

Simplified Protocol for Acute Malnutrition

A simplified, combined protocol is intended to simplify and unify the treatment of uncomplicated severe and moderate acute malnutrition for children ages 6-59 months into one protocol in order to improve the coverage, quality, continuity of care and cost-effectiveness of acute malnutrition treatment in resource-constrained settings. The simplified, combined protocol tested in CompAS uses only ready-to-use therapeutic food (RUTF) at doses tested to optimize growth and minimize cost at each stage of treatment. Admission, progress and discharge is assessed using mid upper arm circumference (MUAC) and oedema only.

When resources are spread thin, this approach may:

- Eliminate the need for separate products, infrastructure, and administrative procedures for MAM treatment;
- Enable earlier treatment of cases before deterioration into more costly SAM treatment; and
- Enable better continuity of care

In the context of COVID-19, delivery of a simplified acute malnutrition treatment protocol by community health workers could relieve the burden on health facilities and reduce risk of viral transmission between patients. The simplified, combined protocol on the right was tested in the CompAS trial; different countries should adapt the protocol to local context as needed. Ready-to-use Therapeutic Food (RUTF) was used in the CompAS trial; different ready-to-use foods (RUFs) designed to treat SAM and/or MAM could be used according to supply availability.



<115mm	115 - <125mm
2 RUTF a day 1000kcal	1 RUTF a day 500kcal

Simplified, Combined Protocol tested in CompAS	
Admission criteria	<125mm MUAC AND/OR bipedal oedema (+/++) AND clinically uncomplicated (i.e. passes appetite test, no Integrated Management of Childhood Illness (IMCI) danger signs/no serious medical complications)
Treatment frequency	<115mm: Weekly 115-<125mm: Bi-weekly
Dosage	<115mm and/or oedema (+/++): Two 92g sachets RUTF/day (1000 kcal/day) 115-<125mm: One 92g sachet RUTF/day (500 kcal/day)
Transition from 2 RUTF to 1 RUTF	Two consecutive weekly measurements at or above 115mm and no oedema
Cured	≥125mm for 2 consecutive measurements and no oedema, with 3 week minimum stay
Default	Absent for 3 consecutive visits
Non-recovered	Has not achieved discharge criteria within 16 weeks
Discharge procedures	Discharge ration of 7 RUTF sachets
Routine medical treatments (as per national protocol)	For all children with MUAC <115mm and/or bipedal oedema (+) on admission: <ul style="list-style-type: none"> • Amoxicillin: Give first dose at health facility and then give remainder to caretaker with instructions to give twice daily for 7 days For all children with MUAC <125mm and/or bipedal oedema (+) on admission: <ul style="list-style-type: none"> • Malaria: according to national protocol • Measles: one vaccine on 4th visit (4th week) (children >6 months) (unless already vaccinated) • Deworming: one dose (albendazole or mebendazole) on the second visit (second week) (children >1 year)
Referral procedures (as per national protocol)	Any child who develops medical complications and/or is not responding to treatment will be referred for a medical evaluation and/or to the Stabilization Center. <p>‘Not responding to treatment’ will be defined in the following way:</p> <ul style="list-style-type: none"> • Failure to gain any weight (non-oedematous children) • Failure to start to lose oedema • Oedema still present • Weight loss since admission to program (non-oedematous children) • Failure of appetite test • Weight loss of 5% of body weight • Weight loss for two successive visits

Evidence to support simplified, combined treatment protocols

- Niger, 2006: MSF treated SAM and MAM cases together in a large-scale therapeutic feeding program in Maradi. Moderately malnourished children were treated with the same medical and nutritional protocols as SAM children, except no systematic antibiotic was given at admission to MAM patients. No distinction was made between the treatment of SAM and MAM, only between complicated and uncomplicated acute malnutrition. ([Defourny et al 2007](#))
- Sierra Leone, 2015. Children receiving a simplified, combined treatment protocol for acute malnutrition (MUAC <125 mm) using a decreasing ration of RUTF and peer health maintenance messaging were compared to a standard weight-for-height SAM and MAM protocol. In the simplified treatment group, 83% of children recovered (note that 70% of cases were MAM) as compared to 79% recovery in the standard protocol group (of which 37% were MAM). ([Maust et al 2015](#))
- Burkina Faso, 2016-2018. A randomized, non-inferiority trial among children with uncomplicated SAM (WHZ < -3 and/or MUAC < 115 mm) showed that reducing the RUTF dose by 30-53% after two weeks of standard treatment did not reduce overall weight or MUAC gain velocity or affect recovery or lengthen treatment time. There was a small but significant negative effect on linear growth, especially among children under 12 months. ([Kangas et al 2019, PLOS Medicine](#))
- Burkina Faso, 2017. In the OptiMA trial, three changes were made to the treatment protocol: 1. Mothers were trained to screen their children by MUAC and checking for oedema; 2. Children with a MUAC of <125 mm or oedema were admitted for treatment; 3. RUTF dosage was gradually reduced based on a combination of MUAC status and weight. The study aimed to demonstrate that this approach adhered to SPHERE standards of recovery rates of >75%. Overall recovery of trial participants was 86.3% (95% CI; 85.4, 87.2) and for the 16% of children admitted with MUAC <115 mm or oedema, recovery was 70.5% (95% CI; 67.5, 73.5). Recovery was associated with mothers trained to screen their children with MUAC prior to admission. ([Daures et al 2020, British Journal of Nutrition](#))
- South Sudan and Kenya, 2017-2018. The ComPAS randomized-control trial of a simplified, combined protocol using a MUAC- only protocol was shown to be non-inferior to national standard treatment in terms of recovery, and more cost- effective than standard treatment. The simplified protocol has the potential to ensure that resources are optimised, more children are reached with treatment, continuity of care between SAM and MAM treatment is improved, and health systems are able to treat MAM children before they deteriorate into SAM. ([Bailey et al 2016, Bailey et al 2018, Marron et al 2019](#))
- Somalia, 2018. The IRC conducted a prospective cohort study to test an adapted protocol for the treatment of SAM using a reduced RUTF dosage (two sachets per day, weekly for SAM phase; one sachet per day, every two weeks, in MAM phase). There was no control group. Median number of weeks to recovery was 14; recovery rate was 98% (1% defaulted and 1% were referred); non-response and death rates were 0%. Good treatment adherence in the study was likely helped by close proximity of services to beneficiaries. ([Kozuki et al 2018](#))
- Mali, 2019-2020. An operational pilot used the simplified, combined protocol in health facilities and through CHW; and trained caregivers to do MUAC measurements. Of the 8,221 children enrolled, 93.9% recovered from SAM and 97.7% recovered from MAM. Admission criteria were uncomplicated cases with MUAC measurements of <125 mm and/or bilateral oedema and positive appetite test. Average treatment time was 7 weeks for SAM and 4 weeks for MAM. Mothers had favorable perceptions of using MUAC tapes and were observed by CHW to be proficient. However, only 50% of mothers conducted monthly measurements and only 20% of mothers did so when their children were ill. (International Rescue Committee presentation given March 2020 in Bamako, Mali.)