health facilities with inpatient care

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION

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	

FIELD VISIT

LEARNING OBJECTIVES	HANDOUTS TO TAKE TO INPATIENT CARE FIELD VISIT
1. Review Admission, Treatment and Discharge Procedures for Inpatient Care	Handout 5.1 Essentials for the Management of SAM with Medical Complications in Inpatient Care Handout 5.8 Inpatient Care Field Visit Checklist Local Inpatient Care Treatment Card
2. Observe and Discuss Admission, Treatment and Discharge Procedures for Inpatient Care	

HANDOUT 5.1 ESSENTIALS FOR THE MANAGEMENT OF SAM WITH MEDICAL COMPLICATIONS IN INPATIENT CARE

GENERAL

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 stabilizes, 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 edema or visible wasting** (or insufficient breast milk in a vulnerable environment). **Once stabilized, 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 stabilizing the medical condition. (The term

   "stabilization center [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 specialized centers (e.g., therapeutic feeding center [TFC], nutrition rehabilitation center, nutrition rehabilitation unit [NRU]) with 24-hour care. Children with SAM receive inpatient care for the stabilization 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° C), severe dehydration, severe anemia, hypoglycaemia, hypothermia (< 35° 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 edema 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 ≥ 80% of the median or WFH ≥ 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 24hour care capacity wherever possible**, using Ministry of Health (MOH) staff. Inpatient care for children with SAM often already exists in the pediatric 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 stabilization 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 stabilized and moved to outpatient care. A sudden population migration or an outbreak of diarrheal 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

- 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 edema, 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 edema:** Children with bilateral pitting edema +++ have an increased mortality risk and must be referred to inpatient care.

- **Marasmic kwashiorkor:** Children with bilateral pitting edema AND severe wasting (MUAC < 115 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 anemia, 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 specialized 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 edema or are visibly wasted are admitted to inpatient care for specialized 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 Contra 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

ADMISSION CRITERIA 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		
Bilateral pitting edema +++ **OR** Marasmic kwashiorkor: Any grade of bilateral pitting edema with severe wasting (MUAC < 115 mm or WFH < -3 z-score [WHO] or < 70% of median [NCHS]) **OR** Bilateral pitting edema + or ++ or MUAC < 115 mm or WFH < -3 z-score (WHO) or < 70% of median (NCHS) **with** any of the following medical complications: ▪ Anorexia, no appetite ▪ Intractable vomiting ▪ Convulsions ▪ Lethargy, not alert ▪ Unconsciousness ▪ Lower respiratory tract infection (LRTI) ▪ High fever ▪ Severe dehydration ▪ Severe anemia ▪ Hypoglycaemia▪ Hypothermia **OR** ▪ Referred from outpatient care according to action protocol ▪ Other: e.g., infant ≥ 6 months and < 4 kg	Bilateral pitting edema + and ++ **OR** MUAC < 115 mm **OR** WFH < -3 z-score (WHO) or < 70% of median (NCHS) **AND** ▪ Appetite ▪ Clinically well ▪ Alert	MUAC ≥ 115 mm and < 125 mm **OR** WFH ≥ -3 z-score and < -2 z-score (WHO) or ≥ 70% and < 80% of median (NCHS) **AND** ▪ Appetite ▪ Clinically well ▪ Alert **ALSO:** Children recovering from SAM, after discharge from outpatient care, regardless of their anthropometry *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.*

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

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
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 AND INPATIENT CARE		
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 another outpatient care site	***Referral from inpatient care:*** Child's health condition improved in inpatient care and child continues treatment in outpatient care **OR** **Returned** after defaulting, or **Moved in** from another outpatient care site	***Referral from outpatient care:*** **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 edema, 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 edema 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 edema 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 hospitalization, 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

DISCHARGE CRITERIA 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		
DISCHARGED TO OUTPATIENT CARE: Appetite returned (passed appetite test) **AND** medical complication resolving **AND** bilateral pitting edema decreasing **AND** clinically well and alert (If Marasmic kwashiorkor admission: bilateral pitting edema resolved)	**DISCHARGED CURED:** **If bilateral pitting edema admission:** ▪ No bilateral pitting edema for 2 consecutive sessions ▪ MUAC ≥ 115 mm ▪ WFH ≥ -2 z-score (WHO) or ≥ 80 % of the median (NCHS) ▪ Child clinically well and alert **If MUAC admission:** ▪ Minimum 2 months in treatment ▪ MUAC ≥ 110 mm ▪ No bilateral pitting edema ▪ Child clinically well and alert **If WFH admission:** ▪ 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 edema ▪ Child clinically well and alert **If Marasmic kwashiorkor admission:** ▪ No bilateral pitting edema 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 ***Children are discharged to supplementary feeding if available***	**DISCHARGED CURED:** **If MUAC admission:** ▪ Minimum 2 months in treatment ▪ MUAC ≥ 125 mm **If WFH admission:** ▪ Minimum 2 months in treatment ▪ WFH ≥ -2 z-score (WHO) or ≥ 85% of median (NCHS) for 2 consecutive sessions **DISCHARGED AFTER RECOVERING FROM SAM:** ▪ 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 are required).		
DISCHARGE CRITERIA FOR PREGNANT AND LACTATING WOMEN		
		Pregnant and lactating women MUAC ≥ 210 mm or infant ≥ 6 months of age

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
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 (action protocol)

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)

	STABILISATION PHASE		REHABILITATION PHASE
STEP	**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 labor-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 edema (circle) **None + ++ +++**

Registration No:

Date of Referral:

Criteria for Referral:

Treatment given:

Comments:

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