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INTRODUCTION — Community-based management of acute malnutrition (CMAM) is a structured system of outpatient care for children with uncomplicated severe acute malnutrition (SAM). Key components of CMAM programs are provision of a therapeutic food that is of high nutritional quality and has minimal spoilage, known as ready-to-use therapeutic food (RUTF), and regular follow-up at home or in decentralized health centers ideally in proximity to where children live by trained community-based health workers. Using this strategy, more than 90 percent of children with SAM can be treated as outpatients, provided that the child has a good appetite and no obvious acute infection or other medical complications [1]. Children with anorexia or complications are initially treated in inpatient programs, but are transferred to outpatient care as soon as possible [2].

Over the past two decades, an increasing number of countries and relief agencies have adopted CMAM with remarkable success, leading to widespread acceptance and dissemination of this approach worldwide. Where CMAM is available, nutritional recovery rates can be expected to regularly exceed 80 percent, and case fatality rates can be expected in the 5 to 10 percent range, or even better in particularly well-functioning programs. Effective CMAM requires the presence of trained staff, reliable supply chains for RUTF and medications, and the possibility of referral for inpatient care if needed. Because of the increasing availability of RUTF, CMAM has mostly replaced the historical system of universal inpatient management, which was plagued by limited access, poor outcomes, and high costs. There certainly remains an important role for hospitalization for children with complicated SAM. However, CMAM allows most acutely malnourished children to "skip" the inpatient phase of treatment and allows for an orderly transition of care once children with complicated SAM have recovered sufficiently.

Treatment of children with **uncomplicated** SAM using CMAM is described in this topic review. Treatment of **complicated** SAM and the evaluation of a child with malnutrition are discussed separately. (See "Management of complicated severe acute malnutrition in children in resource-limited countries" and "Malnutrition in children in resource-limited countries: Clinical assessment".)

EVALUATION — The initial evaluation of a child at a feeding center is described in detail separately. (See "Malnutrition in children in resource-limited countries: Clinical assessment".)

Classification — In children 6 through 59 months of age, **severe acute malnutrition** (SAM) is defined by anthropometric criteria using mid-upper arm circumference (MUAC) <11.5 cm (115 mm), or weight-for-height Z-score <-3, or bilateral pitting edema (table 1). The malnutrition is considered **uncomplicated** if the child has no clinically obvious acute infections or other medical complications and has a good appetite, determined by an "appetite test" during the initial evaluation. (See 'Indications for community-based management' below.)

For infants under six months of age [3,4], MUAC <11.0 cm (110 mm) is likely the best single criterion for diagnosing SAM [5], although international consensus has not settled on this value. The threshold for admitting these infants to inpatient care is necessarily lower than for older children. (See 'Triage' below.)

Triage — For a child with SAM, triage to inpatient versus outpatient care settings depends on the child's age, appetite, presence or absence of medical complications, and access to follow-up.

Indications for community-based management — A malnourished child is eligible for community-based (outpatient) management of acute malnutrition (CMAM) if the child (algorithm 1) [2,6,7]:

- Is aged six months or older. Protocols are established primarily for those 6 through 59 months of age. For older children, it is reasonable to use the same protocols as an extension of established practice. However, for these older children it is particularly important to do a thorough evaluation for underlying diseases that may have triggered the malnutrition, such as human immunodeficiency virus (HIV), tuberculosis, or malignancy, since isolated SAM is less common in this age group.
- Passes an "appetite test," which assesses whether the child is able to consume approximately 30 grams of ready-to-use therapeutic food (RUTF) in a supervised calm setting under the direct observation of clinical staff.
- Has no signs or symptoms suggesting acute complications, such as sepsis or pneumonia. The presence of diarrhea, HIV infection, and severe edema are not necessarily contraindications to outpatient care or to the use of RUTF if the child is otherwise clinically stable [2,6,8,9].
- Is already on effective HIV treatment if the child is HIV infected. To identify children with untreated HIV, it is highly advisable to perform routine HIV testing for all malnourished children at the initial evaluation. However, if routine HIV testing seems to present an obstacle to accessing care for malnutrition, due to local culture and stigma, then it is reasonable to reserve testing only for those children who are not recovering appropriately.
- Has a reliable caretaker who can provide frequent closely-supervised feedings at home.
- Is able to return to the feeding center for regular follow-up where progress can be monitored, medical complications addressed, counselling and major health messages reinforced, and additional RUTF provided. Follow-up should generally occur every one to two weeks [10]. (See 'Follow-up and monitoring' below.)

In most settings, more than 90 percent of children with SAM will qualify for outpatient therapy at the time of initial evaluation. Additionally, most children with complicated SAM who begin therapy as inpatients can complete therapy as outpatients using the identical protocol; therapeutic feeding programs should be prepared to accept transfers of these patients into the outpatient feeding program [2]. (See "Management of complicated severe acute malnutrition in children in resource-limited countries", section on 'Transfer to outpatient care'.)

Indications for inpatient care — Malnourished children who have acute complications or who fail the appetite test should be hospitalized and given specific therapies for their acute illness while nutritional rehabilitation is initiated. Other indications for hospitalization include (but are not limited to) children who have not recovered after a trial of outpatient therapy, those with challenging social situations that preclude effective outpatient management, and untreated HIV or tuberculosis infection [2,8].

Infants <6 months — Most infants six months and younger with SAM should be managed initially as inpatients, especially if the inpatient center can offer intensive counseling and assistance in resuming exclusive breastfeeding [8] (see "Management of complicated severe acute malnutrition in children in resource-limited countries", section on 'Infants zero to six months'). Although suboptimal, it is sometimes necessary to treat these young infants as outpatients, due to resource and logistical limitations (on both the part of the health system and families). (See 'Feeding protocol' below.)

COMMUNITY-BASED MANAGEMENT OF ACUTE MALNUTRITION — International consensus guidelines now recommend community-based care for children with **uncomplicated** severe acute malnutrition (SAM), as outlined above (see 'Indications for community-based management' above) [2,6,8]. Community-based management of acute malnutrition (CMAM) is safe and effective for most of these children, increases access to care by avoiding travel and reducing costs, decreases the risk of nosocomial infection, and

decreases the likelihood that the caretaker will take the child home (or even abandon the child) against medical advice before therapy is complete.

Overview — CMAM emphasizes a decentralized and low-cost model of care that is able to reach far more malnourished children and is able to achieve better outcomes than most inpatient care settings. Key components of the CMAM approach are:

- Decentralized design and community involvement, to minimize geographic barriers and encourage early presentation and compliance.
- Where resources are available, early intervention for moderate acute malnutrition to prevent progression to severe malnutrition. (See 'Community-based preventive care' below.)
- Use of simple protocols and supplies, including therapeutic food that is high in energy and micronutrients (ready-to-use therapeutic food; RUTF). (See 'Formulations' below.)
- Counseling and education of the caregiver(s) to optimize outcomes and prevent relapse. (See 'Counseling' below.)
- A brief empiric course of oral antibiotics, which improves recovery and decreases mortality. (See 'Antibiotics' below.)
- Integrated approach allowing for smooth transitions between inpatient care for children recovering from complicated severe acute malnutrition, and outpatient care for children without complications. (See "Management of complicated severe acute malnutrition in children in resource-limited countries", section on 'Transfer to outpatient care'.)

Ready-to-use therapeutic food — The cornerstone of CMAM is the use of ready-to-use therapeutic food (RUTF). RUTF is of high nutritional quality, easily transportable, does not require cooking or other preparation, and has minimal spoilage. It provides all of the micronutrients and macronutrients needed for nutritional rehabilitation. RUTF is available commercially from a number of manufacturers and international agencies such as the United Nations Children's Fund (UNICEF), or often can be produced locally.

Formulations — The most commonly available RUTF consists of a mixture of peanuts, sugar, oil, and powdered milk, supplemented with a vitamin and mineral mixture. It is a soft solid paste that is readily consumed by most children six months and older. This formulation was initially developed during the 1990s and has become the de facto standard of care, although no specific formulation of RUTF is universally endorsed as long as all nutritional and safety standards are met. The most widely available commercial source of RUTF is marketed under the name Plumpy'Nut (manufactured by Nutriset, Malaunay, France), but is also increasingly produced locally in over a dozen countries.

One of the major advantages of the peanut-based formulation of RUTF is that the energy density is fourfold higher than that of F-100 (table 2), allowing malnourished children to eat smaller quantities of food at more frequent intervals, on demand. Because of low water content, RUTF can be kept unrefrigerated for up to two years and is thus ideal for outpatient use. It provides all of the macronutrients, vitamins, and minerals needed for nutritional rehabilitation, including sufficient iron, phosphorus, zinc, and vitamin A to treat these common deficiencies. Additional vitamin supplements are needed only rarely, under select circumstances, such as symptomatic vitamin A deficiency or beriberi. (See "Management of complicated severe acute malnutrition in children in resource-limited countries", section on 'Vitamin and mineral supplementation'.)

RUTF can also be prepared from locally available foods with the addition of powdered milk and a commercially available vitamin and mineral mixture [11]. A number of newer formulations substitute locally available sources of protein (eg, sesame paste) and grain (rice, maize, sorghum, or barley) in an effort to improve palatability and lower the cost of RUTF [12-15]; although none have been used on a wide scale yet, this is likely to be a significant area for growth and further development in the upcoming years.

Other modifications of the standard peanut-based RUTF recipe have been attempted with varying degrees of success. In a randomized trial, addition of probiotic bacteria and prebiotic fiber to RUTF did not alter the frequency or speed of nutritional cure, frequency of diarrhea or other clinical symptoms, or cumulative mortality [16]. A pilot trial of including mesalazine as part of CMAM care demonstrated some benefit in decreasing intestinal inflammation [17], but the benefit of this approach in improving nutritional recovery or decreasing mortality was not established by this small pilot study. Improvements in the fatty acid profile of RUTF to include higher levels of omega-3 polyunsaturated fatty acids have been proposed, especially since this may contribute to improved cognitive development in young children [18-21].

A promising formulation of RUTF, known as BP-100 [22], is wheat-based (rather than peanut) and comes in the form of a biscuit/bar that is especially well-suited to older patients if they do not like the taste or texture of standard peanut-based RUTF. This biscuit can also be crumbled into water to make a porridge. A paste formulation of BP-100 is also available [23]. Both formulations of BP-100 meet World Health Organization (WHO) standards for RUTF, and while clinical efficacy studies in malnourished children are lacking, there is reason to believe that it should be as effective as peanut-based RUTF.

Efficacy — CMAM and RUTF have become the de facto standard of care for uncomplicated SAM based primarily on successful outcomes with extensive clinical experience [24]. No large-scale randomized controlled trials have compared this protocol with inpatient hospitalization and traditional milk-based formula feedings for all severely malnourished children. In a small randomized trial in severely malnourished children in Senegal, children treated with RUTF recovered more quickly than children treated with F-100 [25]. A systematic review concluded that RUTF or other specially formulated food increased the recovery rate by 29 percent for children with moderate acute malnutrition compared with standard care [26]. In addition, RUTF was slightly superior to blended food supplements in improving weight gain and other anthropometric measurements, and significantly better in decreasing non-recovery rates (relative risk [RR] 0.53, 95% CI 0.40-0.69). Other studies have shown RUTF to be superior to standard corn-soy blends for the recovery from severe acute malnutrition [27,28].

Given the widespread acceptance of CMAM and markedly better outcomes compared with historical recovery rates for traditional inpatient management, it is unlikely that further randomized trials will be performed, both for practical and ethical reasons.

Feeding protocol — Children who are treated as outpatients are prescribed RUTF at a dose of approximately 175 kcal (733 J)/kg/day. RUTF is generally provided in foil sachets containing 500 kcal of RUTF (picture 1 and table 2). RUTF should only be provided for the severely malnourished patient and not for others in the family; exceptions should be made for twins in which only one is malnourished, or for other children in the household with very similar ages, since sharing can be assumed.

There may be situations in the field where severely malnourished infants under six months of age cannot be hospitalized, although every effort should be made to admit them to the hospital for management (see "Management of complicated severe acute malnutrition in children in resource-limited countries", section on 'Infants zero to six months'). If an infant must be treated at home, very close follow-up is warranted, ideally with clinical assessments and weight checks daily or as frequently as feasible. Nutritional therapy should focus on re-establishing exclusive breastfeeding if possible. If this is not possible, commercial infant formula or diluted F-100 (prepared by diluting F-100 with an additional 30 percent water) may be used, although with the caveats that these can be quite expensive and the use of unclean water in their preparation puts the child at high risk for diarrheal diseases; the need to prepare these milks at least once or twice a day also makes this challenging. In some field settings, RUTF has been used for infants as young as four to five months of age, by softening the paste with a small amount of water and feeding it by spoon, but the safety and efficacy of this approach has not been tested.

Counseling — A number of counseling and education messages should be provided to the caretaker at the start of therapy and should be re-emphasized at each return visit:

- RUTF should be fed in frequent, small feedings throughout the day, as driven by the child's appetite (on-demand feeding). Most children will need at least five to six feedings per day to recover.
- RUTF should be considered a medication for this specific medical condition (severe malnutrition) and is not to be shared with others.
- RUTF should be the only food offered to the child; breastmilk and water are the only other items the child should ingest during treatment.
- The child's appetite may wax and wane over the course of therapy.
- If the child finishes the complete allotment of RUTF prior to their next follow-up visit, then the child can be given a balanced local diet until their next visit. This should be seen as a sign of success as it demonstrates the child has a good appetite and is likely making a quick recovery.
- The provision of clean water, good hand hygiene, and limiting ingestion of dirt and other contaminated materials is important during therapy.

Caretakers of severely malnourished children (particularly mothers) are often quite stressed and depressed about the condition of their child; they should be provided frequent, compassionate encouragement and emotional support during the weeks of intensive care they must provide their child.

Antibiotics — A brief empiric course of oral antibiotics (eg, a seven-day course of amoxicillin 40 to 45 mg/kg twice daily, or cefdinir 7 mg/kg twice daily) for children treated for uncomplicated severe acute malnutrition in an outpatient setting is recommended by the WHO [6,8]. Children with SAM have high rates of underlying bacterial infection, infection is an important contributor to mortality, and overt signs of infection are often lacking.

The practice of empiric antibiotic treatment is supported by two randomized trials: one conducted in Malawi in 2767 children with both kwashiorkor and marasmus [29], and the other conducted in Niger in 2412 children with marasmus [30]. In a meta-analysis of both trials, the rate of nutritional recovery was higher in children treated with amoxicillin plus standard care (including RUTF) compared with placebo plus standard care (75.8 versus 72.4 percent; risk ratio [RR] 1.03, 95% CI 1.0-1.06) [31]. Nutritional recovery was generally defined as resolution of edema and adequate weight gain (ie, weight-for-height Z-score ≥-2). The findings regarding mortality benefit were conflicting in the two trials. In the Malawi trial, mortality was lower in the antibiotic-treated group compared with placebo (4.4 versus 7.4 percent; RR 0.60, 95% CI 0.44-0.82). In the Niger trial, mortality rates were considerably lower than in the Malawi trial, and there was no difference in mortality between treatment groups (0.6 percent in the amoxicillin group and 0.5 percent in the placebo group) [30]. The meta-analysis did not include a pooled estimate for the effect on mortality. The difference in the mortality rates in the two trials is likely accounted for by the different settings in which the trials were conducted. The Malawi trial was conducted in a "real-world" community setting without easy access to a hospital, whereas the Niger trial was conducted at health centers with ready access to inpatient care and children who weren't recovering well were quickly admitted to the hospital. Thus, in the Malawi trial, <3 percent of children received inpatient care, whereas one-quarter of those in the Niger trial received inpatient care. Of note, in the Niger trial, children in the amoxicillin group were less likely to be transferred to inpatient care compared with those in the placebo group (26.4 versus 30.7 percent; RR 0.86, 95% CI, 0.76-0.98) [30].

The efficacy of empiric antibiotics is also supported by retrospective studies, which found that children who received amoxicillin as part of outpatient management of SAM were 1.5 to 2 times more likely to achieve nutritional recovery compared with children who did not receive antibiotics [32,33].

Follow-up and monitoring — Children should return for follow-up every one to two weeks, depending on local practices and balancing the burden that frequent visits places on caretakers and health care providers. If necessary, the follow-up interval can likely be extended to every four weeks without significant adverse

effect (eg, in particularly remote settings where health center attendance is especially challenging) [10]. At each follow-up visit, weight and mid-upper arm circumference (MUAC) are measured and edema is rechecked. Careful records for each child should be kept and response to therapy closely assessed. Children who are losing weight (other than water weight from decreasing edema) or who are not making steady progress over two to three weeks should have a careful clinical and social assessment performed to identify confounding illnesses and any barriers to recovery.

Most children recover within six to eight weeks, where recovery is defined as reaching target anthropometric goals (table 3) (see 'Discharge from treatment' below). Children who are not making progress within two to three weeks, or who do not achieve their anthropometric goals within 12 weeks, should be reevaluated to determine the cause. In most cases, these children should be admitted to a hospital to provide more intensive, supervised care, and to address any underlying infectious or other medical issues (see "Management of complicated severe acute malnutrition in children in resource-limited countries"). Children with both marasmus and kwashiorkor (known as marasmic kwashiorkor) are particularly vulnerable to mortality and are more likely to need more intensive therapy.

Discharge from treatment — Children 6 to 59 months of age may be discharged from treatment when they meet **either** of the following anthropometric criteria [8]:

- Weight-for-height Z-score (WHZ) ≥-2 and no edema for at least 1 to 2 weeks, or
- MUAC ≥12.5 cm and no edema for at least 1 to 2 weeks

In general, the anthropometric criterion used for discharge should be the one that was used for admission to the treatment program. Percentage weight gain is no longer recommended as a criterion for discharge. Other discharge criteria are listed in the table (table 3). The mother or caregiver should be able to care for the child after discharge. She/he should be able to provide food and recognize when diarrhea, fever, respiratory distress, and other common symptoms warrant medical follow-up. Ideally, a health worker should be available in the community to provide follow-up of the child and support for the mother [34].

Relapse after discharge from the treatment program is common in many settings. Higher weight-for-height Z-score and MUAC are associated with a lower risk of relapse in moderately malnourished children, but it is unknown if this applies to severely malnourished children as well [35,36]. Empiric antibiotic therapy generally should not be continued after discharge, since it does not appear to decrease the risk of relapse [37].

An innovation in early identification of severe wasting among children in high-risk populations is to provide caretakers with MUAC tapes and teach them how to identify when their child (or children in their community) have moderate or severe wasting, known as the "Mothers Understand And Can do it" method. Since the tapes generally are color-coded, measuring MUAC is a straightforward activity that does not require the caretaker to have any numerical or verbal literacy. Initial field experience has already shown that this program is effective in early identification of malnutrition, so that children are identified and brought for care when their malnutrition is less severe [38,39]. This method can be adapted to post-discharge monitoring by providing MUAC tapes and education to caretakers of children being discharged from a CMAM program. This strategy likely facilitates early detection of relapses and re-enrollment in the treatment program, but its efficacy has not been formally evaluated.

COMMUNITY-BASED PREVENTIVE CARE — Effective preventive care requires recognition of children at risk for severe malnutrition and implementation of interventions to arrest progression to the severely malnourished state. The following review of strategies and recommendations for preventing malnutrition may be beneficial to the local practitioner in countries with substandard child growth and development.

Recognition of at-risk populations — In resource-limited settings, acute malnutrition is often triggered by an acute treatable illness, superimposed upon food insecurity or chronic malnutrition beginning in infancy or gestation. In many cases, acute malnutrition might be preventable by recognizing and treating the acute

illness early. By contrast, in resource-rich countries, severe malnutrition is usually caused by an underlying chronic illness.

Diarrheal illness — Chronic or prolonged diarrhea is a common risk factor for the development of severe malnutrition. An isolated acute diarrheal illness (duration <14 days) usually causes only transient slowing of growth [40]. However, in the setting of pre-existing and concomitant undernutrition, the intestinal mucosa does not efficiently regenerate. Repeated environmental and infectious insults contribute to the development of environmental enteric dysfunction (EED), which further stunts child growth, leads to cognitive stunting, and places children at elevated risk for developing acute malnutrition [41]. Children with persistent diarrhea or repeated bouts of diarrhea are at particularly high risk for severe malnutrition due to malabsorption [42]. Thus, the prevention and treatment of diarrheal illnesses through standard sanitary measures becomes an essential foundation for local efforts to prevent malnutrition. (See "Persistent diarrhea in children in resource-limited countries", section on 'Pathophysiology'.)

HIV — The association between human immunodeficiency virus (HIV) infection and malnutrition is complex [43]. The immunologic compromise caused by HIV infection accelerates comorbid infections (such as tuberculosis, malaria, or chronic diarrhea) that increase metabolic demands, which increases the risk for malnutrition. In patients with HIV infection, prompt treatment with appropriate antiretroviral drugs and treatment or prevention of opportunistic infections are essential steps to prevent or treat malnutrition [44]. In addition, children with HIV infection require added nutritional supplementation to meet their increased metabolic needs. (See "Pediatric HIV infection: Classification, clinical manifestations, and outcome".)

Supplementation strategies for prevention of malnutrition — Food distribution measures are implemented in a variety of contexts to combat food insecurity and malnutrition.

Generalized food distribution — The usual approach to food crises has been to organize a generalized food distribution (GFD), in which daily food rations (typically an allotment of a cereal item) are distributed to all members of a population. Although helpful as a first-line strategy during a crisis, GFD schemes usually fail to prevent significant amounts of severe acute malnutrition because they do not target the highest risk groups within a population who would benefit most from nutrition support.

Targeted supplementation strategies — Because of the poor efficacy of GFD schemes, the World Health Organization (WHO) now endorses supplementation strategies that target at-risk subgroups as the best strategy for preventing malnutrition within a population experiencing food insecurity.

Targeted supplemental feeding programs directly supplement those populations and age groups at the greatest risk for malnutrition, usually nursing mothers and children younger than 60 months. More current recommendations emphasize protein and lipid rich food items, such as ready-to-use therapeutic food (RUTF) [6,45], in contrast with previous strategies that relied on grain-based foods. RUTF is readily transportable and sanitary, with a long shelf life without refrigeration, allowing for prepositioning of stocks in areas vulnerable to acute food crises. Multiple studies have established the efficacy of RUTF as a therapeutic strategy for children with moderate to severe malnutrition, as outlined above (see 'Ready-to-use therapeutic food' above). Additional interest has been focused on whether use of RUTF in children who are already exhibiting stunting may prevent progression to more severe forms of malnutrition. Unfortunately, no cost-effective implementation strategy using RUTF or other lipid-nutrient spreads has been found to decrease the risk of developing severe malnutrition.

SOCIETY GUIDELINE LINKS — Links to society and government-sponsored guidelines from selected countries and regions around the world are provided separately. (See "Society guideline links: Pediatric malnutrition".)

SUMMARY AND RECOMMENDATIONS

- In children 6 through 59 months of age, **severe acute malnutrition** (SAM) is defined by anthropometric criteria using mid-upper arm circumference (MUAC) <11.5 cm, or weight-for-height Z-score <-3, or

bilateral pitting edema (table 1). Malnutrition is considered **uncomplicated** if the child has no acute infections or other medical complications and has a good appetite, determined by an "appetite test" during the initial evaluation. (See 'Classification' above.)

- For most children with **uncomplicated** SAM who are six months or older, outpatient care in a structured community-based program for management of acute malnutrition (CMAM) is safe and effective and increases access to care by reducing costs and avoiding travel and other treatment burdens on the family. By contrast, children with **complicated** SAM or anorexia, and most infants younger than six months, should be managed initially in an inpatient setting (algorithm 1), then transferred to outpatient care when acute complications have been addressed and nutritional recovery has begun. (See 'Triage' above.)

- Key components of CMAM programs include (see 'Community-based management of acute malnutrition' above):

  - **Provision of ready-to-use therapeutic food (RUTF)** – RUTF is of high nutritional quality, easily transportable, does not require cooking or other preparation, and has minimal spoilage. It provides all of the micronutrients and macronutrients needed for nutritional rehabilitation (table 2). The most common RUTF is a peanut-based paste that is readily taken by most children >6 months of age. (See 'Ready-to-use therapeutic food' above.)

  - **Brief course of empiric oral antibiotics** – For all children with severe acute malnutrition managed as outpatients in a resource-limited setting, we suggest empiric treatment with a brief course of oral antibiotics (eg, amoxicillin or cefdinir for seven days), rather than no antibiotics or symptom-based treatment (**Grade 2C**). In randomized trials in children with uncomplicated severe acute malnutrition, an empiric course of antibiotics improved weight gain and led to higher nutritional recovery rates. (See 'Antibiotics' above.)

  - **Regular follow up** – Children treated in CMAM programs should have regular follow-up and monitoring by community-based health workers, typically every one to two weeks. These visits are used to refill the RUTF supply, assess weight gain, and provide counseling to avoid relapse. Most children recover within six to eight weeks. Children who are not making progress within two to three weeks, or who do not achieve their anthropometric goals within 12 weeks, should be reevaluated to determine the cause. In most cases, these children should be admitted for inpatient treatment. (See 'Follow-up and monitoring' above.)

- Children are eligible for discharge from the outpatient CMAM program when they reach target anthropometric goals, any infections or other medical problems have been treated, and social supports seem adequate to prevent relapse (table 3). Relapse after discharge from the treatment program is common in many settings; strategies to reduce this risk need further investigation. (See 'Discharge from treatment' above.)

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